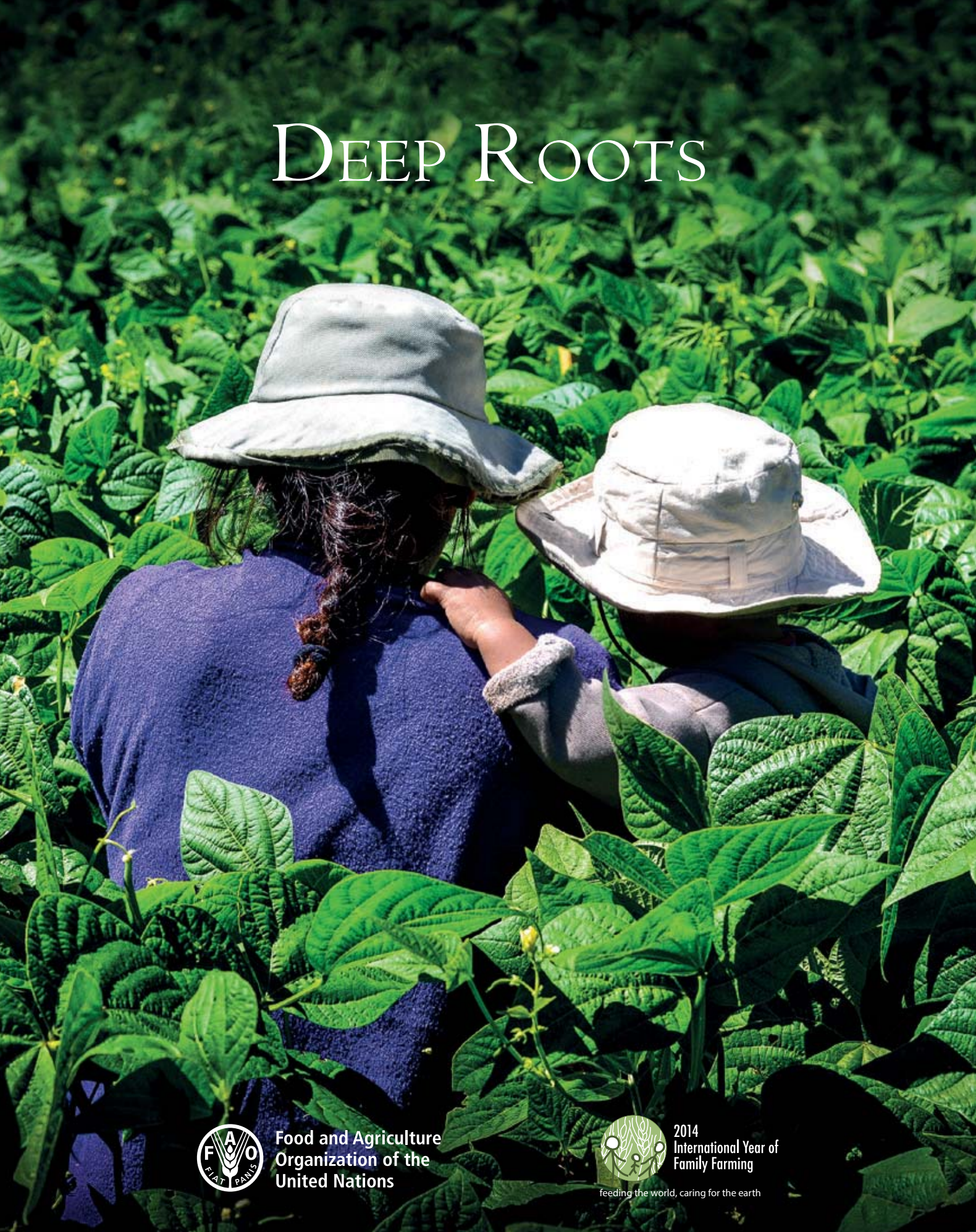
Deep Roots



Food and Agriculture Organization of the United Nations

2014 International Year of Family Farming

feeding the world, caring for the earth

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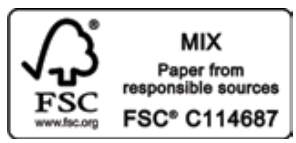

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Foreword

JOSÉ GRAZIANO DA SILVA, FAO DIRECTOR-GENERAL

The International Year of Family Farming (IYFF) has uncovered well-grounded resolve to place family farmers as protagonists in addressing a number of challenges we face, from eradicating hunger and poverty to conserving natural resources. Nothing comes closer to the sustainable food production paradigm than family farming. The diverse set of experiences in this publication puts this paradigm in focus.

The United Nations chose 2014 as the IYFF in order to recognize and bolster the contribution of family farmers. Out of 570 million farms in the world, 500 million are family owned, making the well-being of farm families inextricably woven into the overall well-being of societies, with tremendous implications for food production and sustainability.

The severe food crisis experienced over the last years have shown that world food security cannot be achieved and sustained by relying only on the international commodity markets. The crisis has generated a wide consensus that vibrant family farmers are key to supply domestic markets and generate jobs and incomes in the rural areas.

With FAO as the implementing agency of the IYFF, an intense policy dialogue process has been undertaken throughout 2014, involving governments, family farmer's networks, the academy and research centers, civil society organizations and the private sector, which resulted in strong political commitment from around the world.

Deep Roots reflects the momentum that the IYFF has galvanized during the year. With so many experiences and insights captured in one place, this book offers an opportunity to reflect on family farming in its rich diversity while serving as a tool for how best to address their needs and demands.

The gains of the IYFF beckon our gaze toward the horizon, moving us forward as we continue the momentum gained thus far. As FAO, we recognize the significance of this task and are committed to support Members shape the enabling policy and knowledge environment for family farming in the years to come. Let the insights, challenges, and opportunities presented in this publication guide our collective work going forward.

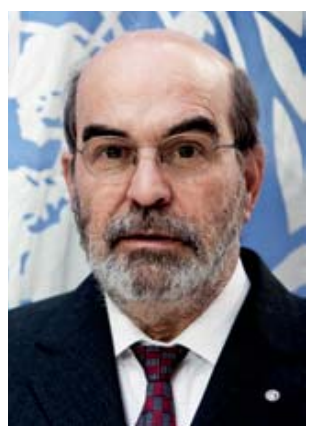

Image: FAO/Alessandra Benedetti

José Graziano da Silva
FAO Director-General

BENIGNO S. AQUINO III, THE PRESIDENT OF THE PHILIPPINES

My warmest greetings to the Department of Agriculture, Tudor Rose, and the Food and Agriculture Organization of the United Nations, as you commemorate the International Year of Family Farming with the publication of *Deep Roots*.

Sustainability has become a vital priority in our bid to secure equitable progress for the Filipino people. The International Year of Family Farming is an opportunity for us to raise greater awareness for the methods and systems that will enable our agricultural sector to incorporate technology and modern dynamics to create a balanced, productive and profitable milieu for growers, producers and consumers. This administration's reforms have bolstered the confidence of our countrymen in our capacity to overcome the challenges that have hampered our growth; may this event maximize our opportunities for development and civic participation so that the fruit of our initiatives can cascade to the farthest reaches of society.

May this publication stand as a testament to the ideals we have worked on being put into effect for the common good. Through integrity, accountability, and solidarity, we will achieve our shared goal of a bountiful, inclusive and prosperous Philippines.

I wish you a productive and meaningful celebration.

Benigno S. Aquino III
The President of The Philippines

The Philippine Government first proposed that United Nations declare 2014 as the International Year of Family Farming during the 37th session of the FAO Conference in 2011, and host the closing ceremony of the Year in Manila on 27th November 2014

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MESSAGES OF SUPPORT FROM THE FAO SPECIAL AMBASSADORS FOR THE INTERNATIONAL YEAR OF FAMILY FARMING

GERD SONNLEITNER, IYFF SPECIAL AMBASSADOR FOR EUROPE AND CENTRAL ASIA

More than 80 per cent of our daily food is produced by farming families. What has made this farming model a success over the centuries? The characteristics of family farming are passion, decision-making and risk taking in the hands of the farming families only. The combination of these characteristics is unique in the overall business world.

Beside food, feed and fibre production, farming families provide diverse and lively rural areas. Prosperous family farming creates the basis for wider economic development in rural areas. It can help to curb urbanization.

Family farming is sustainability in itself. Farms are handed over from generation to generation. My family farm in Bavaria, on the eastern boarder of Germany, for example, dates back to the fifteenth century.

Family farming is not a static way of life. It is dynamic, and therefore no clear definition of it exists. Farmers constantly have adapted to the latest knowledge and science in managing their farms as I did on my farm with my family.

Recognition and a sound and reliable political framework are absolute preconditions for farming families to be able to deliver enough, high-quality food for an ever growing worldwide population. These preconditions are not met in all countries worldwide. In my understanding it is catastrophic that we are still confronted with malnutrition and hunger, affecting people in significant numbers. Where hunger and malnutrition are prevalent good governance is missing.

For the development of an efficient farming sector all over the world access to education, land and finance are essential. The United Nations International Year of Family Farming 2014 gives us a unique opportunity to communicate our diverse needs and challenges to politicians and society. Modernization and sustainable intensification of family farming is my core message for a world of zero hunger.

ESTRELLA A. PENUNIA, IYFF SPECIAL AMBASSADOR FOR ASIA AND THE PACIFIC

The Asia-Pacific region is home to 70 per cent of the world's family farmers. They work on farmlands with an average of 2 hectares, and with women farmers putting in 50-90 per cent of farm work. In spite of their small landholdings, they produce 80 per cent of the total food needed to ensure food security of the region. This is because of the higher use of labour and family-owned inputs, cropping intensity, diversification and integration even with smaller capital. The region overall feeds 60 per cent of the world's population, producing 90 per cent of the world's rice, 40 per cent of its cereals and 40 per cent of its meat.

Yet, out of the total 800 million of the world's poorest and hungriest people, around 545 million are in Asia, particularly in South Asia. They are the women and men who rely on small-scale agriculture, fisheries and forestry for a living — the family farmers in this region.

The Asian Farmers Association for Sustainable Rural Development (AFA), currently with 17 national farmer organizations as members in 13 countries representing 12 million small-scale farmers, is committed to promote family farming and improve the lives and livelihoods of farmers in the region. AFA has a six-priority policy agenda for family farmers:

- recognition of small-scale farmers, especially women
- secured rights to basic production resources, mainly land, water, forests and seeds
- promotion of sustainable, resilient, agroecological approaches
- strengthening market power
- significant involvement in the policymaking processes of governments
- attracting youth into agriculture.

To feed 9 billion people in 2050 with safe and nutritious food, AFA will continue to work in partnership with various institutions and stakeholders to empower family farmers in Asia to constructively engage our governments for favourable policies and programmes; implement projects and activities that build the knowledge and skills of farmer leaders and their organizations centring on the six themes above; and continuously experiment, innovate, learn and share. The ultimate goal is to make farming a profession that gives happy and decent living conditions to a farming family.

IBRAHIMA COULIBALY, IYFF SPECIAL AMBASSADOR FOR AFRICA

Following the United Nations' proclamation of 2014 as the International Year of Family Farming, a global campaign by civil society emerged to address the problems faced by small farmers in the context of neoliberal globalization. Despite initial challenges, family farming, which accounts for approximately 750 million of Africa's 1 billion rural population, is now on the global agenda.

The dynamism of family farming is reflected in the farmer organizations that aim to provide services that are no longer supplied by governments. Their economic activities, implemented in collaboration with other African stakeholders, have development impacts that go beyond the rural sphere.

For years rural areas – particularly small producers – have been impoverished due to risky policy choices. The unresolved issue of youth and rapid population growth is a threat in the context of natural resource degradation and loss of soil fertility.

In order to reduce poverty in rural areas while meeting increasing food needs in urban areas, there is an urgent need for agricultural policies built on the real concerns of African family farmers. We must invest in the modernization of family farms, improving their production capacity to increase their market power and the maintenance of value-added agriculture. We must reorient agricultural research and advice to the demands and needs of family farms with public resources provided by African governments. Finally, the land rights of family farmers must be freely recognized, guaranteed and secured through voted legislation at national and continental levels.

Africa has experienced all the economic theories and concepts developed by others, but the time has come to change course as the continent faces increasingly complex problems. The only solution is to give the majority population – the family farmers – the chance to live in dignity.

ROBERT L CARLSON, IYFF SPECIAL AMBASSADOR FOR NORTH AMERICA

The International Year of Family Farming is a wonderful opportunity for all farmers to publicize our work, not only to the world, but locally, regionally and nationally.

Family farming is the most efficient system of food production the world has ever seen, and it remains so today. The alternatives to family farming have failed throughout history, from the latifundia farms of the Roman Empire through medieval serfdom and the more recent soviet collective farms. All of these grandly designed farming systems failed and the land was transitioned back to individuals and smallholders.

According to the Food and Agriculture Organization of the United Nations, today about 98 per cent of the world's farms are family farms.

In this age of consolidation of most businesses and services, why aren't giant global corporations producing our food? Because we as family farmers have what economists call a comparative advantage over other forms of farming. That means that we can produce farm commodities, maize, beef, pigs, soya, ground nuts and so forth, at lower cost and higher quality than anyone else.

And why is that? Because family farms combine the most basic social and economic unit: the family social unit and the farm economic unit, an extraordinarily strong bond. In essence, no one will work harder or longer to bring in the harvest or save the animals that their life depends upon than family farmers.

If family farmers are to succeed in sustainably growing food to feed a rapidly growing global population, governments need to recognize their responsibility. After all, farming is the oldest and most important profession in the world, but it is also one of the riskiest. Family farmers need a safety net if they are to provide food security and reduce poverty while adapting to a changing climate.

Every day should be a celebration for the work of family farmers.

MYRNA CUNNINGHAM, IYFF SPECIAL AMBASSADOR FOR LATIN AMERICA

In my community on the Wangki River, on the Miskitu Coast of Nicaragua, now Northern Caribbean Autonomous Region, we have always practiced family farming. The territory belongs to the whole community, and serves to meet the material and spiritual needs of each family. To do this, we combine various productive activities such as hunting, collecting seeds and fruits, fishing, fuel to prepare our food, we gather medicine and ritual items that contribute to our health, culture, social and spiritual life.

Farming is based on the work of all family members, complemented through community millennial economic practices known as *Bakahnu* and *Pana Pana*, which are expressions of community reciprocity based on the principle, *if I have, we all have;* such practice generate communal and family liquidity, health, medicinal plants, knowledge, equipment and communal harmony.

Women transmit that form of production through example, legends, songs, dances, and thus protect biodiversity. Together we nurture native seed banks and we care for each other. Indigenous family farming allows us to practice our world view and collective values, because we combine spiritual, cultural, social and productive practices involving spirits, the stars, moon, sun, water, nature and human beings; family and communal indigenous farming applies a logic of diversified production, thus protecting Mother Earth - *Yapti Tasba.*

This traditional indigenous production system is being threatened by the invasion of settlers into our ancestral lands with other productive practices, climate change and increased conflict over access to natural resources. The International Year of Family Farming will help to recognize the significant contribution of indigenous peoples in protecting Mother Earth, promoting sustainable development, and to assess and measure the contribution of indigenous peoples economy and food production to the reduction of hunger.

MOHAMED OULD SALECK, IYFF SPECIAL AMBASSADOR FOR NORTH AFRICA AND THE NEAR EAST

Family Farming is essential from the point of view of food production involving the nuclear family. This social group is the backbone of the family farming concept.

Nowadays, over 90 per cent of fishers operate small-scale/artisanal fisheries, employing nearly the same number of men and women.

The International Year of Family Farming provides an opportunity to demonstrate the small scale and artisanal fisheries' important contribution to livelihoods. Additionally, it is particularly worth mentioning the outcomes that have resulted from the activities and initiatives implemented throughout the Year. A clear example in that regard is the adoption of the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication by 143 Member Countries during at the 31st Session of FAO's Committee on Fisheries (COFI 31). This has represented an extraordinary milestone considering it is the first ever international instrument of its kind specifically developed for small scale fisheries, and it recognizes our needs as fishermen.

These types of initiatives ensure the preservation of our ancestral and authentic lifestyle; one that has brought culture, traditions and unique methods of fishing for generations, and has contributed to human progress.

Nonetheless, there is a great deal of work to do. It is imperative that traditions are preserved as they sustain the origins of our cultural legacy. Let us remember that small scale/artisanal fisheries have an enormous contribution to food security in developing countries and promote an adequate nutrition. All this is fundamental to the strategic solutions developed for tackling poverty and hunger in developing countries.

Concepts and realities of family farming in Asia and the Pacific

Ye Jingzhong, Professor and Deputy Dean at the College of Humanities and Development Studies of China Agricultural University

Asia and the Pacific region has the largest number of family farms in the world. It is home to 60 per cent of the world's population and to 74 per cent of the world's family farmers, with China alone representing 35 per cent and India 24 per cent of the estimated 570 million farms worldwide. It is undeniable that family farming has played a central role in the socioeconomic development and well-being of the whole population in the region.

Recognition of the role of family farming in social, economic and ecological sustainability has been achieved through the celebration of the International Year of Family Farming in 2014. As a multilayered social phenomenon, family farming is too complicated and diversified in different regions and countries to be clearly delineated. Indeed, it is impossible to define family farming in Asia and the Pacific without taking into account the historical and current cultural repertoires in which it is rooted. When the complexity of family farming and its differentiated situation under changing externalities in the region are unfolded, the strengths, merits and challenges of family farming become clear.

Throughout the history of Asia and the Pacific, family farming stands as a means of production, a cultural norm and an institutional arrangement. In the Asia and the Pacific region, which has the largest number of family farms in the world, irrigation-intensive agriculture and rice farming required small social groupings such as families or villages to be the basic unit of production. Small-scale family farming is well adapted to the high density of popu-

Image: Danilo O. Victoriano Jr.

'Harvesting the fruit of love', Philippines (IYFF photo competition overall winner and Asia, Pacific and Oceania regional winner)

lation and relatively scarce agricultural resources. Family farming has been an essential part of the folk custom and rural culture of Asian societies since it first appeared. This cultural aspect of family farming explains why research on Asian rural societies (for example, Japan and China) pays so much attention to 'family'. Family farming is seen as the comprehensive outcome of land legacy, ancestral rules, household rights to common agricultural resources and strong social bonds interwoven by individual families. Peasant agriculture and family farming has supported the orderly operation of traditional agrarian society due to its incomparable advantages in production organization and social stabilization. Many Asian countries formally institutionalize the family as the fundamental farming unit through land reform and legislation.

The dominant role of family farming in Asian agriculture is a constant feature across time and space in this region. From the past to the present, the basic and primary operative unit of agriculture in Asian societies has always been the family. During the post-war development period in the region, debates on the relationship between small family farms and large-scale, commercial farms persisted and were often focused on economic aspects. Academic proponents of family farming usually tried to explain its persistence through the economics of its organizing process and the unique features of agriculture. Far from being substituted by large-scale commercial farms as both neoclassical economics and Marxist theories assumed, family farming adapts well and thrives in modern times through its diverse modalities in different societies. As the most important way to realize the multifunctionality of agriculture, the vitality and significance of family farming in Asia and the Pacific particularly centres on the maintenance of livelihood, agro-ecological protection and rural-urban development. Hunger and malnutrition predominate in Asia, especially among family farmers. According to the World Bank (2004), small family farmers in South and East Asia and sub-Saharan Africa represent over 92 per cent of the world's dollar-poor. However, family farming as such does not necessarily induce poverty. With positive public investment and policy support, family farming is able to provide a decent income for rural people. In Japan, for instance, the average income per farming household in 2012 was about US$58,500, of which a considerable part (31.1 per cent) came from agricultural activities.

The success of family farming lies not in specialization or profit maximization, but in practising farming to meet diverse household needs rather than responding to market opportunities alone. To satisfy the various needs of family livelihood (such as food, nutrition, clothing and cash income), small family farms usually adopt a scope economy rather than the scale economy used in large industrial farms. Hence, they are more productive than large mono-cropping farms in terms of resource utilization. Family farming, as a means of livelihood, cannot be perceived separately from the pluriactive role of rural households. However, family farming's contribution to non-commodified household production is largely underestimated in national economies.

In terms of biological sustainability, family farmers in Asia and the Pacific often develop farming systems and practices to adapt to different local conditions, marginal land endowments and climatic variability. Diversification is therefore an important farm strategy for managing production risk in small farming systems. The biodiversity feature of family farming and the traditional agroecological system that many family farms maintain have extraordinary significance for this region, which has scarce agricultural resources and is vulnerable to various climatic disasters. In addition, family farmers help build stronger rural communities since they are more integrated with the local economy. Small farms not only help reduce unemployment, but also help in maintaining a vibrant local economy that can help build stronger rural communities. Rural development practices currently emerging in Asian societies are not promoted through top-down policy interventions, but largely driven by the grass-roots activities and innovations of family farmers. In a very explicit sense, a series of new decentralized markets, or nested markets, is arising in the countryside as the outcome of the strength of family farmers' dynamics and initiatives. The defence of family farming in Asian societies is beginning to translate into diversified rural development practices (such as agritourism and new markets), improved nutrition and food safety for rural and urban people, and above all shared values on the beauty of agriculture and the countryside.

Family farming in Asia and the Pacific region is highly diverse, making it difficult to come up with a simple definition. Spanning from full-time family members farming with the support of wage labour, as in China, to small-scale and subsistence farmers as in Pakistan and the Pacific Islands, family farming can be characterized in a general sense as family-based and small-scale. Defining family farming implies an ongoing process of increased understanding of situations at the local and national levels. Family farming is a self-evident phenomenon in Asia. However, there is hardly a clear and comprehensive definition that spans all the different realities at national or at regional level in Asia and the Pacific. Similarly, the term 'family farm' is not commonly used in the history of Asian agriculture. Instead, there are some parallel concepts deeply rooted in different cultures and languages when referring to this family-based farming unit. In contrast to Western countries such as in Europe and North America, the old 'agrarian question' has never been 'resolved' in Asian countries as family farming has not disappeared nor been replaced by commercial farms and agribusiness. Debates and analysis concerning family farming and family farms boomed only when 'family farming' in Asian countries seemed problematic in encountering globalized capitalism and West-shaped modernization.

Under the umbrella term 'family farm', the form of family-based agricultural operation as such represents drastic differentiation along with agrarian change in the region in general. Japan and China might be taken as examples to explore the diversity and differentiation of family farming between and within countries. Both countries have official classification and scholarly debates regarding family farming. Yet due to their different positions in terms of economic

Image: Irvin Jethro Veilas

Water spinach farming in the Philippines

development and political environment, family farms in China seem to be experiencing more acute differentiation at present. From the official explanation and national survey criteria, the 'family farm' politically promoted by the Chinese Government falls into the category of a capitalized family farm in terms of four features:

- possession of large-scale farmland obtained through land transfer (with payment and formal contract), and equipped with large- to middle-sized machinery
- primarily using family labour and combining short-term hired labour for productive utilization
- the household as the accounting unit, with the orientated of profit maximization
- continuously expanding production through capital accumulation in order to achieve optimal scale for profit maximization.

Although the form of 'family production' is formally retained (as the utilization of family labour prevails), capitalized family farming is essentially different in its linkage to family and the rural community, and can no longer be characterized by the concept, 'family farming'.

Given the differentiation of family farming in reality, efforts to conceptualize it should trace back to the point of departure for such differentiation, which is peasant agriculture. In academic writing and practice, the terms 'family farming' and 'peasant agriculture' are often conflated and interchangeably used. This is particularly the case in Asia and the Pacific. Before the advent of agrarian commodification and capitalization, family farming could indeed be equivalent to peasant agriculture. In the long history of Asian agriculture, family farming has displayed the features of peasant agriculture due to the centrality of the family in agricultural production and its embeddedness in local society. Subsistence predominated the logic of family farming. Applying political economic analysis, the development of family farming, taking China as an example, can take different directions. Synthesizing from the political economic aspect, family farming could be seen as family-based farming activities that primarily rely on allocated

family farmland, family labour and self-supplied capital for household reproduction and subsistence. Its dependence on, and involvement in, external markets for productive factors (such as land, capital, labour and inputs) is partial. Extended from the broader classification of family farming in terms of political economy, eight features elaborate the nature and quality of family farming more specifically:

- subsistence and livelihood satisfaction
- family centrality
- labour intensification
- diversification, pluriactivity and risk reduction
- autonomy and deliberation of market integration
- endogeneity and locality
- food sovereignty and food safety
- environmentally friendly with cultural heritage.

With the above features, family farming contributes greatly to food sovereignty and food safety. It safeguards food security for producers, especially marginalized peasants and the poor; localizes food systems; renders control and autonomy to local people; builds knowledge and skills; and works with nature. It implies the rights of small-scale family farmers to access agricultural resources. The feature of food sovereignty is particularly important under the global food regime and large-scale land acquisition processes, which have been labelled 'land grabbing'.

In the context of Asia and the Pacific, family farming faces dramatic challenges under global capitalization and agrarian transition. The transition from family farming to large-scale, capitalized farming occurs in the developing countries of Asia and the Pacific are involved in capitalization through contract farming. Compared to the income increase brought by contract farming, the loss of social standing and political power over their own land and labour, the increased social differentiation and disintegration of rural communities, and the rising inequality and risks of landlessness represent immeasurable impacts for family farming and rural society as a whole. The second significant challenge comes from land-grabbing, both by global players and domestic development. According to the Land Matrix, Asia is second to Africa in terms of the number of hectares affected by land deals. Land-grabbing is not just about physical dispossession but a broader sense of dispossession. Evidence shows that land acquisition and the displacement of family farmers has had negative effects on ecological systems, food security, family farmers and rural dwellers as a whole. The third major challenge for family farming is the deagrarianization of rural youth in the trend of migration. It is necessary to envisage the downside of migration on family farming. At the household and individual level, the most notable change after labour migration is the increasing involvement of women, children and the elderly in farming and the transition from labour-intensive farming to fast farming. For agriculture production, the deagrarianization of rural youth and the ageing of the farming population have already significantly weakened agriculture and family farming.

Family farmers contribute to local market development, community-level cooperation and resilience, and ultimately

Image: Erdenebileg Ulgit

Dzud (the falling of big snow) is a major challenge for pastoralist families

to countries' gross domestic product. They have important roles and contributions in enhancing the multifunctionality of agriculture, such as preserving local traditions, heritage and food systems as well as community ecosystems and rural landscapes. However, such an important role can hardly be realized without all-round recognition and external support. The understanding and perception of family farming is closely related to views on agriculture and development. For Asia and the Pacific, generally being a developing region, most developing countries in this region have embraced the developmental paths of industrialization, urbanization and marketization — in a word, a Western 'modernization' set by Europe and North America. Since the 1980s, agriculture in Asian countries has been actively integrated into global markets. The forces of globalization, deregulation and withdrawal of government from agriculture, the liberalization of agricultural sectors, the privatization of services and information, structural adjustment, international trade agreements and new technologies, create an ambiguous environment for policymaking. Policymaking to defend and support family farming should:

- protect agriculture as public goods rather than throwing it into the market
- consolidate the centrality of family farming, protecting peasants from land-grabbing and proletarianization
- emphasize peasants' food sovereignty and its contribution to global food security
- construct new and decentralized markets for facilitating food safety
- facilitate reconstruction and comprehensive rural development for the continuity of family farming
- acknowledge the multiple values of agriculture, recognizing and boosting the values of traditional agriculture.

The family farm in Europe and Central Asia

Jan Douwe van der Ploeg, Professor of Transition Studies, Wageningen University, the Netherlands; Adjunct Professor of Rural Sociology, China Agricultural University, Beijing

In Europe and Central Asia, as in most other parts of the world, the family farm is the most important land-labour institution. Of the 12.25 million farms in Europe (EU28), almost 11.9 million (97 per cent) are classified as family farms. The situation is somewhat different in Russia and Kazakhstan where most of the land is controlled by large agro-holdings. Nonetheless, family farms and household plots produce most of the food in these two countries. In Russia and the Western Commonwealth of Independent States countries, family farms cover 34 per cent of all agricultural land and produce 62 per cent of all agricultural output. In Central Asia, as a whole, family farms control 71 per cent of the land on which they produce 88 per cent of the total agricultural production.

The current dominance of family farming is the outcome of long, complex and highly diverse processes of emancipation that have taken place all over Europe and Central Asia. Some of these processes are hidden in ancient history, others are very recent. However, in each and every case the search for autonomy, the steady improvement of one's own livelihood and the pursuit of political rights all played an important role.

Land-labour institutions tie land and labour together in productive constellations that function according to their own, specific and inbuilt rules. There are many different land-labour institutions in today's world. The family farm is one of these, and it is a very solid and resilient one. This is due to three sets of reasons. The first regards the interests and prospects of the actors involved. The second relates to society as a whole. The third set of reasons lies in the linkages between the interests of the involved actors and the needs and demands of society at large.

The family farm offers those working and living in it the possibility to progress their lives and ambitions through their own work. It gives each generation the chance to create opportunities for the next one. It allows the family members to control the labour process and thus triggers innovativeness. It represents a pleasant place to live and to raise and socialize children. The family farm is also attractive because it is not just based on plain economics: the family is, time and again, the framework that helps to define the organization and development of production. The needs, possibilities, limitations, prospects, interests, experiences and expectations of the family take centre stage.

For society as a whole the family farming sector is an indispensable and much appreciated phenomenon. Family farming is much more effective than the other land-labour institutions in generating employment and incomes. It substantially strengthens regional economies. It contributes in an often decisive way to the quality of life in rural areas. It is a carrier of cultural repertoires. And it often functions as a social safety net in times of crisis and/or emerges as an attractive (albeit sometimes hardly accessible) opportunity for young people. In short: at both the micro and macro level family farming represents a series of promises. Whether or not these come to fruition depends on a range of factors: on agricultural and rural policies, the way markets are structured and the attitudes and buying habits of the general public.

One strategic feature of family farming is that there is a direct connection between the emancipation of the farming family and growth and development at macro level. That is, the improvement of rural livelihoods (at the level of the families involved) translates into a growing supply of food, agricultural products and other rural services. It also translates into more resilience. Put the other way around: nation states that want food security and sovereignty need a vibrant family farming sector. The post-Second World War experiences in Europe and Central Asia are ample proof of this.

Over the last 15 years or so the context in which family farming is embedded and the nature of the family farm as such have been changing in ways that increasingly threaten the family farm and the many virtues it entails. A practical corollary of this is that the operational definition of the family farm probably needs revising and that the role of family farming needs to be reconsidered within political circles.

Agriculture as a whole is increasingly suffering from a squeeze[1] (output prices are stagnating while input prices keep increasing), market volatility and rigid regulatory schemes. Family farming is also suffering harsh competition from large corporate and megafarms that benefit from unequal playing fields. Family farms equally suffer from the tight control exerted by food industries, large retail organizations and banks (sometimes to the degree that family farms are pushed out of business). The European Parliament (notably the Agricultural Commission) is concerned by and trying to respond to these difficult situations.

Many family farms are actively responding to these threats in different ways. These include engaging in pluriactivity (one or more family farm members having an off-farm job) and multifunctionality (creating new economic opportunities within the farm). Women often play a decisive role in these activities. Multifunctionality allows farming families

Image: Hakan Yayla

'Agricultural workers between the Byzantyne walls', Turkey (IYFF photo competition - Europe regional winner)

to meet a range of new societal demands that are being articulated from the cities towards the countryside. Family farmers are also building new intermediary organizations (such as territorial cooperatives that take care of the landscape, biodiversity and sustainability) in order to respond to rigid regulatory schemes. Self-regulation is the key method of operation of these organizations. The capacity to meet new needs (while simultaneously strengthening farming and food production) and to respond to new problems is a reflection of the strength and resilience of family farms. When it comes to meeting new challenges (such as reducing energy use, mitigating climate change, enlarging biodiversity and water retention) this capacity will probably once again turn out to be decisive. However, there are reasons for doubting whether the 'lines of defence' that family farmers are constructing will be sufficient — especially given the turbulence generated by the world market for food and agricultural products.

Alongside these external threats there are also internal ones. The biggest one of these is probably the recent tendency of a small segment of family farms to engage in accelerated expansion that results in the creation of megafarms: very large units of production that formally maintain their status as family farms but whose dimensions are disproportionate to those of regular family farms. These megafarms increasingly monopolize market opportunities; they represent an accentuated concentration of land, and they take away chances for further development from the remaining family farms. In short, their operation negatively impacts upon on the large majority of other family farms (wherever they are located).

Megafarms also produce a range of social ills. Their elevated scale of production means that they almost inevitably use industrialized farming methods. These methods are increasingly criticized by citizens and consumers as debasing product quality, harming animal welfare, increasing environmental pressures, harming the landscape, reducing the quality of life in rural areas and being disproportionately high energy users, among other things.

The panorama of family farming in Europe and Central Asia is complex. Family farming is omnipresent and is of

Image: Zornitsa Zdravkova

Fruit harvesting in the family garden, Bulgaria

Image: Angel Benito Zapata

Family farming in Spain

strategic importance, both now and in the future of the two continents. But it is under threat. While its presence, role and dynamics were once self-evident, we can no longer be certain that family farming will be with us in the decades to come. There is a widespread feeling that the disappearance of family farming would be an immense loss. Thus, new responses are needed that address both the external and the internal threats.

There is growing awareness of the need to construct, at the level of single or cooperating countries, new sovereign forms of food and nutritional security. This will be a far from easy task and it will surely take many years (although sudden and unexpected crises might speed up the process). However, it is equally certain that family farms are to be at the basis of this new food model — simply because they are and remain the most productive, most sustainable, most resilient and most socially appropriate land-labour institutions.

The transitional processes that we need will require extending our definition of the family farm. What will remain constant in the definition is that the family retains control over the farm's main resources (notably, but not only, the land) and provides all or most of the required labour. However, the definition also needs to include an upper limit to farm size coupled with an exclusion of speculative (or predatory) use of agricultural land. This is also echoed in the proposal of the European Commission that 'active farmers' should be the sole beneficiaries of agricultural and rural subsidies, while the possibility to use up to 30 per cent of the budgets for 'redistributive payments' clearly points to the willingness to support smaller farms (instead of favouring especially the megafarms). To rephrase these proposals in positive terms: the operation of the family farm needs to be aligned with the major societal demands, needs and requirements of Europe and Central Asia. New policies are definitely needed to institutionalize such a realignment.

The problems and challenges of the twenty-first century cannot be faced and resolved using theories and policies that date to the previous century. A drastic and far-reaching redesign of the policies that affect rural areas is needed.

Family farming in sub-Saharan Africa

Professor Sam Moyo, Executive Director of the African Institute for Agrarian Studies, Harare, Zimbabwe

The persistent agrarian crisis facing sub-Saharan Africa (SSA), and the recent world food price hikes, have provoked greater urgency among governments, civil society actors and multilateral development agencies to identify public policies which can more speedily promote agricultural transformation and food security and nutrition, as well as rural development. Consequently, SSA states and non-state actors have highlighted the important contribution and strategic role of family farms in the region's agrarian transformation and socioeconomic development.[1]

Since over 75 per cent of the SSA population is involved directly and indirectly in small-scale farming and related employment, family farms are pervasive in the economic life of this largely agrarian region. Family farms generally shape the social organization of life in a largely rural SSA, and consequently play a key role in social protection. The state of human development in SSA (such as poverty, food security and gender relations) largely reflects the socioeconomic fortunes of family farms. Furthermore, family farming communities are a critical electoral constituency which shapes political organization in SSA, even if their sociopolitical importance is not reflected in public policy priorities.

Historical land alienation and integration into world markets led to the extensive destruction of petty production in a few SSA countries and the creation of a limited scale of plantation enclaves in others.[2] Consequently, agrarian change in SSA is characterized by a variety of accumulation paths,[3] including petty-commodity producers 'from below' and from above, through large-scale commercial (capitalist) farms (LSCFs) and corporate estates. However, struggles over the control of land, led by independent movements and the peasantry since colonial times, resulted in the numerical and areal predominance of various forms of family farming systems.

Conceptualizing family farms

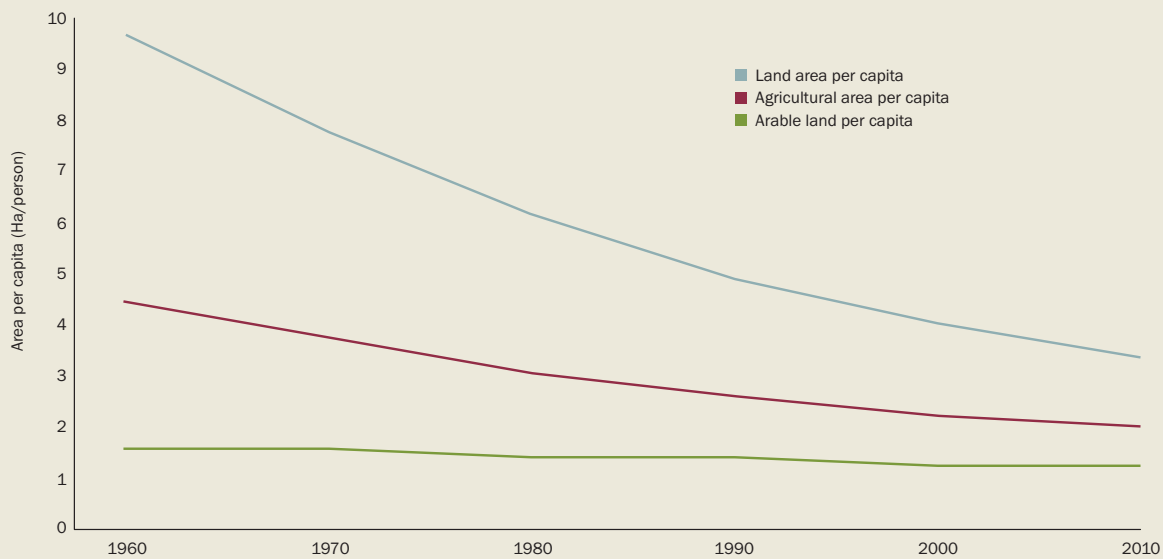
Family farms comprise a diverse range of relatively small-sized units, mainly involved in agricultural, pastoral and natural resource management activities. Unlike other categories of farmers, they are largely managed by and rely mainly on the labour of family members, and produce for auto-consumption and sale. While there is no official or legal definition of 'family farming' in SSA, the terms 'small-scale farmers' or 'smallholder famers' are commonly used by governments, civil society and scholars, while the term 'peasantry' is mainly used in scholarly literature. Conceptually small-scale farmers are akin to small-scale family farms which depend on family labour and produce a significant share of their own food. However, 'small-scale family farm' is a relative term which differentiates them from LSCFs, which are businesses managed by family owners who hire most of their labour.

Historically, LSCFs mostly comprise European settlers found in parts of Southern and Eastern Africa, as well as a scattering of relatively new indigenous 'emerging farmers' with middle-sized landholdings. Furthermore, LSCFs can be distinguished from corporate farming 'plantations' or 'estates', which in SSA are

Image: Edward Echwalu

'Janet Katushabe, displays tomatoes grown to boost immunity of her HIV/AIDS positive daughters and herself' (IYFF photo competition - Africa regional winner)

Total land area per capita in SSA



Source: FAO STAT 2014

largely enclaves producing tropical crops and permanent trees for export. Consequently, family farms are reproduced (or survive) within a historical context of struggle against larger-scale capitalized farming and land alienation.

Small-scale farmers have generally been pejoratively perceived and labelled by many policy experts and scholars as 'traditional' or 'backward', 'subsistence farmers', inferior to technologically progressive profit-oriented LSCFs, linked to financial inputs and commodity markets. They are often wrongly called 'communal farmers' working collectively on commonly held land without secure tenure. The failure of SSA to achieve globally comparable agricultural productivity levels tends to be attributed to various alleged maladies considered inherent in family farming systems, including land tenure insecurity, subsistence orientation and the presumed absence of production and market economies of scale.

Family farms are multifunctional production and consumption units, which meet a range of their consumption and income needs. Their production is structured around individual family and/or household-owned fields (often including extended family members), while their livestock rearing (of family-owned herds) and natural resource management activities are mostly undertaken conjointly on common lands. Family farm members work together on their arable plots and in tending to their livestock. Most family farms in sub-tropical SSA practise mixed crop and livestock farming. While most family farms do not own cattle, large family farm populations in Eastern and West Africa predominantly practise pastoralism. Generally, family farms have common access to community-owned natural resource reserves, and tend to pursue ecologically sensitive management practices regarding their use and reproduction of land and natural resources.

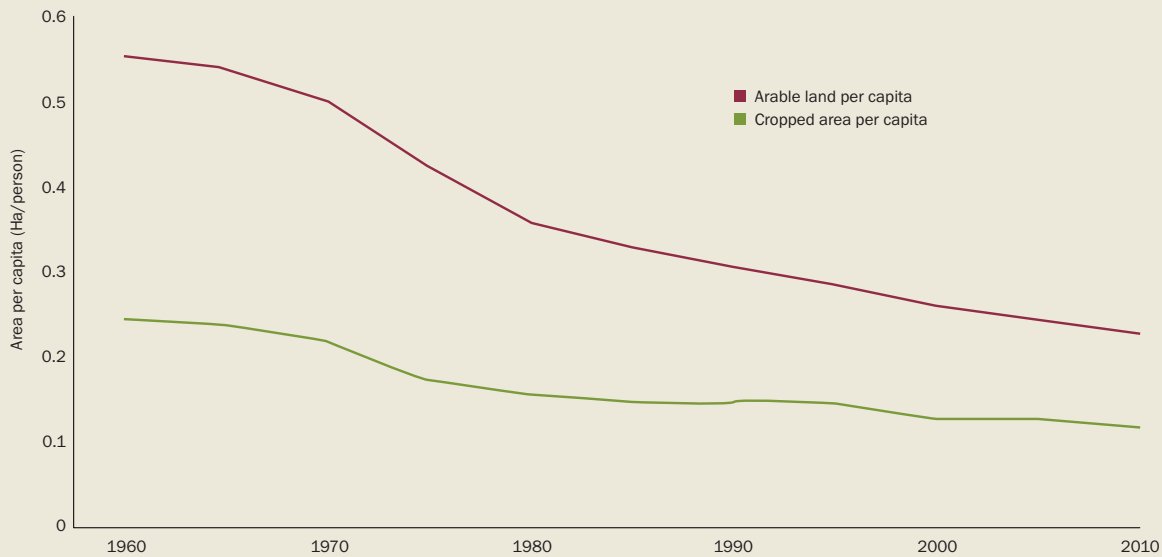
Diversity and heterogeneity

The scale and organizational forms, as well as the production focus of family farming in SSA, have mutated significantly since independence due to other structural changes, including rapid demographic growth and urbanization, snail-paced technical shifts in agriculture, new forms of urban demand for food and their increased market integration. Moreover, family farms are stratified according to various social hierarchies derived from organic tendencies to economic differentiation, territorial and social heterogeneity, and social identity differences such as gender, generation, race and ethnicity.

A heterogeneous range of family farms operate under the diverse agroecological, conditions of SSA based upon historically specific patterns of political and economic transformation shaped by the variegated incorporation of the region into world markets, over the last century.[4] What is relatively unique about the resilience of family farms in SSA is that their predominance is derived from the persistence of household-lineage based land tenure relations, despite various waves of land alienation which began at the dawn of the nineteenth century,[5] and continue to date.[6] A *priori* family farms have access to land largely through allocations and inheritance rules governed by customary procedures, although access increasingly occurs through various forms of land rentals, sharecropping and informal land sales (and livestock keeping arrangements).

It is estimated that there are over 100 million family farms in the 44 countries of SSA. Their numerical growth is largely in consonance with the changing density of the region's rural population, particularly those active in agriculture. While the proportion of SSA's rural population fell from 84.5 per cent in 1961 to 62.4 per cent in 2013, the absolute number rose substantially from 188.4

Arable land and cropped area per capita in SSA



Source: FAO STAT 2014

million to 562 million. This means that the number of families dependent on farming may have trebled since 1961.

A fundamental factor which differentiates family farms from LSCFs is that they use less hired labour. Most family farms hire out their labour, while a few hire in labour from various sources, and some do neither. Furthermore, family farms tend to be differentiated according to the relative sizes of landholdings and levels of capitalization (for example mechanization, irrigation) which influence their operational scale and labour intensity. Such differentiation is reflected in the varied levels of cropped areas and/or livestock holdings, productivity and output (including food surpluses) realized. While most contemporary family farms sell a portion of their produce, some sell more than others. However, fewer family farms obtain external finances (through various credit circuits, contracts and remittances) to procure inputs and implements and market their produce.

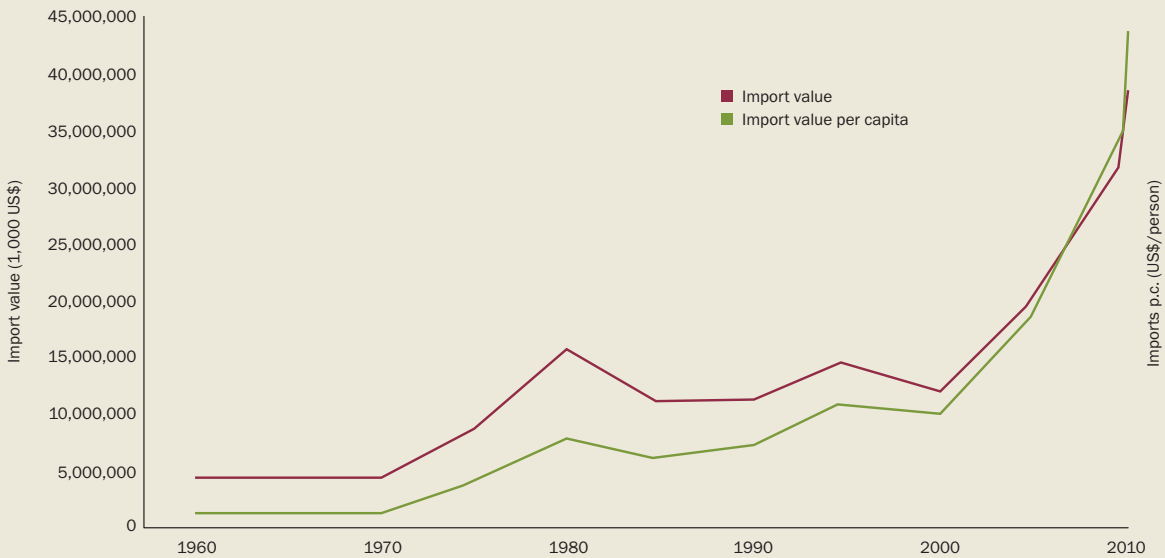
The spectrum of family farms therefore ranges at the top end from the 'better-off' family farm (sometimes called the 'rich' or 'capitalist' family farm) that employs more hired labour than family labour power and sells larger quantities of produce to markets. These are often also referred to as market-oriented family farms, living well above the poverty line.[7] At the bottom end is the 'poor'(near landless, semi-proletarian) family farm that largely sells its labour to other farm and non-farm entities, and hardly produces enough to meet family food requirements, let alone to sell to markets. These family farms fall below the poverty line and are at times labour-constrained family farms,[8] often because of itinerancy of family members and/or other social deprivations (such as the effects of HIV-AIDS). In between is the middle or 'semi-subsistence' family farm. This is the only category that has the semblance of an ideal-type family farm which neither hires nor sells labour power, but produces most of its food requirements and sells some produce to meet a range of family needs.

Access to arable land is decisive in defining the incidence and scope of family farm producers, as well as their basic reproduction and survival. The constraints imposed by increasing arable land scarcity and inequitable access to the limited available arable land are important in shaping the diversity of family farms. The rapid decline in arable land per capita means that unless there is a demographic transition, whereby rural population growth slows down more quickly or there is increased farm productivity, the availability of arable land for new family farms can be expected to end by 2030.

The combination of land and other forms of capital and labour within family farms is not spread evenly within a single household, as it also tends to be differentiated according to gender and generation. Generally, the patriarchs control the means of production while women and children mainly provide largely unwaged labour, and the management of family farms is largely divided by gender, with men being dominant in decision-making. The marginalization of women in access to and control of family land and farming resources remains an increasingly recognized impediment to the development of family farms.

The classification of family farms according to their market integration and/or cash cropping is commonly used throughout SSA. In West Africa, the most commonly observed categories include market oriented family farms with a cash crop specialization, family farms which balance cereal and cash crop production, and those with only subsistence cereal holdings.[9] In Kenya and Uganda, family farms which rely on permanent off-farm employment are distinguished from

SSA agricultural imports in value and per capita



Source: FAO STAT 2014

those whose wealth derives from cash crops, while these better-off family farms are differentiated from resource-poor households that are employed locally. In the middle are the food self-sufficient with a median level of productive resource endowments, relying partly on part-time non-farm activities.[10] In the Malian cotton zone, better-off family farms possess two or more animal traction equipment units and 10 or more cattle, while those with less than one animal traction equipment unit and/or who only use manual labour are the poorest, and those in between have one animal traction equipment unit and less than 10 cattle.

In Southern and Eastern Africa farm typologies are largely based on the discrepancies in landholdings, alongside market orientation. On average, small-scale family farms hold less than 3 hectares of arable land and/or cropped areas; middle-scale capitalist farms hold an average 10-200 hectares, and LSCFs and plantations hold 500-3,000 hectares.[11] About 20 per cent of small-scale family farms are mainly market-oriented producers of both food and cash crops, while the rest are semi-subsistence producers focused on food crops. Otherwise LSCFs are profit-oriented specialized cash crop and/or livestock farms, mostly managed as corporate entities.

Contribution of family farms to agriculture

Although most family farms in SSA are largely devoted to production for auto-consumption, they sell a limited but significant amount of staple food crops and cash crops harvested from relatively small areas. In general, family farm production strategies are shaped by their diverse dietary requirements, which are often structured around mass energy staples, pulses and vegetables, with frugal supplies of animal protein. Thus, family farms tend to allocate some (if not most) of the family land and labour to producing their main staple foods rather than cash crops, although a small proportion of them specialize in the latter. However, when the volume of produce from all family farms is aggregated, their output dominates domestic agricultural production in SSA, despite the higher financial value of the cash crops produced mainly by LSCFs and better-off family farms.

The bulk of SSA cropped areas is worked by family farms, and this area has increased by 85 per cent. The cropped area constituted 43 per cent of arable land area in 1961 and 50 per cent in 2012, showing that a larger proportion of arable land is used for cropping. In per capita terms the rate of the cropped area declined slightly considering the low level of inputs utilized on the continent. Cropped area per capita decreased slightly from 0.24 ha/person in 1961 to 0.11 ha/person in 2012, whereas arable land per capita declined sharply from 0.54 ha/person in 1961 to 0.22 ha/person in 2013, which is approximately 1.3 hectares per family. This trend is striking because a higher proportion of arable land is being cropped per capita, and the available arable land is close to full utilization.

The scope of production and productivity among family farms in SSA is differentiated according to their varied social, agroecological and economic conditions, largely in relation to their uneven extent and varied forms of integration into different kinds of commodity and inputs markets. Their social differentiation is reflected in the changing scale of their land-holdings, cropped areas and livestock, the rise of wage labour relations, greater shifts in the purpose of production towards market, and their increased consumption of varied foods and other consumer goods from within the family farm and beyond.

The scope of agricultural commodity production in SSA tends to reflect a division of labour between poorer family farms and better-off family farms and LSCFs and estates according to types of commodity produced and their value in commerce. Family farms tend to produce over 75 per cent of the main (lower value) staple tubers, as well as most of the groundnuts, roundnuts, beans and sweet potatoes. However, most of the cotton is produced by family farms. Family farms produce limited amounts of higher value crops, including less than 20 per cent of tobacco, less than 10 per cent of oilseeds (such as soybeans), and less than 5 per cent of wheat, fruits, sugar, tea, coffee and marketed beef and dairy. Cash crops such as sugar, tobacco and fruits are also dominated by better-off family farms, LSCFs and estates. This division also reflects the predominance of dryland farming and crops with low financial input requirements and/or the labour intensity of crops such as cotton. This corresponds to the scarcity of irrigation facilities and limited access to capital (credit, subsidies).

The exclusion of family farms from private commercial credit facilities is often attributed to various risks, associated with land tenure insecurity, market dispersion and variable weather. Contract farming has, however, partly broken the effects of discriminatory farm financing in the production of cotton and tobacco among family farms.

However, family farms mobilize family and kinship labour and other local resources, and save (mostly for social reproduction and risk insurance) and invest, although this is inadequate for large-scale capital formation.[12] They adopt new technologies and shift crops, and have maintained agricultural production, despite the reversal of state support to farming and social welfare and their exposure to unfavourable terms of trade. Family farms face largely extractive agricultural markets and limited public finance, since the retrenchment of state marketing boards. They also face off-farm infrastructural constraints.

Nonetheless, family farms contribute about 80 per cent of the food supply in Africa, and are central to SSA employment.[13] Yet, malnutrition levels are around 25 per cent, with 239 million people in SSA being undernourished[14] despite the important contributions of family farming to food security. The challenge of redressing food insecurity and undernutrition remains high, because of low levels of food crop productivity and of animal protein supplies from family farms. Furthermore, SSA has experienced rising levels of food importation and aid dependency, particularly for wheat, rice, maize, meat and dairy produce.

The future of family farms in SSA

The socioeconomic importance of family farming in SSA is underlined by the fact that about 600 million rural people derive their main source of income (and food) directly from cultivating and/or grazing small family landholdings, while large sections of the urban populace are fed by family farms. Although most family farm members reside in the countryside, large sections of them straddle between urban and rural areas, and part-time urban family farming is common in SSA. Despite the high rate of urbanization and migration, due to the scarcity of non-farm employment and incomes, many SSA families struggle for access to land and to maintain stable food production at very low yield levels.[15]

Absolute rural poverty, which is closely related to food insecurity and malnutrition, is largely associated with vulnerable lifestyles and uncertain production on family farms. However, while poverty levels in SSA are reported to have declined from 56 per cent in 1990 to 49 per cent in 2010, just below 400 million people still live in extreme poverty — although poverty levels vary widely, from 5 per cent in South Africa, for example, to more than 90 per cent in Niger.[16]

SSA states have relatively different public policy stances towards transforming agriculture and promoting rural development, particularly with regard to the empowerment of family farming and the promotion of LSCFs. The continuing scramble for control over SSA's agricultural land constitutes a threat to the reproduction of family farming.[17] The equitable distribution of land and secure land tenure (not necessarily as private property) is a precondition for the reproduction of existing family farms, while the increasing scarcity of arable land threatens their future.

The critical agrarian question facing family farms in SSA is how to promote a transition from farming based mainly on the extension of their cropped area towards a more intensive but sustainable land utilization system with three times higher productivity, and the diversification of food production[18] to meet the current and future demand for diverse foods and other farm products.[19] Strengthening the capabilities of family farms to ensure 'farm viability' requires market institutions which enhance the internal accumulation of capital and increased investments in family farming.

Improving family farm viability will require higher levels of yields based on better research and extension, access to more rewarding markets, involving more domestic entrepreneurs and increased state support for rural infrastructure and irrigation. There are various ways through which SSA governments could intervene in food markets to create incentives for investments which can improve the productivity and diversification of family farm production and promote food sovereignty. These include promoting food supplies to local markets, including through public procurement programmes for various institutions and by augmenting social welfare transfers, as well as building collective family farm action to aggregate inputs and output marketing.

Regional cooperation through the African Union and regional economic communities could enhance the pace of transformation based on better coordinated policies and increased intraregional trade in agricultural inputs, commodities and service markets.

An agrarian transition is necessary for wider economic diversification, including appropriate forms of industrialization and balanced rural development. Such a transition also requires attention to the ecological sustainability of agriculture and the ecosystem, while balancing the conflict between food and energy requirements in the context of climate change. Addressing various objective constraints arising from repressive gender relations within family farms is critical. These are integral aspects of any development strategy concerned with reducing food insecurity, high levels of unemployment and eliminating absolute poverty.

Family farming in the Near East and North Africa

Ray Bush, Professor of African Studies and Development Politics at the School of Politics and International Studies, University of Leeds

Political turmoil and uprisings since 2010 have had at their core demands for 'bread, freedom, social justice'. Most attention has focused on urban rebellions in Tunisia and Egypt and Libya, but small farmer protests across the Near East and North Africa (NENA) region have been evident since the food price hikes of 2008 which intensified rural malnutrition, poverty and inequality.

NENA is distinguished by being the world's largest food importer, relying on world markets for more than 50 per cent of its food. Price rises, particularly for wheat and rice, have given a stronger rationale to the strategic importance of boosting local production, and the largely non-food producing countries of the Gulf Cooperation Council (GCC) have intensified the search for the purchase of land outside national boundaries. All countries in the region are intent on increasing incentives to agribusiness investors.

Farming and agriculture need to be placed in the broader political economy of the region with a less restrictive definition of food security and the role of family farming within it. It might now be time to ask if a new politics and social policy is possible that listens to the needs of family farmers. There is an early cautionary note: data on the Arab world is scanty and generally of poor quality.[1]

Family farming includes all family-based agricultural activity, and the "diversity of national and regional contexts" is important.[2] Family farming is a catch-all term that is used in the region alongside 'fellahin'. Size is an important caveat however. There are family farmers who generate agricultural surpluses and those who are only able to eke out an existence that may barely keep the family alive. Size needs to be measured in the particular historical and social context of the case study under consideration and other farm and non-farm activity. In some contexts it may be also important to consider the role that ethnic or tribal (loosely defined) affiliation plays in securing continued access to land. Ethnic and tribal or family affiliations may play an enhanced role or may become a lens through which land access or conflict over fragmentation of holdings is viewed. These forms of conflict are usually most dramatic where access to land and rural resources are most acute as in Yemen, Sudan and parts of Upper Egypt.

Family farming and food security

Three per cent of the world's 500 million family farmers are in NENA, where there are also acutely uneven landholdings.[3] Consumption levels are also uneven and malnutrition runs alongside high levels of obesity. In Egypt, for example, more than 30 per cent of children are stunted because of dietary constraints, yet 35 per cent of adults are obese and there are even higher figures for stunting among children in Yemen (57.7 per cent) Sudan (37.9 per cent) and Somalia (42.1 per cent).[4]

More than half of farms are less than 1 hectare, but more than 50 per cent of the land is farmed by holdings over 10 hectares. While 84 per cent of holdings may be under family farming they only control 25 per cent of the cultivated area.[5] Poor family farmers and the near landless are dependent upon wage work off-farm or on the land of other farmers and their livelihood strategies, especially in female-headed households, are the most vulnerable. Up to 85 per cent of all holdings are farmed by those with less than 5 hectares, yet about 6 per cent of holdings are 10-50 hectares in size accounting for 40 per cent of the total holding area.

Food security

With the world's highest dependence upon food imports, a lot of NENA debate concerns issues of population growth and limited land and water resources. Import dependency has sustained a trade-based view of food security. This dominant narrative asserts that food-insecure economies can guarantee food supply (imports) by generating access to revenue to buy food on international markets.[6] This strategy is premised on strong and vibrant national economies, but high levels of per capita growth do not necessarily guarantee family farmer interests. In Egypt for example, per capita growth of at least 3 per cent per annum over 10 years up to the 2011 uprising might be expected to have provided a lasting and sustainable platform for economic diversity and food security. Yet more than 50 per cent of Egyptians live on less than US$2 a day and economic growth was partly based upon land speculation and insufficient support to family farming.[7]

Countries in the GCC have entered into land purchases in the Horn of Africa, among other regions, to compensate for lack of domestic food production.[8] Meanwhile, only 1.7 per cent of the GCC's 259 million hectares is currently cultivated.

If the Kingdom of Saudi Arabia and GCC strategy will increase agribusiness involvement in food production. This will likely disempower family farmers and the deliverability of an alternative to food security.[9] Saudi businesses already have US$11 billion of investment in countries as diverse as Brazil, Canada, Ukraine, Poland, Ethiopia and Sudan.[10] Second, globalization of food production undermines the possibilities for countries with structural food deficits and recurrent famines, like Sudan and Ethiopia, to promote engagement with local farmers and pastoralists to boost production for local consumption. Failing

Image: Abdelkader Elsayed

Haji Bakri Mohammed and his mother cultivate their land

to enhance and defend the interests of family farming has the knock-on effect of jeopardizing rural well-being, nutrition and education, or rural development more broadly defined.

War, economic reform and climate change

Since the Second World War, NENA has experienced the highest number of international wars and civil conflict of any region in the world, at an enormous human and economic cost. That cost has serious implications for the undermining of vibrant and ecologically self-sustaining family farming. War and conflict slashes gross domestic product (GDP), and destroys lives and economic infrastructure.

Sudan is a low-income food deficit country – one of the least-developed regions. Its long civil war in the South and in Darfur, as well as a range of other persistent conflicts, have lasting consequences that impact family farming and pastoralism. Displacement of farmers, for example, has disrupted farming and agropastoralism in Blue Nile and South Kordofan, where more than 500,000 are food insecure.

Following the first Gulf War in 1990, Iraq lost two-thirds of its GDP and the ensuing sanctions campaign took the lives of 1.5 million including 500,000 children.[11] Sanctions and war dramatically affected family farming, already undermined by Iraq's dependence upon oil that accounts for up to 60 per cent of the country's GDP. Iraq had been a 'bread basket', but by 1990 it imported 70 per cent of its cereals, legumes, oils and sugar.[12] Disease, death and malnutrition accelerated after the international sanctions regime that followed Saddam's 1990 invasion of Kuwait. This continued during the 'oil for food' programme.

The Iraq war and internal violence that followed US-led intervention crippled Iraq's family farming sector, further restricting agricultural production and marketing. Reconstruction has focused on the oil sector and regional spoils rather than investment in family farming.

In Syria the devastating civil war and outside intervention has reduced the majority of people to hunger and starvation. And conflict has been central to the history of Yemen, where almost half of the 20 million population is food insecure. Conflict in Yemen has continued since unification and the 2011 uprisings for political liberalization and democratization.

The Occupied Palestinian Territories (OPTs) have been the theatre of conflict, disruption and dislocation, and violent dispossession of farmers, herders and agropastoralists, with the result that small farmer agriculture in the OPTs is the most undermined in the region. The conflicts in Gaza in 2008-2009, 2012 and 2014 caused dramatic constraints on family farming. For instance, according to the Food and Agriculture Organization (FAO) in 2008-2009, "almost all of Gaza's 10,000 smallholder farms suffered damage and many [were] completely destroyed, having a severe impact on livelihoods,"[13] and in 2012 alone, there was a "twofold increase in the destruction of agricultural assets, such as olive and fruit trees and cisterns – and with it lost income."[14] Palestinians are also a microcosm of the region's predominantly young population. Almost 65 per cent of Palestinians are less than 24 years old and in the NENA region as a whole there are more than 100 million between the ages of 15 and 29. With regionally declining population growth rates the young offer a strong and important 'demographic dividend'.[15] A predominantly young

Image: Issam Zerrok

Ms Rokaya, who is responsible for feeding the family, is planting in the high mountains of the Atlas

population also puts immense pressure on political leadership for high expectations of development to be met.

The inflow of agricultural subsidized products from Israel has also had adverse impacts on Palestinian family farmer competiveness. The World Bank notes that "Palestinian enterprises have remained hostage to political instability, unresolved conflict, and continued restrictions on movement, access, and trade."[16]

Economic reform and adjustment

The second major factor impacting family farming in NENA has been the 35-year period of economic reform. Structural adjustment programmes have transformed the region's farmers, dispossessing many from smallholdings, raising prices for inputs to unaffordable levels and promoting export-led growth of largely cash crops for export rather than of staple food crops for consumption locally. Private sector-led growth has empowered large (and some small) entrepreneurs who have charged increased prices for essential farming inputs, accelerating rural social differentiation as smallholders and the near-landless have been displaced by those with larger landholdings and foreign investors. Private sector growth has been the mantra of the international financial institutions (IFIs)[17] and aid agencies and its central plank has been land tenure reform: the conversion of state land (and farms) into private property.

In the aftermath of colonialism, many governments tried to break from the inherited bimodal agricultural system. State-led agriculture and land reform across the region improved the livelihoods of many family farmers and, as in the Egyptian case, gave tenants the rights to land in perpetuity.[18] President Nasser redistributed one-seventh of the country's cultivable land from large landowners to smallholders, tenants and some landless.

High oil prices in the 1970s, however, did not benefit small farmers except to provide wage income for those who travelled to the Gulf, Libya and Iraq to work. Investment in agriculture across the Arab world fell between the 1970s and 1990s. Privatization and the sale of state farms accelerated, driven by donor and IFI pressure. In Egypt, Law 96 of 1992 revoked Nasser's legislation that had given small farmers rights to lease land in perpetuity, and rents rose for many families by more than 400 per cent. Morocco's green plan ('Le Plan Maroc Vert') in 2008 promoted market-oriented development to boost poor farmer income. However, it needs strengthened consultation[19] as well as greater attention to the complex and integrated pluriactivity of farming and farmers prioritizing food chains of fruit and vegetables, olives and olive oil.[20]

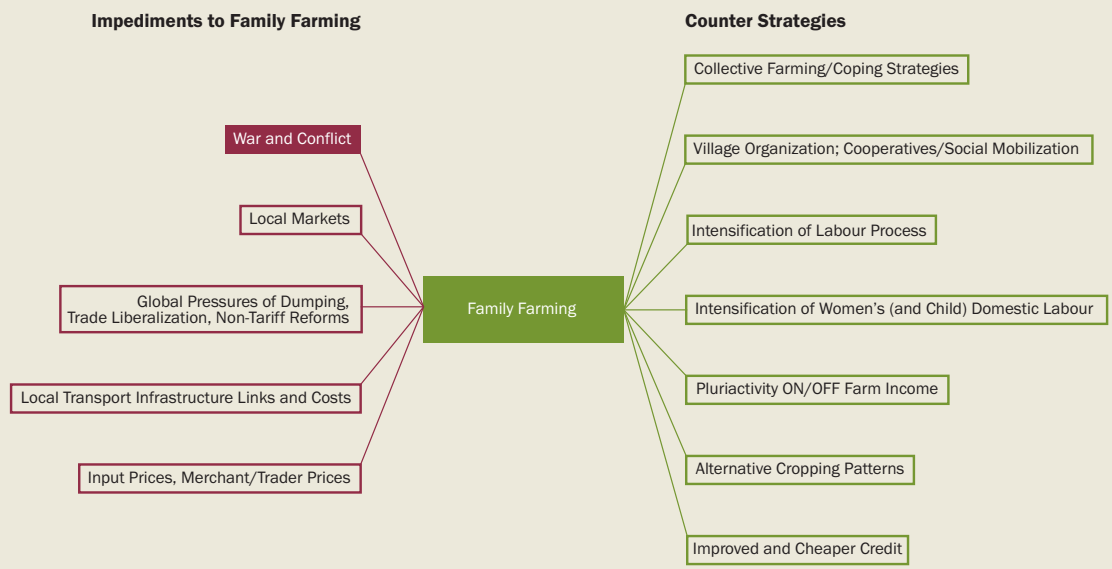
Elsewhere, in the Maghreb, economic reform and structural adjustment led to the deterioration of the material and social conditions of small farmers.[21] In Algeria, prices of fertilizers and other agricultural inputs after liberalization increased and their use fell: so too did agricultural output. Between 1983 and 1987, state-led land redistribution stopped, favouring instead private entrepreneurs, and the previously termed 'socialist agricultural domains' were dissolved.

Climate change

Climate change and unequal distribution and access to water is the third major constraint on family farming. Intrariparian disputes over the use of water and muscular hydropolitics have impacted on development concerns across borders.[22] The region as a whole is a relatively low Co2 emitter, but many of its oil producers have generated carbon-intensive lifestyles. In fact, per capita emissions in many NENA countries are 60 per cent higher than the average among developing countries, [23] while resource-poor Yemen and Djibouti have some of the world's highest levels of poverty, as does resource-rich Sudan and South Sudan.

NENA may be the most water-scarce region in the world. Most of the region's water is used in agriculture.[24] High dependence upon rain-fed agriculture makes family farmers, under existing policy constraints, vulnerable to climate change. More than half of

Family farming constraints and possibilities



Source: FAO

all arable land in 11 countries is rain-fed. In Sudan and Yemen up to 80 per cent of cereal production is rain-fed. The United Nations Intergovernmental Panel on Climate Change highlights that the region will become drier and hotter with the possibility of rainfall decreasing by 10 per cent by 2050.[25] Increased water scarcity will result from reduction in groundwater resources that, together with climate warming, under existing patterns of distribution and use will lead to crop losses, especially for small farmers.

Agricultural strategy rather than absolute scarcity has accelerated an environmental and water crisis made more acute by climate change. The oil-fuel-water-agriculture nexus: cheap regional energy (most of which is used to drive air conditioning units[26]) quickened the use of new drilling techniques and capital intensification of farming for increased export-led growth rather than the production of local staples. Drilling deeper and deeper wells and accessing groundwater and aquifers while not giving these sources time to recharge has mined the region's scarcest resource and limited its social distribution. The impact of global warming and rising sea levels is debated alongside constraints on water availability.[27] It is clear that resource availability is shaped by the distribution of resources and the political forces that shape that. It is therefore somewhat surprising to read from a recent report that "radical departures are not warranted nor feasible."[28]

Farmer voices, recommendations and a research agenda?

FAO has stressed the need to integrate and support farmers by increasing investment and financing "that directly favour family farmers."[29] FAO has called for increasing the share of value-added that accrues directly for family farmers, improving access to land, supporting women and youth and helping family farmers manage climate change. To do this, FAO stresses improving producer organizations and civil society representative organs to expand efficiency and for governments to establish legal frameworks to help family farming.

This important action list needs to be located in the region's patterns of existing governance. Family farmers have to be consulted about agricultural policy, and policies formulated to raise rural incomes in support of family farming have been pursued in the context of conflict, economic liberalization and climate change. There have been only rare examples of viewing the difficulties faced by family farming holistically; a view that is needed to address structural concerns over resource access and how inequality is reproduced. Non-governmental organizations, for example, may address issues of climate, water access and gender inequality but are seldom able to persuade governments to tackle policy failures that link sectoral issues with broader-based concerns of social differentiation. Policy reform has taken place in the context of enhanced internationalization of the food regime where family farming continues to be adversely impacted by agribusiness and international trade arrangements in grain and other agricultural products.

Family farming needs to be recognized as important and integral to development. That means valorizing local farming knowledge and techniques and penalizing the actions of investors and speculators who may take land and other resources out of production in terms of food and use values. Future research agendas will need to explain relationships of power that have impacted adversely on family farming, where the production and distribution shortfalls occur, why and with what kinds of social consequences. In other words, research and policy intervention will need to be *dynamic* and *differentiated*.

Family farming in Latin America and the Caribbean

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There has been remarkable progress in Latin America and the Caribbean concerning the recognition of the role of family farming in the social and economic development of a region. This process started in the mid-1990s in Brazil and has since been expanded and disseminated to other countries in the region. Regional initiatives such as the creation, in 2004, of the Specialized Meeting on Family Farming of Mercosur and, more recently, initiatives in Central America such as the Family Farming Plan of El Salvador, have been crucial to disseminate the concept and meaning of family farming.

Among contributing elements, we can highlight poverty reduction and the improvement of economic and social indicators resulting from public policies in support of small farmers. Latin America stands out among the world regions that need to reduce hunger and poverty and meet the Millennium Development Goals. The combination of economic growth, political and institutional stability and incentives for agriculture and rural development were recognized in the recent report by the Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD) and the World Food Programme[1] on the state of food security as factors that contributed to these achievements. Other elements should be mentioned, such as the fact that, with the end of the military dictatorships in Latin America at the end of the 1980s, social actors and civil society organizations were able to resume their activities and mobilization. This contributed to helping family farmers organize into movements, unions, associations, cooperatives and so on. These organizations play an important role in social mobilization and in demanding policies in support of family farming in the region. Public policies constitute a third key factor in expanding the recognition and legitimacy of family farming in Latin America and the Caribbean. Despite the wide diversity and different degrees of policies that benefit family farmers, varying according to different countries, state intervention has been decisive in supporting family farming.

It is also worth mentioning the work of international organizations and the contribution of scholars and researchers. FAO, IFAD and other public and private organizations have been particularly important in promoting progress and dissemination of the new conception of family farming in the region. FAO's definition of family farming has gained recognition and is gradually expanding its influence. For FAO, family farming (including all family-based agricultural activities) "is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production, which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's." The family and the farm are linked, coevolve and combine economic, environmental, social and cultural functions. Similarly, studies, projects and academic research on family farming are increasing and the training of human resources in this area is rapidly expanding.

However, there remain some gaps and limitations that must be overcome. Further effort is required to improve both the definition and the political and theoretical understanding of family farming, in order to clarify the implications of either using typologies or working with generic definitions in policymaking. Another limiting factor relates to the availability of data and information on family farming, since census updating is poor in many countries in the region.

Conceptual evolution of family farming

The current debate on family farming in Latin America inherits reflections on peasantry (1960s and 1970s) and small-scale farming (1980). In most Latin American countries, the peasantry category remains and is used to characterize agricultural establishments and units that more recently have been referred to as family farming. Similarly, many organizations and national governments continue to use the definition of small-scale production/smallholders in making public policies aimed at this social group.

However, an important theoretical and political shift is underway, which is leading to a distinction between current family farming and the categories of the past. The key element of this shift is a switch of indicators. Until recently, the primary indicator that defined a peasant or small farmer was the size of the farmed land (usually up to 2 hectares, according to the criteria of the World Bank and FAO[2]). Thus, a peasant was necessarily a small farmer and vice versa and both of them were considered smallholders. As scholars and policymakers began to use the origin of the labour force (family or hired) as the paradigm to categorize a farmer, the size of the land unit lost relevance in defining the economic performance or the production scale of a farm. A producer who has a small area, a family farmer, can achieve high technological performance and high productivity, sometimes even higher than that of a producer with large land areas. The same applies in relation to income, because non-agricultural revenues and pluriactivity

Image: Claudia Calder

'Stand by me', Honduras (IYFF photo competition - North and Central America regional winner)

become essential elements to family reproduction and farm units no longer depend solely on agriculture.

This conceptual shift has been crucial for changing the ideas and conceptions of policymakers and scholars on family farming. Such change has not only theoretical and conceptual effects, but also political and ideological ones. It is increasingly evident that family farming is not necessarily synonymous with small-scale farming. For a long time — and still today — small-scale farming has been considered poor, marginal and inept, and thus was always on the verge of disappearing. Many papers have made the case that peasants and all kinds of small farmers were poor because they were small and thus could not achieve great economic performance. Fortunately, current discussions on family farming are overcoming this bias. Family farming is seen increasingly less as synonymous with poverty or aversion to markets and technology.

But there are other aspects to consider in this conceptual evolution, which also represent novelties in relation to past debates and understandings. The current debate on family farming in Latin America and the Caribbean does not emphasize the political and ideological aspects that marked the discussions on peasants and their revolutionary potential in the 1960s and 1970s. Likewise, the current analyses of family farming go further in discussing the efficiency and/or effectiveness of small-scale farming, or the persistence of small farms within the capitalist dynamics of agribusiness chains, which was a major issue during the 1980s and part of 1990s.

From this process of development and resumption of some existing concepts emerges a broader view of family farming in Latin America and the Caribbean, based on the notion that family farming refers to the exercise of an economic activity by a social group that is united by kinship and constitutes a family.[3] Furthermore, the economic activity and the production of goods, products and services is also a way of life that involves all members of a family.

Family farming constitutes a particular form of labour and production organization that exists and is reproduced within the social and economic context where it is embedded. Its reproduction is determined by internal factors related to the way of managing productive resources (such as land, capital and technology), making investment and expenditure decisions, allocating the work of family members and adhering to the cultural values of the group they belong to. Yet, family farmers cannot elude the social and economic context in which they live and by which they are conditioned, or sometimes subjected to. Among these determinants are increasing urban demands for both healthy foods and the preservation of landscapes, soil, water and biodiversity. Technological innovations are also determinants that can reduce the role of both the land and the labour force in the production processes. Thus, they can be decisive for greater competitiveness of the productive units.

Characteristics of family farming

According to the latest report by the United Nations Economic Commission for Latin America and the Caribbean, FAO and the Inter-American Institute for Cooperation on Agriculture in 2013, it is estimated that the family farming sector in Latin America amounts to nearly 17 million units, comprising a population of about 60 million, and that 57 per cent of these units are located in South America. Despite lacking precise figures for every country, family farming is considered to represent 75 per cent of the total production

Image: Joseluis Alfredo Franco Castro

'Sellers of Alpaca meat', Peru (IYFF photo competition - South America regional winner)

units in almost all Latin American countries, and in many of these to exceed 90 per cent of the total.[4]

There is a great diversity of family farms in Latin America and the Caribbean, which vary according to the forms of access to land and its occupation and comprise heterogeneous farming styles and agrarian systems. Nevertheless, perhaps the main characteristic of family farming diversity in Latin America is neither its agrarian basis nor related to the variability of agricultural production and livestock systems. The ethnic and cultural diversity of rural populations and the impacts of miscegenation resulting from the encounter of pre-Columbian civilizations (Incas, Aztecs, Guaraní among others) with the European settlers have eventually created distinct ways of life, each with their specific form of sociability and strategies of production and interaction with the ecosystems that characterize peasants and family farmers in Latin America.

Figures and statistics cannot depict this major heritage of Latin American society, which is responsible for specific social formations that sometimes coexist with and are integrated into the social division of labour, and sometimes are excluded and marginalized. Added to these main features — diversity and heterogeneity of family farming in Latin America — there is also inequality and vulnerability of this social group. A significant part of the rural population still lives and reproduces itself under poverty and insecurity conditions, sometimes suffering violence and threats by groups that use the rural space for non-agricultural interests.

Opportunities and challenges

Family farming is part of the rural landscape of Latin America and the Caribbean and it carries the cultural and ethnic identities that mark its social diversity. Family farming has played a crucial role in the historical development of the region, since family arrangements were decisive in shaping the agrarian structure. Considering the massive and hegemonic presence of family farming in Latin American and Caribbean societies, we may claim that the economic and social development of these societies depend upon the strategic role ascribed to this sector. In some countries, notably in Central America, family farming represents more than 90 per cent of rural agricultural establishments.

The International Year of Family Farming represents an unprecedented opportunity to affirm the importance of family farming in rural development in Latin America and the Caribbean.

Among the potentialities of family farming it is its fundamental role in food production. In many countries of Latin America and the Caribbean, the agricultural sector remains the main engine of economic development and the crucial factor for macroeconomic stabilization. Even in large and industrialized economies like Brazil, Mexico and Argentina, the agricultural sector, within which family farming has significant weight, remains essential. In countries of intermediary economies such as Chile, Colombia and Uruguay agriculture also plays a central role. In the least industrialized countries, family farming is the very basis on which a development strategy could be built. So there is an economic and productive

potential that fully justifies recognition of and support for the role of family farming in Latin America and the Caribbean.

Family farming plays an even more crucial role with regard to food security, improvement of living conditions and poverty reduction in Latin America and the Caribbean, especially in rural areas. The strengthening of family farming may represent, first, an increase in available food surplus, either by improving production for self-consumption in the farms or by increasing local or regional circulation of the surplus. Besides, the improvement in feeding conditions may boost other dimensions such as health, education and the environment, not to mention the positive effects of improved food security and nutrition on health and education. A less vulnerable and less impoverished rural population can also make more sustainable use of natural resources like water, soil and biodiversity.

Some challenges must be pointed out, which refer to the need to improve both the assets and access to them, namely to:

- improve knowledge about the diversity and heterogeneity of family farming in order to better understand the potential of different social groups
- broaden the scope of action of public policies beyond the focus on the agricultural segments, by means of support for infrastructure and services that may encourage the production of public goods
- encourage the participation of farmers and their organizations in policy planning and formulation
- increase access to natural resources, especially to land and water, but also to seeds and genetic resources
- expand financing programmes aimed at family farming
- support initiatives and actions aimed at youth
- develop public policies aimed at strengthening women's autonomy.

Beyond these challenges, Latin American and Caribbean family farming faces strong pressure from agribusiness corporate sectors interested in land acquisition, access to mineral reserves and areas prone to commercial exploitation of services and tourism. In some Latin American countries, for example, there is increasing foreign demand for land purchasing, which has led to episodes of land-grabbing that directly affect family farmers, who end up selling their lands or surrendering under coercion. Likewise, many family farmers and whole rural communities have been affected by the harmful expansion of the mining sector which affects productive lands, generating various constraints. In addition, an increasing quest for commercial exploitation of services and tourism has been observed, especially in the Caribbean region, limiting access to fishery sources and other spaces for labour managed by family farmers.

Finally, family farming is facing the issue of markets. On one hand, we observe the growing power of large agrifood corporations and their strategies for monopolizing markets and marketing channels by means of a broad scheme of mergers and acquisitions of companies in the agribusiness sector in Latin America, leading to denationalization of capital in this segment. The number of both downstream and upstream firms in the agricultural food production chain has decreased in recent years, and several studies have shown that the ongoing concentration of food distribution in the super/hypermarkets generates a squeeze that interferes in prices and competition mechanisms, with strong impacts on family farmers. On the other hand, a challenge emerges concerning the creation of new markets for family farmers. Diverse initiatives have emerged and spread out in this respect, many of them arising from public procurement as in the case of food acquisition from family farmers for supplying school feeding programmes, public stocks and even social welfare policies such as food baskets for vulnerable people and popular restaurants.

Public policies for family farming

The state and public policies represent a powerful mechanism that can be mobilized in favour of family farmers. State intervention can both guarantee anticyclical measures for macroeconomic protection and create long-lasting mechanisms such as funds and insurance against natural disasters, price crises and even health problems. It will, surely, depend on the social and political ability of family farmers to organize and claim support for their goals and demands as well as on the capacity of national governments to heed them.

Nevertheless, public policies aimed at family farming are still limited in Latin America and the Caribbean. In many situations, family farmers are still seen as just another segment amid a larger group of farmers, resulting in a lack of public policies able to meet the specificities of this segment. This is the case with respect to access to technologies and innovations, for they generally continue to be conceived and designed without taking into account the reality and the needs of small family farmers. A notable example is the agricultural mechanization that is often inadequate to the technical requirements of small farmers and has prices that they cannot afford.

In view of the evident and recognized diversity of family farming, it is reasonable to expect that public policies in this area should take into account such heterogeneity. Therefore, the set of actions, programmes and policies should be diversified, seeking to reach the specificities of each situation. There is a guideline that may be applied for devising public policies aimed at family farming. This is based, on one hand, on the principle of capacity building, and on the other, on the mitigation of vulnerabilities. In short, good policies for family farming are those that strengthen their livelihoods and are able to generate resilience.[5] It is useless to mention or rank what would be the best or more appropriate policies for family farming, since the answer to this will always depend on the local conditions of the ecosystem and the characteristics of the family farmers.

However, there are at least two areas in which public policies for family farming have a particularly important role in the current social and economic context. The first is access to technical training and innovations. The rural areas that present a more accelerated development of family farming are also those that count on the presence of organizations which were able to help farmers to design projects, create collective synergies and mediate their access to information. Therefore, public policies to support agricultural extension remain fundamental. The second area is markets and commercialization. In the context of agrifood globalization, it is essential for family farmers to have access to protection mechanisms against unfair competition. This does not mean protectionist policies in relation to global markets, but rather public policies able to guarantee food and nutritional security, environmental preservation and actions to keep people in the rural space.

Family farms of North America

John E. Ikerd, Professor Emeritus of Agricultural and Applied Economics, University of Missouri-Columbia, USA

Historically, family farms held positions of esteem in the dominant cultures of North America, as in much of the rest of the world. The first family farmers in North America were the indigenous peoples who had lived on the continent for centuries before the arrival of Europeans. They farmed as extended families on common lands occupied by their tribes. The European settlers displaced the indigenous peoples and "enclosed the commons," creating independently owned and operated family farms. Thomas Jefferson, the third President of the United States, believed strongly that the "yeoman farmer" best exemplified the kind of "independence and virtue" that should be respected and supported by government. He was reflecting the historical values of both Western and Eastern cultures.

The family farm — defined

No generally accepted definition of the 'family farm' has emerged, in spite of centuries of family farming. Some statistical indicators of family farms were outlined in the 2014 Dialogue of Family Farming in North America:[1] the likelihood of a farm being a true 'family farm' decreases along statistical gradients from family labour to paid employees, family capital to non-farm investments, independent operator to contract producer, landowner to cash renter, single proprietor to corporation, and producing for families and local markets to producing for international markets. A family that provides the labour for a farm, makes the management decisions and owns and lives on the farm is more likely to feel a deep, personal sense of connectedness to the farm, which characterizes family farms.

The sense of interconnectedness of the family with the farm makes the farm a 'family farm' and the family a 'farm family'. Such farms and the families are inseparable. The same farm with a different family would be a different farm, and the same family with a different farm would be a different family. True family farms represent a way of life rather than just a means of making an economic living. Such farms are managed in ways that reflect the social and ethical values of the farm family as well as the potential economic value: they are intentionally multifunctional. Family owned and operated farms that give priority to economic benefits are managed as monofunctional farms, even though they have multiple effects on society and nature.

Sustainability may well be the defining question of the twenty-first century: How can we meet the needs of the present without diminishing opportunities for the future? Sustainability is inherently multifunctional in that it has three key dimensions: ecological integrity, social equity and economic viability. Farmers that manage multifunctionally are better endowed to address the multiple dimensions of sustainability.

Evolution of family farms in North America

Farm families who migrated from Europe to the United States of America (US) and Canada participated in a form of enclosures when indigenous peoples were forced off their land and the frontier was privatized. Homesteads gave farm families 160 acres in both the US and Canada. This continued a trend towards market allocation of land use, which was common in Europe during the 1600s. Farmland had to be privatized or commodified before it could be bought and sold and thus reallocated to ensure its highest economic use. This fundamentally changed the nature of family farms, farming in general, and ultimately the history of humanity.

Prior to the mid-nineteenth century, farming in North America was predominantly a way of life and most farms were clearly family farms. Farm sizes began to increase, as farms on the US and Canadian prairies began to mechanize and expand production to provide food for growing populations in the east. Improved storage and transportation allowed grain surpluses to be more easily traded abroad. Farmer cooperatives played a significant role in the evolution of farming in Canada and the US, as farmers joined together in various organizations to gain bargaining power against large grain merchants and provide their own services. Farms continued to expand in acreage and productivity during the 1800s and early 1900s, with various setbacks associated with economic recessions.

Following the Second World War, millions of US and Canadian farms were destined to become farm businesses rather than ways of life, and agriculture soon became an industry. Wartime technologies developed to supply munitions, poison gas and tanks were soon adapted to produce chemical fertilizers, pesticides and farm equipment. During the 1950s and 1960s, capital and technology replaced labour and management and farms were consolidated into larger and fewer farm businesses. By 1970, farm numbers in the both countries had dropped by more than one-half from their peak. The global economic recession of the 1980s caused roughly one-quarter of the remaining farms to go out of business in the US. Since then, farm numbers have continued to decline and average farm size is now 421 acres[2] in the US and 778 acres[3] in Canada.

Farming in Mexico has followed a path quite different from the US and Canada, but the tendency towards industrial consolidation has been much the same.[4] In 1876, Spain established a dictatorship in Mexico that lasted until 1911. The emphasis on modernization included enclosing and privatizing farmland. Unlike the US and Canada, lands in Mexico were privatized as large estates (haciendas) in an attempt to minimize domestic

food costs provide agricultural exports. Railroads were built to encourage expansion of agricultural production for export.

The resulting social inequity, deprivation of access to farmland, and the exploitation of peasants and workers led to repeated rebellions, which spawned the Mexican revolution of 1910, leading to a new Constitution in 1917. The new constitution authorized agrarian land reform. By 1940 most of the country's arable land had been redistributed to peasant farmers, benefitting only approximately one-third of all Mexicans. However, declining productivity during 1980s, and mounting food imports gave Mexican President Salinas, elected in 1988, political momentum to reform the land tenure system. The following reconsolidation of agricultural land into large corporate farms set the stage for the North American Free Trade agreement of 1994 (NAFTA) between Mexico, the US and Canada. As in the US and Canada, family farms in Mexico are being consolidated into large farm business intended to compete in global markets.

Challenges to family farmers

North American farm families today face a number of major challenges — some continuing and others new. Farm policies that increasingly support the industrialization of farming in a quest for economic efficiency have intensified with the implementation of NAFTA. The increasing emphasis of farm policies on monofunctional economic efficiency makes it even more difficult for multifunctional family farms to survive economically while maintaining their social and ethical commitments to multifunctionality.

During the 1960s and 1970s, the focus of US farm policy shifted from ensuring food security through preserving family farms to food security through agricultural productivity. A more efficient agriculture was intended to reduce food prices, making adequate quantities of wholesome and nutritious food affordable for everyone. The strategies of industrial agriculture are specialization, standardization and consolidation of control, which inevitably leads to larger and fewer farms. Every major farm programme in the US since the New Deal era of the 1930s, in one way or another, has promoted agricultural industrialization — thereby promoting consolidation of agricultural production into fewer and larger economic production units.

As agricultural production expanded well beyond needs for domestic consumption, farm policies shifted to expansion of export markets. Farm policies in Canada today are largely driven by international trade considerations. The emphasis on international trade further narrows the focus of farm policies on monofunctionality and economic efficiency. Thus, NAFTA has severely affected multifunctional family farmers in all three countries, especially in Mexico, where the agreement accelerated agricultural consolidation and industrialization, particularly in the northern regions of the country.

Another major challenge to family farmers in North America is the advancing age of farmers. Young people without farm backgrounds have begun to operate small farms in the US and Canada, but not enough to offset those leaving established farms. If current trends continue, even more farms will become consolidated into monofunctional farm businesses, leaving smaller multifunctional family farms. Much of the knowledge and wisdom that will be needed to sustain family farms resides in the hearts and minds of today's ageing farmers. Industrial agriculture dominates public research and education, particularly the land-grant universities.

Image: Valentin Rivera Luna

Family farmers in Mexico display the fruits of their labour

As a result, multifunctional family farmers have turned to learning from each other. Unfortunately, when today's ageing farmers retire or die, their personal knowledge and wisdom will go with them.

Young people who do choose farming as their occupation also face a major challenge in gaining access to land. Prices of farmland are at record high levels in the US as a consequence of expanding demand in global markets and domestic biofuel subsidies and mandates. Government programmes for 'beginning farmers' are targeted primarily to new commodity producers, not new family farmers who produce for local markets. As much as 70 per cent of US farmland may change hands over the next two decades.[5] Non-farm investors and large private equity investors have become major competitors in farmland markets. Access to farmland for family farmers is a challenge not likely to be met without significant changes in land tenure policies.

Farmers traditionally have prided themselves on their independence. This may have been an asset to family farms in the past but it could be a major obstacle in the future. Today's smaller family farms that are producing for local niche markets will need to scale up their operations. To meet this challenge, literally thousands of farmer alliances, cooperatives, networks and food hubs are being established all across the US and Canada.[6] These new food networks must follow the organizational principles of earlier cooperative organizations if they are to maintain their multifunctionality and thus their sustainability. Those farmers who meet the challenges of cooperation may well find it to be one of the most economically and personally rewarding aspects of family farming in the future.

Image: Natasha Bowens

Young farmers of the low country, USA

Do family farms matter?

Family farms obviously are important to farm families, but is their survival important for society as a whole or the future of humanity? Those who value traditional family farms are often seen as naïve or idealistic. The controversies surrounding family farms versus industrial farms invariably centre on questions of agricultural sustainability: The ability to meet the basic food needs of all of the present without diminishing opportunities for those of future generations. It is not naïve to be concerned about sustainability.

The historical root meanings of the words 'farm' and 'farmer' suggest that economics has always been an important aspect of farms and farming. However, these words have also always had important social and ethical dimensions. Historically, farmers have managed their farms multifunctionally. The industrial agriculture emphasis of economic efficiency invariably leads to extraction and exploitation of the natural and human resources that ultimately must sustain long-run agricultural productivity. True family farms are a way of life, not just a business, and thus have a natural advantage in meeting the multiple needs of both present and future generations.

Industrial agriculture has shown weaknesses in providing domestic food security for all in the United States and Canada. About one-in-six residents of the US and one-in-eight Canadians is classified as 'food insecure'.[7] Many can get enough food to satisfy their need for calories or energy only by buying cheap industrial food products that fail to meet their nutritional needs for healthy, active lifestyles. As a result, diet-related illnesses in the US are rampant, including obesity and related diseases such as diabetes, hypertension, heart failure and various types of cancer.

Development experts attribute the persistent hunger globally to increases in population made possible by the increased food production of the Green Revolution. However, many of those living and working in developing nations have a very different view. Numerous studies sponsored by the United Nations indicate that multifunctional farms are key for meeting the food needs of a growing global population. In the US and Canada, the challenge is agricultural sustainability, not agricultural productivity.

Government policies for family farms

Since government policies have been focused on monofunctional economic efficiency rather than multifunctionality or sustainability, the definitions of family farms describe farm businesses rather than farms as ways of life. The existing definitions tend to give some attention to previously mentioned gradients between family and non-family farms, including the nature of management, legal ownership, and sources of labour and markets to lesser extents. However, current family farm definitions are of limited usefulness in address questions of functionality.

Food security has been accepted as the logical motivation for farm policies in the past. However, with growing ecological and social equity concerns, a more encompassing farm policy mandate for the future is agricultural sustainability. Agricultural sustainability is a multifunctional concept with ecological, social and economic dimensions. Thus, farm policies that support and promote agricultural sustainability must support and promote intentional multifunctionality. Examples include:

- reducing emphasis on subsidies for industrial agriculture that incentivize specialization and corporatization at the expense of diversification and family farms, beginning with programmes linked to specific commodities including corn, soybeans, wheat and rice — including subsidized crop insurance
- reducing economic risks for multifunctional family farms — for example through subsidized 'whole-farm revenue insurance' with lower premiums for more diversified farming operations
- subsidizing farm families, not farm production by linking government payments to family size not farm size.

Policies supporting multifunctional farming must extend beyond farming operations. They must provide basic health care to multifunctional farm families as well as workers' compensation and other 'fringe benefits'. They must restore farmland to the commons and permanently zone enough farmland for food production to meet the food sovereignty needs of all in current and future generations. This should include developing land tenure policies that will support more farms, local markets, local control and food democracy, thus ensuring the use of farmland for the common good. And public research and education should be redirected to serve public interests, giving priority to on-farm research and with-farmer education. Farming must again be treated as a learned profession.

In summary, the sustainability of food production for the benefit of all of the "world's people" can be and should be ensured by policies that support a global network of local community-based food systems that support and are supported by multifunctional family farms. Multifunctional farmers are better endowed to farm sustainably, and sustainable farms are the key agents to achieving sustainable food and agricultural systems. Public policies thus must support this transition from mono- to multi-functionality. Family farms can and must return to their honored, almost sacred, position in the cultures of North America as well as the rest of the world.

Creating resilient, sustainable and equitable farming systems

Winnie Byanyima, Executive Director, Oxfam International

It is shocking that a majority of the 805 million people who are currently undernourished are small-scale farmers and their families.[1] Small-scale food producers around the world face enormous challenges meeting their food needs and contributing to the food security of their communities and countries. Women farmers face unique barriers such as access to land, credit and support services, and multiple responsibilities, which have consequences for their well-being and the contributions they can make to their communities.

These challenges are compounded by climate change. Extreme weather events are becoming more frequent and more severe, threatening the reliability and productivity of agriculture, exacerbating already extreme levels of poverty, and reinforcing persistent inequality and chronic undernutrition. Without efforts to address and adapt to climate change, more erratic weather — including across Africa which has the greatest concentration of people living in hunger — will result in lower yields for the basic staple grains. By mid-century, yields could be down by almost a quarter accross sub-Saharan Africa.[2]

This is a truly frightening picture. But it is not inevitable. In truth, we already know a lot about how to create resilient, productive, sustainable, equitable and efficient farming systems that can meet the needs of food producers and consumers now and in the future. Getting there requires action on several levels.

Image: Anna Fawcus /Oxfam America

Ms. Mamawse Sandra, farmer and credit officer of APDA, weeding rice from SRI rice plots in Petite Riviere, Haiti

Empowering people

As a global organization working in more than 90 countries, Oxfam works directly with communities to create sustainable local food systems while also tackling underlying root causes that perpetuate poverty. At all levels, the key lies in people, in building their power to claim their basic human rights. Farmers who can claim their rights can access and control the resources they need to grow nutritious food that feeds their families and benefits local economies.

What does this look like in practice? In its 2010/11 edition of *The State of Food and Agriculture* report, the Food and Agriculture Organization stated that if women in rural areas had the same access to land, technology, financial services, education and markets as men, agricultural production could be increased and the number of hungry people reduced. This would not require opening up more area for agricultural production. It would also not require investing in expensive technologies. Instead, it is a question of gender equality: of changing mindsets and cultural norms, of changing laws and policies so that women have the same rights as men to buy, sell or inherit land, to access credit, and so on.

Growing food more sustainably

Likewise, there is a lot that is already known about how to grow food in a more sustainable way. There is ample evidence that the industrial model based on intensive use of synthetic fertilizers and pesticides is unsustainable, contributing to greenhouse gas emissions and destroying biodiversity. Although investments in agriculture are increasing, the 2013 United Nations Conference on Trade and Development noted that current priorities are still

Farmers lead a culture of innovation

Half of the world's people consume rice. An estimated 1 billion people are engaged in growing rice. Most of them are poor, with women doing more than half of the work. In 2002 Oxfam started promoting the System of Rice Intensification (SRI), an agroecological method to help women and men in rice farming communities improve their food and income security and increase their resilience to shocks and stresses.

As of 2013, more than 1.5 million smallholder farmers in groups supported by Oxfam's partners in Cambodia, Sri Lanka and Viet Nam have benefited from SRI using both improved and local rice varieties. Learning SRI and collaboration around its adoption has given farmers a greater confidence in public spaces and in experimenting with new methods. Farmer-led practices such as the hand-held rotary weeder in Cambodia, the System of Teff Intensification in Ethiopia, the minimum-tillage potatoes method in Viet Nam, and home gardens in Sri Lanka are proving effective and addressing time-poverty for women. SRI is now adopted in more than 50 countries around the world. The journey of SRI demonstrates that with a relatively simple grass-roots innovation on hand, small-scale farmers can make a world of difference.

Images: Le Minh/Oxfam America

SRI instructor farmer Tran Thi Lien checks the rice fields in Dong Phu commune, My Duc district, Hanoi province with her neighbour and local extension worker in Viet Nam

Image: Percy Ramirez, Oxfam America

Luz Sinarahua, president of the women's group that maintains the traditional garden in Chirikyacu, spreads out a fresh harvest of beans to dry in the sun in Peru

heavily focused on increasing production, mostly under the slogan 'more with less'.[3] This approach is still very much biased towards the expansion of 'somewhat less polluting' industrial agriculture, rather than more sustainable and affordable diversified food production in rural areas.

Generally, such an approach focuses on the intensive use of chemical inputs and the concentration of farming on a handful of dominant crops in monocultures. Industrial agriculture is also a main contributor to greenhouse gas emissions at a time when governments have to commit to deep cuts in emissions to stay below 1.5 degrees of warming.[4] Although this type of agriculture is often framed as a solution, it doesn't account for the real-world heterogeneity and complexity of agriculture, the limited resources most farmers, especially women, have access to and the increased vulnerability many farmers face due to climate change. As every farmer will tell you, every plot is different. To put it bluntly, this approach is failing farmers who most need support.

There are alternatives. Practices based on agroecological principles — aligning agricultural practices and strategies with natural systems and with traditional knowledge — have multiple values and deliver real results. For example, agroecological approaches can help to maintain genetic diversity the raw material on which breeding for increased production and greater resilience depends. Further loss of genetic diversity in plant crops and animal breeds is dangerous. It makes our food supply more vulnerable to outbreaks of pests and diseases and to loss of capacity to adapt to changing climatic conditions. Agroecology can help to safeguard traditional seed varieties that are important sources of diversity.[5]

The integration of trees into annual food crop systems has been adopted by tens of thousands of farmers in Malawi, Zambia, Burkina Faso and Niger, leading to increases in household and national food security. These farmer-driven approaches are transforming lives and local economies.[6]

A number of governments, such as those of Brazil, Viet Nam, Cuba and France, support farmers to practice agroecological farming at national or international level. In Brazil, for example, agroecology has been adopted into the national research agenda, and the findings are being adapted to local farm use through farmer-to-farmer networks and supported by the Government's national anti-hunger programme, Fome Zero (Zero Hunger).[7]

At the international level, the Committee on World Food Security has endorsed the Global Strategic Framework for Food Security and Nutrition (GSF), which acknowledges that agroecological practices are important in improving agricultural sustainability as well as the incomes of food producers and their resilience in the face of climate change.[8]

Harnessing the private sector

Growing more food in more sustainable ways won't improve livelihoods unless farmers get a fair return for their labour and investments. Assisting small farmers to access markets is an essential step to increasing their prosperity. Factors such as poor logistics and large up-front investments to meet quality standards mean that international markets are likely to be less important for most family farmers. However, local and regional markets may offer farmers more opportunities to sell their produce. In fact, small-scale producers are the largest investors in agriculture in many developing countries — although this is poorly recognized and incentives are often set against encouraging investment from farmers themselves.

Local and regional markets for food staples, livestock and horticulture are all growing across the developing world. In Africa, the value of domestic and regional markets for food staples alone is worth more than US$50 billion annually. This is considerably more than the value of total international agricultural exports, and will grow along with Africa's population and economy.[9] Small-scale producers could be well positioned to compete in these markets, provided that investments are targeted at helping them to join cooperatives and associations, share risks and costs, and negotiate and bargain collectively. Furthermore, investing in processing can enable smallholders to choose to target sectors where women are strongly involved, providing additional opportunities for income and business development for women. Some of these technologies can also reduce women's time and energy expenditure, enabling them to invest in income-generating activities, childcare or rest.

Putting in place policies for family farmers

The private sector has a crucial role to play, but it is policy and legal structures that will eventually determine whether family farmers will benefit from agricultural investments. Governments ultimately share the responsibility of ensuring that family farming is recognized in the agriculture and food system. Policymakers across different institutions have a critical challenge in this endeavour: to develop policy that both supports small-scale producers and tips the balance of private investment towards inclusive and sustainable models. Without these, or in cases where policy priorities are skewed, incentives may drive demand for large-scale land acquisitions and lead to conflict, with negative impacts for both small-scale producers and investors.[10]

So what are the implications of ensuring that this year in fact changes the lives of farmers? Broadly speaking, the following areas need to be tackled:

- put gender equity front and centre
- build political leadership and invest intelligently
- build collaboration with farmers.

Poverty and marginalization are ultimately about a denial of rights. Therefore, addressing them requires changing cultural and social norms, and legal frameworks. There needs to be a real commitment to empowering women and addressing gender discrimination so that women farmers have equal access to the necessary inputs to thrive. Doing so will unleash massive untapped potential for more productive and resilient farming systems.

Currently there are thousands of islands of success in agroecological practices. These experiences need to be integrated into comprehensive national agriculture strategies and associated budgets to ensure implementation. Also, it is necessary to invest in strengthening local institutions and farmers' organizations so that they can act as brokers, facilitating access to resources and information. Investments need to be made in risk management tools, including social safety nets, as a component of adaptive strategies that can support smallholders to innovate and adopt new practices.

Transforming the situation of the family farmer will require marrying bottom-up approaches with top-down actions. Farmers are a primary source of knowledge about what will work in their local ecosystems. Research and agricultural extension systems need to work more with farmers rather than seeing them as recipients of technologies and interventions. These activities need to take place at a scale to avoid marginalizing communities, and they need to be adapted so that information and knowledge is appropriate to the targets. Women may have different extension needs than men, for example.

The urgent task of reducing global hunger requires us to take bold steps. All governments have recognized the GSF. Now they should, with the support of donors and international organizations, turn this commitment into practice and systemically scale up agroecological approaches. Support for family farming will require institutional support, experimentation and innovation at all levels from local to global. Both the success and the legitimacy of these efforts will depend in large part on governments, donors, multilateral organizations, the private sector and civil society organizations. Family farmers are at the centre of efforts to build local food production, expand domestic markets and fight hunger. We cannot let them down.

Catalysing market development through smallholder-friendly procurement

Ken Davies, Global Coordinator — Purchase for Progress, United Nations World Food Programme

As the world's largest humanitarian agency, the World Food Programme (WFP) is a major buyer of staple food. In 2013 alone, WFP bought some US$1.16 billion worth of commodities, 80 per cent of which were supplied by traders in developing countries, injecting revenue into local economies. To explore the best ways of extending these economic benefits to small-scale farm families and their communities, WFP launched the Purchase for Progress (P4P) pilot in September 2008.

The rationale behind P4P is to link WFP's demand for staple food commodities, such as cereals, pulses and blended foods, with the technical expertise of a wide range of partners. This collaboration provides smallholders with the skills and knowledge to improve their agricultural productivity and an incentive to do so, as they have an assured market in which to sell their surplus crops.

So far, P4P has reached more than 1 million farmers in 20 diverse countries. However, the benefits of smallholder-friendly procurement models are widely extended by catalysing further investment by the public and private sectors. While P4P has showcased this potential, a global scale-up of support to family farmers is necessary to improve food security and promote inclusive growth.

To best inform future efforts, P4P has emphasized an honest and transparent examination of what works and what does not. Throughout the five-year pilot, P4P has studied and documented the most effective ways of linking smallholder farmers' organizations to formal markets, and how an institutional procurement footprint can be leveraged to promote sustainable agricultural and market development.

Partnerships along the value chain

An essential part of P4P's work has been coordinating and facilitating some 500 partnerships across the staple food

Image: WFP/Charlie Barnwell

Smallholders from the IKURU farmers' organization in Mozambique undergo training in storage and post-harvest handling

Image: WFP/Jiro Ose

Alazar Yimar, 45, and his wife Inatfanta Damasey, 32, shortly after marketing 100kg of white maize through the Kuch Cooperative in Gidan Village, Ethiopia

supply chain in the 20 pilot countries. These partnerships have supported smallholders to access the skills and resources needed to most effectively market their crops to formal markets. Partners include host and donor governments, non-governmental organizations, United Nations agencies, academic institutions, research bodies and private sector partners. Two key WFP partners throughout the P4P implementation have been the United Nations Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD). FAO facilitated smallholders' access to agricultural inputs and training, while IFAD supported representatives from farmers' organizations and partners in their negotiations with financial institutions where programmes aligned.

Due to deeply-rooted challenges faced by rural smallholder farmers, capacity development efforts are vital to linking them to markets. Thanks to active engagement with partners, nearly 800,000 farmers, agricultural technicians, warehouse operators and small and medium traders have been trained in a variety of topics. These include improved agricultural productivity, post-harvest handling, quality assurance, group marketing and business management.

By bringing WFP's demand for quality food into the equation, P4P has been able to enhance partners' capacity development efforts by providing smallholders with a tangible market opportunity. This has provided an incentive to learn new skills and stimulated investment to enhance agricultural productivity. The assured market presented by WFP also ensures that smallholders can sell their quality surplus for premium prices, and don't risk losing on their investments. During the pilot period, WFP contracted over 450,000 metric tons of food commodities, valued at more than US$177 million, using procurement modalities that address the various marketing constraints of smallholder farmers. The majority of the food was purchased through farmers' organizations, but some quantities also came from small and medium-sized traders and marketing platforms such as commodity exchanges and warehouse receipt systems.

Image: WFP/Charles Hatch-Barnwell

A WFP warehouse manager at Malawi's national food reserve in Lilongwe

P4P pilot countries

Africa: Burkina Faso, Democratic Republic of Congo (DRC), Ethiopia, Ghana, Kenya, Liberia, Malawi, Mali, Mozambique, Rwanda, Sierra Leone, South Sudan, Tanzania, Uganda, Zambia

Asia: Afghanistan

Latin America: El Salvador, Guatemala, Honduras, Nicaragua

While the need for capacity development is often extensive, the overall P4P experience has shown that when smallholder farmers see the benefits of engaging with formal markets and are provided with appropriate support, they will seize market opportunities and respond to quality demands. Not only have P4P-participating smallholders sold to WFP, but with the technical know-how and confidence built from these sales, they have also marketed more than 150,000 metric tons of quality commodities to other institutional and private sector markets, valued at an estimated US$63 million.

Government engagement

Almost without exception, pilot country governments have embraced the P4P concept. Their engagement and the presence of an enabling environment has proven to be vital for effectively linking smallholder farmers to markets. The methods tested through P4P have presented governments with innovative tools to support smallholder farmers, with a number already developing initiatives modelled after or similar to P4P.

The Government of Rwanda has taken ownership of the P4P project through the creation of a government-run initiative called Common P4P (CP4P). CP4P is implemented through the Ministry of Agriculture and Animal Resources, which buys up to 40 per cent of the requirements of the National Strategic Grain Reserve from smallholder farmers' organizations. P4P's role has been to support the Government to design a programme which best fits the country's needs, while mobilizing partners to train participating farmers in post-harvest handling and storage. The successful adaptation of smallholder-friendly procurement models has led the Rwandan Government to host several exchange visits from countries including Burkina Faso, Ghana and Kenya. Today, the Government of Burkina Faso is beginning to implement a project similar to P4P, with the national food reserve committing to procure 30 per cent of its purchases from smallholder farmers' organizations.

In Ethiopia, the Government has made programmes such as P4P central to national policies, enhancing opportunities

Image: WFP/Francisco Fion

The ECA San Vincente farmers' organization has doubled production and improved crop quality, since it began participating in P4P

for smallholder farmers. Through partnerships coordinated by the Government's Agricultural Transformation Agency, P4P provides the platform around which to effectively coordinate the support needed to build smallholder farmers' capacity to engage in structured markets. With its creation, an effective mechanism was formed that brought together several important players supporting the maize value chain. The Government of Ethiopia has recognized maize as vital to economic growth and development in the country. In Ethiopia, Malawi and Mozambique, government partnerships are further strengthened through the Purchase for Africans from Africans (PAA Africa) programme, which is jointly implemented by FAO and WFP. PAA Africa was inspired by Brazil's national Programa de Aquisição de Alimentos (Food Purchase Programme). In these countries, as well as in non-P4P countries Niger and Senegal, smallholders are supported to market a variety of fresh and staple crops to home-grown school feeding programmes. This has contributed to the testing of innovative financial models. For example, in Ethiopia and Malawi, funds have been transferred from WFP to district departments of education or schools, allowing them to purchase food directly from local farmers' organizations.

Triggering innovation

P4P has provided the impetus for public, private and civil society actors to leverage their investments to better respond to the needs and potential of smallholder farmers, and has proven that linking them to formal markets is a viable investment. Emerging evidence now shows that a wide variety of stakeholders, including governments, financial institutions and local leaders, have recognized the value of these investments, benefiting smallholder farmers, their organizations and communities in various ways.

Microfinance institutions, banks, input suppliers, WFP and other partners have now collaborated to make financial services available and affordable in remote areas. New solutions include providing smallholders with financial management and literacy training, as well as the use of food supply contracts and warehouse receipts as collateral for loans. Thanks to these initiatives, farmers' organizations have been able to facilitate access to credit for their members and to acquire productive resources, enabling them to produce larger quantities of high quality food and to aggregate and market crops collectively. Forward delivery contracts (FDCs) have proven effective in several countries. The Commercial Bank of Ethiopia has endorsed FDCs as

Image: WFP/Vanessa Vick

In Uganda, food purchased from P4P-supported smallholder farmers' organizations are used in WFP's emergency food distribution and food and nutrition security programmes

loan qualifying criteria, enabling cooperative unions in Ethiopia to access credit where they were often unable to previously. FDCs have also been used in other P4P pilot countries, allowing farmers' organizations to access credit at favourable interest rates.

Agriculture, nutrition and gender

Women face many challenges that can preclude them from independently owning or managing land and productive assets. In many households, men control the production and marketing of crops as well as household finances. The P4P pilot specifically targeted women farmers in order to address the particular difficulties they face, with an ambitious goal to have 50 per cent women participants. While P4P succeeded in tripling women's participation in P4P-supported farmers' organizations during the pilot period, the experience demonstrated that mere numerical participation does not directly translate into a positive impact on the lives of women farmers, nor provide them with the same financial gains as their male counterparts.

Rather, P4P found that a variety of interventions were necessary to empower women farmers, including context-specific action plans, new methods for targeting women farmers, including men in gender sensitization efforts and providing women with time- and labour-saving technology. In many cases, these efforts have assisted women to gain increased voice and greater decision-making ability in their homes and communities. Though these efforts yielded results, in countries such as Ethiopia, cultural barriers and traditional land tenure make it difficult for women to profit from their work. Ensuring that women benefit economically from P4P has been especially challenging in cases in which women are not heads of households.

Through P4P and partners' efforts, agricultural development and nutrition have been linked, facilitating sustainable improvements within rural households and communities. Nutrition-sensitive approaches include improving smallholders' agricultural production, empowering women, supporting resilience and providing access to nutrition education. In countries such as Afghanistan and Guatemala, P4P-supported smallholders market their crops to processors and millers for the creation of fortified flour and nutritious foods such as high-energy biscuits. Government investment has been vital to these efforts, as has the involvement of the private sector, which has committed to making purchases to best benefit smallholder farmers.

Improving income and nutrition

Image: WFP/Ken Davies

Women farmers in West Africa have been encouraged to increase their productivity and consumption of a nutritious legume similar to cowpea called niébé. Because niébé is traditionally grown and marketed by women, it can increase their income while improving household nutrition. In Mali, thanks to support from male family members and traditional leaders, women have been able to access land individually and as groups to increase their productivity of and profit from sales of niébé.

Image: WFP/Stephanie Savariaud

During the pilot period, WFP has bought more food from smallholders in Ethiopia than any other country, much of it maize

Poor crop quality can have a negative impact on health and nutrition. The consumption of the toxic chemical compound aflatoxin is particularly dangerous, as it can cause liver cancer and may also be linked to stunting in children. Inadequate crop quality initially posed a major challenge for WFP purchases from smallholder farmers. However, WFP's insistence on quality standards generated results, leading to a decrease in overall default rates by farmers' organizations, which improved the quality of their crops. Many smallholders and their families previously consumed the low quality grain they were unable to sell. However, thanks to awareness-raising campaigns on the dangers of doing so, P4P observed a reduction in this practice.

In Kenya, WFP's high quality standards triggered investment in the development of low-cost methods for reducing occurrences of aflatoxin. On national and regional levels, continuous advocacy for the enforcement of national quality standards, the establishment of quality monitoring protocols and the adoption of best practices are critical. One of the innovative tools created to address food quality and safety was the Blue Box, a portable field testing kit which allows farmers' organizations in remote rural areas to avoid the costly and time-consuming process of sending their crops off for quality testing.

Moving forward

While significant accomplishments and learning have been generated by the P4P pilot, further support is needed to overcome the many complex, contextual and operational challenges. Lessons learned throughout the pilot implementation period have identified priority investment areas to more effectively and sustainably connect smallholder farmers to formal markets. Smallholder farmers' technical skills and organizational capacity must be at the centre of investment, while investing in policy and institutional reform is essential for future programming.

Though the five-year P4P pilot treatment period concluded in December 2013, efforts to support smallholders will continue as WFP mainstreams key innovations and best practices. In the 2014-2017 Strategic Plan, WFP has committed to further increasing the amount of food it buys from smallholder farmers, and working with governments and private sector buyers to support these farmers to access sustainable markets beyond WFP.

The WFP commitment to support smallholder farmers is global, but the potential impacts of linking smallholders to formal markets can be seen most clearly in Africa. Across the continent, demand for quality food commodities is rising, driven by rapid urbanization, income growth and the increased consumption of processed foods and livestock products. Currently, the majority of these quality food commodities are imported from outside Africa. With the majority of sub-Saharan Africa employed in agriculture, assisting family farmers to access growing quality markets has the potential to create more inclusive growth. Investments in smallholder-friendly procurement can directly contribute to improving food security, boosting local economies, lowering unemployment and decreasing poverty.

Unlocking the potential of family farmers with agroecology

Edith van Walsum, Director; Janneke Bruil, Coordinator, Learning and Advocacy; and Nick Pasiecznik, Coordinating Editor, ILEIA — Centre for Learning on Sustainable Agriculture, the Netherlands

In the 1980s, family farmers in Madagascar started to experiment with new practices in their rice fields. After many years of trial and error, of adapting and applying lessons learned, this resulted in the highly effective practice of rice intensification, signifying big improvements in the food security of family farmers.

"For me this system means Merdeka (freedom)," said Pak Enseng, a small-scale family farmer in Indonesia. "I get a fair yield and am no longer dependent on buying seeds, chemical fertilizer or pesticides."

The techniques include transplanting young seedlings, spacing single plants more widely, and keeping the soil moist instead of flooded. This enables rice plants to create stronger tillers and roots and become much more efficient in the uptake of water and nutrients. The result is a crop that is more resilient to droughts, pests and diseases. This agroecological practice is now known as the system of rice intensification (SRI). Based on an agroecological approach, SRI crossed the ocean to Asia in 1999. SRI methods raise, concurrently, the productivity of the land, the labour, the water and the capital that are employed in irrigated rice production. The principles are proving equally relevant for other crops like wheat, maize, millets, sorghums, vegetables and tubers. Today SRI principles are being applied in different ways by millions of farmers in over 50 countries on different crops, contributing substantially to the food security and food sovereignty of family farmers.

SRI is just one example of a broad range of agroecological practices. This example makes it very clear that agroecological practices can offer effective solutions for family farmers. It can help to unlock the great potential of family farmers to contrib-

Image: Rajendra Uprety

SRI enables stronger rice plants and a crop that is more resilient to droughts, pests and diseases

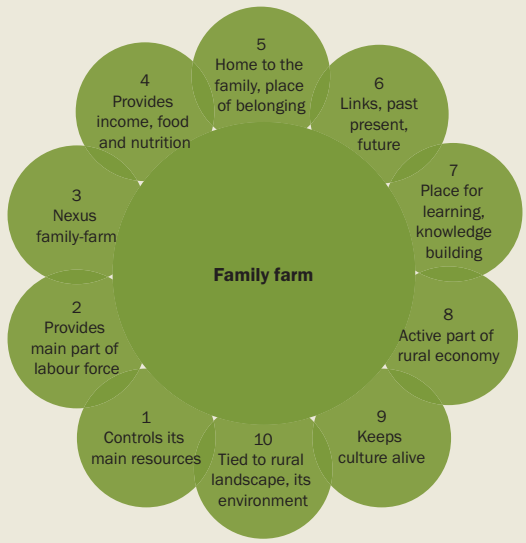
ute to their own food security and that of their communities, while carefully managing and maintaining natural resources and biodiversity and strengthening the economic, ecological and social resilience of their communities.

Family farmers have very specific characteristics. Agroecology is an approach that builds on them.

Agroecology is not a set of prescriptions. It is rather a set of principles that family farmers can use according to their needs, aspirations and the resources they have at hand. "After studying the process of SRI dissemination in Nepal, I learned that different farmers face different problems and that they adapt all techniques to suit their diverse circumstances and needs," said Rajendra Uprety, a former extension worker in Nepal.

Why do family farming and agroecology go together so well? It is estimated that more than 1.4 million family farmers across the world have adopted agroecological approaches. Agroecology as a global movement emerged at the end of the twentieth century in a decentralized and diversified way, building on the work of millions of family farmers all over the world. Agroecological farming systems have a high degree of local specificity and require much local innovation. This is in stark contrast to the diffusion of universal technical packages, the solution that is implicit in the 'green revolution' approach. It also involves developing and maintaining agroecosystems with a wide diversity of livestock breeds and crops, the latter of which is achieved through crop combinations, rotations and successions. Managing this kind of complexity sets limits on the size of the farm and requires highly skilled and flexible labour that is attentive to detailed management issues, which can often be found on family farms. Moreover, agroecology allows family farmers to use their in-depth knowledge of the local ecosystem and

Ten characteristics of family farming



Source: JD van der Ploeg (2013). 'Ten qualities of family farming'. *Farming Matters*, 29:4:8-11

Family farming is often thought of in terms of a single characteristic, such as farm size (for example, small-scale farming), land ownership, or that all labour is provided by a single family. Furthermore, the goal of farmers is often defined as maximizing profit, and whereas family farmers do indeed seek to make a decent living, it is not their only driving force. In reality, family farming is a way of life, encompassing far more than any of these simple descriptions can convey. In fact, 10 key characteristics of family farming can be seen to make it unique. These characteristics are, however, not always present at the same time, in every situation and in every family.

Image: Somenath Mukhopadhyay

Family farmers can increase productivity and build a sustainable future for themselves while contributing to society as a whole

Image: Alexia Skok

Agroecology can help family farmers to contribute to food security for themselves and their communities

resources. It also freduces farmers' dependence on external inputs. For these reasons, agroecology works especially well for small and medium-sized family farms.

With agroecology, the productivity of family farmers often increases. As well as high productivity levels, agroecological systems provide other benefits, which act as a counterweight to many of the factors responsible for the crisis in conventional farming. They have a positive energy balance and low fossil fuel energy use. They are economic in their use of water. They recuperate and conserve soil fertility without the use of external inputs, and are resistant to soil erosion. They function as carbon sinks and emit very little in terms of greenhouse gases. They are functionally integrated with the natural vegetation, providing greater stability to local microclimates. And they do not generate chemical or genetic contamination.

Taken as a whole, these positive effects indicate that promoting agroecology is a strategy that can provide not only benefits for family farmers themselves, but also a comprehensive structural response to the crises in the world. It meets the challenge of feeding an expanding world population while respecting sustainability and biodiversity, and providing climate-resilient solutions. This potential has been recognized by the International Assessment of Agricultural Science and Technology for Development, a three-year initiative financed by organizations linked to the United Nations and involving the efforts of a multidisciplinary group of 400 scientists from every continent in the world. The outgoing United Nations Special Rapporteur on the Human Right to Food Olivier de Schutter, has also repeatedly stated that agroecology can simultaneously increase agricultural productivity and food security, build climate resilience and improve the incomes of family farmers.

The main challenge to achieving a wider spread of agroecology is not technical but political. It involves the need to overcome the political, economic and ideological power of agribusiness and governments that drives the continued expansion of the industrial farming model. Among the many well-documented negative effects of this approach, it has been the main factor behind the disappearance of small-scale family farmers worldwide. This disappearance not only means more rural poverty, it also implies the loss of traditional culture and knowledge of rural peoples and communities — essential elements in the construction of sustainable, agroecological farming systems.

A science, a movement and a practice

Agroecology is a science, a movement and a practice, and is strongest where these three aspects converge.

- Practice and knowledge building lies at the heart of agroecology. It is developed and spread through farmer learning and experimentation, which can be supported by local organizations, researchers, governments and civil society.
- As a movement, agroecology seeks to create a social, institutional and policy environment where agroecological initiatives can flourish and spread by, for example, supporting the establishment of peasant-to-peasant learning initiatives, supporting and initiating political campaigns to advocate policies that recognize indigenous seeds or by mobilizing farmers and citizens to strengthen regional food systems.
- As a science, agroecology seeks to gain an understanding of the social and ecological dynamics of food and farming systems and their relevance for sustainability.

In agroecology, the experiences, knowledge, values and aspirations of family farmers are central.

Image: Somenath Mukhopadhyay

Agroecological farming involves developing and maintaining agroecosystems with a wide diversity of livestock breeds and crops

Family farming holds the promise of developing productive, sustainable, responsive, innovative and dynamic agricultural systems and for contributing to resolving the food, finance, fuel and climate crises prevailing in the world today. Policies that enable family farmers to thrive should therefore be based on the promotion of agroecology. This requires change in many institutions, including those of governments, international agencies (such as the Food and Agriculture Organization, the International Fund for Agricultural Development and other United Nations organizations), research organizations, political parties, social movements and civil society as a whole.

Although family farming continues to survive in highly adverse conditions, positive policies can help enormously in ensuring that family farming reaches its full potential. Policies can ensure that family farmers' rights are secured and that they are provided with the necessary security to invest in their own futures. This was recently reconfirmed by the prestigious High Level Panel of Experts on Food Security and Nutrition. Enabling policies can allow farmers to experiment and accumulate knowledge, and ensure that local resources are the starting point for rural development. Family farmers can then use their special qualities to increase productivity and build a sustainable future for themselves, while contributing in many ways to society as a whole.

To unlock the potential of men and women family farmers, governments must create long-term investment strategies, with accompanying policies and budgets. These should put family farmers and their organizations at the heart of these strategies.

The challenges faced by humanity as a whole are enormous. Yet, we still have family farmers with the knowledge needed for developing agroecology, especially if they are supported by adequate public policies. Policies are also urgently needed to protect or re-establish family farming, for example through agrarian reforms and measures that guarantee territorial rights as well as other measures. The sooner we implement measures for promoting agrifood systems based around agroecological family farming, the less painful the transition from an economy based on fossil fuel energy to an effectively sustainable economy will be.[1]

Strengthening family farming through support for gender justice, food sovereignty and biodiversity-based ecological agriculture

Sarojeni V. Rengam, Executive Director, Pesticide Action Network Asia and the Pacific

The Food and Agriculture Organization (FAO) of the United Nations has dedicated 2014 as the International Year of Family Farming (IYFF) to highlight the vital contribution of family farming and smallholder farming in "eradicating hunger and poverty, providing food security and nutrition, improving livelihoods, managing natural resources, protecting the environment, and achieving sustainable development, in particular in rural areas".[1]

This is a timely policy declaration from the world's leading food and agriculture agency. Family farming remains the predominant form of agriculture in the world today and family farmers are the main producers of food which we consume on a daily basis.

Alarmingly high levels of global poverty and hunger highlight the timeliness of the declaration. Given the non-stop expansion of corporate farming and technology globally, spotlighting the significance of people involved in farming — that is, smallholder farmers — is a welcome move for advocates of pro-people agricultural policies and programmes.

IYFF brings to the forefront the fact that family farms and rural communities are being displaced worldwide, as more agricultural land is used for urban expansion and development and/or for the large-scale expansion of corporate farms. This expansion of corporate farms and of the use of corporate technology is environmentally and economically unsustainable in the long term. For example, the use of pesticides in food production impacts the health of people and the environment, compromising people's ability to work, earn a living and conduct community and livelihood functions.

To ensure that the IYFF goal "to reposition family farming at the centre of agricultural, environmental and social policies

Image: PAN AP

After winning their battle for land rights, a group of Dalit women decided to undertake collective farming with the help of TNWF and SRED

Image: PAN AP

PAN-AP has provided leadership training for rural women for the past seven years

in the national agendas by identifying gaps and opportunities to promote a shift towards a more equal and balanced development"[2] is achieved, we urgently need a paradigm shift to support ecological systems of food production. This shift is described by the United Nations Conference on Trade and Development in its Trade and Environment Review 2013 as "a rapid and significant shift from conventional, monoculture-based and high external-input-dependent industrial production towards mosaics of sustainable, regenerative production systems that also considerably improve the productivity of small-scale farmers."[3]

Women in family farming

The inclusion of the objective to "achieve the recognition of the role of women in family farming and of their specific rights" in the 2014 IYFF is a welcome one. But such recognition should be anchored on clarifying, examining and critiquing the unequal gender division of labour in family farming and the discrimination farming women face in society.

Women belong to farming families whose access to land is limited or threatened as land and resources are consolidated and controlled by the rich, landlords and corporations. Under conditions of class and caste inequality, the discrimination of women is intensified. Farming women's multiple burdens on account of their responsibilities in the farm and in the family are exacerbated by their lack of access to land, seeds and credit as well as access to trainings and organizing as women food producers.

Moreover, there is growing outmigration of men from rural areas, leading to a rise in the number of women-headed households in many regions and countries. According to the International Fund for Agricultural Development, "female-headed households are particularly disadvantaged when it comes to land access".[4] Other sources indicate that female-headed households "where female heads are single, divorced or widowed are more likely to be poor than those with support from adult males."[5]

Image: PAN AP

PAN AP's capacity building sessions in Sarawak, Malaysia help indigenous communities learn how to map and document their native customary lands

On top of poverty, lack of access to resources and multiple burdens, women are vulnerable to violence within and outside the home. The World Health Organization states that "35 per cent of women worldwide have experienced either intimate partner violence or non-partner sexual violence in their lifetime."[6]

Women in family farming play significant roles in food security, ensuring food production, economic access to available food and nutritional security. However, this significant contribution is often not recognized; and they are denied opportunities to decide for themselves and to be heard. This non-recognition of women's contribution and their marginalization in community affairs and decision-making are rooted in the dominant culture that considers women as weak and subservient to men. This culture denies women the right to live a life free from harm and violence and denies them the opportunity to achieve their full human potential.

It is essential that the concept of family farming be strengthened to include women's struggles, and to address the issues of their disempowerment and the increasing female-headed households in many countries. Governments and institutions need to recognize women's contributions, and to initiate and support policies and programmes that empower women to have access to land and needed resources, including promoting ecological agriculture.

In the face of ongoing discrimination and exploitation, women continue to advocate for decent livelihood to ensure the survival of their families and communities. They continue to organize and struggle for their rights and for social and economic justice.

Collaborating with rural women's organizations and people's movements, Pesticide Action Network Asia and the Pacific (PAN AP) works to strengthen rural women's leadership in campaigns and policy advocacy, and helps build rural women's capacity to assert their rights. Through PAN AP's capacity building and training, the understanding and skills in food security and sovereignty and ecological agriculture of rural women's organizations and their members have been enriched. Such understanding enables rural women to raise and address gender issues in programmes, projects and other efforts geared towards achieving sustainable livelihoods and building community resilience.

PAN-AP's leadership training for rural women has been ongoing for the past seven years. It is now named the 'Irene Fernandez Leadership Training for Rural Women' in honour of a remarkable woman leader who initiated this training and inspired PAN AP to systematically develop rural women leaders. The training programme includes sessions on feminism, globalization and food security, caste and class, and leadership, and utilizes interactive methods such as sharing experiences, exercises, games, discussions, role playing and inputs. Timely assessment by teams of participants provides the fine tuning of daily sessions to ensure better understanding and participation of the rural women. A strategy discussion outlines the follow-up to the workshop by participants and

Image: PAN AP

BEA is essential to the future prosperity of family farming – here, farmers receive training in rice breeding

their organizations. At the end of the training participants are inspired and admit to gaining more confidence in fulfilling their roles as women leaders. For example, a participant wrote: "I'll mobilize the community to raise their voices whenever there is a policy that is unequal or suppresses women, farmers and the grass-roots community."

Aside from training, PAN AP contributed to the formation of the Asian Rural Women's Coalition (ARWC) in 2008 to project the strength of rural women's organizations in the region. As the Secretariat of the ARWC, PAN AP makes sure that the plans agreed upon by the coalition — such as support to local women's actions, online campaigns in support of their land struggles, regional campaigns and international policy lobbying at United Nations events — are implemented. In 2012, PAN AP supported ARWC's 'Honouring 100 Rural Women' project to acknowledge rural women's leadership and commitment in struggling for justice and gender equality. This acknowledgement of women who have worked hard for a long time for women's equality and social justice has inspired the women to continue with their commitment and motivated others to empower themselves. For instance, an Indian woman said, "I feel glad and honoured to be part of these exceptional women. Thank you for acknowledging my efforts that I am trying to materialize on the ground."

A recent innovative project called 'Our Stories, One Journey: Empowering Rural Women' was initiated by PAN AP, ARWC, and Oxfam's East Asia GROW campaign as an advocacy campaign for food security and sovereignty and for a more equitable and sustainable system of growing food. Our Stories, One Journey features a travelling journal with entries written by rural women food producers from eight countries — the Philippines, Viet Nam, Cambodia, Malaysia, Indonesia, China, India and Sri Lanka. Through their stories, rural women narrate the challenges of high food prices, low income, losing their access to land due to land-grabbing, climate change, and lack of control and access to seeds. The journal is their story and their voices come through as an indictment of the discrimination and exploitation that they suffer as women, food producers, workers and as mothers, daughters and wives.

Capacity building, organizing a region-wide formation of rural women's organizations, and innovative projects such as the travelling journal have contributed to the intensification of the campaigns of rural women with victories achieved in several instances.

In India the women's organization, the Tamil Nadu Women's Forum (TNWF) and its support group, the Society for Education and Rural Development (SRED) worked with Dalit women (the most marginalized group of women under India's caste system) to assert their rights to land. In one area in Andhra Pradesh, Dalit women organized themselves with the help of TNWF and SRED to petition for land to the government land office. The women were initially either ignored or repeatedly told to just return. One government official even asked for sexual favours from the petitioning women. The women responded by getting the official into a room and hitting him with slippers. Finally after many years of petitioning, campaigning and demonstrating in front of the government offices, 30 women were given land titles and after continued struggles they were also given financial support to improve their lands. Ten of them decided with the help of TNWF and SRED to undertake collective farming and are continuously trained on ecological methods of cultivation. They have had a number of successful agricultural seasons. With the land and its produce the women's food security needs are being met and they are more confident. This has motivated them to stand for local election and two of the women have now been elected into the local panchayat committee.

PAN AP's capacity building sessions in Sarawak, Malaysia help equip indigenous communities with skills to map and document their native customary lands. Without access to land, the survival of the indigenous community and its people is in jeopardy. The indigenous communities used this documentation for legal cases to assert their rights over land (recognized in Sarawak's legal system as Native Customary Rights of indigenous communities). PAN AP's trainings were an important contribution to the indigenous communities securing access to their land, which means securing their livelihoods and ensuring food and nutrition security. There are now 400 legal cases in the courts in Sarawak that have been brought by indigenous communities to assert their rights over land that has been given to logging and palm oil corporations.

In one community in Sarawak, the impact of the documentation and mapping training was immediate. The documentation was used in the filing of the community's case against a palm oil company. However, even before the start of the hearing, the company involved learned that the community was organized and had received training. It decided to stop its encroachment into the native land and then opted for an out-of-court settlement and eventually compensated the community.

To build on such successes and to create more awareness, PAN AP has organized a series of campaign activities tagged 'Women asserting their rights to land and resources including seeds' which has been ongoing in the last four years. This year, groups in eight countries in Asia and Africa simultaneously held mass actions and other activities to highlight the struggles on International Women's Day. Several days later, representatives from PAN AP and ARWC were in Mongolia to emphasize women's issues during the discussions on family farming at the FAO Regional Conference for Asia Pacific. These actions for the campaign will continue during Rural Women's Day on 15 October with more groups joining the campaign.

Biodiversity-based ecological agriculture

PAN AP has been both contributing to the discussions on expanding the concept of family farming and undertaking efforts to support gender justice and promote biodiversity-based ecological agriculture (BEA) within the context of family farms.

For family farming to survive and to prosper there is a need to mainstream BEA. This has been emphasized by the United Nations Special Rapporteur on the Right to Food, Olivier de Schutter in his report of 2010 when he asserts that the ecological systems employed by smallholder farmers and rural women are key to food security and are vital in ensuring their right to food. These systems also protect the environment and are economically feasible. The report identifies agroecology as a science and practice that has fast concretized the right to food for many vulnerable groups.[7]

The commemoration of IYFF should provide impetus for putting in place policies and programmes that stimulate the widespread adoption of BEA to meet the future challenges of food production and distribution. These polices should promote the conservation of biodiversity and encourage local seed banks. Decentralized participatory research that builds on farmers' and local knowledge systems should be funded and institutionalized, and the approach of farmer-scientist partnerships should be emulated.

These BEA models supported by civil society organizations are in widespread practice. For example, 20,000 rice farmers with Kudumbam practice low external-input sustainable agriculture in Tamilnadu; 56,000 rice farmers with the Community Economic Development Assistance Corporation practice a non-chemical system of rice intensification in Cambodia and around 35,000 BEA rice farmers use the Masipag approach, a farmer-scientist collaboration for rice breeding and ecological agriculture in the Philippines.

Advancing family farming

We reiterate that the bold policy statements this year on family farming have to be translated into political will for change that includes strong support for women's rights and empowerment and BEA to ensure food for all.

PAN AP is committed to contribute to this process as it has built strong partnerships with peasants, agricultural workers and rural women's movements in the Asia Pacific region. PAN AP now comprises 108 network partners in the region with links with about 400 civil society and grass-roots organizations at regional and global levels. Our greatest strength and most powerful resource is the network of people's organizations, particularly of marginalized communities that also represent diverse movements and organizations.

This year we have the opportunity to ensure that the objectives of the IYFF — particularly raising awareness for family farming that includes gender equality and for safe food, healthy environment, and food security and sovereignty — are achieved. PAN AP pledges its full support to the realization of these objectives. The strengthening of family farming, achieving women's empowerment and the adoption and propagation of BEA require that institutions and agencies that have similar vision and genuine support for family farming must work and collaborate together.

Cultivating a revolution in agriculture for young people

Danielle Nierenberg, President, Food Tank

There's a revolution taking place among youth in rural — and even urban — areas around the world. For the first time, many young people are excited about being involved in agriculture and the food system. Instead of abandoning farms and generations of farming, many are not only picking up hoes, but also learning the skills to become agronomists, extension agents, food scientists, academics, food business leaders, chefs and cooks, and food entrepreneurs. They see the food system as an opportunity, not a burden. And they're looking to solve some of the world's most pressing social problems — unemployment, conflict, climate change — through food and farming.

There's no question that agriculture is at a turning point. Nearly 1 billion people go to bed hungry each night while another approximately 1.5 billion are overweight or obese; an astounding 1.3 billion tons of food is wasted each year; some 2 billion people suffer from micronutrient deficiencies; non-communicable diseases, many related to diet, including heart disease and diabetes, afflict millions of people worldwide; and climate change is expected to have the worst impacts — including drought, increased temperatures and flooding — in the world's poorest nations which are least able to handle these problems.

Farmers are also ageing all over the world. Globally, the average age of farmers is around 55 years; in Europe, one-third of farmers are under 35; in South Africa, the average of farmers is 62 years; and in the United States 50 per cent of farmers are 55 years or older. Youth continue to migrate to cities in massive numbers, leaving agriculture and their communities behind.

Engaging youth today and future generations in farming and the food system is more important than ever before for environmental sustainability, food security, social stability and economic viability. It's time to cultivate the next generation of food system leaders — the professional producers, thinkers and doers who can create a more sustainable food system that nourishes people and planet.

In rich and poor countries alike, youth confront barriers to jobs and careers in agriculture. According to the International Labour Organization of the United Nations, there are at least

Image: Bernard Pollack

In rich and poor countries alike, youth confront barriers to jobs and careers in agriculture

4.5 million unemployed youth. And when youth, particularly young men, have few options for income, conflict can result. The 2012 uprisings in Egypt and Tunisia were not only a result of high prices for food and fuel, but also of the lack of jobs and severe social inequities.

At the same time, according to the United Nations, by 2050 about 6.3 billion of a global population of more than 9.3 billion people will be living in cities. Lack of productive land and limited rural job opportunities are 'pushing' young men to look for work elsewhere. In addition, urban industries, education and public goods are pulling people to cities, leaving women, children and the elderly on farms. Often, they have few resources to manage crops and are dependent on the yield from harvest to harvest for food. But despite this move to cities, the World Bank predicts that the majority of the population in sub-Saharan Africa will be rural in 2030 and that some 330 million youth will enter the job market over the next 15 years — 195 million of whom will come from rural areas.

Unfortunately, youth don't see agriculture as a viable job or career, but as something that lacks prestige and — more importantly — a reliable source of income. In parts of sub-Saharan Africa, many farmers earn less than US$2 per day. And in the United States, farming households depend on off-farm income for between 85 and 95 per cent of household income, according to the US Department of Agriculture. Of countries included in the Rural Incomes Generating Activities Database, the International Fund for Agricultural Development found that 30-60 per cent of households depend on at least two sources of income to make up 75 per cent of total income. Farmers are feeding the world, but not making enough income from farming alone to feed themselves.

Moreover, there continues to be a disconnect between people of all ages and where their food comes from. Eaters, young and old, have forgotten basic culinary and food processing skills. Not only are youth not becoming farmers, but they're also not becoming healthy, nourished eaters. According to the Barilla Center for Food and Nutrition, this lack of knowledge and conviviality about food can lead to rising youth obesity rates.

Image: Bernard Pollack

All over the world youth are seeing opportunity in the food system, and seeing agriculture as something they want to do

But there are solutions. They're happening all over the world in fields and classrooms, in kitchens and boardrooms, and in businesses where youth are seeing tremendous opportunity in the food system, allowing them to see agriculture as something they want to do, rather than something they feel forced to do.

In villages outside of Kampala, Uganda, for example, the Developing Innovations in School Cultivation project (DISC) is helping youth build leadership skills around farming. One of the project's former students, Betty Nabukala, managed the school's garden. She explained that DISC taught the students 'new' methods of planting vegetables. Before, she says, "we used to just plant seeds," but DISC taught them how to fertilize crops with manure and compost, and how to save seeds after harvest. More importantly, Betty explained that she and the students learned that not only can they produce food, they can also earn money from its sale.

Students learn how to grow, process, and preserve food and how to celebrate it through juice parties and activities that allow them to recognize the diversity and uniqueness of their local food cultures. In Uganda, and throughout sub-Saharan Africa, local and indigenous foods are often looked down upon or even thought of as weeds or poor people's food. But by re-learning how to cultivate and cook foods that have long been eaten in Uganda and other countries, students are learning to appreciate the food their parents and grandparents ate. Often, these foods are better suited to local climates, more nutrient dense, and more resilient — making them the foods of the future as sub-Saharan Africa continues to battle the impacts of malnutrition and climate change.

DISC was co-founded by Edward Mukiibi, who is now the Vice-President of Slow Food International. Edie is 28 years old and has been part of leading efforts around Slow Food's Thousand Gardens in Africa initiative, which is implementing gardens in communities and schools across the continent. "It is time to be proud of being a food producer and revive our lost food traditions in Africa," says Mukiibi, adding that the Thousand Gardens initiative "is an opportunity for young ones, like me" to strengthen ties between communities but also within communities through the oral exchange of agricultural traditions and practices. Thanks to DISC and Slow Food, many students are no longer seeing agriculture as an option of last resort, but something enjoyable, intellectually stimulating and economically profitable.

And across the world in Milwaukee, Wisconsin and Chicago, Illinois, Will Allen is teaching at-risk youth how to grow food in urban areas. Will, a former professional basketball player, founded the organization Growing Power to train young people and community members "to become community farmers" so they can have access to fresh, safe, affordable and nutritious food at all times. In Chicago in 2013, Growing Power's Iron Street Farm trained more than 300 youth how to build gardens and greenhouses, build soil, grow vegetables,

Image: Bernard Pollack

A school visit with Project DISC in Uganda. Students learn how to grow, process and preserve food and to recognize the diversity and uniqueness of their local food cultures

flowers and herbs, and create a line of value-added products including hand-crafted beauty products. Growing Power is even selling their products at 10 Walgreen's Pharmacy and store chains in Chicago.

In addition, Growing Power started the Rainbow Farmers' Cooperative to support family farmers across the Midwestern and Southern United States. The organization works with more than 300 family farmers providing training, helping them access markets and transportation as well as storage and cooling centres — infrastructure that many small-scale family farmers are unable to afford on their own.

Professional training in the agricultural sciences, research and development is also helping more youth stay involved in agriculture. Universities and colleges from Ghana to Costa Rica are increasing efforts to educate the next generation of farmers, scientists and entrepreneurs.

At the Department of Agricultural Economics and Extension at Cape Coast University in Southern Ghana, learning takes place not only in classrooms, but also literally in fields and farms all over the country. As part of a programme to improve agricultural extension services, extension officers are working with professors to find ways to improve food production in their communities. The extensionists, who are already working with farmers, are selected by the Ministry of Agriculture and the university from all over the country to train at the university to help them better share their skills and knowledge with farmers.

The programme was started in the early 1990s after the Ministry of Agriculture found that its extension workers were not communicating well with farmers, says Dr Okorley, a Cape Coast professor. The goal of the programme, according to Okorley, is "to improve the knowledge of frontline extension staff." Because the educational background of many extension workers is "limited" (many don't have the means to attend college), they "couldn't look at agriculture holistically," says Okorley.

But the university is helping change that problem. Students learn how to engage with farmers and communities by learning better communication skills. And they are trained to properly diagnose problems, as well as come up with solutions.

After attending a year of classes on campus, the students go back to their communities to implement what they've learned in Supervised Enterprise Projects (SEPs). The SEPs give the student-professionals the opportunity to learn that particular technologies, no matter how innovative they might seem in the classroom, don't always fit the needs of communities, says Dr Okorley. The SEPs also help them implement some of the communication skills they've learned in their classes, allowing them to engage more effectively in the communities where they work. Instead of simply telling family farmers to use a particular type of seed or a certain brand of pesticide or fertilizer, the extension workers are now learning how to listen to farmers and help them find innovations that best serve their particular needs. "One beauty of the programme is the on-the-ground research and experimentation," says Okorley, "It allows the environment to teach what should be done."

Many programmes have focused on production and yields and have neglected the managerial, business and innovation skills that are also necessary to run successful agriculture and food businesses. At EARTH University in Costa Rica, though, farmers are learning how to be more entrepreneurial and students are learning to improve yields through more sustainable, agroecological practices. EARTH University believes that in order to eradicate poverty and alleviate hunger, family farmers need to build the business of farming.

In addition, two exciting competitions around building a better food system have been launched in just the last few years. One, is the Barilla Center for Food and Nutrition's

Image: Bernard Pollack

The future of agriculture is in the hands of young people

Young Earth Solutions contest, or BCFN YES! BCFN YES! is working with people under 30 to develop the most sustainable solutions to alleviating hunger and creating a better food system. In 2012, the centre presented its first YES! award to Federica Marra for the Manna From Our Roofs project. Federica hopes to engage young people in an international network of activities combining education, communication and business. Participants will actively take part in cultivation, preservation, cooking and sale of their own urban food products. Through roof gardens, window farms and edible walls, they will be rescuing abandoned city buildings, transforming them into multi-layered urban farms. These will provide the community with fresh, local produce while taking care of their own energy supply, water and waste.

In 2013, BCFN awarded the prize to students from the University of Dhaka in Bangladesh. Their solution is to provide safe, affordable, nutritious food to the 6 million people living in urban slums in Dhaka. Their model focuses on local food production, manufacturing and marketing to low-income slum dwellers and the entrepreneurs believe it is highly replicable in other cities around the world.

And at the University of Wisconsin-Madison (UW-Madison), the Howard G. Buffett Foundation, the Wisconsin Institute of Discovery (WID) and the US Department of Agriculture helped establish the Agricultural Innovation Prize to encourage cutting-edge technology in agricultural and food systems. The prize encouraged students to think about achieving food security while also protecting the environment and creating resilience in the food system. The prize provides more than US$200,000 to winning teams — the largest cash prizes awarded to any agricultural student contest in the world. The grand prizewinner receives US$100,000 to implement their project, while the finalists get US$25,000 each. “This project is about inspiring the next generation of food system innovators to believe that they can create the future they dream of and the future we need,” says Molly Jahn, professor of genetics at UW-Madison and Discovery Fellow with WID, who led efforts to organize the Ag Prize. This year, the winners included strategies for reducing food waste for farmers in India, technology for pasture-raised chicken and mobile poultry houses in the US, and edible mealworm powder to help improve food security in sub-Saharan Africa.

Prizes for young farmers and entrepreneurs, however, are not enough. Youth in agriculture need to have opportunities to connect and network with others — across communities, regions, and national borders.

The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), based in Pretoria, South Africa, is doing innovative work engaging a variety of stakeholders, including young people, across Africa. Recognizing the role of Africa’s farmers as powerful agents for increasing food security, FANRPAN set a goal to create conducive policy environments that include and empower Africa’s farmers, especially youth and women farmers. By opening up communication channels and advocating for common-sense policies and reforms that promote and support youth involvement in agriculture, FANRPAN is helping to create a food-secure Africa that can feed itself.

The CEO of FANRPAN, Dr Lindiwe Sibanda, says “farmers know what to do” when it comes to the environmental and food challenges we face. The real difficulty is getting those ideas and methods from the farmer in the field to government officials drafting and implementing policy.

As the future farmers, policymakers and business people, youth are central to FANRPAN’s overall work. Additionally, engaging youth is especially important in sub-Saharan Africa where there are over 200 million young people aged between 12 and 24 — the world’s youngest population. FANRPAN launched the Youth in Agriculture initiative to encourage integration of youth into decision-making on food and agriculture issues and to advance policies that create opportunities for Africa’s youth.

The Young Professionals for Agricultural Development (YPARD), housed at the Global Forum for Agricultural Research in Rome, is also helping connect young farmers, researchers and scientists to one another. By connecting members (all under 40 years old) both online and in person, YPARD is trying to help young agricultural professionals share ideas, innovations and news of what’s working in their own communities. In addition, YPARD alerts members to educational opportunities, grants and events to help them develop their skills. “Increased access to education means that young people can be a force for innovation on family farms, increasing incomes and well-being not only for farmers, but also for local communities,” says Mark Holderness, Executive Secretary of the Global Forum on Agricultural Research. “Young people can develop the agricultural sector by applying new technologies to current work methods.”

It’s clear that the future of agriculture is in the hands of young people — whether they’re family farmers, cooks and chefs, entrepreneurs, teachers or scientists. To cultivate that next generation, governments, academics, businesses and the funding and donor communities need to provide the investment and funding they need to nourish both people and planet.

Sowing the seeds to harvest: young farmers are the future of food production

European Council of Young Farmers

Food security must take priority in a world of ever-increasing demand for food, particularly coupled with mounting environmental concerns. On a global scale, the United Nations predicts a necessary increase of up to 60 per cent in food production in order to feed the world by 2050 — and yet in the last few decades, the farming population of the developed world has been ageing. This trend must be reversed and young farming must be promoted across the globe in order to ensure the survival of the family farming model and therefore the continuation of sustainable food production in local economies across the world.

The family farming model is one which can be found across the world, and which is essential to the future of global food production. In the past, this model has been seen as more of a hindrance than a help to achieving food security, considering family farms are likely to be small-scale and less industrialized. However, today, in an environment fraught with sustainability concerns in terms of limited resources, biodiversity and climate change, it is these farms which produce high-quality, safe food in harmony with the natural environment. It is not the case that family farms are exclusively small, either; in fact, some family farms can be quite sizeable with high levels of production and profitability, and yet still kept within the family and still inspired by the farming traditions of past generations. Family farms are also essential to the development of local economies in developed and developing countries alike, as they are most likely to use shorter supply chains and direct selling, therefore improving their own livelihoods and economic sustainability while guaranteeing high-quality food for decent prices to local communities. Such family farms also enhance employment opportunities for local people. However, despite the importance of the farming knowledge and techniques which are passed on from generation to generation, many of which work in harmony with the natural environment and resources affected, it is the younger generations which need more focus and support in order to

Image: CEJA/Gerry Huberty

Young farming must be promoted to ensure the survival of the family farming model and continued sustainable food production

Image: CEJA

Young farmers often use innovative techniques to modernize the family farm while safeguarding sustainability and biodiversity

establish a secure and sustainable future for family farming in the context of global food security.

The importance of young farmers to family farming is fairly self-explanatory, considering farming businesses and the land they are on are passed from generation to generation — therefore, a new generation of farmers will always be necessary to continue the trend. However, it is important to note that farming, compared to other businesses, tends to stay in the hands of the older generation for much longer. This is often quite surprising considering the comparatively increased level of physical labour necessary, but it can perhaps be explained by the years it takes for someone to perfect their farming skills, as farmers can only really learn from their mistakes once per harvest, compared to other careers where learning curves may happen much more frequently. It is also likely to do with a connection to the land, animals and production in general — a farmer works in harmony with nature in order to reap its benefits while ensuring it can continue to provide him and future generations with income in the future. Global statistics are hard to come by in the field of agriculture but, for example, in the European Union (EU), the average age of a farmer (defined as the head of the holding) is 55. This is problematic in the context of food security for a number of reasons, primarily because of the missed opportunities in terms of increased productivity, efficiency and sustainability of family farms.

In the EU, young farmers are defined as heads of holding under the age of 40. Although these make up just 7 per cent of the farms in the EU today, it is these in particular which consistently produce more food per hectare than their older counterparts. It is difficult to say exactly why this is the case with any certainty, but easy to come up with a few ideas. Higher young farmer productivity is likely to be down to a number of factors, including a higher level of education than their predecessors — with many young farmers in the EU now holding highly-respected academic qualifications such as degrees in agronomy, agricultural economics, business management, environmental studies and more. Young people are also more technologically able, leading to the use of innovative farming techniques and modernization of the family farm to enhance productivity while safeguarding sustainability and biodiversity, in keeping with the traditions of a family farm and ensuring its survival. Because of their increased productivity, established young farmers are also more likely to employ more labour than others. Finally, young farmers are more adaptable — more likely to be willing to change produce, buyers or carry out activities such as direct selling, bringing consumers closer to farmers while ensuring a decent price for both parties. All these factors contribute to a clear picture: a younger farming population is a more productive one, and therefore more likely to achieve global food security. But in a world with an ageing population, particularly in the farming sector, what is to be done to achieve this?

Although family farms still make up the majority of food-producing farms across the world, they are in decline, and have been for some years. This has been caused by the lack of interest shown by many young people in taking over their parents' farm. Considering the job opportunities in urban areas compared to rural areas and the vast difference in average income in the agricultural sector compared to others, this is not surprising. Some parents discourage their children from following in their footsteps because they wish them an easier, more prosperous life. This should not come as a surprise considering that on average, a farmer will earn around half of what someone working in another economic sector earns. Combine this with the lack of infrastructure and services in rural areas compared

Image: CEJA/Ulf Palm

CEJA advocates a range of support measures to help young farmers get their feet off the ground

Image: CEJA

Younger generations need more support in order to establish a secure and sustainable future for family farming in the context of global food security

to their urban counterparts, and farming does not look like such an attractive profession for an ambitious and determined young man or woman. In some developing countries, it is even equated with punishment as those serving prison sentences have to farm in the fields, thereby giving it an image as a non-career for the lowest of the low and the poorest of the poor. In order to counter this trend and inject youth back into farming across the world, steps must be taken to overcome these challenges. If farming can become a more financially attractive job, then changes in attitudes towards it will come too.

The conditions for young people entering the agricultural sector and staying afloat in it must be improved if we are to see an increase in young farmers at work. The barriers to entry in Europe in particular — but across the world too — consist most importantly of a lack of access to land and capital/credit. Land is in high demand, especially for Europe, and land prices are forever increasing. This makes it particularly difficult for young farmers to start their own family farm or to expand the family farm that they have inherited. The European Council of Young Farmers (CEJA) advocates public support to help young farmers to buy such land, particularly if it is their first farm and they want to get their feet off the ground. Installation aid such as this has successfully been implemented in the EU, with up to €70,000 available per young farmer to help with start-up costs, as long as they can present a viable business plan for their farm. However, this is only implemented if a member state chooses it as an option in its Rural Development Programme, and therefore it cannot yet be said how effective it will be on the ground. Secondly, access to capital and credit (which also affects access to land of course) is very hard to come by, especially for young people with no assets or security to speak of, and especially in the wake of the global financial crisis. In order to address this and to attempt to assist new young farmers struggling with low returns on high investments in the first years of business, the EU has also provided young farmers with an annual top-up of their direct payments for the first five years of their farm. It is essential that this additional support is applied to young farmers in order to assist them with entering the sector — not just in the EU, but across the world.

The most difficult years of business for a farmer are his/her first ones — at least the first five. They have to invest in land, produce, labour and machinery with no prospect of any financial return for at least one year. It takes significant capital to be able to achieve this. It is for this reason that young farmers need more assistance than their older counterparts who, whether they are a new farmer or not, are already likely to have capital to invest. This combination of an available lump sum to help you start your farm combined with supplementary income support in the first years of farming consists of the most substantial support for young farmers across the world, even though it still does not go far enough. As a model of support though, these two complementary measures, combined with others, should be advocated and promoted across the world. However, CEJA has also called for a number of other measures to be used alongside these in order to quell the current serious age crisis in Europe and beyond. With one third of all EU farmers over the age of 65, it is time to take serious action, and to act as an example to the rest of the world — where the average age is not quite as bad yet, but it is undoubtedly following the same trend.

CEJA advocates other ways, not just income support, to assist young farmers too. In terms of access to credit, CEJA calls for a bank guarantee from the European Investment Bank for European young farmers, in order to give them the security they need to borrow money from their national bank. This could easily be transposed to a global scale. CEJA also advocates state aid for land acquisition for young farmers, facilitating access to land and getting a young farmer's feet off the ground — this could also be used in other places. Finally, CEJA believes not just in financial support from the state, but also in the use of succession brokers for emotional, financial, legal and technical advice when it comes to transferring the family farm to the younger generation — thereby encouraging this to happen at an earlier age for the younger farmer. Finally, CEJA is also considering potential options or systems in terms of investment banks and other private entities which may be interested in cooperating with a young farmer and his or her enterprise.

The ageing trend in the farming population is a serious threat to the current family farming model which should be recognized for its potential for meeting food demand across the globe in a localized and sustainable manner. Add to this the fact that farms owned by those under 40 are on average more productive and employ more labour, and it seems that rejuvenating the global farming population presents a number of solutions as well as additional opportunities for an increase and improvement in high-quality local food production across the world. However, in order to achieve food security in a sustainable way and to protect the family farming model, young farmers across the globe need support to either start their farm or to inherit their family's farm, and to improve it. In the EU, measures are already in place as part of the Common Agricultural Policy and, although it is yet to be seen how effective they are in concrete terms, it is an important political signal and a significant step forwards in terms of recognition of the issue. This, as well as other, more innovative solutions for the future such as CEJA has suggested in terms of access to credit and succession assistance, must now be spread and mirrored in other parts of the world where the future of family farming is facing exactly the same challenges.

Community-based aquaculture to sustain food security and livelihoods in the Pacific region

Moses Amos, Director, Fisheries, Aquaculture and Marine Ecosystems Division, Secretariat of the Pacific Community

Demand for fish by increasing populations in the Pacific Islands is projected to outstrip the ability of several island nations' coastal fisheries to supply them. The need to strengthen coastal fisheries management systems to maintain fish supply is important, but this may not be sufficient. Therefore, the ability to provide additional production from aquaculture is essential to meet anticipated fish supply shortfalls. In addressing this issue, the Secretariat of the Pacific Community (SPC) recognizes the important contribution of communities through aquaculture by bringing into perspective a community-based aquaculture approach to address a shortfall in the supply of fish for food and sustain the well-being of rural communities.

While aquaculture in general is not a tradition in some Pacific Island nations, there have been records of integrated aquaculture and agriculture practices in other Pacific Island countries, such as integrated freshwater prawn farming of the species *Macrobrachium lar* in some island communities in Vanuatu. There is a good record of community-based aquaculture farming all over the Pacific region today, where it is a family affair and both women and children are involved.

In addressing community-based aquaculture in the Pacific region, the key constraints of capacity, feed and seed supply are challenging, particularly in remote coastal and inland communities. To date, it has been difficult to quantify the number of people fully engaged in a community farm per day, whether it is full-time or part-time employment, what the roles of women and children are in a community farm and how economies of scale can be enhanced to improve aquaculture, hopefully bringing it to another level. The key factor remains that community-type aquaculture has to be formulated around the way of life of the village people who most need that support. That way of life needs to be recognized and understood in terms of various agricultural practices such as subsistence farming and fishing.

Image: FAME, SPC

Demand for fish in the Pacific Islands will soon outstrip the ability of coastal fisheries to supply them

Image: FAME, SPC

Additional fish production from aquaculture is essential to meet anticipated shortfalls in fish supply

Small-scale tilapia farmers in the Tailevu area of Fiji with farm productions for 2012 and 2013

Farmer	Pond area	Stocking size(g)	Stocking density	Grow-out period	Harvest size	Total production
Mosese Ratuki	3,500m^2	0.1g	5/m^2	6-8 months	180-300g	2,300kg/year
Abdul Saddiq	2,520m^2	2-3g	5/m^2	5-7 months	180-300g	2,800kg/year
Milito Sausau	5,000m^2	0.1g	5/m^2	5-7 months	200-300g	2,800kg/year
Arun Lata	2,100m^2	0.1g	5/m^2	7-8 months	180-300g	1,240kg/year
Myong Kim	6,000m^2	0.1g	5/m^2	8-12 months	100-200g	3,200kg/year
Mr Maika & Katarina	2,800m^2	0.1g	5/m^2	6-7 months	250-350g	2,600kg/year

Source: FAME, SPC

Recognizing these challenges and the need to promote community-based aquaculture, SPC recently embarked on a three-year project, funded under the Australian Centre for International Agriculture Research (ACIAR), that addresses some of the capacity constraints relating to community aquaculture, scaling-up of promising aquaculture industry sectors, and the factors relating to greater uptake of aquaculture among communities. It involves working with species that are already being produced.

The aim is to develop profitable community aquaculture systems, resulting in improvements in the value of aquaculture production both in formal and non-formal economies and improved nutrition and livelihood for people in marginalized peri-urban or remote rural communities, through access to aquaculture technologies and management systems that would deliver meaningful benefits. This is achieved through the following four objectives:

- address technical and capacity constraints in community aquaculture
- apply and evaluate community-based approaches to strengthen community impacts of small-scale aquaculture
- ascertain the impacts that community aquaculture can have on household income, nutrition and the status of women and children in the four countries
- integrate community sea cucumber aquaculture with coastal fisheries management to strengthen community-based fisheries management approaches.

Community-based aquaculture development in the Pacific region is making good progress. Three top commodities, seaweed *(Kappaphycus alvarezii)*, freshwater prawns *(Macrobrachium rosenbergii)* and freshwater fish (mainly Nile tilapia: *Oreochromis niloticus*) proved successful in the region, contributing significantly to food security and livelihood development for the Pacific people. Seaweed is relatively low in value but high in socioeconomic impact in remote and isolated areas of small island economies. It is well established in Kiribati, Fiji, the Solomon Islands and Papua New Guinea with a total annual production of 3,100 metric tonnes. Freshwater aquaculture (freshwater prawns and tilapia fish), focusing on supplying fresh and nutritious food to the rapidly growing rural and urban population, is gaining popularity in community-based aquaculture farming systems. In Fiji, there are approximately 300 tilapia farmers, out of which 50 are commercial farmers, 100 are semi-commercial farmers and 150 are subsistence farmers. In 2009, tilapia production was estimated at 200 metric tonnes and valued at over US$1 million. The giant freshwater prawn, *Macrobrachium rosenbergii* is another commodity for Fiji, where production was recorded at around 20 tonnes in 2011. In Vanuatu, the number of community-based aquaculture farmers involved in tilapia farming has increased from eight in 2012 to 53 in 2013. In Papua New Guinea, there are more than 15,000 established community-based aquaculture farmers. In Samoa there are approximately 30 community farmers producing tilapia using various systems from earthen ponds to concrete raceways. National governments are starting to invest in aquaculture from national budgets in areas such as improving infrastructure to increase seed production, and human resources capacities.

Small- and medium-scale community-based aquaculture of lower-value freshwater finfish (Nile tilapia, common carp and milkfish among others) for food and nutrition security, which historically was the initial reason to promote aquaculture in the Pacific, is now gaining higher priority. This is particularly so in places where there are significant urban or inland-rural populations. The main reasons for this increased significance of small-scale community-based aquaculture are the growing urban and peri-urban population in many Pacific countries; the increase in the acceptance of freshwater fish in Pacific communities; and the decline in coastal fisheries, driven by overfishing to feed increasing populations and loss of fish habitat due to the impacts of climate change and habitat degradation on coral reefs.

The Pacific people are traditional consumers of seafood, which plays an important part in their diets and overall wellness. Domestic market opportunities for aquaculture remain strong, and the economic contribution that can be made by import substitution is extremely significant, more

Freshwater tilapia fish and freshwater prawn production by community-based farmers in Santo Island, Vanuatu, 2012-2013

	Year	Total production (kg)	Total value (US$)
Tilapia	2012	517.5	2,530
	2013	1,049	5,594
Freshwater prawns	2012	350	3,154
	2013	351	3,020

Source: Glen Alo, Vanuatu Fisheries Department

Image: FAME, SPC

Community-based aquaculture complements catches from traditional fisheries and forms the basis of food security in Pacific Islands

specifically in countries with a strong tourism or mining industry such as Fiji, Vanuatu and Papua New Guinea, where high quality aquaculture products are imported in large quantities every week from Asian markets.

Community-based aquaculture in the Pacific region comprises diverse systems of farming plants and animals in inland and coastal areas, and often complements other food production systems. In the context of the rural poor or isolated communities of the Pacific region, community-based aquaculture complements catches from traditional capture fisheries. The capture or culture of aquatic species forms the basis of food security in Pacific Island countries and territories, enabling the use of livestock or cultured fish as a source of income generation. Community-based aquaculture is an attractive and important component of rural livelihoods in situations where increasing population pressures, environmental degradation or loss of access limit catches from wild fisheries.

Pacific women play a very important role in community-based aquaculture. It is a family activity where women and children are involved. However, formal assessments to quantify the involvement of women and children in aquaculture are lacking. A study funded by ACIAR is underway in Fiji, Kiribati, Samoa and Vanuatu to determine the role of women and children in aquaculture production and marketing, with the intention that the findings for this assessment will be easily transferred to other Pacific countries.

SPC continues to assist its 22 member countries in addressing capacity constraints and knowledge gaps that are related to scaling up promising aquaculture industry sectors, and the factors relating to greater uptake of aquaculture farms among rural communities. The technical assistance approach comprises relatively small but targeted interventions working with species that are already being produced, or which have known potential. The intention is to enable better understanding of the future role of aquaculture at community level in meeting food security requirements and providing livelihoods, in response to population growth, increasing demands for cash income and urbanization. Rather than merely supplement the production of fish from capture fisheries through aquaculture, the regional approach also explores ways for aquaculture to be integrated with coastal fisheries management and, where possible, provides incentives for communities to support better coastal fisheries management. It is hoped that under these interventions SPC's contribution will have a positive impact on:

- increasing production of freshwater fish available to communities
- improving profitability and sustainability of community-based aquaculture practices
- improving community-based fisheries management through community-based aquaculture interventions, particularly in the application of community-based fisheries management systems
- gaining a better understanding of how community-based aquaculture can improve the status of women and children in the community.

National Farmers Union: we are all citizens of the world

Roger Johnson, President of National Farmers Union

Founded in 1902 to help family farmers address profitability issues and monopolistic practices in the United States, the National Farmers Union (NFU) has since been working to protect and enhance the economic well-being and quality of life of family farmers, ranchers and rural communities through advocating grass-roots driven policy positions adopted by its membership.

NFU represents family farmers and ranchers in all states, with organized divisions in 33 states. The key to the success and credibility of the organization has been its grass-roots structure in which policy positions are initiated locally. Two of the areas that NFU has spent a considerable amount of time on are how agriculture can boost local economies and how small family farmers can help address world food security.

Rob McClure and Erin Schneider would probably not be considered your stereotypical type of farmers. The couple operates Hilltop Community Farm (Hilltop) in LaValle, Wisconsin. Unlike many farms in the area, Hilltop doesn't produce simply commodity crops. "We have about 53 different types of vegetables that represent 153 varieties, plus lot of herbs and about a dozen fruits including hardy kiwi, apples and raspberries," said Schneider.

But what really sets Hilltop apart from many other farms in the area — or in the rest of the United States for that matter — is that the farm operates under a model known as a community supported agriculture (CSA). "The model for a CSA is built on the notions of relationships and trust," explained Schneider.

Unlike other farms that look to market their produce directly to the public after harvest, CSAs build relationships with customers well before planting; they attain funding from the people for whom they grow food, not from commercial banks, like many other farmers. "It's similar to a magazine subscription," explained Schneider. "Our members subscribe to our farm for 20 weeks and get to experience the ups and downs of farming and the food cycle. Patrons make a commitment to fund our work and we make a commitment to grow them socially conscious, healthy and sustainable food. We also offer opportunities for members to participate in the farm through events, and share recipes, newsletter articles and ideas."

Schneider explained that as Hilltop is a small-scale diversified fruit and vegetable farm, she and McLure see their role as ecological stewards and collaborators in building resilient, regenerative food systems and sharing the harvest of edibles and ideas with the rest of the world.

Small farmers take many risks, she said, and there are not a lot of really effective tools available for speciality crop farmers to handle the risks that are thrown at them day in and day out. "Having subscribers gives us the cash flow that we need and the sense of security that commodity farmers get from purchasing crop insurance, which isn't available for many speciality crops. CSAs are a way for farmers to keep from having to go to banks and beg for big operating loans," she said.

The subscription, paid by families as far as 100 miles away, helps fund the costs of operating for the overall farm season, making it a very direct, long-term commitment that is mutually beneficial for both the grower and the eater. "We get direct feedback from our members and they find their lives enriched by the diversity of fresh fruits and vegetables that they might not find at the grocery store," said Schneider.

This approach to farming is good for small landowners because of its intensity, and good for the rural communities where they live because the farms bring in capital from outside the community and generate wealth in the form of good, healthy food. Schneider noted that the CSA model —

Image: Barb Steinhorst

Farmers Erin Schneider and Rob McClure of Hilltop Community Farm, a small-scale, diverse CSA farm and orchard

which originated in Europe and Japan in the 1970s — could be applicable to the developing world but that the model would necessitate "interest and commitment from both the producers and the consumers."

The CSA model fits very well in the United States with consumers who are increasingly seeking a more direct connection to either their food, their farmer, or both. With the vast majority of Americans now having very little involvement in agriculture at all, this trend could start reconnecting the population to its agricultural roots.

It might also be applicable for those in developing nations who have a small plot of land and are willing to seek support from their urban neighbours. "We're a small CSA, feeding 12 households on roughly one-eighth of an acre or about the size of a city lot," said Schneider. "This could be something that might work in the developing world since for many, risk management tools just aren't there. People can read this, innovate and make the model work for them or their country."

Schneider noted that in countries where input costs, especially fossil fuels and fertilizers, are daunting, small-scale CSAs have found a way to better manage their environmental footprint. "We've reduced our on-farm gasoline use to about a gallon per year, so that means we're able to produce 8-11 calories of food for each calorie of energy we use, roughly 90 times the efficiency of conventional agriculture," she added.

Hilltop runs entirely on renewable energy. "Our goal is to be as bountiful as possible with as little drain on resources as possible," said Schneider. "We've installed solar panels to erase our energy footprint from the grid. We've installed 2,500 gallons of water storage so we can irrigate with rainwater rather than pumping from our well. Our orchard was designed to produce fruit almost without input, using species that would grow symbiotically together and not be attacked by pests. In our CSA fields, we compost, mulch, rotate crops and plant crops that either attract or repel insects."

Overall, CSAs are very labour intensive, and the success of Hilltop has been through the farmers' ability to grow a large variety of crops on a small area. "We feed 12 families, although some CSAs feed 1,000 families, so there is a lot of room for flexibility," said Schneider.

Schneider believes that CSAs hold a bright hope for the future because they turn the current, industrialized-world model of modern agriculture on its head. "The dominant paradigm is that agriculture is an inefficient use of energy and land, but we're changing," she said. "Agriculture is maybe one of the last real democratic systems that we have."

In addition to growing vegetables, Hilltop has another 25 acres in prairie, 11 acres of woodland and one acre in niche fruit production. In 2009, the couple started a sustainable fruit programme. "We grow fruits like elderberry, currants and honeyberry in a forest-like setting," said Scheider.

The approach, widely known as agroforesty, is also a model that is applicable to developing regions because it uses perennial, multipurpose plants that share resources and are mutually supportive. "I've had the opportunity to support farmer-to-farmer programmes around the world and every time I'd visit farms, I noticed that fruit and nut trees would be interplanted with the vegetables or along hedgerows and living fences," noted Scheider. "I was inspired to try a few of these techniques gleaned from other farms, to tweak, research and adapt them to our farm's management system. Again, through intensive cultivation and careful planning, you can select plants that help each other, cutting down on your overhead costs substantially."

Schneider said that although languages and locations vary, farmers across the world have one thing in common: their love

Image: Rob McClure, Hilltop Community Farm

Financial support from CSA subscribers early in the season supplies funds for seeds and other inputs, eliminating the cost of production loans

Image: Ian Alley, Living Earth Community Farm

Currant Events participants at Hilltop Community Farm, sampling blackcurrants while touring through the young food forests

Image: Ian Aley, Hilltop Community Farm

Hilltop is run entirely on renewable energy using low-cost methods that are adaptable anywhere in the world

for agriculture and love for what they do. "I don't think any farmer in the world will tell you that they just farm because it's a job," she said. "For most farmers, farming defines us."

CSAs will help connect a rapidly urbanizing world population to the people and places that grow their food, said Schneider. "The more we can get people sitting face to face and having honest and open relationships with farmers, the better off we'll all be," she said. "Anyone who is interested in using this model can go to www.hilltopcommunityfarm.org to find out more."

Clearly, new approaches that help individual farmers produce better food with fewer inputs and in an ethical and fair manner, all while better managing their environmental footprint, are needed. These challenges will need to be addressed if we are going to be able to raise enough to feed an ever-expanding global human population, set to hit 10 billion by 2090. But what are these new approaches, new ways of looking at food production and those who work in it, and new parameters by which to judge success or failure?

A national symposium, sponsored by Catholic Rural Life and a host of other groups including five Midwest Farmers Unions (Minnesota, Montana, North Dakota, South Dakota and Wisconsin), provided some of those answers. The symposium, titled 'Faith, Food and the Environment', studied the intersection of agriculture and religious traditions and delved deeply into the ethics of food production, hunger and environmental stewardship in America and the world. It brought together a large swath of religious leaders and theologians, members of the five Midwest Farmers Unions, and environmental activists, in hopes of creating new synergies and finding new ideas from the intersections of these three disciplines.

The three-day event was held in St Paul, Minnesota and provided thoughtful and provocative ethical frameworks to examine these issues. "The seminar was inspired by a discussion and the pursuant letter the US bishops wrote 10 years ago, challenging Catholics in their lack of awareness of food, farming and farm worker related issues as seen through the lens of the Catholic social doctrine," said James Ennis, executive director of Catholic Rural Life.

Ennis noted that the inextricable link between food and agriculture, the increasing concentration at every level of agriculture and growing globalization mean that a few people are making food production decisions that affect more people than any time in history. "Because of the corrupting influences of injustice the church cannot remain indifferent to agriculture matters," he said.

The national symposium will be followed by an international symposium in Italy in 2015. The findings of both symposiums will be used to develop The Vocation of the Agricultural Leader, a set of resources that Catholic Rural Life is developing with the Pontifical Council for Justice and Peace in the Vatican. Ennis hopes these resources will provide present-day farmers and food industry leaders with the practical wisdom rooted in faith traditions that is needed to overcome the ethical challenges facing agriculture today. "Maybe history will show us that this new global paradigm began in St Paul, Minnesota," he said.

Doug Peterson, president of Minnesota Farmers Union, said that the symposium was a natural fit for farmers union members, many of whom are people of faith but all of whom are seeking to maximize their agricultural production in a sustainable and responsible manner. "Family farmers are ethical, hard-working people, and injecting them into a conversation about the larger issues of global hunger, food production, ethics and the environment helped participants in this symposium come up with insight into steps that can be taken by each and every farm family to address these issues," said Peterson.

Peterson noted that swaths of rural America and rural areas around the globe are struggling to survive and thrive, dealing with the high costs associated with getting started in farming, the ongoing effects of climate change and the increasing concentration in American agriculture. "We cannot ensure a safe, affordable and sustainable food supply without planting the seeds for the next generation of farmers, ensuring they have the risk management tools they need to deal with increasingly unpredictable weather patterns and fewer and fewer buyers of commodities," he said. "Clearly, people examining these issues from a religious point of view have offered valuable insights and guidance on how small family farmers can best handle these issues and overcome some challenges that have been placed in their paths."

NFU members know that while they can't provide all of the answers facing world food production, sustainability and helping family farms to thrive so that they can underpin rural economies, they are certainly part of the solution. And that is why NFU and its members in all 50 states will continue to advocate for the economic and social well-being and quality of life of family farmers, ranchers, fishermen and consumers and their communities through education, cooperation and legislation. NFU advocates sustainable production of food, fibre, feed and fuel.

Supporting family farms for food, nutritional and livelihood security: India's story

Pravesh Sharma, Managing Director, Small Farmers' Agribusiness Consortium, Department of Agriculture and Cooperation, Government of India

India presents a unique model of a large country, hosting the second biggest population in the world, which has achieved self-sufficiency in food production entirely on the strength of its family-owned small farms. Not only has food[1] production climbed from a paltry 50 million metric tonnes (MTs) in 1950 to over 269 million MTs in 2013, the country was also the world's top exporter of rice in that year. This is in addition to large shipments of wheat, cotton, soymeal, fruits, vegetables, flowers and spices, besides dairy and meat products. In fact, India enjoys a comfortable surplus on its agricultural trade account, a testimony to the competitiveness of the sector. Along the way, India has also emerged as the top producer of milk, the second largest producer of fruits and vegetables, and is among the top three producers of cotton, wheat and poultry products in the world.

India's success in leveraging the productive potential of more than 130 million farm households to voluntarily coordinate with and support the efforts of the national and local governments in meeting the challenge of food self-sufficiency is an agricultural success story with no parallel in the world. Unlike command economies which operate in a totally different milieu, India's success has been achieved against the backdrop of a democratic polity, private (read family) ownership of farms and concern for sustainable use of natural resources. The resources, both human and financial, mobilized for India's agricultural growth have been predominantly domestic, which is one of the reasons for its sustainability over a period of more than six decades.

The centrality of family farms (or smallholder[2] agriculture as it is called in India) in the strategy to achieve food self-sufficiency, generate employment and reduce rural poverty was recognized by India's planners as they set out to revive an exhausted agricultural sector emerging from the neglect of over a century of colonial rule. These planners envisaged the creation of a comprehensive ecosystem which would address every challenge of farming from the pre-production to the marketing stage, thus enabling family farms to make choices based on

Image: Reuters Market Light India (RMLI)

Food production in India has grown significantly since 1950, and the country was the world's top rice exporter in 2013

Image: Reuters Market Light India (RMLI)

Family farms are central to India's strategy to achieve food self-sufficiency, generate employment and reduce rural poverty

their human and natural resource endowment and respond to a slew of incentives to unlock their productive potential.

Over the course of almost three decades beginning in the early 1950s, the key pillars of this ecosystem were gradually erected and strengthened. Looking back, the decision of India's political and economic leadership to place its trust in what were then weak and unproductive family farms stands out as a remarkable testament of faith in the inherent strength and potential of smallholder agriculture, rejecting the obvious successes achieved through collectivization in some countries and corporate farming in others.

Five features of the enabling ecosystem created to support smallholder family farms stand out for mention.

Creating a network of agricultural research institutions was the first and most important pillar of this ecosystem. In a country with over 27 agroecological zones ranging from the high Himalayas to desert and coastal conditions, localization of plant and animal varieties holds the key to sustainable and viable agriculture. Over 100 research institutions supported by the national and provincial governments, more than 50 agricultural universities and over 500 district-level research and training stations, together manned by over 15,000 agricultural scientists, make up this pillar.

Tasked with carrying the outputs generated by the research network to farmers, the countrywide extension system with over 100,000 field agents constitutes the second vital pillar of the agricultural ecosystem. These lab-to-land messengers have been a critical factor in rushing the breakthroughs achieved in the research laboratories and testing stations to farmers, providing guidance, mentoring, advice and experience sharing.

As technological options increased and success was demonstrated in one area, the challenge of scaling up rapidly was met by creating an elaborate system of village-level cooperatives, which supplied everything from credit to inputs such as improved seeds, farm machinery and fertilizer. Currently, over 50,000 cooperatives serve India's 600,000 villages. Together with the commercial banking system, they delivered over US$115 billion in agricultural credit in 2013. The role of this third pillar in helping to channel credit and inputs to family farms to build capital stock and ensure provisioning of working capital is a major contributor to India's agricultural success.

A mechanism for signalling price incentives was put in place as the fourth pillar. The national-level Commission for Agriculture Costs and Prices (CACP) was mandated to constantly review costs and propose support prices for major crops to the Government. Currently, CACP recommends minimum support prices for 26 crops to the national Government, which announces these in advance of each agricultural crop cycle (typically twice every year). This gives farmers adequate time to plan their crop mix and achieve the ideal output from their farms.

Finally, to assure farmers of a safety net in case of market failure, especially in remote parts of the hinterland, the national Government, acting in partnership with the provincial administrations, created a vast system of direct purchases of cereals from farmers to maintain a national buffer food stock. In 2013, this system held over 80 million MTs of wheat and rice purchased from farmers, valued at approximately US$13.5 billion. The stocks are gradually released through the public distribution system, and are also provided to bulk users in the private sector to maintain price stability and availability in the open market.

A defining feature of the supporting ecosystem for agriculture in India is the backing it has received from across the political spectrum. Thus, even with changes in the political composition of governments, the five pillars described above have enjoyed continued patronage and financial support. This

Image: Reuters Market Light India (RMLI)

The supporting ecosystem for agriculture in India has received continued support from across the political spectrum

Image: Reuters Market Light India (RMLI)

The human and financial resources that enable India's agricultural growth have been predominantly domestic, helping to ensure its sustainability

consensus may not occur in other spheres of the economy, where competing visions have often led to sharp swings in policy, as is only normal in vibrant democracies. However, agricultural policy, especially the role of smallholder family farms in achieving food, nutritional and livelihood security, has been remarkably consistent.

Does this historical success suggest that the trajectory of support will continue? Even as it can be reasonably assumed that there is policy continuity in the medium term, new challenges to family farms will require smart responses from policymakers to sustain the gains made in the past few decades.

Looming large above all the immediate risks is that of climate change. This inevitable and uncontrollable global phenomenon threatens the very existence of smallholder family farms and may well wipe out most of the gains made over the past five decades, if not confronted directly and immediately. Family farms could deploy capital and technology efficiently to contribute to national food security due to their nimbleness in decision-making and low overheads. This strength could again be leveraged to help them adapt to climate-smart agriculture. But for that to happen the ecosystem will have to be strengthened to deliver the necessary knowledge and financial support. This calls for an effort across national and internal provincial borders.

The pressures of a rapidly industrializing and urbanizing country are already telling on smallholder agriculture. Conflicts over transfer of farmland to industry and urban housing are increasingly becoming complex and often violent. A balance between the two seemingly conflicting goals of economic growth and sustainable management of natural resources will have to emerge from the collective wisdom of policymakers and the community engaging in intense dialogue. Productivity enhancement with a "more-crop-per-drop" approach, recently urged by the Prime Minister, will have to be mainstreamed, especially in rain-fed, dryland areas.

Finally, India will once again have to place its trust in the strength of its family-run farms to gradually integrate its farm sector with the global economy. It is already competitive against major rivals in a host of farm products. The current global food trade regime is no doubt imperfect and the ground is tilted in favour of industrialized countries. However, a calibrated opening up will yield immediate gains by aligning domestic prices with global ones and allow India's hard-working farmers and its efficient private sector to exploit opportunities in new markets. This will also help to eventually reorient the huge subsidies on inputs (such as fertilizer) towards investments in infrastructure, research and extension. India's deeply embedded democratic processes are actually an asset, not a hindrance, in helping to usher in this transition.

Five decades ago, India's leadership achieved the seemingly impossible leap of imagination to visualize farm productivity and prosperity from impoverished family farms. A similar leap of faith is required to bring India's agriculture into the new millennium. Now, as then, family farms can lead the way.

Family farming: the key to food production in Norway

Eugen Tømte, Deputy Director General, Federation of Norwegian Agricultural Cooperatives

With steep hills down to the fiords, high mountains, small pieces of land, cold winters and short summers, Norway may seem an unlikely place to have active farming across the country. The key to achieving this is a tradition of family farming that has continued for centuries. So far, society and politicians have supported family farming as a tool to achieve the highest possible national self-sufficiency based on national resources. And farmers have achieved access to the market by creating and developing strong farmer-owned cooperatives. Forestry is also an important part of family farming, as a substantial proportion of the cultivated forest in Norway is family owned and often combined with other agricultural production.

Only a low percentage of farming families are able to earn enough income from traditional production on the farm. In most parts of the country, farming has traditionally been combined with other activities such as fisheries and logging. Today, one or several members of the family usually have another occupation besides taking part in running the farm. However, the family lives on the farm and contributes significantly to the activity and economy in rural communities.

Norway covers a distance of 2,500 kilometres from the southern part to North Cape at 71 degrees north. The climate and conditions for agriculture differ significantly from south to north and from the fiords to the mountain areas inland. Population density is low, with a total population of 5 million inhabitants. An increasing proportion of the population lives in cities and urban areas.

Only 3 per cent of Norway's total area is arable land, and 30 per cent of this can be used for grain production and vegetables. The rest of the area can only be used for grass production. In addition, sheep and cattle graze in the mountains during a short, but intensive summer.

With a very few exemptions, Norwegian farmers produce for the domestic market. Still, the country's degree of self-sufficiency is less than 50 per cent on an energy basis. Norway thus has a substantial net import of food, and national food security is an important issue.

Norway has a national objective to maintain domestic production and, within existing multilateral trade commit-

Image: Norges Bondelag, Lars Alhaug

Agriculture in Norway is characterized by small-scale family farms

ments, cover the national demand for those products that naturally grow in the country. The agricultural sector also has many social objectives. To meet society's needs, agriculture must produce safe and healthy food of high quality in the light of consumer preferences, and produce public goods such as viable districts, a broad range of environmental and cultural benefits, and secure long-term food production.

Norwegian agriculture mainly covers the domestic demand for milk and milk products, pig meat, poultry and eggs. Norwegian farmers produce 80-90 per cent of the national demand for beef and sheep meat. The national market share for grain and potatoes is approximately 60 per cent. Only 25 per cent of the demand for vegetables, fruits and berries is produced in Norway. Forestry is also an important part of Norwegian agriculture. Some 20 per cent of Norway is cultivated forest, a substantial part of which is owned by family farmers.

Nearly 100 per cent of Norwegian farms are owned and run on a family basis. The average farm size is 22 hectares. In milk production the average herd size is 24 cows. Behind these figures there is a wide range from very small to substantially larger farms. However, within Norwegian topography, farms have to be relatively small-scale.

As in all countries, agriculture in Norway need to increase in efficiency and productivity. The number of farmers has decreased substantially during recent decades. Farmers expand their production, to some degree by buying neighbouring farms, but more often by renting land.

Maintaining family farming in Norway

Norway has a long tradition of family farming. However, to maintain this tradition there is a need for specific measures. In Norway there are three very important conditions:

- ownership legislation
- agricultural and rural policy supporting family farming
- efficient and well-functioning farmer-owned cooperatives.

Following tradition through centuries, an allodial law was adopted for the first time in 1821. This law gives family members the first right to buy when a farm is for sale. The first-born son or daughter has the first right, followed by other members of the family.

The new owner of a farm has some strong obligations. He or she is obliged to live on the farm for a number of years and to run the farm or make sure the farmland is properly used by others. On the other hand, today there is also a price control on farms. The aim of this is to secure a price level, giving the buyer the economic ability to live on and run the farm as obliged.

Ownership legislation to keep farms in the family is not enough to maintain sustainable family farming. The farmer and his family also need to have enough income to cover investments and livelihood. To achieve this, national agricultural and rural politics are important.

The production cost for agricultural products is high in Norway, partly caused by a very high cost level in general and partly because of the natural conditions for agriculture. To be able to achieve a price in the market that corresponds with these costs, an import regulation is necessary. There are high tariffs on the import of products that can naturally be produced in Norway. For most other products, tariffs are low, and there are no tariffs for any product from the least developed countries.

Within the import regulations, it is possible to achieve a high price in the market. However, the prices are limited by a target price decided by Parliament after negotiations between the Government and farmers' organizations. On the other hand, it is accepted that the farmers and their cooperatives use certain tools to achieve the target price.

The agricultural policy also includes direct payments to farmers. These have strong structure and regional measures, and are essential for the livelihood of small family farmers in rural areas.

Agricultural cooperatives

The farmers' products have to be sold in a market, and processed and packed according to consumer preferences. Agriculture production takes place in rural areas spread across the country, while the majority of the consumers live in or near the cities. Only a few farmers, living near to cities, are able to bring products directly to the consumer or store.

Most products need processing before they can be sold. One single small farmer cannot invest in the necessary equipment for this alone. In addition, if the farmers are going to market one by one, competition between them will bring their prices down.

Against this background, Norwegian farmers started to develop their cooperatives more than 100 years ago. Members cooperated in collecting products from the farmers and bringing them to market after the necessary processing. The alternative was to let middlemen take care of the marketing. But the farmers soon learned that this would not give them a fair share of the market value for their products.

Today Norwegian farmers have cooperatives in all sectors. They are mainly organized as single-purpose cooperatives. Starting with small local cooperatives, through increased cooperation between cooperatives, each sector now has one national cooperative with members from across the country. The market share of the cooper-

Image: TINE SA

Milk and beef are important products based on Norway's grassland

Image: Norsk Landbrukssamvirke; Tore Berntsen

The whole community takes part in bringing the sheep down from the mountain

Image: Norges Bondelag

Nearly all of Norway's farms are owned and run on a family basis

atives is high. In the dairy sector more than 90 per cent of the milk produced is delivered to the cooperative. For meat, eggs and grain it is 60-70 per cent, and for vegetables approximately 50 per cent.

The cooperatives also have a role in implementing agricultural policies. They secure the best possible price for the farmers' products within the negotiated target price. The cooperatives are also obliged to collect products from non-members if they ask. This secures access to the market for family farmers across the country.

On the other hand, farmers do have some exemptions from ordinary competition rules. Firstly, the farmers are allowed to cooperate in the market through their cooperatives. Secondly, the cooperatives are allowed to have a high market share because of their role in implementing agricultural policy. At the same time, the authorities have tools to make sure the cooperatives are not misusing their position.

The ordinary food market in Norway is well organized. Many consumers are now asking for local and special products. Thus, some family farmers have started refining their own products for direct sale to consumers on the farm, or at farmers' markets. This gives an opportunity to keep more of the value added for the family on the farm. Most of these farmers are still members of the cooperative, which supports their local activity. The cooperatives were deeply involved in the formation of farmers' markets in Norway.

Local products from the farm will not replace ordinary products from the cooperatives and other food industries in the grocery stores. However, they are a very important supplement for consumers and some farmers. They also provide an important arena for direct contact between farmers and consumers.

Supporting rural communities

In many rural areas, the agricultural activity performed by family farmers is the backbone of the community regarding settlement, economy, employment and social activity. Agricultural production must take place where the land is. The farmer and his family are therefore more than any other activity linked to the community where the farm is located. The farmer boosts the local economy by his production and activity, but also indirectly by using local industry and services for his business and private life. Many other jobs in the community depend on family farms. The activity of one family farmer creates two to three further jobs.

In addition to their ordinary agricultural activity, many farmers provide different kinds of services both on the farm and outside it. This is also important for the community and the well-being of the residents.

The future of Norway's family farms

Family-based ownership of farms has a very long tradition in Norway, and current legislation is strengthening this tradition. However, some political parties aim to change this and liberalize the market for farm properties. This will also open up opportunities for companies to buy farms, and the buyer will have fewer obligations. A possible change in legislation will probably not have a very strong impact immediately, but in a longer perspective it may challenge the family farm structure, especially in the best agricultural areas.

The next question is, will the families continue to run their small-scale farms? In Norway, farmers' incomes are substantially lower than in other businesses and jobs. Young people therefore often prefer to have another occupation rather than taking over and running the family farm. This will lead to bigger farming units in the best areas and to farmland being set aside in the less favoured areas. That is also why it is important to support family farming in order to maintain food security based on national resources.

Family farming depends on the willingness and skill among farmers to cooperate and create income from markets. But food production based on the family structure is also important for consumers and society. Family farming therefore needs political, economic and legal support for its maintenance and development.

Taking the lead in promoting family farming: The Global Forum and Expo on Family Farming in Budapest

Zoltán Kálmán, Head of Department; Bálint Illés, Head of Unit; and Ágnes Dús, FAO Coordinator from the Ministry of Agriculture of Hungary on behalf of the Organizing Committee of the Global Forum and Expo on Family Farming

Participants from 104 countries, representing a wide range of stakeholders, gathered in Budapest on 4-6 March 2014 to participate in the Global Forum and Expo on Family Farming (GFEFF). The event was organized by the Ministry of Agriculture of Hungary in cooperation with the Food and Agriculture Organization of the United Nations (FAO) as a key event of the United Nations International Year of Family Farming (IYFF). The outcomes of the event were presented in the Conference Summary Conclusions, which served as an important input for further events and discussions throughout the year.

The event was opened by Sándor Fazekas, Minister of Agriculture of Hungary, and José Graziano da Silva, Director-General of FAO — the two initiators of the GFEFF. The successful realization of this joint initiative is a good example to the excellent cooperation between FAO and Hungary. Hungary has traditionally good relations with FAO. Since it became a donor country in 2004 — when it joined the European Union — Hungary has been providing financial and technical support to FAO (including the financing of development projects, hosting FAO offices in Budapest, and offering a scholarship programme for students from least developed countries) to contribute to the achievement of its goal in improving global food security.

In his opening speech, the Hungarian Minister of Agriculture referred to family farming as a successful model. This is the best way to use natural resources sustainably, to preserve traditional agricultural products and to produce healthy and high-quality food. Creating an enabling environment for family farmers is essential for the maintenance and development of family farms, which may include access to land and other natural resources, improving rural infrastructure, establishing favourable subsidy programmes, and developing agricultural extension services and local farmers' markets.

The Director-General of FAO began by sharing a message from Ban Ki-Moon, Secretary-General of the United Nations, addressed to the participants of the conference. The Secretary-

Image: Csaba Pelsőczy, Ministry of Agriculture of Hungary

Minister Sándor Fazekas speaking at GFEFF

Image: Csaba Pelsőczy, Ministry of Agriculture of Hungary

Minister Sándor Fazekas and FAO Director-General José Graziano da Silva at the conference

General's message placed emphasis on the sustainability of family farms — similarly to the Hungarian Minister — saying: "I commend the forum's focus on the three dimensions of sustainability: economic, social and environmental. Family farms harmonize all three aspects and, in the best instances, enable the principles of sustainable stewardship of land and fisheries to be handed down to succeeding generations."

José Graziano da Silva also underlined that family farmers, fisher folk, forest-dependent people, pastoralists and traditional and indigenous communities are key for food security in most countries, but at the same time are among the world's most vulnerable populations. "Apart from producing a high proportion of the food we eat, family farmers are by far the biggest source of employment in the world," he said, adding that they are also the guardians of the world's agro-biodiversity and natural resources.

The appointment ceremony for FAO Special Ambassadors on Family Farming was one of the highlights of the global forum. The FAO Director-General appointed Esther Penunia, Secretary-General of the Asian Farmers' Association; Mohammed Ould Saleck, President of the southern area of the artisanal section of the National Federation of Fisheries of Mauritania; and Gerd Sonnleitner, President of the European Farmers' Association, as IYFF Special Ambassadors for Asia and the Pacific, Near East and Europe respectively.

The role of family farming in strengthening local and global food security was discussed by ministers and other high-level participants, who shared their expertise and best practices in this field. Thematic panel discussions were dedicated to other major aspects of family farming. The academic panel looked at family farming in the context of the three dimensions of sustainability — harmonizing the social, environmental and economic aspects. The second, multi-stakeholder panel took stock of key challenges and opportunities for agricultural investments in family farming and dealt with the advantages of cooperation among farmers. The third panel was dedicated to a discussion about the role of women and youth in family farming, and considered possible measures for improving their situation. The outcomes of these discussions were presented the following day, and participants were given the opportunity to comment and reflect on them.

Image: Csaba Pelsőczy, Ministry of Agriculture of Hungary

Participants from 104 countries and the EU discussed the potential in family farming and its relevance in ensuring food security

At the closing plenary, high-level representatives of the three Rome-based United Nations agencies — Ertharin Cousin, Executive Director of the World Food Programme, Vladimir Rakhmanin, Assistant-Director General of FAO and Regional Representative of Europe and Central Asia, Rasit Pertev, Secretary of the International Fund for Agricultural Development, and Gerda Verburg, Chair of the Committee on World Food Security — shared their thoughts about the potential in family farming and its relevance in ensuring food security. The Conference Summary Conclusions document of the GFEFF has been handed over to them, and served as an important input for other IYFF events and meetings throughout the year.

The GFEFF identified four key messages. First, a wide range of examples shows that a great diversity of family farms exists across the world. Despite this diversity, however, family farms play an important role everywhere in ensuring food security and securing rural livelihood.

Second, family farming is a model that meets all the requirements of sustainability. In addition to economic viability, family farmers are the guardians of environmental sustainability. They use and manage natural resources (primarily land and water) in a responsible way to keep their land fertile for future generations. As a social dimension, the family farming model provides unique employment opportunities and livelihood in rural areas. It has been confirmed that family farmers have an essential role also in preserving traditions and cultural heritage, which can be considered as the fourth dimension of sustainability.

The third key message is that, acknowledging their clear advantages, small-scale family farmers should be provided with an enabling policy environment to be able to contribute to local and global food security objectives.

In addition, it is essential that male and female farmers have equal access to land and other natural resources as well as to financing and markets. It is important for the future that youth find their livelihoods, job opportunities and income in the rural areas, therefore adequate policy measures are essential.

Rich participation

Alongside the outcomes of rich discussions, the GFEFF has proven to be successful in terms of wide participation.

More than 600 participants from 104 countries on six continents attended the event. A total of 85 countries participated at governmental level, and high-level government officials such as ministers, deputy ministers and state secretaries were present from 17 countries. Ambassadors from 45 countries attended on behalf of their governments.

In addition to governmental delegations, approximately 200 participants from non-governmental global, regional and national organizations of family farmers (farmers' organizations, cooperatives and producer organizations, civil society organizations and the private sector), and representatives of research institutions, universities (more than 100 participants) attended the event.

Summary Conclusions of the Global Forum and Expo on Family Farming

Initiated by the Philippines and World Rural Forum, the UN General Assembly declared 2014 as the International Year of Family Farming. Against this background, the FAO and the Hungarian Ministry of Agriculture organised a Global Forum to identify the various political, policy, business and social elements that play a role in the complex environment in which family farms operate. The overall objective was to find ways in which economies and communities could benefit from the values that family farms represent in food production, management of natural resources, biodiversity, human relations and the preservation of cultural heritage.

The main findings of the two day event, which emerged from the ministerial roundtable and the three parallel panel discussions, are the following:

- Even if family farms differ to a large extent from region to region, they have values that all nations share and challenges that all nations need to tackle.
- Most smallholder farms are family-based and make a significant contribution to global food and nutrition security. However, family farms and the countries in which they operate are diverse in many ways and the solutions offered for them should be tailored for this diversity.
- Farmers need a high enough income to maintain their rural livelihoods and not to move to urban areas in the hope for a better life. To this end, a decent price for their produce and services needs to be obtained.
- Limited access to land and other natural resources, knowledge, education and financing are seriously hindering family farming development globally. Best practices of coping mechanisms should be widely disseminated.
- Co-operation could offer access to investment, technology and markets making family farming viable. An enabling environment, including a clear and simple legislation and a proper taxation system is crucial for the development of co-operatives and farmers' organisations. Socially responsible partnerships with civil society organizations and with the private sector can play an important role in the promotion of co-operation.
- Women are the backbone of family farming but their large contribution is not duly recognized in terms of income earned and access to productive resources and assets. If both women and men have adequate access to productive resources, rural societies can become more resilient. Hence, women's meaningful participation in decision making processes should be enabled. We should continue raising awareness on the role of women in family farming management and promote women's equal access to land, credit, education, technology, networks and decision-making processes.
- Youth are increasingly losing interest in agriculture and are migrating away from rural areas in search for job opportunities in other sectors. In order to provide young farmers with adequate livelihoods, appropriate income, targeted policies, programs and projects are essential.
- The common ground among the views expressed reflects the key position that family farms occupy in sustainable agriculture. Since we all want our agrarian systems and rural networks to be sustainable, we must strive to support family farms.
- Economic sustainability is essential for family farming. Viable farming helps to keep young people on the farm. We also need pragmatic co-operation and responsible actions from different stakeholders: especially government, business, farmers and civil society.
- Environmental regulations should take into account the measured and internalised positive and negative externalities of different types of family farming. Traditional family farming strongly contributes to environmental sustainability. New environmental challenges should be answered by participative research, knowledge transfer and Life Long Learning.
- The social sustainability of family farming is based on the next generation's willingness to take part in farming and the society valuing the culture behind traditional family farming.

Images: Csaba Pelsőczy, Ministry of Agriculture of Hungary

The GFEFF family (left); Farmers and members of farmers' organizations exhibited their products and shared best practices at the GFEFF Expo (right)

The GFEFF also provided the opportunity for family farmers of participating countries to introduce their activities in the frame of the Expo, open during the whole event. Farmers and members of farmers' organizations arrived from all parts of the world to exhibit their own products and share their best practices.

Behind these impressive numbers lies the effort and commitment of the participants who made this event a success by engaging actively in discussions and sharing their expertise and ideas. One participant travelled over 50 hours from the island of Palau to attend the event and exhibit at the Expo. He was committed to showing that family farming is present and highly important in small islands at the other end of our planet, such as in the Pacific and Oceania.

The GFEFF was an important milestone in the IYFF, bringing people together from different regions and different backgrounds to listen, to discuss and to enrich their expertise on family farming. Good ideas and new contacts born during the event will live beyond the IYFF, and this is crucial for keeping the momentum also after 2014.

The family farm in India

J. S. Sandhu, Agriculture Commissioner and R. S. Saini, National Consultant (National Food Security Mission), Department of Agriculture and Cooperation, Ministry of Agriculture, New Delhi

The importance of agriculture in the socioeconomic fabric of India is evident in the fact that the livelihood of the majority of the country's population depends on agriculture. The agriculture sector contributes only about 14 per cent of India's total gross domestic product, with more than 60 per cent population dependence, resulting in low per capita income in the farm sector.

The National Policy for Farmers (2007) of the Government of India defines a farmer as 'a person actively engaged in the economic and/or livelihood activity of growing crops and producing other primary agricultural commodities'. This includes all agricultural operational holders, cultivators, agricultural labourers, share-croppers, tenants, poultry and livestock rearers, fishers, beekeepers, gardeners, pastoralists, non-corporate planters and planting labourers, as well as people engaged in various farm-related occupations such as sericulture, vermiculture and agroforestry. The term also includes tribal families/persons engaged in shifting cultivation and in the collection, use and sale of minor and non-timber forest produce. One of the aims of the policy is to improve the economic viability of farming by substantially increasing the net income of farmers, and to ensure that agricultural progress is measured by advances made in their income.

A family farm is a farm owned and operated by a family. Like other family businesses and real estate, ownership often passes to the next generation by inheritance. It is the basic unit of the mostly agricultural economy in human history and continues to be so in developing nations. Alternatives to family farms include those run by the corporate sector through contract farming. Family farming is one of the most predominant forms of agriculture all over the world, both in developing and in developed countries. The sector comprises a wide spectrum of farm sizes and types, ranging from very large land holdings in high-income economies that are easily cultivated by one or two family members with the use of labour-saving machinery and hired labour, to the small-holdings of a few hectares or less in low-income economies. The latter are often oriented towards subsistence with low marketable surplus.In the Indian context a family farm is a farm on which only family members work full-time; they are not linked by salary, but by domestic ties. Work forges strong links between the family and the farm and part of what is produced is consumed by the family itself. Family farms do supply markets, but domestic consumption is the primary concern. Capital is family-held and it is inseparable from what the family owns.[1]

The total number of operational holdings in India during 1990/91 was 106.6 million, and that figure increased to 137.7

Number and area of operational holdings by size groups over different years in India

	No. of Holding (000)				Area (000 Ha)				Average Size of Holding (Ha)			
Category of Farmers	**1990-91**	**1995-96**	**2005-06**	**2010-11**	**1990-91**	**1995-96**	**2005-06**	**2010-11**	**1990-91**	**1995-96**	**2005-06**	**2010-11**
Marginal (less than 1 hectare)	63,389 (59.44)	71,179 (61.58)	83,694 (64.77)	92,356 (67.04)	24,894 (15.04)	28,121 (17.21)	32,026 (20.23)	35,410 (22.25)	0.39	0.4	0.38	0.38
Small (1.0 to 2.0 hectares)	20,092 (18.84)	21,643 (18.73)	23,930 (18.52)	24,705 (17.93)	28,827 (17.42)	30,722 (18.81)	33,101 (20.91)	35,136 (22.07)	1.43	1.42	1.38	1.42
Marginal + Small	83,481 (78.28)	92,822 (80.31)	107,624 (83.29)	117,061 (84.98)	53,721 (32.46)	58,843 (36.02)	65,127 (41.14)	70,546 (44.32)	0.64	0.63	0.61	0.6
Semi-Medium (2.0 to 4.0 Hectares)	13,923 (13.06)	14,261 (12.34)	14,127 (10.93)	13,840 (10.05)	38,375 (23.19)	38,953 (23.85)	37,898 (23.94)	37,547 (23.59)	2.76	2.73	2.68	2.71
Medium (4.0 to 10.0 hectares)	7,580 (7.11)	7,092 (6.14)	6,375 (4.93)	5,856 (4.25)	44,752 (27.04)	41,398 (25.34)	36,583 (23.11)	33,709 (21.18)	5.9	5.84	5.74	5.76
Large (10.0 hectares and above)	1,654 (1.55)	1,404 (1.21)	1,096 (0.85)	1,000 (0.73)	28,659 (17.32)	24,163 (14.79)	18,715 (11.82)	17,379 (10.92)	17.33	17.21	17.08	17.38
Total	106,637	115,580	129,222	137,757	165,507	163,357	158,323	159,181	1.55	1.41	1.23	1.16

Source: Compiled from *Agriculture Statistics at a Glance* of different years, Government of India Publication. Percentage figures in parentheses

million in 2010/11 due to the division of farm families. The average size of land holdings decreased from 1.55 hectares to 1.16 hectares during the same period. Out of 137.7 million total operational holdings, 117.1 million holdings (84.98 per cent) are operated by marginal and small farmers who have an area of less than 2 hectares. In some states like Bihar, Orissa, marginal and small holdings are highly scattered, putting a question mark over their sustainability. Small and marginal holdings were 78.28 per cent in 1990/91 when they were operating 32.46 per cent of the total area.

Operational holdings of 2-10 hectares constitute about 14.3 per cent of the total holdings with 44.76 per cent of the total operated area, and the large holdings (10 hectares and above) constitute 0.73 per cent of the total number of holdings with a share of 10.92 per cent of the total operated area. Thus, it can be seen that 85 per cent of the farmers cultivate about 44 per cent of the operated area and 15 per cent of farmers cultivate 56 per cent of it. Although small and marginal farmers have higher productivity from small holdings compared to large holdings, they also have low marketable surplus and profit. Estimates indicate that small and marginal farmers may account for more than 91 per cent of farm holdings by 2030. The sustainability of decreasing farm sizes in the long run will be a great cause for concern. According to a Planning Commission report, about 10 per cent of rural households are reported to be entirely landless, and a large percentage to be near landless. With little or no owned land they depend on informal leasing arrangements.[2]

Various studies in India during the 1960s, 1970s and in later years have revealed that there is an inverse relationship between the size of a farm and productivity, despite a few researchers holding a contrary opinion.[3] These family farms, consisting of marginal and small farms, are a typical example of a diversified farming system involved in crop production, within which farmers grow more crops alongside animal husbandry to become independent. According to one study[4] more than 60 per cent of farm produce comes from small farms only. Marginal farmers have been major contributors to the production of key staple commodities. In 2000/01, marginal farmers produced 32 per cent of India's rice, 24 per cent of its wheat, 23 per cent of sugarcane, 14 per cent of pulses, and 13 per cent of oilseeds.

The smallholders and landless farmers together also control about 71 per cent of cattle, 63 per cent of buffaloes, 66 per cent of small ruminants (goats and sheep), 70 per cent of pigs and 74 per cent of poultry.[5] Small and marginal farmers actually engage in cropping patterns that give them higher average revenues (high-value crops and cropping intensity) per hectare than for large farmers who focus mainly on lower-end staple crops.[6] Marginal farmers with under 0.4 hectares realize the highest output values per hectare (Rs25,000) and large-scale farmers have the lowest earnings (Rs7,700). The value of output per hectare and net income per hectare of cropped areas is greater for small farms than for medium and large farms. Similarly, the cost of cultivation per hectare of smallholdings is also greater than medium and large holdings.

Research has found that per capita output is low on smallholdings despite higher productivity, due to lower per capita availability of land.[7] Therefore, a tiny piece of land cannot generate enough income to take care of the livelihood needs of a small farm family. According to Tendulakar Committee norms, the family dependent on agricultural income needs a minimum 0.8 hectares of land to keep a farm family above the poverty line. Therefore 75 per cent of smallholders cannot meet their livelihood from farm income alone. In addition, poverty for smallholding farmers is much higher than for other farmers.[8] There is a need to increase the productivity and income of smallholdings to promote non-farm employment opportunities for these farmers.

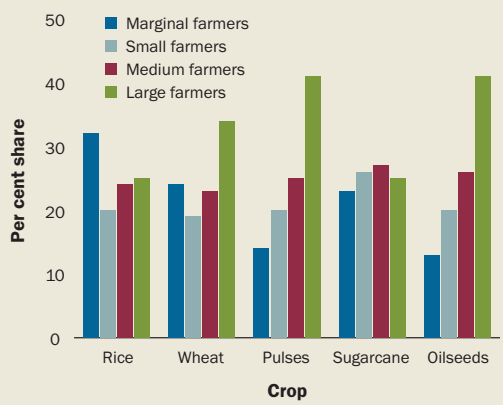
Government of India initiatives

Several new initiatives have been taken in the recent past by the Government to support the agricultural sector in general, and

Image: Dept. of Agriculture, Govt. of Odisha, India

The majority of India's population depends on agriculture for its livelihood

Share of the output value of major crops by farmer category



Source: Agricultural Census 2001/02

Agricultural output per household, per hectare and per capita in different farm size categories

Farm size class (ha)	Household size	Per capita land (ha)	Output value (Rs)		
			Per household	Per capita	Per ha
0.01 - 0.4	5	0.04	4,783	965	25,173
0.4 - 1	5	0.12	12,563	2,364	18,921
1.01 - 2	6	0.24	23,292	3,801	16,780
2.01 - 4	6	0.43	40,403	6,734	15,091
4.01 - 10	7	0.82	77,120	10,558	13,564
>10	8	2.2	137,473	16,782	7,722
All	6	0.22	18,858	3,143	15,426

Source: Chand et al, 2011

The value of output, cost of cultivation and net income per hectare by different farm sizes

Income/Cost	Small holdings (<2 ha)	Holdings (>2 ha)	All size holdings
Values of output per hectare (Rs)	13,944	11,333	12,535
Cost of cultivation per hectare (Rs)	6,530	5,252	5,841
Net Farm income per hectare (Rs)	7,414	6,080	6,694

Source: GOI 2005, Situation Assessment Survey of Farmers: Some aspects of Farming-2003

small and marginal farmers in particular. Some of these important initiatives include: the National Food Security Mission with time- and target-bound goals to increase production; the National Horticulture Mission; the National Rural Employment Guarantee Programme; Rashtriya Krishi Vikas Yojana to incentivize the states to invest more in agriculture; the establishment of the of National Rained Area Authority; the expansion of institutional credit to farmers; agribusiness development through venture capital participation by the Small Farmer Agribusiness Consortium; watershed development and micro-irrigation programmes; reform and support for agriculture extension services; knowledge connectivity through Common Service Centres and IT initiatives; the establishment of the National Bee Board; the establishment of the National Fisheries Development Board; reforms in agricultural marketing and the development of the market infrastructure; the National Bamboo Mission; and the revitalization of the cooperative sector.

In addition another renowned business plan, 'Bharat Nirman', has been designed for augmenting and creating fundamental rural infrastructure. This scheme comprises various projects on roads, housing, water supply and other areas which will help the rural population in general, and small and marginal farmers in particular, to find better opportunities for income generation, thus leading a dignified life. The major beneficiaries of these development schemes are small and marginal farmers, particularly women farmers.

The way forward

The major problem confronting rural areas in general and farm households in particular is the lack of employment opportunities and market accessibility. It is a fact that the productivity of these farm families is higher, but their actual land holding is less, which means they do not produce enough to meet their food and other needs. There is a need to create job opportunities in the farm sector through activities such as increased investment in irrigation, watershed development, wasteland development, land reclamation and consolidation and post-harvest raw agricultural produce processing.

In addition, there has to be a greater focus on the accelerated development of the rural non-farm sector and the development of clusters around towns/market centres. A growing farm sector, better rural infrastructure and connectivity, skill development, adequate power supply and easy availability of credit would help in the creation of more employment opportunities in the rural non-farm sector and, in turn, enhance the income of farm households. In view of this there is a need for a more comprehensive approach to the economic wellbeing of farmers, to make available the latest technology which is accessible and sustainable. Efforts should concentrate on improvements in the income of farm families, not only to meet their consumption requirements but also to enhance their capacity to invest in farm-related activities.

Food security and small family farming in Asia-Pacific countries

T. Haque, Director, Council for Social Development, New Delhi and Former Chairman, Commission for Agricultural Costs and Prices, Government of India

The Food and Agriculture Organization (FAO) of the United Nations has declared 2014 as the International Year of Family Farming with the objective of inviting focused global action for improving the productivity and incomes of family farms in different countries. Family farming is a form of agricultural organization in which labour and managerial skills in farming come mainly from the farm family members.

While the average size of family farms is comparatively large in the developed countries of the west, small family farms dominate in the Asia-Pacific countries. According to FAO[1] about two-thirds of the developing world's 3 billion rural people live in smallholder households, many of which are poor, food insecure and malnourished. The smallholders in India, China, Indonesia, Bangladesh and Viet Nam account for about 300 million of the 500 million small farms which produce diverse grains, roots, tubers and a wide range of livestock and fisheries. But due to the small size of holdings, low yields and low incomes, the majority of them remain poor and food insecure. Analysing the food security concerns of small family farms in the Asia-Pacific countries will help to identify the key challenges and opportunities for their viability and sustainability.

In the Asia-Pacific region, a vast majority of the agricultural workforce consists of marginal and small farmers, tenants and landless agricultural labourers. About 85 per cent of operational holdings in India are less than 2 hectares in size, operating about 44.4 per cent of the area. Similarly, 92 per cent of operational holdings in Nepal, 98 per cent in China, 69 per cent in the Philippines, 89 per cent in Indonesia and 95 per cent in Viet Nam are of less than 2 hectares. The average size of holding in India is 1.16 hectares, while in countries like Bangladesh, Nepal, Sri Lanka, China, Japan and Indonesia, it is less than 1 hectare. However, it is 2.01 hectares in the Philippines, 3.16 hectares in Thailand and 1.01 hectares in Malaysia, which is also small. In recent years, the share of agricul-

Image: CSD, New Delhi

A group of women beneficiaries of a micro-enterprise initiative under the Kudumbashree programme in Kerala, India

Levels of agricultural productivity, incomes and poverty in selected countries

Country	Average size of holding (Ha) (latest)	Cereals yield (Kg/Ha) 2012	Agricultural value added per worker (constant US$) 2012	Latest poverty headcount national poverty line
Bangladesh	0.35	2,980	491.9	31.51
Bhutan	NA	2,665	624.9	23.2
Cambodia	NA	3,178	523.8	30.1
China	0.67	5,839	749.4	2.8
India	1.16	2,954	672.1	21.9
Indonesia	0.79	5,081	979.2	12.5
Lao PDR	1.57	4,082	475.8	27.6
Malaysia	1.01	3,994	9,290.5	3.8
Nepal	0.79	2,719	270.4	25.2
Pakistan	3.09	2,876	1,063.5	22.3
Philippines	2.01	3,493	1129	26.5
Sri Lanka	0.47	3,843	998.7	8.9
Thailand	3.16	3,097	1,136.2	7.75
Viet Nam	0.71	5,462	467.7	14.2
South Korea	N/A	7,271	23,882.3	N/A

Source: World Bank Development Report, 2013

ture in gross domestic product declined substantially in almost all the developing countries, while the share in total employment dropped marginally and consequently agricultural income per worker is very low. There is also wide intercountry variation in crop yields and incomes. Countries like South Korea and China have comparatively much higher crop yields and farm incomes than other countries, especially in South Asia.

The average incomes of small family farms are lower than those employed outside agriculture, due to the small size of farms, low crop yields, high input costs, low output prices and low access to off-farm and non-farm employment. Even though the land productivity of small family farms is sometimes higher than that of large commercial farms, the net farm incomes are lower. Most marginal and tenant farmers neither produce enough for home consumption nor earn enough to purchase food from the market. Improving the productivity and incomes of small and marginal farmers, tenants, women and landless cultivators is crucial for food security and poverty alleviation in the developing countries.

There are numerous challenges as well as opportunities for small family farms. First, the yield gaps, reflecting the difference between farmers' yields and technical potential yields, are huge in most of the Asia-Pacific countries. In India, this is between 200 per cent and 300 per cent in some crops in some regions.[2] Bridging the yield gaps through appropriate extension, credit and other support services and the use of new technologies such as hybrid seeds and biotechnology holds tremendous potential for productivity improvement.

Second, the majority of small family farms produce mainly for self-consumption and sell only part of their produce. This helps them to ensure food security even in times of food price inflation. But they do not produce enough of every food item to avoid dependence on the market. Small farmers' lack

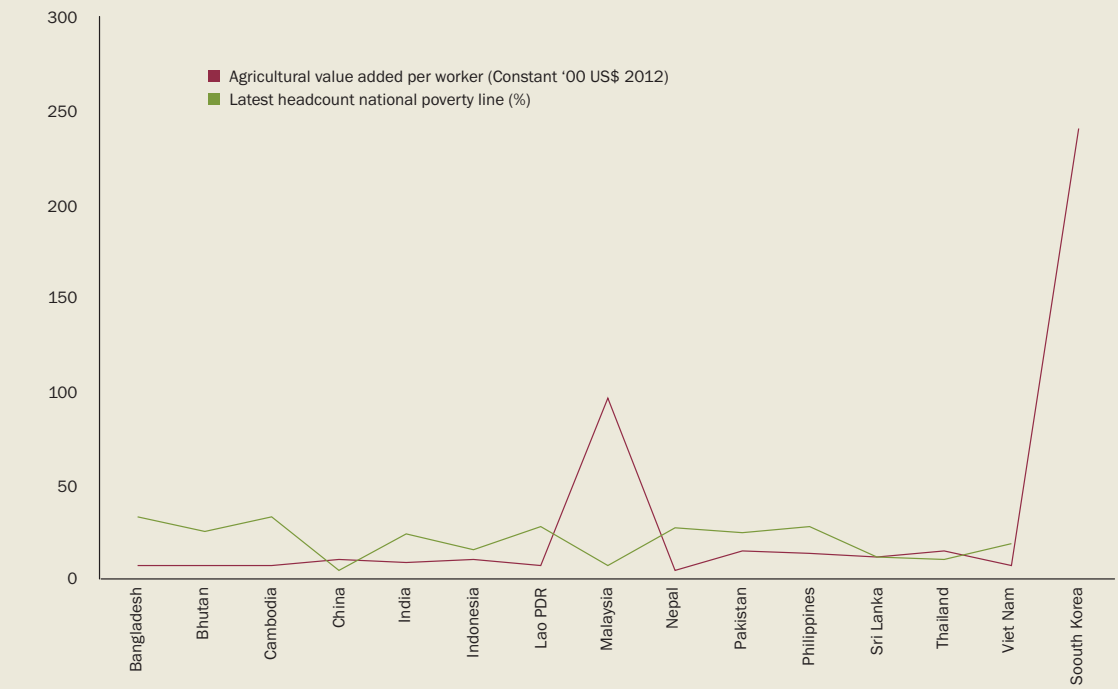
Shubhankari Nag's story

Until recently, Shubhankari Nag lived in a small rented shelter without any security. She received a 5 decimal plot of land under Nijo-Griho Nijo-Bhumi scheme of the Government of West Bengal in March 2012.

"I worked hard in the hope of enhancing my family's income, but options were few," she said. "Now, after getting land and a house from the Government, things are changing. I have nurtured a small kitchen garden; fresh vegetables from my garden supplement our diet. I can even sell a portion to earn a little. I am also rearing cows. I now generate about Rs200 per month which goes into supporting my children's education. I have never felt so happy before."

Source: Wings, Department of land and Land Reforms, Govt. of West Bengal, 2012

Crop yields and incomes vary widely between the countries of the Asia-Pacific region



Source: FAO Statistics 2011-12 and World Development Report 2012-13

of market orientation and, in some cases, limited access to market reduces the benefits that may arise from commercialization and modern value chains. The development of vertically coordinated supply chains in recent years, involving explicit contracts between farmers and processors/traders, has largely bypassed the small farmers as the food processing companies often prefer to enter into contractual arrangements with a few large farmers than with many small farmers for managerial efficiency. Tenant and women farmers' scope to benefit from contract farming is much more limited, as they do not have land in their names, and informal tenants also lack tenurial security in most cases. Besides, small farmers' participation in modern supermarkets requires greater managerial skills and an ability to ensure regular supply and to meet food safety and quality standards. In addition, small farmers' inadequate access to credit, storage, packing or processing facilities becomes a constraint to their market participation. Also, providing timely and reliable market information to small family farms is essential for their market participation. In some cases, small farmers work in a group which helps them to enter into contractual arrangements with a company or supermarket. In India, the Kudmbashree experience in Kerala as well as farm producers' organizations in Madhya Pradesh, which enable small farmers to take up agricultural and non-agricultural enterprises on a viable basis with support from local self-government and banks, are good examples of how collective action by small farmers can help improve their bargaining power and status.

Third, access to adequate land is necessary for sustainable livelihoods of marginal and small farmers, as they do not have much access to non-farm employment opportunities for lack of education and skills. Land leasing could be an option for improving their increased access to land. But this would require the lifting of legal restrictions on land leasing in many countries including India. In fact, legalization of land leasing along with security of tenure for the tenants would help improve their access to credit for investment in new technical inputs for productivity enhancement, as well as encouraging some farmers to lease out and take up non-farm activities.

Fourth, secure land rights for women is regarded as fundamental to ensuring food security. Agricultural production and food security increases when women are granted land tenure security. According to FAO,[3] if women had access to the same productive resources as men, they could increase yields on their farms by 20-30 per cent. These gains could lift some 100-150 million people out of hunger. However, there are legal as well as sociocultural barriers to land and property rights for women, which need to be overcome through sustained awareness building and policy changes. In the past two years, the states of West Bengal and Odisha in India have allocated homestead plots to more than 0.3 million families, jointly in the name of wife and husband, which is reported to have had a significant impact on the food and livelihood security of the beneficiaries.

Image: Landesa-India

Women beneficiaries of micro plot distribution and land reform in West Bengal grow vegetables, ensuring food security and improving their status

Fifth, the adverse effect of climate change on agriculture and food security has been widely reported in various parts of the world. Small family farms are generally ill-equipped with knowledge and financial as well as human resources to meet the challenges of climate change. Therefore, it may be necessary to offer incentives to small family farms for safeguarding ecosystem services such as watershed protection, carbon sequestration and the protection of biodiversity for sustainable agricultural production and food security.

Sixth, access to off-farm and non-farm rural employment opportunities is crucial for the sustainable food security and poverty alleviation of small family farms. Given the present agricultural terms of trade and productivity levels, farming alone may not suffice to take them out of the poverty trap. At least one farm youth in each family should be trained and supported to take up not only high-value agriculture, but also better paying employment outside agriculture. If off-farm and non-farm enterprises are developed in the rural areas, the benefits could easily accrue to small family farms.

Seventh, agricultural production in developing countries is associated with various types of risks, the important ones being variability in crop yields and incomes, due to the erratic behaviour of weather and prices. In most Asia-Pacific countries, the existing agricultural insurance schemes suffer from several inadequacies and weaknesses. These schemes should be redesigned and improved to make them small-farmer friendly.

To conclude, there are numerous challenges and opportunities for small family farms to improve their incomes and food security situation in developing Asia-Pacific countries. Many of the challenges can be converted into opportunities, if there are appropriate policies to support small family farms in an integrated manner. These include policies to:

- increase crop and livestock yields through technological and market interventions
- improve market orientation and market access for small farmers
- provide education and skills to farm youth for high-tech and high-value agriculture
- organize small family farms into groups such as producer companies and autonomous cooperatives
- improve small farmers' access to credit
- ensure tenurial security for tenant farmers
- provide secure and effective land rights to women
- increase public and private investment in rural infrastructure
- promote diversified rural growth through appropriate infrastructure, technology, institution and policy support.

Small family farms in Asia-Pacific countries can help improve agricultural productivity and food security in a sustainable manner, provided there is an integrated policy support to make them economically viable and ecologically more responsible.

Mountain family farming: past and prospect

Dr Anil P Joshi, Founder, Himalayan Environmental Studies and Conservation Organization

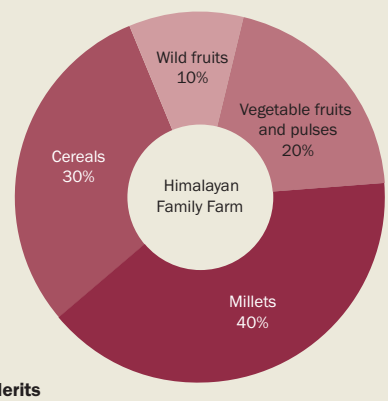
The Himalayan mountain ecosystem is unique in the world. Not only is its topography distinctive; its culture and social-economic structure are too. Himalaya is also characterized by its fragility, inaccessibility and marginality, and these features have an impact on the agroecosystem, which is distractive but uneconomical too. The majority of farms (95 per cent) are small and marginal. A family farm cannot be identified as an exclusive piece of land for farm produce only. It is a product of forest, collective human efforts and local cattle. Since family farming in Himalaya is ecological in nature, aggressive cultivation is not permitted.

The climate in the Himalayan mountains changes within a short distance, and thus ecological variability enables rich crop diversity. Lower and higher altitudes are enriched with a variety of climate-specific crop species. This forms the major strength of the mountain family farm: the lower productivity of the family farm is compensated by the ability to produce special crops which others cannot grow.

In the Himalayan system, the ideal farm model must be ecologically sound. Because of the region's fragility and vulnerability, intense mechanization is not permitted as the ecological losses would outweigh agricultural outputs. The majority of land in the region is rain-fed and climatically suitable crops with low agri-inputs are more suitable. In fact, the mountains also have a major responsibility as a watershed for natural resources. Therefore, agriculture does not only serve local communities, but also has an ecological responsibility for the nation. Ecological cropping is important in the region, and family farming is the best fit for this model.

About 2.5 million people residing in the North Mountain region of India live under stress. Their agriculture land is highly depressed with wide fragmentation. Fragmented landholding has been a major setback for mountain farmers. A family may hold cultivated lands in many places, making it difficult for them to practice. In addition, in the recent past, family farm productivity has been paralysed due to the invasion of wild animals, especially monkeys, wild boar

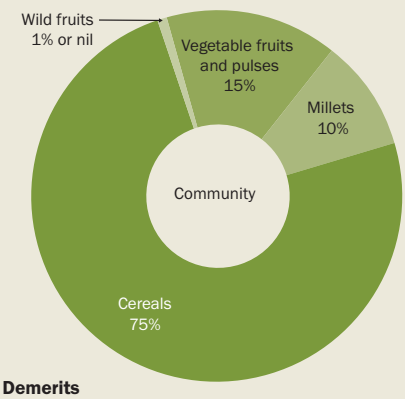
Past: Food dependence pattern of community on local resources



Merits
Optimum nutritional status
Stong immunity and resistance

Traditional Himalayan crops were well suited to climatic conditions and the nutritional needs of local communities

Present: Dependence pattern of community on local resources



Demerits
Hotspot for micronutrient deficiency
Osteoporosis
High incidence of anemia and vitamin deficiency
Prone to cardiovascular

Changing consumption patterns have meant the loss of essential micronutrients, leading to several physiological disorders

Source: HESCO

Image: HESCO

Himalaya represents a true family farming model in which communities work together and families support one another

and porcupines in the mountains. This loss has become so intense that in some places the community has either left farming or grown forest trees on their piece of land. The age-old practice of biofencing, which was designed to protect against wild animals, has been lost in the course of time. Biofencing used different types of shrubs which had qualities to prevent intrusion into farm land. Biofencing served multiple purposes in villages — as well as providing fencing, the shrubs produced various fruits, or had medicinal and fuel values.

Himalaya represents a true family farming model, through the collective efforts of community where families help and seek support from one another. There is an arrangement for material, labour and the sharing of produce. Landless farmers and artisans also help farmers as payment for grains. Family farming here is a multi-stakeholder affair, where all community members work collectively but maintain individuality too.

Mountain agriculture cannot be treated in isolation. Various factors contribute to growth here. Agriculture is not possible without the forest, as various inputs come from there. Cultivated land is a deposition of soil that comes with rainwater from the forested top of the mountain. Local cattle play their role in ploughing, threshing and other purposes, and these animals depend largely on the forest for fodder. Forest litter also becomes a major source of compost for the family farm. The litter is spread as a bed under cattle and, when mixed with their waste, helps to prepare the manure.

In the past, the nutritional needs of the mountain community were met by traditional family farming. The nature of local crops is such that it matches the local community's physiological needs. Millets were major crops in the mountains, and these served all basic bodily needs. For example, in high altitude areas, buckwheat protects against solar radiation hazards because it contains a compound called rutin. There are several such relationships between climatic produce and local human needs, and this age-old nutritional dependence is peculiar to Himalaya.

Millets were the staple diet, with other elements coming from cereals, vegetables and fruits. One special contribution used to come from wild fruits and vegetables, serving the requirement for micronutrients and essential elements. There was a striking sustainability between human needs and the region's climatic regime. This sustainability broke as we advanced in status and knowledge. Paddy and wheat were assumed to be elite class food, and that discouraged millet consumption at village level too. Besides, the Indian Forest Act prevented communities from having access to forest the resources they contain. The third factor that ruptured the local farmers' relationship was market invasion. Community dependence on the market began to

Image: HESCO

Ecological variability enables rich crop diversity on Himalayan mountain farms, with a variety of climate-specific crop species enriching different altitudes

increase in the recent past. Earlier, everything was managed through local resources or farm produce. Only salt and sugar had to be sourced from other places. The changing consumption pattern became market dependent. This new trend brought the loss of essential micronutrients leading to several physiological disorders.

This interdependence pattern of forest agriculture and animal husbandry is peculiar to the family farms of Himalaya. Strategies must be targeted to make mountain farms sustainable. It is important to support these farms through a variety of inputs in the form of nutritionally rich, climate-suitable crops with back-end assistance for post-harvest, and to develop market intelligence for the farmers' specific produce.

Family farming can only be lifted when all interlinking factors are also involved in the development process, where tradition and new knowledge are amalgamated. It must be given essential inputs to take it from subsistence to surplus, from nutritional deficit to nutritionally secure, and from uneconomic to viable. All age-old practices that exist within a family farm need to be improved. Crop selection, varietal cultivation and other inputs must be given with due respect to ecosystem relevance. Fruit yards and vegetable yards can offer supplementary food and nutrition for local consumption. The traditional practice, where marginal farmers grow fruit and vegetables in their back yards, needs to be improved with better agronomic inputs. The forest can be recuperated through family or community forestry with indigenous species. Besides large cattle, poultry and goats will enhance farm income. The promotion of beekeeping will not only be useful for honey, but will play an equally important role in cross-pollination to maintain diversity.

Similarly, family farming has to be integrated with post-harvest services. On many occasions surplus produce is lost, but this can be preserved and processed both for local consumption off-season and for marketing.

There are two other important inputs that need to be linked with family farms. A common facility centre (CFC) for farmers will be the first important step. Since small and marginal farmers do not have access to public services, a local-level CFC can serve this purpose. These CFCs should be equipped with all necessary farm services and machines. Different regional agri-horticultural research institutes must be linked with such CFCs for agriservices related to new knowledge and tools.

Since small and marginal farmers are large in number and are remotely located, a network strategy involving financial institutes, civil society and research organizations can help reach them with new knowledge. A collective effort can take the mountain family farm from subsistence to surplus to sustainable.

Family farming means food born from relationships

Carlo Petrini, President, Slow Food and Cinzia Scaffidi, Director, Slow Food Study Center

Farm is a place. It is important to start from the origin of the words. When we think of a farm we think about place, people and activities. Family is people. And again, when we think of a family we think about people, places and activities. This is the core issue of the idea of family farming: it is a complex food system, based on relationships.

The key word is 'adaptability', which presumes another: 'unpredictability'. We know unpredictability as one of the features characterizing living things. Certainly science makes a major effort to reduce unpredictability. But it can only be a reduction, not an elimination. Where it is not possible to totally eliminate unpredictability, we need to have recourse to the amazing instrument of adaptability.

This certainty — the fact that nature is not totally predictable and controllable — has always been an underlying element of all forms of traditional agriculture. Thanks to their small scale, they are more flexible, more reactive and better able to tolerate unpredictability. These kinds of agriculture actually learn from the idea of a family management and vice versa. Living individuals (whether humans, vegetables, animals or microorganisms) that happen to be in the same time and space can hope to survive only through the relationships among them, which means adapting to each other, co-evolving.

However, it is not only a structural question, it is also a matter of objectives: the objective of small-scale agriculture is to ensure the producer and family have a harvest every year, whatever the climatic conditions. Here we can see a basic difference between traditional and industrial agriculture, since the fundamental element for the latter is number, in the grammatical sense of the word. So, we can analyse industrial agriculture and define it as singular, and we can examine traditional agriculture and define it as plural.

Image: IFAD

Family farming is a complex food system, based on relationships

Above all, family farming involves more than one gender (again referring to the grammar categories of male and female) and more than one generation. Now as in the past, family farming uses the knowledge, abilities and contributions of both men and women. It also involves young people, allowing them to grow up with respect for nature and feeling part of it.

As its objective is to produce a harvest to feed the family, it cultivates several species. Several varieties of each species are usually cultivated and each variety, grown from seeds improved using traditional methods, contains high variability within each population. This allows correspondingly high adaptability to climatic conditions: if a species is damaged by rain, a harvest is still produced thanks to crops needing a lot of water; if a variety is destroyed by a parasite, others will show they are resistant; even when the variety is affected by some natural event, it does not completely die but it is always possible to save a few individual plants (which can form the basis for further genetic improvement as these individuals have shown they can resist the adverse event). In any case seeds obtained from the harvest are suitable for re-sowing and the farmer can renew resources, the basic capital, with each harvest.

Family farming is not specialized: the production of a traditional farm is always diversified. It involves the coexistence of its major focus on crops and livestock with sale and processing activities, as well as a whole range of social and environmental issues such as education, the protection and maintenance of the landscape, and the defence of wild and domestic plant and animal biodiversity.

It has numerous objectives: its main aim is not the market but feeding the family and animals, maintaining soil fertility, creating a pleasant landscape which can attract visitors as a result of its diversity (monocultures are not attractive and in any case do not allow agritourism activities), providing social opportunities for the local community, as well as for those who are not part of it.

It also has many ways of accessing the market, which is almost always the nearest one, through direct sale at the farm gate, local markets and collaboration with purchasing groups. Selling in the neighbourhood also enables a link to be maintained with local culture: those belonging to the same culture are better able, as consumers, to judge the quality of the product.

Last but not least, family farming involves different types of consumers: elderly people with links to small-farming culture, young people seeking reliable information, environmentalists who want to be consistent in their behaviour, food connoisseurs who know that quality starts in the fields and, before this, in the choices that farmers make. They are all united in their appreciation of food.

Family farming is an integrated system. Where possible it reuses waste and by-products for other stages of production or to start new initiatives. This means it has a reduced impact on global resources and lowers production, as well as environmental costs.

And when we say 'family farming,' we are talking about many types of agriculture which can accommodate adjustments and additions, and accept suggestions from different cultures including industrial culture. It makes the most of

Image: Paolo Demetri

Family farming uses the knowledge, abilities and contributions of men, women and young people, who grow up with respect for nature

Image: Olivier Migliore

Local products enable buyers to discover the traditions and culture of a particular geographical area

knowledge wherever it comes from and does not expect to apply the same model to every situation.

Direct marketing: the economic complement

What is the economic counterpart to family farming? The local market. Here we are not just speaking about a short chain. The short chain issue is somewhat misleading because, once more, it focuses on the quantity of steps occurring between the producer and the consumer, and the amount of time that passes between production and sale — but it ignores many other values and functions. Mozzarellas from South Italy which are ordered via the internet and are in a New York restaurant within 24 hours are an example of a short chain, but a producer market is a lot more than this.

Let us again consider two basic factors, time and space. A farmers' market invests in time (of purchasers, sellers and people interacting) instead of aiming to save it (the main concern of the large-scale retail business); it looks after space, instead of trying to take up as much as possible. A farmers' market actually does not need much physical space, but is a service to its surroundings: the urban area, which receives economic and other benefits when it is revitalized, and rural areas, which gain a higher profile from the market together with an economic boost.

Space is regarded as a place, not just a geometrical surface area. For this reason it is important that markets are set up in towns and not in hypermarkets, as often happens, for example in the US or UK where large chains are keen to welcome farmers' markets, reckoning on increased sales for products the markets do not sell.

The evolution of consumer desires and preferences has recently led to new behaviour. This has mainly involved seeking reasonable prices, but also nutritional quality and food safety, together with an effort to enrich the purchasing experience through finding out more about the places and methods of production. This ends up by modifying traditional ideas and approaches to marketing. Farmers are interested in accessing the market. They are willing to change and, where necessary, improve their production and communication methods so they can meet consumer requirements. The opportunities provided by farmers' markets for education, tasting, presenting and selling food, facilitate a direct relationship and help to create value in the production cycle.

When farmers attend a market, they bring new energy and professional skills to postproduction activities. They are keen to guarantee the quality and diversity of their produce compared to the range offered by conventional retailers, and in the process they often manage to keep final selling prices in check.

Consumers also have an interest in attending farmers' markets since the opportunity to interact with producers and purchase products with an identity bring important benefits. A local product becomes a way of discovering the traditions and culture of a particular geographical area and the purchasing process involves different values from the simple convenience of a supermarket — which displays products with their prices on shelves — by highlighting objective attributes (quality, biodiversity, health bene-

Image: Paola Viesi

The production of a traditional farm is always diversified – crops and livestock coexist with sale, processing, social and environmental activities

fits) or subjective ones (involving trust in the producer). Consumers can gain awareness and information about the significance of their purchase and relationships with farmers are of fundamental importance, as they enrich an everyday experience.

A farmers' market is a place where the encounter between sellers and buyers leads to personalized negotiations. Farmers have a direct role in presenting their products: they document how they have been grown or raised, how they have been preserved or processed, the context of places and traditions. The products contain complex additional information. As well as gaining direct information about the product, consumers can ask for further details, clarify any uncertainties about safety, and judge for themselves the quality and fairness of the price. Purchasing at the farmers' market doesn't mean just picking something from a shelf.

It is at this social and relational level that a system of family farming selling at farmers' markets shows the strength of its integration, functionality and effectiveness. Trust and reputation are the keys, and this is why the social network is important. The producers who sell a few kilometres from their farms have neighbours who see how they work and what they produce, and word gets around. If the neighbours see them at the market with questionable products, they ask questions. Producers are obliged to be honest and customers need to trust them; they are willing to do so as they know that the producer's reputation is in their hands.

Supermarkets can try to imitate the superficial aspects of a market, but there is always the problem of product origins. The supermarket staff cannot describe these as they do not see product quality as an issue of personal prestige.

A model based on the local resources of each context, diversified according to various local initiatives and distinctive features, would create difficulties for the traditional standard economic approach, which is on the one hand based on accumulating and incorporating technical progress, and on the other hand endeavouring to reduce costs. This type of economics can be seen to be inappropriate, with its focus on quantitative criteria for agriculture, little interest in the particular geographical area and inevitable emphasis on company size.

In rich agricultural areas, as the term is understood by classical economics, characterized by companies growing monocultures (corn, soy, milk), there are increasing problems with production methods aiming to continually reduce costs, using materials too similar to those of competitors from geographical areas with more appropriate farm sizes. At the same time there is a need to adapt to new production priorities, where production focuses on qualitative criteria rather than adopting technologies offering economies of scale.

Terra Madre: interdependence and quality

If we think of a really sustainable food system made by relationships and biology, we cannot end up without thinking of Terra Madre. This world meeting of food communities is organized by Slow Food every other year in Turin, but in between those meetings, the food communities themselves organize regional-level meetings in other countries.

Image: Paolo Andrea Montanaro

The main aims of family farming are to feed the family and animals, maintain soil fertility and create a pleasant and diverse landscape

When Slow Food started designing this gathering, it found that it needed new words. The expression 'rural community' was not adequate to define the basic unit of an event such as Terra Madre. Only in some parts of the world do rural communities perform all the functions involving a food product, from its production to final sale. But you can find sustainable food everywhere. How do things work when a rural community doesn't exist? In countries where an individual, not the community, is at centre stage, how can sustainable food make its way through all the necessary steps?

The term 'chain' also seemed inadequate. It refers to the technical and production context conceived as a whole and involves a single person being aware of all the various stages. But very often there isn't explicit cooperation between the various groups making up a sustainable food chain.

A food community consists of people who may do different tasks, live in different places and experience different conditions (levels) of development. But they are all part of a community since their activities are performed with the same purpose, sharing the same values and with the same objectives. When a shepherd sells milk to a cheese-maker who supplies cheese to a restaurant owner, these people are a community even if they do not actually know each other.

Real food, which is good for everyone, moves from the person cultivating, to the person transforming, the person cooking and the person eating, without forgetting the one who researches, communicates, promote and educates. It is good for the earth in which it takes root and grows, it is good for the water and the air which feed it and the sun which keeps it alive. It is everyone's and everything's food.

And this is how we come to the redefinition of quality using the criteria of good, clean and fair. Good in taste and cultural terms, considering a culturally rooted taste or a 'trained' one; clean in terms of environment and health; fair in terms of rights and respect for people and animals.

The strength of this message lies in the fact that it doesn't choose between the three options, but states that the concept of quality cannot be reductive, it must necessarily be complex and embody other concepts and values without hierarchical priorities. It is, we want to repeat it, a matter of relationships.

France: support for family farming — quality rooted in territory

Stéphane Le Foll, Minister of Agriculture, Ministry of Agriculture, Agrifood and Forestry, France

Agriculture varies across the world, reflecting the natural environments in which farmers operate. Farms are the result of each country and the agrarian, cultural and social history of each territory. Within this environment, family farming is a massive phenomenon. It represents the overwhelming majority of farmers worldwide in terms of food production and employment: 70 per cent of global food production and 40 per cent of assets in the world. Ironically, the majority of people experiencing food insecurity are farmers or farm labourers.

Because family farming is the largest producer of food in the world, because it is the world's biggest employer, and because the majority of people who suffer from hunger are family farmers, for France, support for family farming is the way to contribute directly to food security. Indeed, family farmers are a pillar of the global economy. The jobs created by family farming are the first defence against hunger and poverty, and are pivotal in the dynamics of economic growth and regional development.

Recent food crises have shown an increased interest in speculative land capital and agricultural commodities. This increased competition, combined with low recognition in policies of the central role of family farms, undermines their development and contributes to the movement of farmers to the cities. For food security reasons, but also to balance the territories, it is important that public policies establish favourable and appropriate economic and institutional legal frameworks to secure access to land, credit, markets and training for family farmers.

The United Nations proclamation of 2014 as the International Year of Family Farming provides an opportunity to promote family farms as part of the solution to the food challenge, the challenge of the fight against poverty, and the challenge of sustainability. Through its policies and history, France has developed its agriculture on the model of family farming. It is fully mobilized in its international advocacy, on

Image: Xavier Remongin/Min.Agri.Fr

Family farmers are pivotal in the dynamics of economic growth and regional development

France: key messages for the International Year of Family Farming

- Appropriate public policies can enhance the performance of family agriculture to meet global challenges.
- The advantages and potential for the economic, social and environmental improvement of family farming cannot be expressed without the establishment of an institutional and economic framework of conditions and public policies that support and recognize the social, as well as the economic role of agriculture.
- Strategies supporting the development and modernization of family farming can only be differentiated, taking into account local realities. They should be considered through the development of differentiated paths within the context of sustainable development.
- In the fight against food insecurity, the French policy of international cooperation and development prioritizes the promotion of family farming, producing wealth and jobs and respecting ecosystems. In this respect, France supports initiatives for family agriculture to play its full role in the adoption of agricultural policies, strengthening regional integration, structuring agricultural markets, value chain development, support for farmers' organizations, enabling equitable access to water, land security and the fight against land degradation.

the one hand to demonstrate the political and social issues to support family farmers, and on the other to explain, from experience, the importance of defining agricultural policy adapted to these farmers.

"Family farming is employment, land, scenic beauty and tradition, but also competitiveness, economic performance and the sustainable use of natural methods of production," said Stéphane Le Foll, France's Minister of Agriculture. "A family farmer is primarily a leader or operations manager on his farm. It is he or she who owns the means of production, works, takes technical and economic decisions on the farm and who bears the risk. It differs from the agro-industrial model characterized by production capital held by absentee owners or shareholders of the operation, management and labour exclusively employed."

The principle of transmission, which is intrinsic to family farms, is also a common characteristic of these farmers. This involves the commitment of farmers in the management of natural resources. This sustainability strengthens social ties within a community and more widely within a territory. It is this model of family farming, as opposed to an agribusiness model, which still forms the basis of agriculture in France.

Over the past 50 years, France and the European Union have developed ambitious policies for family farming. After the Second World War, the six founding countries of the European Union implemented the Common Agricultural Policy (CAP) with the main objectives to increase productivity, ensure a fair standard of living for the agricultural community, stabilize markets, guarantee supplies and ensure reasonable prices for consumers. The European agricultural policy has fulfilled its mission and was able to support the development of European agriculture in preserving the diversity of (mainly family) farm structures while adapting to global challenges (increasing competitiveness, protection of the environment and rural

An efficient agroecological system

With 270 hectares of land in the Chantonnay commune of Vendée, the GAEC Ursula is a model of agroecology, the fruit of an ecological process initiated in the 1980s.

"The GAEC was founded in 1983 by my parents, Jacques and Pierrette Morineau, and two other partners," recalled Marie Schwab. Today, Jacques Morineau is still part of the venture, while three younger farmers have replaced the original members. "Sylvain was installed in 2009 and Sébastien, my husband, installed in 2011, and I replaced my mother in 2013," said Marie.

"In the 1980s we had an ecological approach," said Jacques Morineau: "In 1988/89, the weather was very bad and we found that the inputs did not help. What makes the performance is the sun and rain. We were then tempted by organic farming and we started with poultry." The hen house was a success, with 400 square metres devoted to house hundreds of organic chickens. The entire farm went organic in the 2000s, and it is now considered a model of French agroecology.

All plots are cultivated with varieties of cereals and grassland. "We have 100 hectares of cereals (bread wheat, peas, faba beans, lupins, barley) which is sold directly to farmers," said Marie. "Everything is grown in mixtures, so whatever the weather, there is always a species that is doing well."

To preserve biodiversity, the plots are no bigger than 6 hectares and are all surrounded by hedges. "My father balances areas of cultivation to support wildlife such as ladybirds and beetles," said Marie. "We reproduce what happens in nature, but on the scale of agricultural production."

The GAEC Ursula also raises 100 dairy cows fed on grass, and manufactures organic rapeseed and sunflower — a well-oiled and efficient system on an economic as well as a social ecological level.

Quality and pride

The protected designation of origin (PDO) 'Camembert de Normandie' includes 500 dairy farmers and nine cheese producers. For more than 30 years, François Durand has handcrafted cheeses of exceptional quality, made from raw milk, at his Camembert factory in Orne.

His wife, Nadia, provides a warm welcome to the Fromagerie Durand. She joined her husband there in the early 1990s to help in the family dairy operation. In 1999, they partnered with Nicolas, François's brother, to form a Groupement Agricole d'Exploitation en Commun (GAEC). Between them, they now have 90 hectares of land and 70 cows. Each has specific tasks: François is responsible for making cheese, Nicolas takes care of the cows, Nadia manages accounting and visitors and Rose, their employee, does handling and sales.

Nadia insists on one thing: the quality of the cheese is produced through a demanding manufacturing process. Protected in France since 1983 with an appellation d'origine contrôlée (AOC) and in the European Union with a PDO, the production of Normandy Camembert represents only 4.2 per cent of the total production in France.

To qualify for this label, the criteria are strict: milk production, manufacturing, refining and packaging of cheese must be done in the geographical area (it covers part of the departments of Calvados, the Manche, Orne and Eure). The pie must be made with raw milk from a herd of cows partly composed of Norman purebred, which must graze at least six months in the year.

Neither the AOC nor the PDO require farm production and handcrafting. Yet this is the choice made by the Durands. In their operation, 1,200 litres of milk are produced each day, or 1,000 pies a week. And every step of production is done by hand — a guarantee of quality and pride for the family farm.

www.alimentation.gouv.fr

Image : Xavier Remongin/Min.Agri.Fr

France's land policy has allowed family farmers to invest in soil fertility and concentrate on productive land management

development), echoing the developments of society. During the last reform of the CAP, a special effort was made for small and medium farmers to encourage more productivity and drive the involvement of youth.

In France, the structural policy is aimed at modernizing family farms and limiting the development of large farms. Thus, land use and forestry and rural development instruments were created and several measures have been implemented: long-term, tacitly renewable leases, control of land allocation to regulate the size of farms, regulation of rent prices and strong, secure access to land. This land policy has allowed family farmers to invest in soil fertility, limiting investment in the earth to concentrate on productive land management and the promotion of generational change.

Politically, professional agricultural organizations are involved in decisions and the implementation of agricultural policies. On the economic front, the establishment of inter helped improve the organizational capacity of the agricultural sector and tools for the empowerment of farmers have been put in place, such as the recognition of producer organizations or written development contracts. These national guidelines are now widely adopted in Europe.

Recognizing the richness and diversity of terroirs, France established a policy of quality and origin almost a century ago, to strengthen the competitiveness of its predominantly family farms. This policy, based on the link between produce and its source, and its superior environmental quality, is now shared at European level and represents an important lever for the use and development of our territories.

Under the leadership of Stéphane Le Foll, France has engaged in a two-year programme for the agroecological transition of its agriculture. This will favour solutions that combine economic, environmental and social performance by promoting a systems approach to operations (global thinking, simultaneously integrating all aspects of the operation). There is no ready recipe, but a need to develop specific solutions in each context. Agroecology is based in particular on the development of positive biological interactions within the agroecosystem, promoting functional biodiversity for example, with rotations adapted to reduce dependence on inputs. It aims to strengthen the family farmer in his or her economic, social and environmental role, and make the farmer a key player in sustainable agriculture. Family farming is flexible, adaptable and innovative, therefore it is best suited to be the spearhead of France's agroecological project.

French agriculture in figures

The face of French agriculture today:

- 500,000 farms with an average size of 55 hectares and 966,000 permanent assets
- Agricultural production doubled in 50 years, to €66 billion in 2010
- Farmers are better trained, and 34 per cent are from higher education
- Agriculture employs more than 1 million people, and over 25 per cent are women
- The food industry is the second-largest industrial employer
- 25 per cent of farms have at least one production under a sign of official quality.

In 50 years, the total volume of French agricultural production has doubled, meeting the demographic challenge and participating in major global food balances. Food quality meets the standards expected by consumers. The number of farms has fallen by four in less than 50 years, leading to professionalization and significant improvement in economic performance. These farms are mainly family farms, often focused on diversification and a strong local presence rather than corporate formats.

Family farming in Albania

Ministry of Agriculture, Rural Development and Water Administration, Albania

Family farming in Albania represents a rural way of working which is, in many ways, deeply rooted in the traditions and the savoir-faire of Albanian farmers. Considering the importance of the agricultural sector in the economy of Albania nowadays, as well as the specific weight of family farming in Albanian agriculture, the main challenge for today consists of modernizing the methods of production and increasing the productivity of family-run farms while preserving as much as possible the benefits of this type of agriculture — such as the intact agrobiodiversity and natural resources that characterize most of the agricultural landscape in Albania. The sector has huge potential for boosting local economies, especially when combined with specific policies aimed at social protection and the well-being of communities.

Agriculture remains the most important sector in the Albanian economy, measured by its contribution to the country's gross domestic product, employment and macroeconomic stability. Evidenced by the fact that it is the only sector that has continued to grow during the last three years (about 3 per cent), agriculture in Albania has demonstrated a high capacity of adaptation and resistance to different crises, like the (rather prolonged) transition from centralized economy to market economy as well as the more recent economic crisis.

The sector is strongly centred around family farming. More than 90 per cent of the 380,000 farms in Albania are below 2 hectares and account for about 95 per cent of the land used, being the only country in Europe to rely largely on non-intensive small-scale domestic production. As such, family farms are the most important contributor to food security by producing food for self-consumption as well as for the market. Their contribution to employment is significant as the majority of individual farms serve as a main (if not only) income source for the self-employed in this sector. Around 50 per cent of the population in Albania lives in rural areas.

Image: Min of Agriculture, Rural Development and Water Administration

Beekeeping is one of the many activities that form part of Albania's diverse family farming sector

Image: Min of Agriculture, Rural Development and Water Administration

Family farming preserves traditional food products while contributing to a balanced diet, enabling a lifestyle that is unique to countryside

While it can offer a very successful business model, family farming at small-scale production like the model that dominates Albanian agriculture does not allow for the profitability that can be obtained through economies of scale. It becomes therefore imperative that Albanian agricultural products secure an added value that enables them to compete with neighbouring products on the basis of quality rather than quantity. Organic farming has come to increasingly be recognized as important in this respect. Albania has what it takes to develop its label of organic products. It possesses a relatively cheaper labour force in bigger numbers compared to more developed European Union countries given its predominantly rural population. And, as has already been mentioned, due to its rather primitive state inherited from the communist regime and its moderate development to date, it still has arable soil that is very suitable for organic production. Organic farming also plays an important role in relation to agritourism, which has just started to be explored in Albania.

However, the modernization of agricultural production, either in this form or in its more conventional manner, faces many challenges. Some of the most acute problems regarding family farming today are those related to the centralized agriculture and the communistic regime, like the fragmentation of land or the lack of professional knowledge among farmers. Today's farmers in Albania have a low starting base in their professional training, due to the past regime which organized labour in agriculture through communistic-type cooperatives that sharply divided technical skills from manual labour. The lack of formation, in turn, does not allow for new and adequate technology to find its way, especially in remote areas of the country, where family farming occupies all agricultural land. Other challenges are related to the good functioning of free market mechanisms like the ones connected with the economy of scale, access to domestic and foreign markets through efficient collection and storage of products, or the lack of a suitable financial environment in the form of credits and other financing tools for the development of agricultural family enterprises.

These deficiencies are also an indication of the high production potential of family farming that is not exploited. There is an evident need to make family farming more dynamic and efficient, not only regarding its production but its organization as well.

The lack of intensive farming practices in Albanian family farms has resulted in the conservation of local natural resources and of biodiversity countrywide. The majority of the farms use local varieties in their production, thus preserving, among animals, local small ruminant breeds which still represent more than 80 per cent of the small ruminant population in Albania or, among plants,

Image: Min of Agriculture, Rural Development and Water Administration

Family farms are the most important contributor to food security, producing food for self-consumption as well as for the market

Image: Min of Agriculture, Rural Development and Water Administration

The majority of Albania's family farms use local varieties in their production, preserving species such as small ruminant breeds

local varieties of fruits, olive trees, grapes, and medicinal and aromatic plants. On the other hand, family farming in itself, as a unit, is much diversified, including all livestock products, fruits and vegetables, fishery in small water reservoirs, medicinal and aromatic plants, beekeeping and mushrooms, creating the right environment for developing polyculture agriculture.

Family farming is a social tissue that throughout history has preserved traditions, local identity and cultural heritage, contributing to the country's stability. The social role that family farms play today has considerably changed. Until recently, staying in line with traditional and conservative sociology, the head of the household was usually the oldest man followed closely by the oldest sons. The wife generally took care of the housework, child rearing and financial matters pertaining to the farm. However, agricultural activities have changed over time and are actually much more diversified. The involvement of women and younger generations in rural family farming is increasing. Being a country with a very high rate of emigration, especially in the neighbouring countries which were heavily hit by the recent financial crisis, like Greece and Italy, a large number of youth have had to return in recent years, finding employment opportunities only in the agriculture sector. At any rate, the need for the young farmers to take over is great, as it is estimated that currently 30 per cent of the employees in agriculture are above the age of 64 years, in itself a strong evidence of the wide presence of family farming in the country.

The benefits of family farming in preserving traditional food products while contributing to a balanced diet are known. They provide an opportunity for conducting a lifestyle that is unique to village countryside. The existence of such elements in Albanian villages has come to be recognized as a strong incentive to the development of agritourism.

Albania is gradually, but surely, turning its eyes towards agriculture, realizing the potential of the sector for the economic growth of the country. In light of the recognized challenges in this sector, the current government has for the first time dedicated an important part of its programme to the transformation of Albanian agriculture from a subsistence model to a modern and sustainable agriculture. Apart from policies which aim at environmental protection and the conservation of biodiversity, in order to enhance support for family farming the Government has improved the direct payment scheme to farmers through criteria which are closely linked with the regionalization of agricultural production. The shift is very important as the country's geographical areas vary considerably in terrain and climate conditions, each region being suitable for the cultivation of specific products only. Family farming is the direct beneficiary of such oriented policies since most of the country's land relief is mountainous and not prone to intensive agriculture.

Agricultural biodiversity: an essential asset for the success and resilience of family farming

P. Eyzaguirre and M. Ann Tutwiler, Bioversity International

The International Year of Family Farming places family farmers at the centre of goals, policies and programmes to end hunger and improve the livelihoods and well-being of the rural poor. These goals and objectives are to be realized at a time when the world's stock of natural resources, land, water and biodiversity are being diminished, contaminated and eroded.[1]

Fortunately, small-scale family farms are no longer viewed as anachronistic or as barriers to agricultural development — their potential to contribute to food and nutrition security is now recognized. Furthermore, family farms have a unique advantage in improving the quality of diets, and reducing risks in the food systems of developing countries while protecting the environment and biodiversity. The focus on family farms as global partners in achieving these multiple objectives leads us to examine more concretely the nature of family farming and the specific assets and resources that family farmers can access and deploy.

There is preliminary evidence that the two most important assets available to small family farms are gendered knowledge and agricultural biodiversity.[2] Based on examples and evidence from family farms and production landscapes managed by farm households around the world, there is a strong case in favour of policies that strengthen the knowledge base, knowledge exchange and access to technology among farmers that manage agricultural biodiversity. Strengthened, family farms are able to realize the potential of agricultural biodiversity to provide better income, opportunities for entrepreneurship, more diverse and healthier foods, resilient landscapes, and more sustainable food production over time.

The International Year of Family Farming (IYFF), defines family farming as "a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's. The family and the farm are linked, co-evolve and combine economic, environmental, social and cultural functions."[3]

Image: Bioversity International/Paola de Santis

A Ugandan farmer with her children in an agricultural landscape where each square belongs to a different farmer

Image: Kuban Turgunbaev

Harvesting apples, Kyrgyzstan. Bioversity International is promoting the conservation of biodiversity in fruit tree species in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan

Home gardens maintain biodiversity and enhance food security, nutrition and household income

In family farms, home gardens are important reservoirs of agricultural biodiversity and the knowledge to makes use of it. With support from the Swiss Agency for Development and Cooperation, Bioversity International started a home garden initiative in Nepal in 2002 to study how these small plots contribute to biodiversity, food security, nutrition and household income.

Working with Local Initiatives for Biodiversity, Research and Development (LI-BIRD) and other partners such as the Department of Agriculture, the initiative aimed to understand the scientific basis of the management of agricultural biodiversity in home garden ecosystems in Nepal.

Thanks to the project interventions, home gardeners saw their yields nearly triple from 300 kilograms per year to as much as 900 kilograms per year in some households. More households were selling their garden products as well. Biodiversity increased in the home gardens of participating households, with 66 species under cultivation as compared to fewer than 40 species before the project began. Farmers now maintain higher plant diversity on farms and cultivate a greater range of plant groups — vegetables, fruits, spices, medicinal herbs, fodder and ornamentals — and a larger variety of different vegetables. Participating households doubled their overall consumption of produce, including the amount of green leafy vegetables, and have increased their intake of vitamin A-rich foods like mango and papaya by 36 per cent.[11]

Image: Bioversity International/Bhuwon Sthapit

A farmer in her home garden, Nepal. Home gardens play a big role in improving dietary diversity, bringing in extra income and improving family well-being through the use and conservation of biodiversity

The Committee on World Food Security's High Level Panel of Experts (HLPE) convened by the Food and Agriculture Organization of the United Nations (FAO), affirmed the need to realize the global contributions and local insights for food and nutrition security and sustainable development provided by family farmers.[4] Family farming can bring about transformational change in the fight against hunger, malnutrition and the degradation of natural resources and agricultural biodiversity. By definition, family farms perform social, ecological and production functions in a landscape. Their aggregate scale is enormous. FAO's agricultural census data suggests that family farms represent 98 per cent of all farms and 53 per cent of the world's agricultural lands.[5] This does not include the further contribution of forest dwellers, fishing communities and pastoralists that is estimated at another 20 per cent (in the absence of data to confirm it).

Documentation and review of the status of family farming in the course of the IYFF concluded that small-scale farm households demonstrate higher experience in managerial capacity and a higher level of skills when compared to other farm enterprises. Reviews and case studies also show that household resource allocation decisions are made jointly by the couple or adults managing the family farm. In sum, human capital in family farms is the key asset in their more efficient farm management and their ability to channel returns back to the household. This, coupled with the rich knowledge of natural resources and biodiversity in the landscapes where farm families have lived for generations, creates unique opportunities to promote efficient use of natural resources and sustainable use of biodiversity for healthier, more diverse and sustainable diets.[6]

The reliance on family management and gendered knowledge of men and women in the household allows for a different and more diverse set of products to be grown and raised. The two crucial assets that support diverse and intensive production on family farms are knowledge (human capital) and the agricultural biodiversity that can be usefully maintained and managed in a small space. Studies of rural and peri-urban home gardens have amply documented the ability of farm families to manage high levels of agricultural biodiversity in small spaces.[7] Numerous studies of family farms show that they tend to be structured as mosaics of production niches that maintain many species of crops and livestock, including crop varieties and animal breeds that are not commonly found in large-scale agriculture.

Two of the most important aspects of family farms are:

- what they produce, the diversity and range of plant and animal products from these farms
- how much they contribute to the total food and nutrition security in their respective countries.

The data on the number of family farmers is uncertain, as less than 10 countries in the world actually have a definition for small family farms. Many reports assert that 70 per cent or more of the world's food comes from small family farms. What foods, where are they grown, how they are marketed or distributed and consumed is as yet to be documented at a regional or global level. One of the outcomes of IYFF should be a clearer and more concrete understanding of the specific roles and contributions of family farms to sustainable agricultural production and food security. Despite the large gaps in data on the contribution of family farms to food and nutrition security as well as the challenges they face, there is a basic agreement that in all cases human resources, namely the farm household's knowledge, labour and management capacity, are key. The knowledge and skills that accrue when a family lives in a landscape over time creates a stock of knowledge capital about biodiversity and

Image: Bioversity International/Camilla Zanzanaini

Women harvesting groundnuts in Ghana. The nuts are eaten or sold and the leaves, shoots and roots are fed to the goats and produce a rich manure

natural resources that can be used to manage resources and biodiversity sustainably, efficiently and profitably.

Rather than debate definitions and the current lack of data on the number, amount and types of foods produced by family farms, and documentation of their production and resource management practices, Bioversity International focuses on the distinctive features of family farming that contribute to food security by using and sustainably managing agricultural biodiversity. What emerges is the comparative advantage of family farmers in producing a diverse range of foods that are high in nutritional value, are locally available, and fetch good prices when marketed.

Furthermore the presence of the family on the land and its long-term interaction with the landscape creates both knowledge and demand for more efficient and judicious use of agrochemicals and pesticides, and longer-term perspectives for sustainable use of resources. A farm household will manage several crops, livestock breeds or agrobiological resources in a variety of growing conditions to meet a multiplicity of needs, in a full cycle from planting, production, processing, consumption and marketing. This generates a rich body of knowledge of diversity of crops, breeds and varieties that are used to create options, minimize risk and develop new products.

Family farms identify new varieties, neglected species and cultivars, and domesticate new species to cope with climate change and create new opportunities. Less water, increasing unpredictability in weather and rainfall, hotter growing conditions and more extreme weather events, migration and increases in pests and diseases are already in evidence in all major regions. Global staple crops like maize, rice, wheat and high-value food exports are already at risk from the impacts of climate change. These, however, are not the only crops that feature on family farms. Alongside these staples are roots and tubers, horticultural crops including squashes, gourds and vine crops, leafy green vegetables and fruits. There are also distinctive varieties of pulses including peas and pigeon peas, cowpeas, lima or butter beans, and many of the neglected but nutritious cereals and pseudo-cereals like millets, fonio, quinoa, and local varieties of maize consumed fresh or in grain.

The diverse range of crops, varieties and livestock in a small family farm is an important factor in fighting hunger

Diversity can increase the resilience of agricultural landscapes

Forty days after Hurricane Ike hit Cuba in 2008, researchers conducted a farm survey in the provinces of Holguin and Las Tunas and found that diversified farms exhibited losses of 50 per cent compared to 90 or 100 per cent in neighbouring monocultures. Likewise, agroecologically managed farms showed a faster productive recovery (80-90 per cent 40 days after the hurricane) than monoculture farms.[12] This ability to recuperate and suffer less damage in the face of natural disasters demonstrates how diversity can increase the resilience of agricultural landscapes.

Image: Bioversity International/Alfredo Camacho

Farmers preparing soil for planting of quinoa in Bolivia. Bioversity International and partners have been researching quinoa and other Andean grains for over a decade

Crop diversity as a market and nutrition opportunity

In the Kolli Hills of India, with support from the International Fund for Agricultural Devlopment, Bioversity International worked with the M.S. Swaminathan Foundation and local women's self-help groups to find market avenues for six species of minor millets. High in nutritional value, and easy to grow in marginal areas, millets have a strong comparative advantage in the area. By introducing better processing machinery and training in product creation and experimentation, several new products such as Ragi Malt Drink and Savi Padu are now on the market. School feeding programmes that switched from white rice to finger and foxtail millet-based meals found that within three months, haemoglobin levels of children were between 32 per cent and 37.6 per cent higher than the control group.[13] The Indian Government has now adopted millets as part of its food security package.

and malnutrition.[8] Risk of hunger is reduced as the multiplicity of foods grown become available at different times and in different niches throughout the year. The quality of foods and dietary diversity is an important factor in reducing malnutrition at the household level.[9] Furthermore, as foods with high nutritional quality and taste are increasingly demanded in local and national markets, agriculturally diverse products provide family farmers with entrepreneurial opportunities in higher value markets. This, however, requires increased institutional support, and production and harvest technologies that can meet demands with regularity and quality.

Family farmers also tend to rely on agroecological techniques to grow and protect their crops on their small parcels of land. Given their limited incomes to use purchased inputs, and the fact that much of the technology and farm machinery available is economically efficient at larger scales, farmers use their knowledge of plant combinations, multiple cropping, agroforestry, sylvopastoralism and small livestock in homestead production to maximize total yields and benefits from small parcels with high concentrations of agricultural biodiversity.[10]

The new post-2015 Sustainable Development Goals (SDG) place people's participation at the centre of the vision for change. In this light, several principles are crucial for achieving the SDG by empowering and supporting family farming:

- valuing gender perspectives and diversity and the rich knowledge and multiple strategies and options that emerge from diverse perspectives and practices on complex productive landscapes
- adaptation and innovation can be endogenous, and is often faster and more sustainable when it is
- family farmers, given their knowledge of local resources and capacity to manage complex production systems at a small scale, can produce high-quality foods efficiently when access to productive and financial resources is assured
- family farmers have demonstrated potential to identify new and useful components of agricultural biodiversity to become entrepreneurs, given improved access to markets.

Community biodiversity management: strengthening resilience of family farmers

E.D. Israel Oliver King, Saujanendra Swain and Ajay Parida, M. S. Swaminathan Research Foundation, Chennai

Socioeconomic and climate change poses severe risks to the food security of subsistence farmers located in marginal production conditions. The green revolution has boosted global food production; at local level however, small-scale farmers who live in marginal conditions have benefited only to a limited extent. Those farmers unreached by the green revolution are targeted with the conservation strategy referred to as on-farm management in agricultural production systems. The successful pathways for working with those marginal farmers facing crisis due to change are worth learning.

Community biodiversity management (CBM) emerged as a methodology to realize the on-farm management of plant genetic resources for agriculture. CBM integrates knowledge and practices with social systems; it is driven by the local rules of institutions and strengthens the capacity of rural communities to take decisions on conservation and use of biodiversity in order to secure community access to and control over their resources. Various CBM practices nurtured by the MS Swaminathan Research Foundation (MSSRF) in India in partnership with tribal communities have been successful. These include:

- diversity fairs for awareness raising, documentation, exchange and monitoring
- community biodiversity register for documentation, information exchange and monitoring
- diversity blocks, diversity kits and participatory varietal selection in millets, rice and pulses supporting access and exchange
- farmer and participatory plant breeding promoting use
- community seed banks
- value addition of local crops and varieties, and associated product chain development for sustaining use
- legal literacy for awareness on conservation of agrobiodiversity
- building grass-roots institutions to manage natural resources.

Scarascia Mugnozza Community Gene Bank Resource Center

The Scarascia Mugnozza Community Gene Bank Resource Center (SMCGRC) was established with a munificent grant from the Government of Italy at MSSRF. The community gene bank is a medium-term storage facility where farmers are encouraged to deposit their varieties of crops such as rice, small millets and grain legumes with MSSRF serving as the trustee of deposited materials. The accessions, depending on their stored viability, are periodically regenerated. The seed samples may also go back to villages when farmers need them or when specific seeds are not available in villages. The data set is constituted as the Farmers' Rights Information System, with a view to facilitating access and benefit sharing of farmers' varieties in accordance with two important national laws on agrobiodiversity, namely the Protection of Plant Varieties and Farmers' Rights Act (PPVFR) 2001 and the Biological Diversity Act 2002.

In addition, SMCGRC facilitates the registration of farmers' varieties under PPVFR and undertakes legal literacy among farmers and grass-roots institutions. A total of 38 applications from Jeypore, Odisha were submitted to the PPVFR Authority. SMCGRC has been creating awareness and capacity building on legislation of PPVFRA. The programme covered parts of legislation concerning on-farm conservation, long-term off-site seed storage, development and maintenance of farmers' varieties, farmers' rights, registration of farmers' varieties, benefit sharing, reward and recognition including the Genome Saviour Award of the PPVFR Authority, the role of the Panchayat institution in conservation of local biodiversity, and access to local biodiversity and benefit sharing.

Image: MSSRF

Self-help groups in 15 Kolli Hills villages have their own community seed banks for regular seed production, distribution and exchange

MSSRF's role in shaping biodiversity policies in India

In the area of biodiversity conservation, MSSRF played a key role in giving shape to two important national legislations: the PPVFR Act 2001 and the Biodiversity Act 2002. The draft of the PPVFR Act 2001 emphasized the need to mutually reinforce the rights of breeders and farmers and was presented and discussed at two dialogues organized by MSSRF in 1994 (Farmers' Rights and Plant Genetic Resources: Recognition and Reward) and 1996 (Biodiversity and Farmers' Rights). India is the only country where farmers' rights have been secured by law along with breeders' rights.

Further, MSSRF's suggestion of recognition and reward for the primary conservers led to the Government of India instituting two reward systems – the Genome Saviour Award for recognition of communities that have conserved rich genetic diversity and the Breed Saviour Award for recognizing those who have conserved indigenous animal breeds. It proposed the formation of biodiversity management committees at the local/panchayat level, a biodiversity board at the state level and a national biodiversity authority at the central level; the National Biodiversity Act came to be in 2002.

Image: MSSRF

Value-added products are being marketed in 15 districts in Tamil Nadu province under the brand name Kolli Hills Natural Foods

Some of the community institution-based agrobiodiversity management practices nurtured by MSSRF in India are described below.

Climate-smart nutri-millets in Kolli Hills

The general trend in agriculture, particularly in grain and cash crops, is an increasing shift to monoculture, focusing on a few high-yielding varieties and hybrids. Reasons including a lesser preference for the cultivation and consumption of millets and the drudgery of the traditional processing involved compared to grains which are easier to process and consume, have contributed to a reduction of the area under millet cultivation. It is estimated that three crops — maize, wheat and rice — contribute about 87 per cent of all food grain production. This has led to the neglect of a large number of diverse crops including small millets, which have been contributing to local food security with an important role in the livelihood of local communities in many developing countries. Finger millet *(Eleusine coracana L.)*, little millet *(Panicum sumatrense Roth ex Roemer and Schultes)*, Italian or Foxtail millet *(Setaria italica L.)*, Barnyard millet *(Echinochloa colona L.)*, Proso millet *(Panicum miliaceum L.)* and Kodo millet *(Paspalum scrobiculatum L.)* are often defined as climate-smart nutritious millets and grown over approximately 2 million hectares across India. Millets are hardy and resilient crops in diverse agroclimatic adverse conditions.

In Kolli Hills, located in the Eastern part of Namakkal district in Tamil Nadu State of Southern India, the local community had developed different cropping systems around millets by choosing crops such as maize, pigeon pea and mustard. These intercropping systems involve smart risk protection combinations, while addressing diversified food and cash needs. In different regions, depending on rainfall and distribution, they deploy millet varieties of different maturity periods and abilities to withstand adverse climatic conditions. However, the introduction of commercial crops like cassava, which feeds the starch manufacturing industry, and horticultural crops like pineapple, have shifted farmers from subsistence to commercial farming, with enhanced income earning opportunity. Further, the decline of millets is due to the immediate availability of food grains like rice and wheat supplied at highly subsidized rates by the Government under its anti-poverty programme, and lesser preference for the cultivation and consumption of millets when other available grains are easier to process and consume.

Since 1995, MSSRF in partnership with several agriculture research institutes and universities, state and international agencies (the International Fund for Agricultural Development, the International Development Research Centre (IDRC) and Bioversity International) has been conducting extensive participatory research work on millets, aimed at reviving, conserving, creating economic stakes and enhancing the scope for sustainable use of millets. In this context, the following strategies proved successful.

Increasing yield through improving millet cultivation practices

Together with self-help groups (SHGs), MSSRF undertook different agronomic measures such as row planting, reduced seed rates, application of farmyard manure, and intercropping millet with tapioca to increase millet yield by 20 per cent and net income by 25 per cent from its cultivation.

Introducing drudgery-free grain processing technology

All millets except finger millet have a very hard seed coat requiring high abrasive force to remove the rice from the seed coat. No machinery suited to these millets was available to reduce this drudgery. A collaborative project with the University of Agricultural Sciences, Dharwad and McGill University, Canada, supported by the Canadian International Food Security Research Fund — IDRC, has yielded the development of new prototype machinery for processing little millet with processing recovery efficiency of 90-95 per cent.

Image: MSSRF

The PGUS farmers' association, formed by the tribal community of Jeypore in Orissa, disseminates appropriate technologies to conserve and enhance the production of local crops

Development and promotion of new marketable millet products
Value chain building required specialized training on value-added product development, maintaining consistent product quality, packaging, labelling and marketing. The selected members of SHGs were trained on value addition at agricultural universities at Bangalore and Dharwad. This training programme, planned and supported by MSSRF, empowered village women for the production of 11 value-added items like malt, rava and readymade mixes of millets.

Establishing and promotion of market for value-added millets products
Though farmers have experience in marketing the primary produce, they lacked capacity in marketing value-added products. Through a gradual process members of SHGs with marketing skills were identified and promoted to undertake product marketing with local retail outlets. The most popular and largely sold millet products were found to be readymade mixes, milled rice of little millet and Italian millet, and finger millet malt. Product differentiation and branding were found to be important tools for obtaining a competitive market position. Products are being marketed in 15 districts in Tamil Nadu province under the brand name Kolli Hills Natural Foods. To increase awareness of the nutritional quality of millets and their derived products, MSSRF and SHGs are actively engaged in promoting millet products through exhibitions at various forums.

Establishing community institutions for promotion of millets
MSSRF organized local farm women and men, who are more enthusiastic in the cultivation and consumption of millets, into SHGs and farmers' clubs (FCs) under the umbrella of a federation registered as a society — institutionalized into the Kolli Hills Agrobiodiversity Conservers' Federation (KHABCoFED) in 2009. The current membership stands at 47 SHGs and 62 FCs consisting of 1,511 members. The SHGs were encouraged to build collective savings from their income, carry out a financial lending service within the group (often linked with local banking services), and trained and supported to collectively undertake farming related activities such as the promotion of millet cultivation. Either specific SHGs or members of different SHGs are facilitated and promoted to undertake specific activities of their interest, such as improved production practices, variety selection, quality seed production, management of millet processing units, grain procurement and transportation to processing centres, and building the value chain. SHGs in 15 villages, located in seven panchayats have their own community seed banks and institutional system for regular seed production, distribution and exchange. Over a period of 12 years (2001-2013), the cultivation, procurement, value addition, diversification and sale of products have generated a gross income of US$30,900.

Traditional agricultural practices in Koraput
The Koraput district in Odisha state, India is renowned for the genetic diversity of Asian cultivated rice and has been considered as centre of origin of the Aus ecotype of rice *Oryza sativa*. This area is known as 'Jeypore tract' in rice literature and has drawn the attention of rice biosystematics, geneticists and conservationists for the last half a century. This area is inhabited by many agrarian tribal communities, notably Bhatra, Gond, Paroja, Bhumia, Gadaba, Kandha, Saora, Bonda and Koya who practice hill agriculture and

Image: MSSRF

Tribal men marketing Kalajeera paddy at Koraput: Kalajeera is one of the rice varieties that has been popularized over a larger area

patronize landraces that have many primitive features and are often photo-insensitive and early maturing.

The landraces growing were found to harbour genes for biotic and abiotic stresses, aroma and palatability and hold promise for their utilization in future plant breeding and biotechnology programmes. Tribal communities have preferences for these landraces for their cooking quality, palatability, suitability for value addition, long straw for thatching and fodder. The farming practices followed by them are of great value for sustainable agriculture and food and nutrition security. Often, such traditional knowledge isn't largely recognized for sharing of benefits or rewards accruing to the community for conserving these landraces.

Diversity loss has been observed in rice. During 1955-1959, the Central Rice Research Institute, Cuttack collected 1,745 germplasm accessions of cultivated rice, which is popularly known as the Jeypore Botanical Survey. Among the collections, some perennial wild species *(Oryza rufipogon)*, annual wild species *(Oryza nivara)* and natural hybrids (Spontanea rices) were dominant. In a similar effort during 1995-1996 by MSSRF, only about 350 landraces of rice could be collected in the region, indicating a rate of loss of genetic diversity in a span of 40 years. Changing economic conditions are attributed to the erosion of knowledge on natural resources in Jeypore tract. Notably, in the central area of Jeypore tract, recent irrigation facilities have replaced landraces with high-yielding varieties and influenced traditional agricultural practices.

Realizing the need to develop procedures for recognizing and rewarding the contributions of tribal and rural families, particularly those of women, in the conservation and enhancement of genetic diversity, initiatives were taken by MSSRF since 2000 onwards to conserve, cultivate, consume and commercialize biodiversity with a special focus on landraces of rice, in accordance with the provisions of the Convention on Biological Diversity. The selfless efforts of tribal communities of Jeypore tract earned them the Equator Initiative Award in 2002 at the World Summit in Johannesburg. The award has been a significant motivational factor for the tribal community of Jeypore in Orissa to initiate an endogenous and sustainable mechanism of people's self-organizing actions into a local social system. Thus, it resulted in the formation and registration of a farmers' association, 'Panchabati Grama Unnayan Samiti' (PGUS) in 2003. PGUS was formed to popularize the success achieved in harnessing science and technology to make the villages self-reliant in agriculture and food security.

PGUS has been active since then in terms of disseminating appropriate technologies for conservation and production enhancement of local crops (rice, millets, pulses), enabling food security to a great extent. Access benefits from entitlement schemes have been enhanced through effective linkage. Tree plantation was promoted PGUS, both as avenue and in barren forest land, mainly through the supply of saplings at household level. In-situ conservation of 40 traditional rice landraces has been demonstrated in two villages, especially identified by PGUS. Seventeen landraces have been raised by 23 farmers in 13 acres (primarily for their own consumption). Machhakanta, Kalajeera and Haladichudi landraces have been popularized in a larger area. Kalinga Kalajeera Dhan Utpadak Samabya Ltd, with its linkage to Orissa rural development and marketing society, helped in marketing substantial quantities of Kalajeera rice variety. Village grain seed banks have been established by PGUS to provide farmers with access to quality seeds in time.

Hence, community institutions based biodiversity management and empowerment processes including research, development and legal support mechanisms are imperative and have been critical for hindering genetic erosion, enhancing local resource-based livelihoods and rewarding community conservation traditions.

National and global recognition for conservation traditions

The Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA), Government of India conferred the Koraput tribal communities with a Plant Genome Saviour Community Award in 2007. The Ministry of Water Resources, Government of India presented the tribal communities of Koraput with a National Water Conservation Award in 2011.

The United Nations Development Programme Equator Initiative Innovative Partnerships Award was awarded to the tribal communities of the Jeypore tract for the on-farm conservation of biodiversity, during the World Summit on Sustainable Development at Johannesburg, South Africa in 2002.

The Food and Agriculture Organization declared the Koraput region as a Globally Important Agricultural Heritage System in 2012. This award is for maintaining unique tribal traditional agricultural practices, conservation and utilization of inherited traditional knowledge for local food security in relation to cultural diversity.

Food sovereignty: the bulwark of family farming and agrobiodiversity

Elizabeth Mpofu, La Via Campesina

When the farmer and peasant organizations came up with the principle of food sovereignty, they were reacting to the dominant idea at that time, food security. They felt that food security was weak because it said nothing about where food was produced, who produced it, or how they produced it. Thus, food produced by industrial agriculture, mainly processed and traded by transnational corporations using pesticides and other harmful agrochemicals, and heavily reliant on fossil energy, was supposedly just as good as food produced locally by peasant, family farms, organically or agroecologically. However, that is clearly not the case, the second kind of food is better, because it is healthy, provides livelihoods for local farmers, sustains the agrobiodiversity and mirrors the local cultural eating habits and religious requirements. It is, therefore, a necessity in order to preserve food customs and local culture, and local diversity.

So the peasant organizations came up with the concept of food sovereignty, based on the need to grow and control our own food locally, agroecologically, by small farmers who get land through agrarian reform. It is also based on the need for human communities to define the food policies of their own territory.

Today food sovereignty is a living concept, because it is the banner of struggle of the world's largest social movement, La Via Campesina and its allies who include the consumers, urban poor, indigenous people, environmentalists and many others. All the members of La Via Campesina and allies have contributed ideas to this growing concept which reflects their elements.

Food Sovereignty is an alternative way of relating to nature and other people, which guarantees the survival of humanity even under extremely difficult conditions. It prioritizes local food systems and markets, access to and control over productive resources such as land, water and seeds. It recognizes peasant rights and protection against industrial agriculture, agrofuel production and the use of ecological production methods. Thus, the importance and potential strength of the peasantries of the world increasingly reside in their capacity to establish and secure food sovereignty. In this concept lies both social and economic transformation, hinged on agriculture to anchor sustainable development. Only food sovereignty based on genuine agrarian reform, and the defence of land and territory against land-grabbing, offers a real alternative to the current multiples economic and ecological crises. Such resistance pressures the state to subject natural assets to a collective, social function and under social control, in the

Image: Nelson Mudzingwa (ZIMSOFF)

Community-based seed systems are a driver towards food sovereignty and ensuring the right to food

hands of the food producers who are the peasants and the small family farmers.

La Via Campesina today is developing and promoting agroecology as part of food sovereignty. Agroecology, a part of food sovereignty, has emerged as an alternative to the industrial food regime. It is not a 'one-size-fits all' approach to agriculture but a multipronged approach based on indigenous knowledge systems to develop integrated farming systems widely recognized to be more adaptive and resilient to climate change, including droughts, hurricanes, temperature changes and shifting planting dates. More importantly, it opens a door to resist against multiple hardships faced by peasants, posed by dependence on agrochemicals and fertilizers. It thus presents a foundation to build a new agricultural future for the people and the planet.

Agroecological farming is highly knowledge-intensive and is hinged on farmers' knowledge, experimentation and innovation. The practice is not a straitjacket, and is therefore highly adaptive to different environments and climatic conditions. Even modern beneficial scientific knowledge is incorporated and adapted to the local context by farmers, who are key change agents in this system. Thus, organizations that are part of La Via Campesina have developed over 40 agroecology schools through which to promote exchange of experiences on a farmer-to-farmer ('Campesino-to-Campesino') basis as a tool for disseminating (through horizontal learning) agroecological practices and sustainable peasant agriculture. The farmers are the best researchers, and agents of local-specific change. Such experiences are documented, systematized and socialized. These schools are also entry points for new farmers' innovations and mutual beneficial scientific knowledge sharing. They are thus an incubator of new ideas and shared success stories based on farmer-to-farmer methods. Agroecology favours a bottom-up participatory approach to developing new ways and technologies in farming. However, the Green Revolution model favours a top-down approach which minimizes, if not excludes, the participation of smallholder farmers in the design of new technology. Such new technologies are passed down through extension agents or inputs suppliers. Hence, new innovations are not adapted to the local cultural and ecological context of farmers. This leaves farmers as passive recipients and minimizes the success of such technologies, thus contributing to food insecurity.

Image: Nelson Mudzingwa (ZIMSOFF)

Agro-forestry and other forms of production make farms more secure

Agroecology and other forms of sustainable peasant agriculture practiced on smaller farms make food production more secure. The higher level of on-farm diversity under agroecology means that if one crop is negatively affected, another one is likely to compensate for it. Mulch and green manures that cover soils protect them from erosion and high temperatures and conserve moisture. Agroecology thus promotes food sovereignty and ensures the right to food. It allows small farmers to be independent in terms of their food production as it limits their reliance on external inputs. Inputs such as seeds are harvested and saved; organic fertilizers are made in situ; pests are controlled using traditional methods. This allows small farmers to grow and harvest their food timeously. Moreover, agroecology produces more food (intercropping etc) on less land, using less water and energy. It promotes local food systems, thus ensuring the right to food. Therefore, on the quarter of arable land that peasants farm, these small farmers produce about half of the global food and generate 40 per cent of all agricultural value. Traditional knowledge systems and agroecology have thus allowed millions of peasants to continue to subsist on agriculture and feed a significant population of the world where agribusiness influence is limited.

Agroecology thrives to maintain harmony and equilibrium between the needs of humans and the planet. It promotes crop rotation for improving soil fertility, promotes the development of open pollinated varieties, supports water harnessing, and promotes community seed banks and local breeding systems that guarantee that farmers conserve and utilize their own seeds.

A diversity of varieties, as well as a greater variety within genetic diversity, makes peasant farms more able to adapt to changing conditions than homogenous commercial agriculture. Industrial agriculture has been encouraging the cultivation of crop monocultures, to achieve economies of scale associated with technological improvements such as agrochemicals and machinery.

Again, the use of organic fertilizers promotes soil biodiversity and improves soil infertility. The use of plant material and other on-farm organic fertilizers such as cattle manure and compost maintains rich soil biology and ensures good water retention. The integrated pest management system helps to keep a vibrant biodiversity while minimizing the effects of pests on crops. However, this is not the case with industrial farming. The increased use of inorganic fertilizers and other agrochemicals has affected the biodiversity impacting both soil biology and beneficial insects such as pollinators and pest eaters – and the production of high-quality nutritional, healthy and culturally appropriated food. Most of these technologies suffocated agrodiversity as they promoted mono-cropping instead of intercropping, affecting the nutrition of diets.

Agroecology reduces the need for fossil energy and chemical fertilizers in agriculture – both key sources of greenhouse gases – and thus contributes to 'global cooling'. This makes family farming an important and indispensible player in the fight against climate change, an attribute that is currently being promoted by La Via Campesina. As part of food sovereignty,

Food sovereignty: a pivot of family farming, nature and the planet

Issue	Dominant model: capitalist agriculture	Food sovereignty and peasant-based production
Trade	Free trade in everything	Food and agriculture exempt from trade agreements
Production priority	Agro-exports	Food for local markets
Crop prices	"What the market dictates" (leave intact mechanisms that enforce low prices)	Fair prices that cover costs of production and allow farmers and farm workers a life with dignity
Market access	Access to foreign markets	Access to local markets; an end to the displacement of farmers from their own markets by agribusiness
Subsidies	While prohibited in the Third World, many subsidies are allowed in the US and Europe – but are paid only to the largest farmers	Subsidies that do not damage other countries; i.e., grant subsidies only to family farmers, for direct marketing, price/income support, soil conservation, conversion to sustainable farming, research, etc.
Food	Processed food that is full of fat, sugar, high fructose corn syrup, and toxic residues	A human right: specifically, should be healthy, nutritious, affordable, culturally appropriate, and locally produced
Being able to produce	An option for the economically efficient	A right of rural peoples
Hunger	Due to low productivity	A problem of access and distribution; due to poverty and inequality
Food security	Achieved by importing food from where it is cheapest	Greatest when food production is in the hands of the hungry, or when food is produced locally
Control of productive resources	Privatized	Local; community controlled
Access to land	Via the market Via genuine agrarian reform	without access to land, the rest is meaningless
Seeds	A patentable commodity	A common heritage of humanity, held in trust by rural communities and cultures; "no patents on life"
Rural credit and investment	From private banks and corporations	From the public sector; designed to support family agriculture
Dumping	Not an issue	Must be prohibited
Monopoly	Not an issue	The root of most problems; monopolies must be broken up
Overproduction	No such thing, by definition	Drives prices down and farmers into poverty; we need supply management policies for US and EU
Genetically modified organisms (GMOs)	The wave of the future	Bad for health and the environment; an unnecessary technology
Farming technology	Industrial, monoculture, chemical-intensive; uses GMOs	Agroecological, sustainable farming methods, no GMOs
Farmers	Anachronisms; the inefficient will disappear	Guardians of culture and crop germplasm; stewards of productive resources; repositories of knowledge; internal market and building block of broad-based, inclusive economic development
Urban consumers	Workers to be paid as little as possible	Need living wages
Another world (alternatives)	Not possible/not of interest	Possible and amply demonstrated

Source: Rosset, 2003

agroecology promotes the use of locally adapted farming practices which rely on less machinery and inorganic fertilizers, the key sources of greenhouse gas emission in industrial agriculture. Maintaining a rich soil biodiversity together with the use of organic fertilizers is important to the cooling effect.

La Via Campesina is also defending land and territory, and fighting for agrarian reform, as part of food sovereignty. The recent food crisis and the consequent grabbing of peasant lands expose industrial agriculture as a false solution to global hunger. Peasants and indigenous peoples are the ones who are concentrated in the highest levels of poverty because they have been deprived of their land. Nonetheless, peasants continue to resist expulsion from the countryside, where they constitute more than 90 per cent of the rural population.

The land currently in the hands of peasants and indigenous peoples is around 20 per cent of all agricultural land in the

world. And yet, on this land peasants and indigenous families and communities produce slightly less than half of the world's food. The most secure and efficient way to overcome hunger around the world is to return the land to the peasants, the food producers. Food sovereignty guarantees basic human rights, of which the right to land and water is one of them. It defends the needs of all who work the land and produce food, the farmers and campesinos. It therefore calls for an integral agrarian reform.

Access to and control over productive resources such as land, water, seeds and finance, is a critical part of an integral agrarian reform which entails the democratization of land, and the creation of direct employment, housing and food production. This should not be limited to the redistribution of land, but should entail the ceding of full rights over lands. Such rights should also recognize the legal rights of indigenous populations over their territories, guarantee fishing communities' access to and control over fisheries and ecosystems, and ensure the right of access to and control over livestock migration routes and pastures.

LVC is working to create local markets for farmers, as part of food sovereignty. Many scholars recognize the importance of food sovereignty as the only lasting alternative way to eliminate many forms of hunger and reduce poverty through local economic development. Food sovereignty achieves such development in rural areas by creating and localizing circuits of production and consumption, where family farmers sell their produce and buy their necessities in local towns. This creates conditions for lasting development through generating local employment and enabling farmers to make a living. In contrast, if what farmers produce is exported, fetching international market (low) prices, and almost everything they buy is imported, all profits are extracted from the local economy and contribute only to distant economic development. Thus food sovereignty, with its emphasis on local markets and economies, is essential to fighting hunger and poverty.

Some national governments have adopted food sovereignty oriented policies and laws to promote a better life for peasants and to correct food import deficits. Such policies have entailed the recognition of peasant farming and the protection of peasants from external market factors by protecting national markets from dumping, hoarding and speculation by global corporations, and introducing systems to guarantee fair prices for peasant food production. But subsidies paid to family farmers to keep them on the land and support vibrant rural economies, and subsidies that assist with soil conservation, the transition to sustainable farming practices and direct marketing to local consumers, are good. Some governments have reoriented their agricultural research and extension systems to support farmer-to-farmer agroecological innovation and sharing managed by farmer organizations as the keystone to up-scaling agroecology. Public awareness campaigns to support farm-to-city direct marketing of ecological production through farmers' markets, linking rural and urban cooperatives, are critical.

The current debates on climate change effects, the food crisis and the need to safeguard the planet against further destruction, either through curbing greenhouse gas emissions or reverting from a capitalist mode of agricultural production to food sovereignty, all provide an opportune moment for family farming to amplify the need for ecologically sound and sustainable agricultural practices. Many studies have shown how the yields of improved varieties continue to plateau under industrial agriculture, in some cases

Image: Nelson Mudzingwa (ZIMSOFF)

Local communities increase awareness toward consumption of small grains

declining with slight temperature changes common under climate change. Thus, agricultural and food systems are confronted with an ecological and environmental sustainability crisis to which only food sovereignty provides a lasting solution. Food sovereignty has emerged as an alternative to the industrial food regime and promotes and amplifies family farming. The declaration of 2014 as the International Year of Family Farming by the United Nations is an opportunity to redirect agriculture towards a model of food sovereignty which will generate employment, provide healthy food and respect natural resources.

It is imperative that during this International Year of Family Farming critical steps are taken and that commitment should be mobilized so that policies to protect and to strengthen peasant family farming might be implemented. Of the national governments, we therefore demand that they:

- end resources grabbing: land, water and seeds
- promote policies which guarantee food sovereignty, biodiversity and peasants' seeds, and that they improve access to land and water
- recognize peasant rights regarding the production, reproduction and exchange of their traditional seeds, guarantees of agrobiodiversity and peasants' autonomy
- increase the support and public investments for peasant-based production, and guarantee markets and equitable trade.

At international level, we urge governments to apply the Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests, and other key decisions from the Committee on World Food Security, and that they adopt the United Nations Declaration of Peasants' Rights. Additionally, we urge that they implement the International Treaty on Plant Genetic Resources for Food and Agriculture, and that they end negotiations for any new commercial agreements, particularly the Trans-Atlantic Trade and Investment Partnership or the Trans-Pacific Partnership.

This year should be used to start a global redirection of agriculture towards a model of food sovereignty which will generate employment, provide healthy food and respect natural resources. We call for the creation of an alliance between countryside and city, that it might revive the peasants' dignity and their great contribution to food production. We need important political changes, both for our tables and for our fields.

Family and smallholder farming in Himalayan communities

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Agriculture forms the world's largest commerce sector; with growing population and increased per capita consumption it is strongly felt that more productive agriculture is required to sustain the need of the people along with protection of its ecological integrity.[1] Across the globe a large share of traditional societies' needs are met from family farming practices that comprise agricultural, forestry, fisheries, pastoral and aquaculture production activities, operated and managed by family labour.

Family farming systems are quite prevalent in India, more so in the Indian Himalayan Region (IHR) that comprises nearly 18 per cent area of the country, and varies between 4 and 48 per cent among the 12 mountainous states of the IHR. Agriculture is the major livelihood activity for over 70 per cent of people in IHR. There are diverse agroclimatic zones in the region that support varied crops, cropping patterns and crop productivity. In this region family farming is the predominant form of agriculture for food production, which is mainly dependent on land, livestock, forest and traditional knowledge.

The majority of prevalent family farming systems are subsistence types, though there are commercial farming systems as well. Diversity in physiographic, land, climate and other factors has caused great variations in the traditional agricultural practices which provide a range of products to support livelihood. Farmers maintain crop varieties and livestock according to social needs and environmental conditions, and mostly follow indigenous management practices for crop, field, soil fertility and moisture conservation evolved over the years based on trial and error. In the northeast region of the IHR shifting cultivation (locally called jhum) is the most dominant form of family farming, whereas the northwest region comprises the settled farming systems. Within these two types there are diverse site-specific variations. A key feature of IHR agricultural landscapes is that they are managed for multiple services rather than just for grain production.

Nearly 86 per cent of farmers in the IHR are marginal and smallholders, and family farming is clearly distinguishable

Image: G.B. Pant Institute

An agricultural landscape in north-west Himalaya depicting kharif season crops (with standing crops) and field preparation for the rabi season

between north-east and north-west Himalayan regions. In the north-east region shifting cultivation is the most extensive agriculture land use, which on an average involves the cultivation of 8-35 crops together including cereals and grains, leafy vegetables, tubers and rhizomatous crops.[2] Those are harvested sequentially from July to December; the crop compositions vary with the site and fallow-length of the jhum fields. Grain- and seed-yielding crops give high yield after a longer jhum cycle (60 years), although leafy vegetables, tubers and rhizomatous crops perform better in areas with shorter jhum cycles (5-10 years).[3] However, in recent decades the jhum cycle has been shortened to 5-10 years due to growing population and food demand.[4] Other than jhum cultivation, the region also supports wet rice cultivation in the valleys. An excellent innovation in wet rice cultivation is the introduction of fish that maximize crop output.[5] In the north-east region home gardens are also maintained to meet diverse household needs.

In the north-west region of IHR agriculture is carried out on terraces carved out of hill slopes. The cropping patterns, up to 2,000 metres, are built around the two major cropping seasons of kharif (April-October) and rabi (October-April). As most of the agriculture is rain-fed and generally three crops are taken in two years in low hills, and just one crop annually in mid and high hills. However, in the valley bottom where irrigation is possible, two or three crops of cereals and vegetables are taken in one year with limited use of hybrid crop varieties and fertilizers. The average crop yield ranges from 1-2 ton per hectare per year. To maximize production multi-cropping is a common practice with as many as 40 crops including cereals, millets, pseudocereals and pulses cultivated to ensure food security.[6] The huge traditional agrodiversity has been maintained through a variety of crop compositions, cropping patterns and crop rotation favoured by enormous variations in the edaphic, topographic and climatic conditions.[7] Cereals, pseudocereals and pulses are the main crops of the kharif season while wheat, barley, mustard, lentils and peas are cultivated in the rabi season.

Image: G.B. Pant Institute

Mix-cropping in jhum fields, north-east India

In shifting cultivation area, a collective decision is made over the selection of land for cultivation and the distribution of suitable pieces to each family in a village. In the north-west IHR land belongs to individual family heads, and crop cultivation and associated practices are solely the choice of the land owner. However, the entire farming community systematically divides the entire agricultural land into two halves, each area locally called as 'sar'. One sar is brought under cultivation while the another is left fallow to recover soil fertility status. The system thus exhibits a remarkable crop rotation trend. In the north-west region farmyard manure is applied to the agricultural fields which is derived from composting livestock excreta and leaf litter. However, this practice is not prevalent in jhum fields in the north-east. All over the farm families maintain their own seed banks for various crops although there is also exchange of such seeds among them. A large variety of agroforestry trees is maintained in and around the agricultural fields for diverse uses such as firewood, fodder, fibre, food and for natural fertilizers to maintain farm fertility.[8]

Many commercial crops are grown by farming families in the IHR — for example, saffron and tulip in Jammu and Kashmir, and seed-potato, ginger and vegetables in Himachal Pradesh and Uttarakhand. Also, fruits such as apple, pear, cherry, apricots, walnuts, mango, litchi and almonds are grown on a large scale in the north-west region of IHR although the level of production varies from state to state. Sikkim state is well known for cardamom production, whereas the Darjeeling district of West Bengal and Assam are famed for tea cultivation. In various north-east states orange, lemon, pineapple, guava, litchi, banana, black pepper, rubber, areca nut and betel vine are being promoted as cash crops. Cultivation of medicinal plants has also been introduced in recent years throughout the IHR. It is notable that niche-specific commercial crops perform much better in the region. The majority of family farming practices in the IHR are carried out by smallholders who contribute immensely to the food security, livelihoods, social protection and well-being of Himalayan farming communities. Some highlights follow.

Food security and enhanced livelihoods

Family farmers contribute immensely to maintaining agrobiodiversity (300-500 crop-plant varieties and their wild relatives with 5,000-10,000 crop cultivars) in the IHR. An individual farmer grows 20-40 crops and fully understands various agronomic operations and economics to manage them. Thus these farms can be considered as a source of important genetic material. Mixed cropping and the maintenance of genetic diversity are key features of traditional family farming as diverse production of mixed crops provides insurance against crop failures. Family farming contributes significantly to food security as 30-40 per cent (sometimes more) of the food requirement of small and marginal farmers is met from their farms. Besides, farmers meet most of their fodder, fuel and fibre needs from their farms and surrounding areas. There is continuous use of land with suitable crop rotation, and high emphasis is placed on the recycling of crop residues and other resources. Crop residue fed to animals

Image: G.B. Pant Institute

Rice-fish cultivation in the Apatani valley, north-east India

and the manure thus produced is applied to agricultural fields. It clearly exhibits that in traditional family farming, agriculture and livestock are managed in an integral way. Local livelihoods also depend on use of diverse natural resources, particularly non-timber forest products extracted from surrounding forests, and they are able to enhance their livelihoods by selling raw and value-added products in local markets.

Soil fertility and water management

In traditional family farming systems the use of fertilizers and irrigation inputs are minimal, as most of the crop fields are rain-fed. Farmers adopt various indigenous practices to maintain soil fertility and conserve in-situ moisture in crop fields. In normal cultivation rain-fed crop fields are tilled twice and irrigated fields three times before seed sowing. Reduced tillage (geometry, frequency and depth), mulching of leaf litter and cultivation of drought-resistant crops are some prevalent measures to cope up with the problem of soil moisture and soil fertility.[9] Also, relay cropping, maintenance of crop field bunds, soaking seeds overnight in water to improve germination and micro-irrigation are some indigenous techniques for in-situ soil moisture conservation in the crop fields.[10] There is a need to include traditional practices and knowledge of soil and water conservation in policies and programmes for promoting sustainable agriculture in the Himalayan region. In recent years, drip irrigation and fertigation have also been promoted by government agencies and research and development institutes.

Social protection

In the majority of areas family farming leads to a subsistence economy. However it is most sustainable, as various farming practices are maintained for centuries despite the fact they are less profitable, with little change in crops and cropping patterns. Unfortunately, subsistence is seen in economic terms rather than in ecological terms. Family farming has more adaptability and resilience as it is predominately practised in rain-fed conditions with suitable species for different elevations and land use types; it supports a high degree of plant diversity with a good mix of nitrogen-fixing and pollinator-supporting species. There is considerable community wisdom around the crops and skills with strong community bonding, which minimizes crop failure with drought-tolerant varieties and maintains greater topsoil, moisture, and stable and diverse production.

Environmental well-being

Family farming is more resource-conserving than large farms. Smallholders maintain few resources but more efficiently. They earn more profit per unit of output and are thus more profitable and more productive, since all parts of the plant are used either as food or forage for animals. In family farming the farmers take better care of natural resources including soil erosion control and biodiversity conservation. Land, soil, landscape and water resources are thus maintained in an environmentally sustainable way that is passed from one generation to another. In comparison with industrial agriculture which leads to more greenhouse gas emissions, traditional family farming and small farms are organic, and this helps immensely in carbon sequestration and disease control. Smallholders' knowledge of resource management, biodiversity conservation, environmental monitoring and coping with environmental variability and crisis can help form a good foundation for developing local communities, livelihoods and cultures.

Mix-cropping and associated farming practices not only maximize benefits to smallholders, it also supports pollination friendly/supportive practices. As the integrity and sustainability of many agroecosystems is under threat due to intensive land use change, market forces and contemporary demands, there is an increasing demand for managed bee pollination. This can be seen in apple orchards in Himachal Pradesh, mustard fields in Uttrakkhand and large cardamom in Sikkim state. These examples indicate that pollination management (availability and abundance of pollinators) can be regarded as a production factor for all the pollination-dependent crops grown over a year, as it can affect the agronomic yield and its many components such as fruit and seed set and quality.

Challenges to family farming

Lately, many of the traditional practices in family farming are under stress for various reasons.[11] Improvisation in small and fragmented holdings is a big challenge, which often makes such farming systems more vulnerable than commercial practices. Because of fragility, marginality and inaccessibility, many farmers are constrained to abandon their tiny terraces. Also, there are inadequate technical extension services for smallholders. Due to high input costs the younger generation shows a negative attitude to continuing subsistence agriculture. Thus farmers' wisdom and the communal harmony that helps manage agricultural resources is weakening. Globalization, climate change, frequent flood and drought, weak linkages with markets, sociocultural transformation, changes in food habits and poor resilience/adaptive capacity among farmers also play an important role in drawing marginal farmers away from farming activities. Many of them migrate to nearby towns in search of alternative employment, leading to the abandonment of their houses and agricultural fields.

Agrobiodiversity and agroecosystem diversification must be viewed as mechanisms to cope with environmental heterogene-

Image: G.B. Pant Institute

A view of mix-cropping in rain-fed conditions in a high altitude area of north-west Himalaya

ity, climatic uncertainty and meeting basic needs. In the IHR the traditional farming system has a focus on self-reliance, contrary to modern agriculture which aims for economic gains. Farmers, through trial and error, have evolved diverse agrotechnologies related to land terraces, water management, irrigation, soil conservation, manuring, weeding, crop rotation and lopping regimes for agroforestry tree species. Many of them are 'best practices' based on low input, and are therefore the best fit for developing adaptation and mitigation strategies.

The major focus of policies in the Himalayan region seems to be skewed towards big farms, as subsidies are provided for raising orchards, floriculture, pisciculture, chemical fertilizers, fencing of farms, irrigation and so on. This is hardly feasible for smallholders who have small and fragmented land holdings. There is a need for appropriate policies and programmes to encourage farmers in the conservation of agrobiodiversity, particularly in rain-fed areas. Also, appropriate institutional mechanisms and capacity to address the issue of agrobiodiversity conservation need to be devised. The wealth of indigenous knowledge of Himalayan communities in managing agroecosystems and agrobiodiversity need to be understood by the outside world to get adequate policy backing. There is a need to improvise from subsistence to a market economy, and there is no harm in that if it is seen as a natural change for farming communities. However, farmers have little information on market linkage, technologies and the latest policies, so appropriate capacity development should regulate this change. The cash crop economy is successful in areas where effective value chains exist. Although at small scale, rural markets (village markets), locally called 'hats', have good potential for providing income to smallholders. The Govind Ballabh Pant Institute of Himalayan Environment and Development, keeping in view the issue of smallholder farming systems and farm families in the IHR, has been vigorously pursuing research, documentation of traditional knowledge, demonstration of environment-friendly natural resource management models among smallholder farming communities, documentation and promotion of pollinator friendly best practices, training and capacity building of farm families, and policy advocacy in order to achieve food security and sustainable management of agroecosystems in the IHR.

It would be logical to improvise on traditional technologies that have ecological efficiency, economic viability, social acceptability and environmental suitability rather than replacing them with modern tools and techniques. As policies and programmes often regulate change among communities, appropriate policy design is required to make sure farming programmes are people programmes. Policies should encourage the internalization of development interventions and must focus on empowering farmers. Therefore, the role of people should be more active in policy formulation, based on the transfer of appropriate knowledge and technologies, and the amalgamation of new knowledge with traditional knowledge. If appropriately planned, family farming can provide and contribute significantly to the food security, increased livelihoods, social protection and well-being of Himalayan farming communities.

Family farming and the sustainable use of natural resources around the world

Dr Evelyn Nguleka, Acting WFO President; Marco Marzano de Marinis, Executive Director; and Elizabeth Fox, Communications, World Farmers' Organisation

Family farming and smallholder farming plays a significant role in managing natural resources. Facilitating access to land, water and other natural resources and implementing specific public policies for family farmers (credit, technical assistance, insurance, market access, public purchases and appropriate technologies) are key components for increasing agricultural productivity, eradicating poverty and achieving world food security.

Family farming preserves traditional food products, while contributing to a balanced diet and safeguarding the world's agrobiodiversity and the sustainable use of natural resources. Family farmers are the custodians of a finely adapted understanding of local ecologies and land capabilities. Through local knowledge, they sustain productivity on often marginal lands, through complex and innovative land management techniques. As a result of the intimate knowledge they have of their land and their ability to sustainably manage diverse landscapes, family farmers are able to improve many ecosystem services.

Image: Kati Partanen, WFO Women's Committee, Finland

A woman farmer in Zambia: women play a vital role in family farming

However, farmers already face new challenges posed by climate change while the degradation of land and water resources, as well as other negative environmental impacts, confirm the limits of highly intensive farming systems.

Family farming represents an opportunity to boost local economies, especially when combined with specific policies aimed at social protection and the well-being of communities. Family farmers have strong economic links to the rural sector; they contribute strongly to employment, especially in developing countries where agriculture still employs the majority of the labour force. In addition, the incremental income generated by family farming is spent on products and services such as housing, education and clothing in the local non-farm economy.

Family farmers play a pivotal role in the local production, marketing and consumption circuits that are so important not simply in fighting hunger, but also in creating jobs, generating income, and in stimulating and diversifying local economies. Worldwide, there are an estimated 500 million family farms. In a Food and Agriculture Organization survey of 93 countries, family farmers account on average for over 80 per cent of all holdings. In developed and developing countries alike, they are the main producers of food consumed locally, and the primary stewards of food security.

Family and small-scale farming are inextricably linked to world food security. The World Farmers' Organisation (WFO) is an international member-based organization whose mandate is to bring together farmers' organizations and agricultural cooperatives from all over the world, representing the global community of farmers: small, medium and large-scale. WFO includes 66 members from about 50 countries in the developed and emerging world with the objective to develop policies that favour and support farmers around the world. WFO reached out to its global members for insight about country-level experiences in family farming. Here are a few examples of family farming in a nutshell, and the sustainable use of natural resources.

According to the Coalition for Farmers Ghana (COFAG) family farming, which includes all family-based agricultural activities, in Ghana is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production that is managed and operated by a family and predominantly reliant on family capital and labour, including both women and men. The family and the farm are linked, coevolve and combine economic, environmental, social and cultural functions. At

Image: Debra Brubaker, Village Acres Farm, USA

Family farmer Hannah Smith-Brubaker tending to her chard at Village Acres Farm in Mifflintown, Pennsylvania, USA

the country level, both in developing and developed countries, family farming is the predominant form of agriculture in the food production sector. Within this framework, the development of viable modalities of family farming is essential for the achievement of sustainable development in agricultural, forestry and fishery production systems.

More than 99.9 per cent of COFAG members who are smallholders qualify as family farmers. In Ghana family farming makes contributions to the socioeconomic development of communities in the way of personal, household, community and national food and nutrition security, jobs/livelihoods, unpaid and uncompensated environmental services such as carbon credit, and raw materials. However, at the moment there are no policies in place in Ghana to support family farmers or the family farming model.

COFAG would like to see some of the following mechanisms of support and policies in place to reinforce the family farming model: diversification of livelihoods and income sources; accumulation of assets; appropriate mix of flexible and diversified financing mechanisms and instruments; special and social protection measures; strengthening knowledge, skills and capacity; flexible financing instruments; social protection; capacity building to manage and prevent risks and disasters; sustainable agricultural intensification; consideration of ecosystems in food and nutrition security; the avoidance of food waste and losses as a result of irresponsible consumption and post-harvest losses; implications for the post-2015 Millennium Development Goals and Sustainable Development Goals; accessibility, resources, information, technology, capital, assets, relative power; smallholder family farms and cooperatives at the centre of efforts and investments related to food and nutrition security; more secure access to land and water; access to financial services to pay for seed, tools and fertilizer; access to better markets as incentives to invest in improving production, with less risks; improved infrastructure and transportation; access to technology for up-to-date and reliable market information; stronger organizations and cooperatives; deliberate targeting of special measures for gender, ethnic and age-related access to power, opportunities, capacity and resources; local accessibility of resources and markets; small farms as professional rural enterprises; economies of scale, bargaining power and higher prices; vertical links into upper levels of the input-supply-production-processing-wholesaling chain; prioritization of developing countries and sub-Saharan Africa by taking action now.

In Ethiopia, according to Daniel Gad, Ethiopian Horticulture Cooperative (EHC) board chairman: "The family unit members are actively involved in farming activities. Contribution of family members is compensated via seed, grain for food, food items, and/or cash. [There is] shared labor for agricultural outputs by members of a group defined as family by local tradition and legal entities."

In Ethiopia family farms make up the majority of smallholder farmers. Most reports estimate this to be up to 60 million farmers. Family farms contribute as much as 60 per cent of the national crop output. EHC is a cooperative made up of small to medium-sized commercial farmers who may have groups of smallholder/family farmers making up part of their out-grower schemes.

Image: Kati Partanen, WFO Women's Committee, Finland

Cow milking on an African farm: the DSIP under CAADP supports family farmers, but clearer policies are needed on agriculture financing

Image: Rob McClure, Hilltop Community Farm, USA

A community supported agriculture share at Hilltop Community Farm, Wisconsin, USA: growers and eaters share in the risks and rewards of food production

Microfinance institutions support the needs of family farmers and smallholder farmers in Ethiopia. However, the exact level of availability of microfinance funds is not known at this time. Government policies and legal structures are in place in Ethiopia to ensure that landholding and access to land for family farmers is protected and uniformly applied across the regions of the country. In fact agricultural land is owned by the state and not sold, but leased through both the federal and regional governments. The Development Strategy and Investment Plan (DSIP) under the Comprehensive Africa Agriculture Development Programme (CAADP) has elements that emphasize support to family farmers, but there is no clear policy on agriculture financing. EHC would like to see policies in place such as agriculture financing policy, which would facilitate access to affordable farm credit.

In Malaysia, according to Penubuhan Pertubuhan Peladang Kebangsaan (NAFAS) - National Farmers' Organization of Malaysia, family farms are handed down from generation to generation. They are managed and operated by the family as the main source of family income. There are approximately 800,272 family farms in Malaysia. The Malaysian New Economic Transformation Program and National Agro-Food Policy support family farming.

According to the Canadian Federation of Agriculture (CFA), family-managed farm operation — be it a corporation, partnership or single proprietorship — makes up 72-98 per cent of the farmers in Canada. Family farming is an excellent stewardship of land and natural capital. The policies in place to support family farming in Canada include Farm Credit Canada; young farmer loans; the 'Ag more than ever' campaign and Growing Forward 2 (however this is for farmers in general, not only family farmers). Meanwhile CFA would like to see long-term food strategies in place that all stakeholders agree upon, industry and government.

The National Farmers Union in the United States of America (NFU USA) recognizes family farming as a unit utilizing land and other capital investments operated by one farmer together with his/her family, who provide stewardship, management and take the risk. All NFU USA members are family farmers or supporters of family farming. According to NFU USA, family farming is the prime economic driver of rural communities in the USA. All farm policy is governed by the Farm Bill, a safety net that includes limitations that direct assistance to family farming. NFU USA would like to see more attention to concentration and consolidation in agriculture at the government level.

Upon the United States Senate designation of the 2014 International Year of Family Farming on 17 September 2014, NFU USA President Roger Johnson, said, "Recognizing the critical role family farmers play in providing food, fuel, feed and fibre to the global population and alleviating hunger and poverty is important because we need to be developing our future farmers — both in the USA and abroad — right now."

In Finland, according to the Central Union of Agricultural Producers and Forest Owners (MTK), on family farms the decision-making, juridical and economic responsibility lies in the hands of the family, wherein the family contributes labour, and ownership is passed on (down) through the family. Nearly all Finnish farms are family farms. Family farming provides employment in rural areas in the production, processing and serving of Finnish food. In fact 80 per cent of the food eaten in Finland is produced in Finland. There is financial support from the Finnish Government for family farmers, including start-up support for young farmers and capacity building. MTK would like to see government policies in place to support competitiveness, fair trade and consumer information.

Family farming in Uganda, according to the Uganda National Farmers Federation (UNFFE) is characterized by a small resource base, low input and low output. Over 90 per cent of the farms in Uganda are family farms, and within UNFFE 95 per cent of the members are family farmers. The bulk of Ugandan exports are aggregates of surplus from family farming. The DSIP under CAADP has elements that empha-

Image: Albert Yee

Hannah Smith-Brubaker with her Berkshire pigs, which are raised at Village Acres for her family at Blue Rooster Farm, East Waterford, Pennsylvania, USA

size support to family farming in Uganda. However there is no clear policy on agriculture financing in Uganda. UNFFE would like to see agriculture financing policies in place that facilitate access to affordable farm credit.

According to Sociedad Rural Argentina (SRA) — the Argentine Farmers' Union — on family farms the domestic unit and production unit are physically integrated. Agriculture is the main occupation and source of household income in Argentina. Family farming provides a predominant fraction of the labour force, and output goes to consumption and markets. In Argentina, family farming plays an important role in food sovereignty and security, especially because of the tremendous variety of foodstuff produced in the country, both for sustaining the livelihoods of families and for domestic consumption, and for export to markets outside the region. In particular, almost 70 per cent of the farms in Argentina are family farms. Family farms only occupy 13 per cent of farmlands, but they contribute about 20 per cent of the gross production value and represent 53 per cent of rural employment.

There are Argentinian programmes in place to increase family farming production, support family farming to incorporate market and value chains sustainably, build alliances among different market actors and provide finance, investments, and working capital to increase production and productivity. SRA would like to see several government policies to support family farming, such as housing policies; infrastructure; access to water and energy; communications; transportation corridors; and improved marketing systems.

In Mozambique, according to Mulher, Genero e Desenvolvimento (MuGeDe, or Women, Gender and Development), family farming is small-scale agriculture restricted to household members. While 80 per cent of agriculture production comes from family farming. Within MuGeDe 50 per cent of its members are family farmers. All of these family farms contribute not only to family diets, but also to their local and national economy. The overall rural development strategy in Mozambique has a chapter on family farming. The Agricultural Development Fund and Rural Development Strategy provide rural finance for small and medium farmers. MuGeDe would like to see specific laws in place to support rural women and strategies for development given the vital role of rural women in family farming, along with policies to support disaster risk reduction. In Africa, as in other developing countries, family farms are usually rain-fed and, therefore, are highly subject to climate change.

The National Farmers' Union of England and Wales (NFU UK) considers family farming as a business operated by one or more members of the same family, often passed from one generation to the next, however this does not necessarily mean a small farm. All of the NFU UK members are family farmers, except for a restricted number of professional corporate members that can be considered family farmers. The agrifood sector in the UK accounts for 7.3 per cent of the national gross value added. In the UK, the European Union (EU) Common Agricultural Policy (CAP) governs all farming. NFU UK feels that the CAP must be kept simple, and that it should work towards the elimination of competitive distortions within the common market, enable greater market orientation and encourage farmers to become more competitive, therefore reducing dependency on support payments.

In Ireland, according to the Irish Farmers' Association, family farms are owner occupied, where farmers own capital and labour. Most farms in Ireland have been inherited from parents or other relatives. The majority of the 140,000 farms in Ireland are family farms. Meanwhile family farming is the main source of employment in rural areas. As with the rest of Europe, the EU CAP governs all farming activities. The Irish Farmers' Association feels it is vital that the CAP is fully funded, including national co-financing where it is required under the rural development programme.

In Germany, according to the Deutscher Bauernberband (DBV or German Farmers' Association), family farming is a complex professional cooperation consisting of family members with a variety of complementary tasks and relations. About 94 per cent of the farms in Germany are family farms. German socioeconomic development at local level, jobs and income, is supported by family farmers. The CAP governs German farming. DBV would like to see agriculture taken into high consideration within international cooperation agendas.

In Switzerland, according to Schweizer Bauernverband (Swiss Farmers' Union), aspects of family farming include all family life, and the work is inextricably linked. Usually family farms are passed on through the family, and the decision-making power remains within the family. In Switzerland 99.9 per cent of farms are family farms; even collective farms are organized by families. Approximately 1 million jobs in Switzerland are family-based agriculture. Family farming is a key part of the national identity for Swiss people, and is the key provider of food. There are Swiss policies in place to assist with family farms' financial support, regulations, rural land rights, education and markets. The Swiss Farmers' Union would like to see policies that sustain food sovereignty, international cooperation, fair trade, land access, valorization of education, protection of natural resources, strengthening of peasant women, education of consumers, and competitiveness.

Working with rural households to boost livelihoods and resilience through bamboo farming

I.V. Ramanuja Rao, Senior Adviser, International Network for Bamboo and Rattan and Chairman, Centre for Indian Bamboo Resource and Technology

The overarching importance of agriculture in rural poverty underlines a paradoxical point: although it is the source of livelihood for 76 per cent of the world's poorest people living in rural areas, it only accounts for 5 per cent of the global gross domestic product — 1.5 billion people in 500 million small farms. Even this number is under increasing threat. Globally, cropland represents around 1.53 billion hectares of which 0.4-0.48 billion hectares is abandoned farmland. The poorest farming households have only rain-fed lands without any prospect of irrigation, and the highest risk of crop failure. Unviable farming activity has pushed many poor marginal/small farmers to abandon their farms and move to slums in cities.

Climate change further compounds the inherent risk of rain-fed agriculture by increasing the variability in rainfall and temperature. The agricultural situation will become progressively adverse for the poor who depend on rain-fed land or other natural resources for subsistence and income. On the other hand, the pressures of an ever-growing population are leading to overcultivation, with land degradation and deforestation increasing at an alarming rate. Additional challenges to family farming include the perishable nature of most food produce, rising input prices, rising expenditures and low price realizations.

Image: K. Rathna, CIBART

Biomass briquettes in India — solid biofuel pellets and briquettes can be produced from any biomass

Typically, family farming is founded on land, water and labour. Agricultural produce serves two important family needs: food security and cash income. How does a family cope when this gets disrupted? Assuming there is crop failure due to drought, flood or fire, a rural household should have adequate cash for purchasing the food it needs. How can they generate cash? How can their resilience be enhanced?

The immediate imperatives are to generate rural jobs and income opportunities at a large scale for poor rural households, increase their resilience, rehabilitate lands and make them productive and economically viable, and enhance permanent green cover, thereby making it possible to reduce the impact of climate change on rural smallholder livelihoods through mitigation and adaptation.

Given the scale of the need, solutions to address these imperatives should be:

- household-centric
- land-based, capitalizing on an asset most rural poor already have access to, and capable of application to most soil conditions including degraded land
- natural resource-based, enabling people to grow a hardy and preferably perennial crop that lends itself to year-round harvest of the vegetative part as the economic output
- labour-based, enabling employment of large numbers
- climate independent and drought tolerant
- linked to market opportunities that offer the corresponding scale, growth and income.

It is essential that the new value chains do not displace food crops, and that they conserve and regenerate local and vulnerable ecosystems and enhance agricultural productivity and carbon sequestration.

Renewable bioenergy value chains of solid biofuels and power are large biomass consumption markets that can address the above challenges and imperatives. Both fuels and power are in great demand; the limited supply results in crippling shortages, especially in Africa and South Asia which have most of the world's poor. The robust renewable biomass

energy markets complement agriculture and can provide a second, steady and sustainable income from biomass, which can be grown by small farmers even in rain-fed areas. Given that the amount of income derived can rival that from food agriculture and greatly increase resilience, the traditional concept of farming as being for food production only will expand to one that includes biomass for energy as well. This in turn will help to create a new market opportunity and turn biomass agriculture into a second major farming segment.

Recognizing the importance of energy for sustainable development, the United Nations designated 2012 as the International Year of Sustainable Energy for All. For the poor, the main source of energy is fuelwood, a renewable, solid biofuel. However, given the linkage of fuelwood use to deforestation, policymakers have looked down upon and dissuaded the use of fuelwood and even promoted liquid petroleum gas. The poor have been stigmatized by this linkage to poverty, the poorest even being characterized by such fuel usage. This is a social, environmental and economic policy tragedy of epic proportions; the potential of women, the main gatherers of fuelwood, as responsible managers has been inadequately understood, and their role as potential energy producers has not been recognized, facilitated and incentivized. The 500 million women who cook (at least) twice daily with fuelwood and their 2.5 billion family members could be a potent transformative force in the battle against climate change. That is nearly one-third of the world's population!

The association of the poorest with fuelwood now needs a change since well-off segments in developed countries have come full-circle to biomass pellets and briquettes (urban fuelwood). Solid biofuel pellets/briquettes can be produced from any biomass, not just from fuelwood that is typically obtained from forest trees. This is the game-changer. Smallholder farmers in rain-fed areas have 1.5-3 tons of non-fodder agri-wastes from farming. This is commonly burnt to clear the fields for planting. However, if pelleted or briquetted, it can be used as fuelwood, make it sustainable.

Policy push should change to encouraging the wider use of sustainable biomass solid biofuels by rural households while incentivizing and making the sustainable production of these biofuels a financially attractive economic option and advocating against non-renewable fossil liquid/gas fuels. Importantly, of all the renewable energy options, only biomass solid biofuels sequester CO_2.

The first key strategy for a robust source of income developed by the International Network for Bamboo and Rattan (INBAR) is the innovative household charcoal (HHC) that is produced at least twice daily, year-round, in 500 million households when cooking using fuelwood. HHC, which is commonly discarded, has been made into a year-round source of income for women. It turns every cooking stove that uses fuelwood into a processing unit and the woman into a micro-entrepreneur. The yield is approximately 10 per cent by weight of the fuelwood used. Efficient stoves can double this to 20-25 per cent. At 10 per cent yield, the total calculated HHC production from 500 million households amounts to 183 million tons — nearly four times that produced commercially by deforesting landscapes (47 million tons). At 20 per cent yield, this could be 365 million tons of HHC, which as pure carbon equals 1,338 million tons of CO_2.

In Rajasthan, India, the incremental income from this HHC for the 6,500 participating households is an additional 20 per cent of annual income for a rural working person (income at 10 per cent yield). This can go up to 40 per cent and even over 50 per cent of the annual income. In Tanzania, given the low base income, income from just

Image: Donald Kibuti, WODGRA

Charcoal briquette production in Tanzania

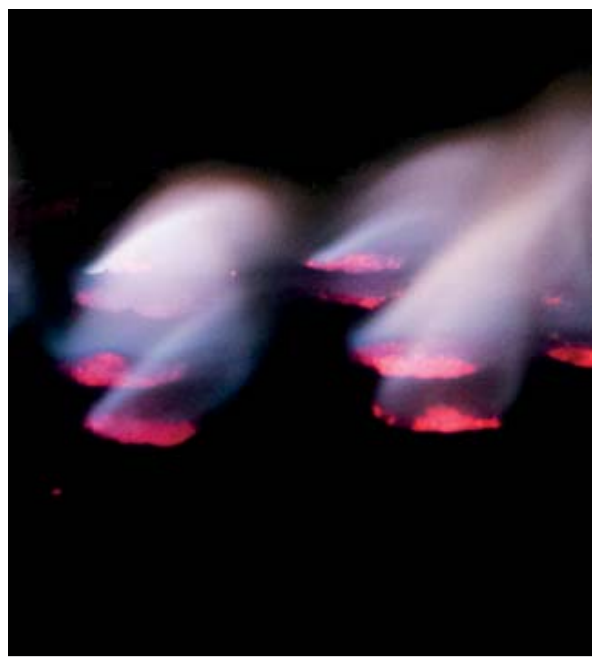


Image: Bedilu Kifle, INBAR

Blue flames from a honeycomb charcoal briquette in Ethiopia

Image: K. Rathna, CIBART

Bamboo in a homestead

sale of raw HHC is up to 50 per cent of annual income, and if briquetted, it reaches 200 per cent. This can be raised through efficient stoves as described above. Presently, 4,286 women are collecting charcoal in turn, which is processed by 230 briquetting micro-enterprises each with one hand-briquetting mould between them. While it benefits all women using fuelwood, single mothers and widows see a major benefit since they have significantly reduced household income. The dependability of the income, which is year-round, makes all the difference. Households derive income from the collection of charcoal formed during cooking using fuelwood, from selling the HHC and from dividends from the three processing enterprises set up (WODGRA in Tanzania; Shakti and Black Gold in India with a total installed capacity of 9,000 tons per year which can benefit 25,000 households).

The stereotype propagated by society and governments is that farming communities 'grow' food and urban communities 'buy' food. The concept of 'Farmer = Food' is common but 'Farmer = Energy' is not. The second key strategy for a robust source of income being advocated by INBAR and implemented by the Centre for Indian Bamboo Resource and Technology (CIBART) is that farmers should also grow biomass crops for fuelwood, for their own use and sale to others as a mainstream source of income. This is relatively new for farming households because fuelwood is commonly gathered from the forest for free, such that biomass was never valued or thought of as an income source. A change to 'Farmers = Food + Energy' can bring significant benefits to farmers, enhance their income and quality of life, lead to resilient livelihoods, release pressure from forests and let them recover. It would also lead to enhanced areas of permanent green cover.

Bamboo is a miracle crop, perhaps the most versatile of them all. It is easily the icon of sustainability just as the Panda is the icon of biodiversity. It is a tree and a grass at the same time, straddling the sectors of forestry and agriculture. Botanically, bamboo would be classified as a pioneer species since it can grow on the poorest soils and ameliorate them. It can also grow on the richest soils. On poor soils it would subsist and survive with low production as in forests, while if fertilized and irrigated as an agricultural crop, bamboo provides the highest biomass yields of all woody plants. It is drought- as well as flood-tolerant and even tolerates complete surface destruction by forest fires and 'slash-and-burn' agriculture. It is a perennial plant that is annual in behaviour, putting out new poles from underground rhizomes each year. For a farmer it is, therefore, an annual crop while for the forester it is the perennial tree.

Bamboo plants can be grown by each willing household in the homestead and farm boundary. Thirty-five bamboo clumps could generate adequate bamboos for fuelwood and livelihood use. It would be beneficial to carry this out at the household level since there is individual ownership and incentive. Animals need feed, which is commonly in shortage. Most livestock eat bamboo leaves. In Ethiopia, it is a staple food for donkeys. Cows and buffaloes eat bamboo leaves; in upland areas this is often the only green fodder available during winter. Bamboo leaves can also substitute fish feed for up to 50 per cent. Chickens originated in bamboo groves and readily eat bamboo even from the broiler stage. Bamboo fodder and feed is thus part of the food security of the household.

Bamboo biomass and agriresidues from the farm are being used to produce briquettes that industries need for use in boilers. Currently, four processing units are operational with a combined capacity of 12,000 tons per year, which is US$500,000 in new income to the farming households who would have otherwise burned the residue in the fields.

Such biomass could also be used to generate power: 1.2kg of biomass produces 1 kWh. A typical bamboo pole of 12kg, would then be 10 units of power which is more than a rural household would need in a month. Small-scale biomass-based power units can act as intermediate markets for local agriwaste biomass and for empowering rural households to enhance their quality of life, operate water pump sets, flour mills and the like, as has been demonstrated in a CIBART project in India. Globally, 1.3 billion people live in energy poverty.

Growing bamboos would bring several environmental benefits including soil amelioration and the rehabilitation of degraded lands. In Allahabad district in Uttar Pradesh in India, the growing of especially bamboo helped rehabilitate tens of thousands of hectares of fertile farmland degraded by the removal of topsoil for brick-making. This won the US$1 million Alcan Prize for Sustainable Development. The 68 million hectares of degraded land in India, and 500 million hectares in Africa can similarly benefit from bamboo planting, as can the rural households in those areas. This includes abandoned farmlands, which can be rehabilitated and made productive.

While the average biomass of the leaves on the plant at any time is around 10 per cent, this does not account for the leaves that have dropped over the year (say 10 per cent).

Image: Carmelita Bersalona, InHand Abra Foundation

Chickens eating bamboo leaves in the Philippines

Assuming an average of 145 tons per hectare of growing stock, the biomass accretion to the soil from leaf fall over the year could range from 14.5 to 29 tons per hectare. This leads to incremental year-round organic carbon accretion to the soil, which is fundamental for soil health, water holding capacity and fertility. Although leaves represent only around 10 per cent of total plant biomass, their high nutrient concentration makes them a major sink for nutrients, representing 37 per cent, 23 per cent, and 20 per cent of total nitrogen, phosphorus and potassium respectively in bamboo.

A second source of organic carbon and nutrients is the rhizomes and roots. Bamboo grows only in the topsoil (commonly 50-75cm deep) and hence benefits this economically important soil layer. It has an elaborate rhizome, root, and root hair system that sequesters 31 per cent of the total biomass with 69 per cent being in the poles (culms), branches and leaves. Of this below-ground biomass, 34 per cent is due to rhizomes and 66 per cent to roots in clumping bamboo species.

A third key strategy is to secure better returns on rural savings. Rural women are the backbone of rural savings. Poor rural women incrementally build up a corpus of savings through self-help groups, savings and credit cooperatives. While savings are built up, there are few productive and low-risk investment opportunities. The cooperatives mostly lend at 6 per cent interest for the commodity trades they are involved in, which is the return the women receive after deducting costs. In comparison, inclusive social enterprises can offer better returns since they currently source working capital (debt) at 16 per cent interest, which benefits only the financing agencies. On the other hand, if the rural women's cooperatives would lend to them, then they would earn an additional 10 per cent.

There is a lot that rural savings and investments can do for the communities themselves. For example, an HHC enterprise can be set up by 12,000 women, each contributing Rs120 (US$2), to a total of Rs1.44 million (US$24,000). The intrinsic risk to a single woman is low since Rs120 is about what they earn in a day in India. The women would thus have shares in the enterprise and get dividend income, and further benefit by selling their HHC to it.

A novel NGO-community-professionals partnership (NCPP) concept has also been developed and implemented in two enterprises, one in Tanzania and one in India. It is based on the healthcare model where the hospital/clinic-doctor/nurse-patients are the key stakeholders and investments are made into the entire system. Likewise for the development-care ecosystem, enterprises set up on the NCPP model would have diversified equity to reduce risk and make development more sustainable. The proportion of shareholding in NCPP could be approximately 30 per cent from the NGO, 30 per cent from the Community, 30 per cent from development professionals (such as those in the NGO), and 10 per cent 'sweat equity' for technical assistance.

The robust field-validated initiatives and strategies discussed above are hugely scalable and replicable around the world. In India one key modality is the many large NGOs, which grew mainly during the heyday of microfinance with outreach to tens of thousands of rural households. Such NGOs offer an opportunity to mainstream bamboo growing, agribiomass briquetting and power production, and HHC, including leveraging their communities to self-help by investing in the processing enterprises themselves through the NCPP enterprise model. Together, these would not only enhance the resilience of poor rural households but also greatly enhance their income and raise the quality of life.

Family agriculture, innovation and ecosystem services: Santa Cecilia organic farm

Cecilia Cordero Romero and Isidro Gomez Chinchilla, co-owners, Santa Cecilia organic farm; and Roberto Azofeifa Rodriguez, Manager, Department of Sustainable Production, Bureau of Agricultural Extension, Ministry of Agriculture and Livestock, Costa Rica

The domestic agricultural sector has historically had great social, economic and environmental importance for Costa Rican development. According to data published by the Secretary of the Agricultural Sector Planning in 2013, the agricultural sector's gross domestic product contribution for 2011/12, including primary production and agro-industry, was 14 per cent, ranking fifth in importance. It is the second largest sector for providing jobs and employs 13 per cent of the economically active population.

Family agriculture occupies an important place in public policy and is represented in the pillars of the national agricultural development strategy. Due to its social, economic and environmental functions and the leading role it has historically played as part of the democratic, social peace and sustainable development of the country, Costa Rican society supports government programmes to strengthen familial agricultural production systems.

Some of the important functions associated with agricultural production in Costa Rica include job creation, safe food provisioning, strengthening the family unit, protection of natural resources, recycling of nutrients, product diversification, conservation and use of genetic resources, systems development, low use of external inputs, local energy use, creating opportunities for rural youth, promotion of farmer culture, and distribution of wealth.

The Santa Cecilia organic farm is located in San Jose province, about 50 kilometres south-west of the city, at an altitude of 2,150 metres, in the La Cina de Dota village of Santa Maria de Dota county. The farm is an exemplary case of what family farming in Costa Rica is like. It is a representative sample of family farming in an organic production system with predominately annual crops.

There are nine members of the family, of which eight make up the workforce, administration and management of the natural system and agricultural production. Cecilia and Isidro are the parents of four boys, two of whom are married and live on the same farm. They have always been dedicated exclusively to agricultural production and in 2009 began the change from conventional to organic after considering the benefits organic production has for those who manage the crops and for the consumer.

The Gomez Cordero family estate has four hectares of land, three of which are devoted to agricultural production. The rest is forest land for windbreaks and protecting wildlife and water resources. Although the workforce, administration and management is mainly family, the farm requires a permanent contracted labourer and one or two additional collaborators. The majority of the work is physical with some mechanical support for soil management, fertilizer and pest control application, and livestock feed. The farm has its own vehicle with appropriate conditions for product transport as well.

Some 30 per cent of the farm's production area is used for opencast production, while 60 per cent is for protected agriculture systems. The last 10 per cent is dedicated to infrastructure for livestock (pigs, sheep, cattle and poultry), which are very important for providing organic waste for composting processes and for the production of part of the energy resource (biogas) that is used for cooking food.

Production is quite diversified. It focuses on perennial horticultural crops and annual local fruit crops. The main objective for livestock production is the provision of manure, but it also serves as financial security for the family during times of unforeseen additional expenses. The Santa Cecilia farm offers 25 horticultural varieties and about five fruit varieties in addition to the pigs, cattle, sheep and poultry.

The farm runs on low external inputs. Soil fertility maintenance, plant nutrition and crop management all use

The Santa Cecilia organic farm story

We started in the 1990s as a dairy farm. Our practices have always emphasized sustainability and the maximization of natural resources, organic waste and rational use of water because we saw it as a need to reduce production costs.

In 2000, we had a crisis and could not continue in dairy, so we decided to dedicate ourselves to growing crops, but in September of that same year our youngest son was diagnosed with leukaemia and had to undergo chemotherapy treatment for three years. This encouraged us to care more about the health of our family, and we saw the need to protect our natural resources, so we decided to make the switch to organic crop production and that's when we started to train ourselves on the topic.

Using all the information we had gathered, we started to work and have gradually been increasing our production. In 2009, we began our transition period to acquire organic certification under national legislation and in December 2012 we became certified organic, which opened to us up to many opportunities to sell our products.

Image: R. Azofeifa

Eight of the Gomez Cordero family's nine members are responsible for the administration, management and most of the labour on the Santa Cecilia organic farm

inputs produced within the system, with a few exceptions for livestock feed and health, soil amendment application, crop protection and product packaging.

An intensive organic vegetable production system requires large amounts of compost for soil fertility. For this reason, the family has invested in training resources and infrastructure for the production of compost from waste or biomass grown on the farm, using cattle manure, crop residues and grasses as a basis, aided by leguminous plants and various nutrient suppliers.

The water for agricultural production and livestock consumption comes directly from the farm itself and is used in a controlled manner. For crop irrigation, drip systems and microsprinklers are used and for livestock there are automatic waterers and controlled delivery applications.

The marketing of over 30 agricultural products is mainly achieved through direct sales to consumers at a particular market called 'Feria Verde', or the Green Farmer's Market, which takes place on Saturdays in an urban part of the metropolitan area. A small portion of the products are sold to suppliers of hotels and restaurants offering special menus.

Knowledge of farm management has been a major resource contributing to the success of the family's agricultural produc-

Image: R. Azofeifa

The family has invested in training resources and infrastructure for the production of compost from waste or biomass grown on the farm

Image: R. Azofeifa

The Cordero Gomez family organizes annual workshops and field trips to share their technical expertise and demonstrate the production process

tion. Since the farm's inception, training from other producers, participation in courses offered by public institutions, and individual learning by investigating solutions to specific problems and challenges have been key for the continuous improvement of results for the farm's sustainability.

The family's years of experience as agricultural producers and their good standing with national banking system credit agencies are important strengths when it comes to having credit available for increased investment to expand their operations and supply their growing market.

Innovation has also been an important part of the process. Through government incentives for ecosystem services, technical advice from specialists and the continuing search for production improvement information by the young members of the family, the farm has made significant innovations that produce a substantial economic return.

The experience of Santa Cecilia organic farm is an important reference for many producers and technicians, both domestic and international. It is also a living experience for consumers of the farm's products. The Cordero Gomez family organizes annual workshops and field trips to share their technical perspective on crop management, organic fertilizer production, the production of bio-products and to transparently demonstrate how the production process is carried out.

As an organic farm, the family is required to keep records to ensure the traceability of their entire process according to national legislation. In addition to being certified organic under National Regulation 29782-MAG, the farm has been awarded the Ecological Blue Flag. This prize is supported jointly by 11 organizations in the public and private sectors. It is presented to farms that meet a standard of climate change adaptability, which is based on best practices for the protection and use of water resources, land conservation and management, proper solid and liquid waste management, the stimulus multiplier effect on neighbouring producers, employee training and efficient energy use.

The Santa Cecilia organic farm, like many other family farms in the country, is a clear example of success where the combination of production factors produce positive economic, environmental and social results. According to Cecilia and Isidro, the key elements of success in family farming are the workforce and family unity, the market for the products, production knowledge, fertile soil, clean water and the capital to extend farm operation.

Uchuva cultivation

The uchuva, or Peruvian ground cherry (Physalis peruviana), is one of the most important crops on the Santa Cecilia organic farm. The domestic market for the fruit is very attractive. After researching, the family developed an innovative method to hold the plant by its sides so that it grows upward. They have had much success with this method during production and harvest, which is done manually.

Livestock farming boosts local economies in developing countries

Steve Staal, Susan MacMillan, Jacqueline Escarcha and Delia Grace, International Livestock Research Institute

Picture a family farm in a developing country. What do you see? A small plot of maize or rice or other staple food? Maybe a vegetable patch or a cash crop or two as well? If so, your view is similar to that of many agricultural and development experts and government planners whose focus is on staple food supplies for our increasingly crowded world.

But look out over a farm fence anywhere in these countries and you are likely to find yourself staring into the face of a farm animal. Livestock matters a great deal in developing countries, playing an increasingly important role in food security and economic development. In fact, the livestock subsector is growing faster than all other agriculture sectors in developing countries worldwide. And importantly in the International Year of Family Farming, the bulk of that livestock production is occurring on small family farms. Livestock farming offers unique features to support local livelihoods and economies, especially for women.

Some 70 per cent of the world's 37 billion farm animals are raised in developing countries, and that share will increase in the coming decades. A major reason for this is an ongoing dramatic rise in demand for meat, milk and eggs in developing countries, far outstripping that for grains, starches and other food crops. This 'livestock revolution'[1] is a result of dietary changes due to increasing urbanization and incomes, both of which lead people to spend more of their disposable income on meat and other high-value animal-source foods than on maize, rice, potatoes and other cheaper staples. As a consequence, total demand for livestock products is expected to double by 2050 from 2000 levels.[2] Nearly all of that growth is occurring in developing countries, where experts anticipate a 37 per cent rise in per capita consumption of animal-source foods, even as rich-country consumption levels flatten or decline.

Further, because feeds are easier to trade than perishable livestock products, 90 per cent of the increased livestock production will occur in the same developing regions where demand for animal-source foods is growing. On aggregate, livestock enterprises now comprise about 40 per cent of total agricultural gross domestic product of developing countries, a proportion expected to grow to 50 per cent in the next few decades. Because livestock products are intrinsically energy-dense and high value, four of the five highest value agricultural commodities globally are livestock products, with dairy as the highest value agricultural commodity globally.[3] All of this indicates that important new opportunities are opening for livestock producers, particularly for family farmers in developing countries.

Smallholder family farms still dominate livestock production in most developing countries, especially with ruminant animals such as cattle, water buffalo, sheep and goats. These animals can remain productive by subsisting largely on low-cost roughages, stovers and other crop by-products produced or gathered locally, providing smallholders with a comparative advantage over larger livestock producers. Other advantages of family farms are access to underutilized family labour and the many synergistic benefits accruing to small farmers who integrate crop growing with animal raising, such as more efficient nutrient cycling, soils better nourished with animal manure and use of animal traction for cultivating croplands. For these reasons, family livestock farms still compete strongly against large producers in many

Image: ILRI

A mixed farm in Ethiopia: the livestock subsector is growing faster than all other agriculture sectors in developing countries

settings. Research has shown little evidence of economies of scale at play in dairy production in Asia and Africa, for example, particularly where the opportunity costs of labour are low and incentives for mechanization limited.[4] Small family-run pig enterprises in Viet Nam were also shown to operate with similar or lower unit costs than larger enterprises.[5] The family nature of livestock enterprises is central to this competiveness.

As a result, small family farms produce 70 per cent of the milk in India, now the world's largest milk producing country; more than 90 per cent of meat from sheep, goats and chickens; and 70 per cent of beef. In Viet Nam, where some agricultural subsectors are intensifying rapidly, small farmers still produce 90 per cent of the supply of pork, the most popular and important meat product in that country. These small farm shares are expected to decline in future with rural-urban migration and changing technologies, but the opportunities for tens of millions of smallholder livestock farmers across several continents to improve their lives and livelihoods through livestock will continue for decades to come.

Household livelihoods

While clearly important for family livestock farms in the aggregate, livestock are also economically important at individual household level. As one measure of that importance, nearly 1 billion people living on US$2 a day or less in South Asia and sub-Saharan Africa keep livestock. More than 80 per cent of poor Africans keep livestock, and 40-66 per cent of poor people in India and Bangladesh keep livestock.[6] In many rural settings, livestock production comprises the most important part of individual household incomes and livelihoods.

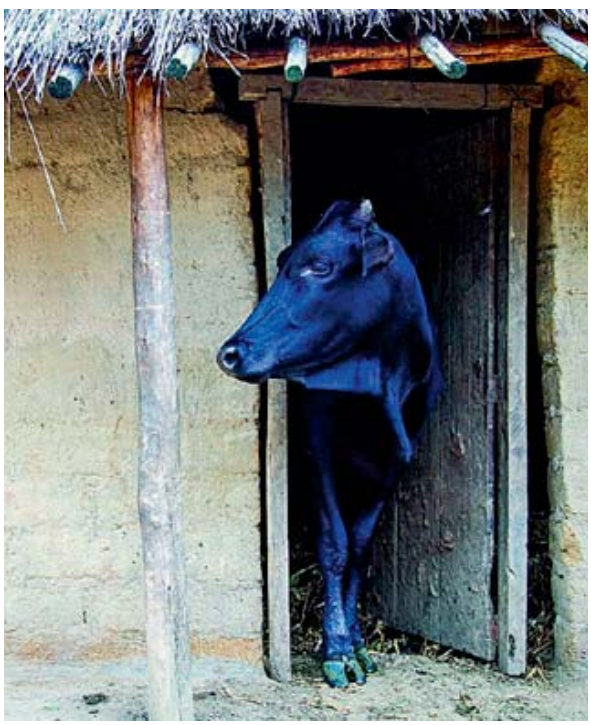


Image: ILRI

Smallholder family farms still dominate livestock production – especially with ruminant animals – in most developing countries

Also seldom recognized is that keeping livestock often does not require land owning or even land-use rights. Intensive specialized livestock production can be carried out at the homestead with feed bought, exchanged or gathered from other sources. Analysis in Kenya found that the size of land holdings is not associated with a family's ability to keep dairy cows.[7] In India, where rural and urban landlessness is an ongoing problem, the number of landless dairy producers has been increasing.

A study of 92 cases from the developing world found that livestock contributed on average 33 per cent of income from all sources on mixed crop-livestock farms, with higher proportions associated with market-oriented dairy and poultry production.[8] The importance of livestock tends to increase in drylands and other regions where growing crops is nearly impossible for climatic reasons and livestock are the only practical means of harvesting the benefits of scarce moisture. In these largely non-arable lands, the study found average livestock incomes from pastoral production comprises 55 per cent of total household incomes.

The shares of household income from livestock are not only typically large but also growing in many cases. While the share of income from cropping remained stable or even declined, the share from livestock grew in just six years by 75 per cent in Ghana and by 110 per cent in Viet Nam (1992-1998) and by 290 per cent in Panama (1997-2003).[9] This is partly because as smallholder households transition from subsistence to market-oriented agriculture, they prefer marketing high-value meat, milk and eggs to selling crops, which are often of lower value. Livestock thus plays an increasingly large role in the market income of smallholder households as farms shift to market-orientation and away from subsistence.

An important aspect of household incomes from livestock is that the daily surplus of milk and eggs is a ready (and rare) source of regular cash income in poor rural environments. Livestock also offers unique economic and livelihood benefits. As an inflation-proof means of accumulating assets, livestock serve as insurance instruments for maintaining funds for medical and other emergencies and as a means of saving planned expenditures such as school fees or small business investments. These are critical matters in resource-poor communities, where formal insurance schemes and savings mechanisms are often nonexistent. Here, medical emergencies can produce life-long poverty traps. Even small stock such as goats or poultry, which are often in the control of women, are used for lumpy expenditures such as utility bills.

Finally, in many communities livestock keeping improves a family's social capital, improving access to other community services and functions. Remarkably, estimates of these 'non-market' benefits of livestock keeping can amount to an additional 40 per cent on top of cash profits.[10] Such non-market benefits are generally not available to large commercial producers, for whom livestock assets are sunk costs rather than assets accumulated through low-cost labour and local feed resources.

Image: ILRI

Livestock are the only practical means of harvesting the benefits of scarce moisture in drylands and other regions where the climatic conditions are unsuitable for crops

Livestock and women

Almost two-thirds of the world's 1 billion poor livestock keepers are rural women, although their ability to control livestock assets and incomes differs by their cultural and economic settings. In many cases, women's ownership of stock does not correlate with their control over use of products or decision-making regarding livestock management or sales. Women often control small stock such as poultry, as long as this remains a small-scale enterprise. Women often may own the milk from cattle while men control the income from animal sales. Among some societies in Senegal, dairies are often run by women and milk production is controlled entirely by women, who have sole control also over the sale of any surplus milk.[11] Women also manage activities at different stages along livestock value chains, not just as producers or traders but also as cottage processors of traditional value-added products such as cheese, sweets and dried and ready-to-eat cooked products. In traditional dairy production practices in Ethiopia, women who process and sell butter and cheese earn 69 per cent of the household dairy income.[12]

Local economies

Beyond the farm gates, livestock keeping benefits the local and wider economies in many ways. What is often underappreciated is the level of local employment by livestock family farms, even those with only a small enterprise. Many small farms hire part-time and even permanent full-time labourers to assist with tasks like livestock feeding and cleaning. A study in Kenya found that half of the country's many small family dairy farms (most with fewer than three head of cattle) hire at least one full-time labourer.[13] These workers are often from the most resource-poor and marginalized communities, so these are important opportunities for employment and livelihoods for the most disadvantaged. In rural communities, some individuals also provide informal or formal animal health or breeding services, gather feeds for sale to livestock keepers or establish 'agro-vet' shops to sell animal feed and health products.

Numerous other economic and employment activities, for women as well as men, occur along the livestock product supply chain, from the most basic collection by small traders of livestock or products for assembly and further sale along the chain (which in pastoral areas can comprise very long distances and sequences of intermediaries) to quite sophisticated local processing of speciality products such as high-value dairy sweets.

In most developing countries, these livestock supply chains tend to be 'informal' or 'traditional', meaning they don't employ modern processing or handling methods but deal with either raw, unchilled or traditionally processed products. Although these informal markets generally don't meet official standards, they still comprise the largest share of the livestock subsector in most developing countries.

Importantly for the local economy, the retail prices of such informal products are nearly always lower for consumers than alternative 'supermarket' products, generating economic gains to consumers. And informal markets tend to employ more people per unit of product than modern, capital-intensive product supply systems. Studies across Africa and South Asia found that informal milk markets employ two to five times as many people per

Image: ILRI

Demand for livestock products is expected to double by 2050 from 2000 levels and nearly all of that growth is occurring in developing countries

Animal-source foods and balanced diets

Even though overconsumption of meat, milk and eggs is a potential health threat in well-off nations and communities, for the undernourished poor the benefits of consuming these foods are large and undisputed. Livestock products have an important role in the diets of the poor: they provide on average 11 per cent of energy and 26 per cent of protein[13] and are a key source of micronutrients. For some vulnerable groups, such as the world's 180 million pastoralists, the contribution of livestock products to diet is much higher. International Livestock Research Institute research shows substantial amounts of dairy products are consumed on the farms that produce them.

Livestock products are excellent sources of bioavailable micronutrients that are difficult to obtain in sufficient quantities from plant foods alone and are often low in the mainly vegetarian diets of rural children. Animal proteins are also more 'biologically complete' than plant proteins, meaning they contain all the essential amino acids needed by the body and do not contain the anti-nutrient factors common in plant foods. Because livestock products are nutrient dense, palatable and often highly preferred, they are excellent foods for those who can't ingest large amounts of food: infants, children, older people and those suffering from illness.

Studies in different parts of the world showed that animal-source foods with their high energy density and constituent micronutrients of heme iron, zinc, B12 and high-quality protein, all in bioavailable form, contribute positively to physical growth, physical activity and cognitive function essential to learning.[17] Even small amounts of milk, meat or eggs, consumed regularly by children under five years old, reduce stunting and improve cognitive development, with benefits that last a lifetime.

unit of product as modern formal markets while paying the same or higher wages.[14]

For all these reasons, livestock production usually generates more rural economic multiplier effects than other subsectors. Rural income multipliers were found to be higher from primary livestock production than from nearly all other agricultural subsectors across several continents, multiplying rural incomes, for example, by nearly five times in Africa and in some cases higher even than non-agricultural activities.[15]

Challenges and opportunities

In spite of the opportunities that livestock markets present and the ability of smallholders to compete, there remain significant challenges to small livestock producers. The levels of basic animal productivity on most farms are typically well below those on commercial farms. In some cases, beef productivity gaps between small-scale and commercial farms are 130 per cent and as high as 430 per cent in the case of milk production.[16] These gaps are caused by many factors, including inadequate or low-quality feeds, poor disease control and use of low potential animal breeds. Small farm access to reliable extension, animal health and breeding services is often poor. On the market side, buyers of livestock products are increasingly demanding higher and more consistent quality products that must also adhere to more stringent safety standards, which small farmers may struggle to achieve. Public policy and investment is generally shaped by those with the most prominent voices, which tend to be large commercial players. Small family farms may not benefit and in some cases may be specifically disadvantaged by policy measures aiming to industrialize livestock systems.

Fortunately, ongoing, rapid and dramatic advances in genomic technologies are creating new opportunities likely to produce breakthroughs in development of new vaccines and higher yielding animals adapted to developing-country environments. New business models and information and communication technology tools are being developed to provide family farms with better access to knowledge and markets and with platforms that facilitate local innovation. Finally, renewed attention to agriculture following the food price crises of 2007-2008 and 2011 has shifted public and philanthropic investment back to agriculture, including livestock.

While some experts advise against further investments in small livestock family farming because they see its role as declining, and some view industrial livestock production as more resource-efficient and potentially more 'climate smart' than small-scale production, a wealth of evidence indicates that family farms remain a critical and competitive part of the global livestock product supply. Family farm enterprises are essential not only to meeting the growing demand for animal-source foods but also to generating rural employment and economic growth.

The developmental aim should be to support livestock family farms through the transitional process being faced by all agriculture as markets, technologies and economic factors change, to either scale up and specialize towards fully commercial and durable enterprises, or to generationally and positively transition out of agriculture through education to more remunerative livelihoods, using strong family farm revenues and assets to facilitate that process. Both of those pathway require continued and increased investment in research and development specifically for livestock family farms.

Harnessing the potential of family farming in India and China

Suhas P Wani, Director and K H Anantha, Scientist, International Crops Research Institute for the Semi-Arid Tropics Development Center; and William D Dar, Director General, International Crops Research Institute for the Semi-Arid Tropics

Ninety per cent of the world's farmers are in developing countries and 85 per cent of farms worldwide are less than 2 hectares.[1] Presently, family farming feeds up to 80 per cent of the population in Asia and sub-Saharan Africa, and supports the livelihoods of up to 2.5 billion people.[2] Small family farms will play a vital role in achieving food security for 9 billion people by 2050 as world agricultural production will have to increase by 70 per cent.[3]

Small family farms are more efficient in resource use and per-unit productivity than large farms[4] but their full potential is not yet realized. Thus, the challenge is to develop models for unlocking the potential of rain-fed agriculture. There is a need to transform family farms from a subsistence level to a business model using innovative economies of scale, so they can fulfil their multiple functions against adverse environmental conditions and demographic transformations.

In Asia, almost all farms are small family farms, and current farmers' field crop yields are two to five times lower than the achievable potential. In many parts of the world, smallholder agriculture could contribute to growth and employment, environment and climate change adaptation, and food and nutrition security[5] by bridging these yield gaps. In this context, family farms in India and China face similar challenges such as fragmentation of farms, low crop yields with subsistence farms, water scarcity, land degradation, acute population pressure and inability to access credit and markets. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and its partners have established a 'proof of concept' demonstrating the potential for transforming small family farms in Asia by adopting integrated farmer-centric watershed management for improving livelihoods. Two case studies from India and China illustrate the technical, social and institutional nuances and innovations used to harness the production efficiencies of small family farms with scale efficiencies to access inputs and markets through farmers' collective action.

Researchers and development agencies in India have adopted rainwater harvesting and soil conservation inter-

Images: ICRISAT

Low-cost water harvesting at Kothapally, Telangana, India

ventions to tackle frequently occurring droughts affecting dryland agriculture since 1970. ICRISAT and its partners developed Vertisol management technology using a watershed management approach in 1976 and took it for on-farm demonstrations during the 1990s but, although economically remunerative, the technologies weren't adopted by farmers. Based on the lessons learned from different evaluation studies of conventional watershed management programmes in India, in 1998 an integrated farmer-centric watershed model adopting an Integrated Genetic and Natural Resource Management (IGNRM) approach was developed and piloted to address tangible economic benefits to smallholders, ownership of the interventions, women's involvement, enhancing collective action, and technical backstopping ensuring knowledge sharing.[6] ICRISAT later adopted the Inclusive Market Oriented Development (IMOD) strategy to link small farmers to markets and ensure profits through innovative collective action using new information and communication technologies. The IGNRM and IMOD pillars harnessed the potential of crops, livestock, poultry, fisheries, trees and value-adding microenterprises, linked production and markets to benefit smallholders and transformed their lives through an integrated approach.[7]

Many partners are engaged with farmers and co-invest their knowledge, technologies and practices to address key constraints that farmers face as suppliers. This initiative was initially supported by the Asian Development Bank for pilots in India, Thailand, Viet Nam and China. Later, development investors such as the Indian Ministry of Rural Development, the World Bank through the Sujala Watershed Program in Karnataka, the Department for International Development through the Andhra Pradesh Rural Livelihoods Program, the Sir Dorabji Tata Trust and the Sir Ratan Tata Trust supported further refinements and scaling-up in India.

Identifying a suitable entry point activity (EPA) for promoting collective action and gaining the trust of the community is critically important. The EPA must be knowledge-based rather than cash-based to benefit large numbers of community members. Based on close study of the constraints, suitable EPAs were identified for increasing productivity quickly, as in Adarsha watershed, Kothapally in India, or addressing a major common need such as drinking water in Lucheba watershed in China.[8]

Adarsha watershed, India

In 1998/99 Kothapally village in the Shankarpally mandal of Ranga Reddy district in Telangana (previously Andhra Pradesh) was a village with little development and no transport facilities. Eighty per cent of its 462 hectares of agricultural land was rain-fed, growing one crop per year. The main crops were cotton, maize, sorghum and pigeonpea with 1-1.5 t ha^{-1} productivity of sorghum and maize and 200 kg ha^{-1} of pigeonpea. All the 62 open wells were dry from January onwards and village women had to travel 2-3 km to fetch drinking water from February until the June-July monsoon rains. Milk production was low and there was little surplus milk to sell. Smallholders were migrating to the city for livelihood during the off season.

In 1999, at the request of the district administrator and the government Drought Prone Area Programme, the ICRISAT team selected Kothapally for drought-proofing with improved technologies based on the severity of water scarcity, large rain-fed area, low crop yields, poverty and the willingness of the community to work together. ICRISAT brought the partners together with the Government of Andhra Pradesh, MV Foundation (a non-governmental organization operating in the district), the Central Research Institute for Dryland Agriculture and the National Remote Sensing Agency in a consortium.

Images: ICRISAT

Open wells in Kothapally before watershed scenario and after, with recharge pits

Images: ICRISAT

Vegetable cultivation in Kothapally, India

Using a wilt-tolerant pigeonpea high-yielding cultivar grown on broad beds and furrows as an entry point, community mobilization was achieved. During the first season the pigeonpea yield increased to 600 kg ha^{-1} giving farmers additional income of Rs6,000 ha^{-1} in 1999. The tangible economic benefit to smallholders triggered collective action and common activities such as rainwater harvesting structures benefiting the community were then easily facilitated. In 1999, the first earthen check dam near the village was constructed with an investment of Rs78,000 (US$1,733), benefiting nearby farmers' wells and providing drinking water for animals and for washing clothes. Low-cost constructions included 43 rainwater harvesting structures, 14 masonry structures, 37 sunken pits and 97 gully control structures, and 39 open well recharging pits. Soil nutrient status mapping and soil test-based fertilizer recommendations, the introduction of improved cultivars, integrated pest management, vermicomposting, Glyricidia plantation on bunds to generate nitrogen-rich organic matter, avenue plantation, nursery raising, fodder production in wasteland, and livestock breed improvement through an artificial insemination centre in the village were undertaken in participatory mode, and farmers contributed in cash and kind to ensure ownership of each activity.

The most visible impact in Kothapally today is the farmers' — especially the women's — confidence that they can cope with the challenges of climate change. During 2014, in spite of deficit rainfall, farmers have grown their crops using available water. Farmers are delivering 600 litres of milk every day at the computerized milk collection centre set up by the Reliance group and about 500 litres per day at private milk collectors. From milk alone Rs40,000 per day are added to village income. With the help of the SABMiller women's group, a new initiative provides spent malt as quality feed for dairy animals, resulting in a 1.5 litre increase in milk productivity per animal per day and Rs9,710 per day additional income in the village. Increased water availability has transformed the village's one-season agriculture to three crops, with a move from maize and sorghum to Bt cotton and high-value vegetable production. Water is available year-round in the open wells and women get drinking water through taps using borewell water. The village is buzzing with activity and has 35 autos, two luggage vans, four lorries and nine tractors. The average crop yields of sole maize increased by 2.2-2.5 times (3.8 t ha^{-1} compared to 1.5 t ha^{-1}), intercropped maize pigeonpea with improved management produced 6 t ha^{-1} compared to 2.9 t ha^{-1}, pigeonpea yields increased to 900 kg ha-1 against 200 kg ha^{-1} in 1998. Similarly, hybrid cotton was replaced by Bt cotton with increased productivity of 7.1 t ha^{-1} compared to 2.1 t ha^{-1} in 1998.[9]

Average household income from crop production activities within and outside the watershed is Rs15,400 and Rs12,700 respectively. The respective per capita income is Rs3,400 and Rs1,900. The average income from agricultural wages and non-farm activities during 2002 was Rs17,700 inside the watershed and Rs 14,300 outside it. Growing more diversified crops and diversifying their income sources through livestock rearing increased farmers' average incomes threefold in 2010 compared to Rs25,000 in 1998. Even during the drought year of 2002, income was 1.5 times higher than non-watershed farmers' incomes, and the villagers in Kothapally did not migrate for their livelihood. Watershed development has helped improve the resilience of agricultural income despite the high incidence of drought during 2002. While drought-induced shocks reduced the average share of crop income in the non-watershed area from 44 to 12 per cent, this share remained unchanged at about 36 per cent in the watershed area. In addition, environmental benefits include improved

Images: ICRISAT

A concrete house and internet training facility at Lucheba watershed, China

water quality (pesticide residues free), increased year-round water availability, reduced run-off (30-40 per cent), reduced soil loss (from 10 t ha^{-1} to 2 t ha^{-1}), increased greenery cover and associated increased carbon sequestration through tree cover.

Lucheba watershed, China

Lucheba village in Pingba County, Guizhou province in southern China was selected in 2003 for integrated watershed interventions by the International Development Research Centre and ICRISAT team. This cluster of six villages (11 natural villages) with 340 households and 1,373 people was growing maize, rice, soybean, sunflower and rapeseed during the year. Women in the villages were unhappy as they had to travel long distances to fetch drinking water and houses were dilapidated. The village had no access road connecting it to the main road and people used to migrate to cities to work as construction labourers.

In 2003, based on discussions with the village communities, two drinking water schemes were undertaken as an EPA with project funds and contributions from villagers. Springs in the hills were tapped, and water was piped to the village. This promoted collective action and brought farmers together. The watershed management programme introduced various interventions focused on reducing poverty and land degradation by adopting a farmer participatory approach. These included soil and water management, improved cropping systems, crop diversification, integrated nutrient and pest management practices, along with other income-generating microenterprises such as poultry and pig rearing. The communities were involved throughout the programme, and were active in identifying constraints and interventions, and modes of implementation, monitoring and evaluation for the impact assessment. Some 151 rainwater harvesting/irrigation water storage tanks of 5 m^3 capacity were constructed, 133,600 trees were planted on 100 hectares of wasteland, and a 4.8 km village approach road was built from the main road. Later a 6 km-long field road was constructed with government support. Crop diversification was undertaken, with high-value vegetable crops. More than 260 biogas plants were set up in village households to reduce pressure on fuelwood and protect the forests. The whole village now has biogas powered street lighting. Microenterprises for women were promoted along with forage production on bunds. Training courses were conducted for farmers and later, with government support, a computer-aided training centre with internet facilities was established. The Lucheba watershed area is now covered with lush green vegetation. The old and dilapidated houses have been transformed into new concrete houses with big courtyards and gates, equipped with modern appliances.

"We started using harvested rainwater for cultivation, and everything just changed," said Peng Fay Ou, a farmer with a 1 hectare landholding in the Lucheba watershed. With seven members in the family, he used to earn ¥3,000 (US$500) per year. Now his agricultural income has increased threefold, to ¥10,000 (US$1,650) per year. With water now available, three crops of vegetables are grown in the village. The Vegetable Growers' Association plans the growing cycle and markets the crops using the internet facilities. The benchmark crops (rice, corn, rape, soybean, sunflower and kidney bean) were replaced with high-value crops like cabbage, watermelon and vegetables like tomato, pumpkin, chillies and eggplant using hybrid seeds and improved agronomical practices. The average area under cultivation of rice, maize and peas has decreased by 18 and 38 per cent respectively, while the area under cultivation of high-value crops has increased by two to six times. Yields for different vegetables have increased by

Images: ICRISAT

Grading and packing of green chilli and vegetables, which are then loaded onto a lorry for transport in Lucheba watershed, China

32-673 per cent.[10] Substantial increases in the area under high-value crops (40 hectares in 2003 and 113 hectares in 2005) were observed.

In three years (2003-2005), the net yield advantage and net monetary benefit per unit of water conserved for watermelon and vegetables were 287.3 and 78.7 kg mm^{-1} ha^{-1} respectively. Net monetary benefits for vegetables and watermelon were ¥147.1 and ¥83.4 (US$18 and US$10) mm^{-1} ha^{-1} respectively. This reflected a similar trend of net monetary advantage per unit area of ¥9,253 and ¥5,246 (US$ 1,141 and US$647) ha^{-1} respectively over three years due to availability of water during the most critical stage for these crops. Net returns of vegetables per unit of water per unit area in 2005 were 3.5 times higher than in 2003. Higher benefit-cost ratios were observed with vegetables than watermelons during the pre- and post-project period.[11]

Lucheba now boasts two animal health centres, one computer-aided, internet-enabled farmers' training centre and one Vegetable Growers' Association. Those who had migrated to cities have returned to villages as the quality of life is better than in the city. The village's average per capita income is twice as high as the provincial per capita income.

The future of family farming in rain-fed areas

These cases underscore the role of smallholder farming in food security and environmental sustainability in India and China. The integrated approach combines progress in productivity, sustainability and impact on food security. There are two key points to note:

- agriculture, and family farming in particular, should be the clear focus of a goal related to food security and environmental sustainability
- smallholder agriculture should enter the agenda not only through a focus on productivity but also through a broader agenda of sustainability and building system resilience.

The benefits of family farming in India and China go far beyond resource degradation and scarcity and contribute to societies at large. In these countries, rain-fed agriculture provides food for about half the population, in many ways thanks to the integrated management practices adopted by farmers. Family farming in most regions, including India and China, is undergoing rapid transformation due to internal and external drivers such as population growth, urbanization, migration and resource degradation. These have contributed to increased pressure on local resources, unsustainable practices in land use, disintegration of local customs and traditions, and increased vulnerability to global change.

Smallholders in these regions have shown the potential to bridge large yield gaps by actively adapting to change. However, these efforts need to be supported by enabling policies that will help them adapt to ongoing changes in a sustainable way, to achieve sustainable livelihoods and maintain important ecosystem services. National policies need to support secure land tenure, access to resources and to empower women to promote family farming in these regions. The same is true for extension services that support farmers in achieving sustainable farming practices through advice in areas such as appropriate use of external inputs including seeds, fertilizers and pesticides. Innovative technologies and traditional knowledge need to be carefully integrated to increase and restore resilience along with better access to markets through collective cooperation.

Family farming: powering the future of agriculture

Reema Nanavaty, Self-Employed Women's Association

The Self-Employed Women's Association (SEWA) is a trade union working for poor, self-employed women workers. It was founded in 1972 with the main objective of organizing members to provide full employment and self-reliance. Spread across 14 states in India, SEWA has a membership of over two million women. It is the single largest union of self-employed women in India, as well as being affiliated and active in seven South Asian countries.

Nearly two-thirds of SEWA's members live in rural areas, and 54 per cent have agriculture as their main or only source of income and food for their family. SEWA's members include not only small and marginal landholders, but also landless agricultural sharecroppers and casual labourers. While working with these farmers SEWA realized that the agriculture sector is full of problems. It is an unorganized sector of the economy, where farmers have to face problems like irregularity of work, low and unequal wages (based on factors such as season or gender), unskilled labour force, lack of employment opportunities, lack of skill development, degradation of the soil and other natural resources, and above all no income security even after working for long hours. They have no direct market access. Climate change is bringing increasing difficulties, as changes in weather patterns are already significantly affecting productivity. Women farmers are the worst affected, as despite contributing much to agriculture they are not recognized for their work, receive lower wages, and are often employed in worse conditions so the whole family remains hungry.

In order to address these problems affecting small and marginal farmers, in 1995 SEWA initiated its agriculture campaign with an approach that treats agriculture as an industry led by small and marginal farmers — an industry capable of becoming fully self-sustainable and profitable, and moving away from subsistence.

Along with SEWA's agriculture campaign, with the support of the International Fund for Agricultural Development, in 2009 SEWA and a group of partners started working on the creation of a national Farmers' Forum under the Medium Term Cooperation Programme with Farmers' Organizations in Asia and the Pacific. The objective is to create and strengthen the network of small and marginal farmers' organizations in India and to increase their visibility, voice and representation with a focus on small and marginal women farmers.

Since its foundation SEWA has focused on education and capacity-building as central elements of its activities, in the belief that these are crucial for strengthening farmers' self-reliance and capacity to collectively demand action by the Government. In recognition of SEWA's efforts, in 2014, under

Image: SEWA

Many farmers are women, who are often best placed to work towards their families' economic and social security

Image: SEWA

SEWA's Mobile Ration Van supplies wheat, rice and sugar to women in remote villages in the arid area of Patan district

the context of the International Year of Family Farming (IYFF), the United Nations asked SEWA to lead activities related to awareness-raising and education in the South Asia region. This opportunity will be used to focus efforts on the issues indicated above. SEWA is the National Focal Point in IYFF celebrations in India, and is working towards supporting and strengthening women's role and contribution in family farming.

SEWA promotes a family farming approach to ensure food security and nutrition as well as to strengthen the local economy, improve household capitalization and contribute to poverty reduction by achieving sustainable development, particularly in rural areas. SEWA recognizes the importance of visualizing how family farmers produce healthy and nutritious food while they respect the environment and contribute to biodiversity. All activities related to family farming are placed under SEWA's agriculture campaign, which currently works with more than 561,000 family farmers at the national level.

SEWA found that with Indian agriculture becoming feminized and the problems of a farmer being closely intertwined with the challenges faced by their family, women are best placed to tackle such problems and work towards the economic and social security of their families. Further to this, SEWA has been witnessing the worsening food security situation first hand, with many of its marginal farmer members struggling to maintain good farm yields and many others struggling to meet their daily food requirements because of stagnating household income and rising commodity prices.

In response to its members' demands, SEWA has been running the following long-term food security schemes particularly for those in drought hit zones.

The Shakti Packet Programme has been operational since 1993, and covers over 7,000 poor women and their households from far-off drought-prone areas of Banaskantha. A typical packet contains coarse food grains such as millet and wheat, edible oil, red chillies, tea, soap, iodized salt, turmeric and vegetables. The entire scheme is managed and run by the poor women themselves.

Image: SEWA

The community seed bank helps to conserve indigenous genetic resources and empower farmers with organic farming technologies

The Mobile Ration Van is aimed at providing timely and sufficient availability of rations on the doorstep of the rural community. The van supplies rations to 11 far-flung villages covering over 6,000 households in the arid area of Patan district. The rations supplied are typically wheat, rice and sugar. This food supply system saves the poor women a lot of time. They would previously have had to travel up to 20 kilometres to buy these items, thereby losing a day's wage.

The community seed bank is aimed to enhance the livelihood security of small and marginal farmers by conserving indigenous genetic resources, and to empower farmers with organic farming technologies. SEWA has set up farmers' community seed banks for seed exchange, distribution and utilization as well as for the preservation of these varieties in three drought-prone districts in Gujarat.

The community grain bank has been set up with the main objective to provide a safeguard against starvation during natural calamities/disasters and during the lean season by lending stocks of grains for an average of 40-50 families. SEWA has set up three grain banks in food-scarce (drought-prone, desert and tribal) areas.

The Rural Urban Distribution Initiative (RUDI) was conceptualized with the twin objective of helping marginal farmer get better prices and making better quality products available to poor rural consumers at competitive prices. RUDI has its origins in a SEWA initiative in 2001 that arose out of SEWA's strong belief in the Gandhian vision of a self-reliant village.

SEWA also believes that to sustain food security at the policy level, the right to food should ultimately be linked with other economic and social rights, such as the right to work (the National Rural Employment Guarantee Act 2005 is a step in that direction), the right to education (recently enacted) and the right to health. These economic and social rights complement and reinforce each other.

SEWA continues its march towards creating a vibrant agricultural economy through constant innovation and improvement in its approach towards the implementation of agriculture development. Although significant progress has been achieved in recent years, there is still much to be done to support family farmers in India and help millions escape

SEWA agriculture campaign: impacts

Small and marginal farmers in 2,400 villages across Gujarat, 11 states of India and three countries of South Asia have a local, national and regional-level platform to share their issues and best practices.

In the past five years, more than six policy-level dialogues have been conducted at the regional level, following by workshops to share cross-country experiences in agriculture. Following this, SEWA is producing a booklet which provides all this information to small and marginal farmers using the latest technology.

Until now agriculture has never been seen as an industry. In the past five years SEWA's agriculture campaign has worked to develop agriculture as an industry. A total turnover of more than Rs350 million was achieved by family farms in 2013.

In order to equip small and marginal farmers against risks, SEWA successfully piloted rainfall insurance, providing future and spot prices to the farmers. This has now been taken up as a campaign across India.


Image: SEWA

Adequate access to water infrastructure is crucial so that farmers don't have to rely on rain for irrigation


Image: SEWA

SEWA's agriculture campaign treats agriculture as an industry, led by small and marginal farmers, which can become fully self-sustainable and profitable

poverty and vulnerability in a sustainable way. There are several key challenges to address.

Adequate access to water infrastructure is crucial so that farmers do not rely only on rain for irrigation, while storage and transport infrastructure are key to increase efficiency and reduce losses. These are historical problems to which technical solutions have been available for many years, although the vast majority of family farmers still suffer with a lack of proper implementation. Organizations such as SEWA can help by setting up small-scale projects to address the needs of specific villages. This is already being done.

Climate change has become a severe problem for Indian family farmers, especially over the last five years. With weather patterns becoming increasingly unpredictable, SEWA members unanimously claim that adaptation measures are desperately needed. An important initial step would be to count on better weather forecasting tools and techniques that are able to provide detailed forecasts for the next days and weeks, and facilitate agriculture planning. However, considering the dimensions of the climate challenge, it will be necessary to go far beyond that. SEWA intends to investigate which adaptation mechanisms already being used by members can be scaled up, and what can be learned from the experience of family farmers in other countries.

Attacks by wild animals, migrating due to the destruction of their habitats, are the result of insufficient conservation policies. With the devastation of forests, wild animals have been attacking cereal and vegetable plantations, and this is one of the factors that have led family farmers to focus more on cash crops — which are also more lucrative due to higher prices in the global market. This trend is not positive for farmers because it reduces their options and increases their vulnerability. Nor is it positive for Indian society, as it affects the country's food security. Measures to reduce the risk of attacks can be taken independently by farmers who are able to afford them, but real solutions depend on better policies for conservation.

In addition to these pressing issues, it is important to highlight the absence of spaces for dialogue between policymakers and family farmers. Although SEWA and other unions and organizations are capable of maintaining regular contact with policymakers by putting a lot of effort and resources into it, there are very few official spaces for communication and consultation with the population as a whole at all levels of government. The situation is aggravated by the fact that the Government runs very few surveys on the characteristics and needs of family farmers, with action based on research being even rarer. Furthermore, another obstacle in the relation between farmers and the Government is the difficulty of accessing programmes and schemes supposedly created to support family farming — these are wrapped in so much bureaucracy and inefficiency that they are inaccessible to a vast majority.

Finally, it is becoming increasingly evident to SEWA that management and financial education have an important role in helping family farmers with long-term planning. The complexity of farming activities in India is growing fast: there are serious environmental crises, the demand for land from private actors and the Government is increasing, and pressure from multinational companies who act as suppliers or competitors remains high. In such a context, empowering family farmers to make conscious decisions about how to manage their resources and assets, so they do not fall victim to impulsive or misinformed decisions, becomes a top priority.

Much remains to be done in order to recognize the true value of women and men family farmers as the worthy ambassadors of food security and sovereignty. Many awareness raising and political advocacy actions are still needed to permanently move away from certain paradigms which clearly work against family farmers, whatever their origin, specialization, income levels or holding size. The coming years promise to be fruitful, since numerous significant activities are already planned for the remainder of the year. SEWA is certain that it will achieve its goals for family farming by taking small steps now to power the future of agriculture.

The Agricultural Development Institute's work in Chile: promoting local economic development

Carlos Furche, Minister of Agriculture and Octavio Sotomayor, Director, Agricultural Development Institute, Chile

Peasant family agriculture in Chile comprises some 260,000 farms, equivalent to almost 90 per cent of all production units in the country.

From an economic standpoint, this segment contributes 22 per cent of the gross value of production generated by Chilean agriculture; owns 25 per cent of the assets; controls 44 per cent of the surface area expressed as Basic Irrigation Hectares (hectare equivalent of a same quality) and 38 per cent of the irrigated area; and generates over 60 per cent of agricultural employment. Its role in food production is significant, at around 40-50 per cent of the value of annual production of crops, vegetables, meat and bovine milk. The average size of a peasant farm is 17 physical hectares.

One of the characteristics of peasant family agriculture is its heterogeneity, which is expressed in a variety of production systems, physical and economic sizes, technology and productivity levels, and access to goods and services, among others aspects. In this context, it is possible to recognize two major segments to establish differentiated policies and strategies. First, a group formed by producers that support a multi-activity economic development strategy, that is to say, combining self-employment on the farm with other activities outside it that allow the farmers to complement their income. This group represents almost 60 per cent of peasant family agriculture, equivalent to about 155,000 farms. The farmers' gross income from agriculture on the property amounts to US$5,000 per year, which is complemented by income from working as temporary and/or permanent employees and social subsidies. Rural poverty, which still amounts to 13 per cent of the country-dwelling population, is concentrated in this segment.

The second group corresponds to what has been called the 'commercial' segment, which corresponds to producers with greater productive resources, allowing them to deploy an economic strategy based on their activity on the farm. They

Image: INDAP

Many family farmers combine self-employment on the farm with other income-generating activities outside it

Images INDAP

INDAP supports family farms in the country with technical assistance, training programmes and financing

represent about 40 per cent of the stratum of small farmers, equivalent to around 100,000 farms. This group has significant internal variation, since the value of farm production is between US$5,000 and US$100,000 annually.

A major weakness of peasant family agriculture is the limited ability of farming families to negotiate advantageously with product markets, as well as with markets for inputs and services. This is due to different reasons that operate as disadvantages over other agents, such as the scale of production, information asymmetries, higher transaction costs per unit of product traded, logistical constraints (collection, transport, storage, packaging, value addition etc.), health and tax informality, and the quality and suitability of its products. Partnership is another important constraint: in 2013 a total of 236 peasant cooperatives were registered in the 'active and valid' category, which together congregate more than 5,000 members. This indicates that there is a big gap with the total peasant farming population.

The Agricultural Development Institute (INDAP) is the public agency responsible for supporting family farms in the country, for which it has a budget of approximately US$400 million annually. This is applied in three main areas: technical assistance and training programmes; working capital financing; and non-returnable subsidies for machinery, infrastructure and other property taxes investments. From an organizational standpoint, INDAP unfolds through 15 regional offices and 127 area agencies and offices, covering the entire national territory. It has a staff of over 1,600 people, complemented with 4,770 consultants hired by INDAP to carry out direct technical assistance work with producers. INDAP currently serves 167,500 farmers, implying a coverage of 65 per cent of the potential total.

INDAP promotes local economic development through different instruments. One is the Local Development Programme (PRODESAL), which primarily runs through the municipalities. INDAP transfers resources through a collaboration agreement, and these are complemented by the implementing entities' own resource provisions. These resources must be spent on hiring consultants to deliver ongoing technical assistance to the farmers in the programme, which is organized into operating units of between 60 and 180 farmers. Additionally, INDAP delivers resources for investment and working capital to the peasant families, with amounts ranging between US$800 and US$2,000 annually.

INDAP has another similar programme for the indigenous world, the Indigenous Territorial Development Program. This works in a similar way to PRODESAL, but is more appropriate from a cultural standpoint. Finally, INDAP has a contestable fund investment, the Investment Development Program, which finances larger individual or associative projects with a public subsidy of 90 per cent of the value of each project. Amounts vary for each project because each is analysed on its own merit. The funds could be used to finance tractors or other machinery, irrigation infrastructure, warehouses, fences, tourist equipment, solar panels, fertilizers and many other types of investment. Additionally, INDAP has complementary programmes including lines of credit and project programmes that seek to improve marketing.

Image: INDAP

INDAP is working with farmers' organizations and other government agencies to support rural development

INDAP: Major programmes

Technical assistance
- Technical Advisory Service (individual)
- Technical Advisory Service (companies)
- Productive Partnerships Program
- Local Development Programme
- Indian Territorial Development Program
- Agricultural Program for the Integral Development of Small Farmers of the Dry
- Training Programme for Rural Women
- Management and Organizational Support Program

Working capital
- Short-Term Credit
- Main Support Fund
- Agricultural Insurance

Capitalization
- Investment Development Program
- Irrigation Program
- Incentive System for Agro-Environmental Sustainability of Agricultural Soils
- 'This Is My Land' programme
- Long-Term Credit
- Grassland and Pasture Program Supplemental Resources

Markets
- Country Flavours Program
- Trade (Rural World Expo - Regional Fairs)

Support in emergencies

Current challenges

INDAP is consulting with its various stakeholders to develop a strategic plan for the government period of 2014-2018. Through these consultations, a number of challenges have emerged.

There is a need for an inclusive intervention strategy in the territories. The challenge here is to promote the orderly intervention of the different state agencies, looking to implement an integrated approach to rural and agricultural development.

Strengthening the quality of services is an urgent task. Given the significant level of coverage, the task of the coming years is to provide quality services to small producers working with INDAP.

Innovation must be a central axis of intervention. The challenge is to promote innovations in the products and processes that improve the family income of producers.

Productivity and sustainability are an ongoing challenge. Chilean producers have advanced in terms of productivity, but there is still much to do in terms of environmental improvement. Both issues are complementary in order to achieve a more sustainable and more comprehensive intervention strategy.

Irrigation and water resources management must be developed. Some regions of Chile face a drought that has now lasted for more than eight years. Improved irrigation is essential to ensure the future, in a context where climate change will exacerbate these restrictions.

The internal market is one of the main challenges of the period, because until now the efforts have focused on export, with limited results. The advance of telecommunications and the country's infrastructure makes it possible to think that this objective can be achieved successfully through the promotion of local fairs, public procurement, sales at the farm and other types of short circuits.

The development of partnership is crucial in order to address domestic and export markets. This is also critical to achieve adequate levels of social participation.

A key challenge is the promotion of inclusive development for women and youth. Women are responsible for about 30 per cent of the farms in the family farming sector, and there are very successful programmes such as the Training Programme for Rural Women (PRODEMU) to encourage entrepreneurship. These programmes have broad support thanks to the efforts of rural women. The rural youth, meanwhile, will shape the future of Chilean agriculture.

A focus on indigenous peoples is essential in order to reduce social inequalities and to achieve rural development and a fairer and more balanced society. Finally, it is important to develop local networks to strengthen the social capital of family farming.

All these lines of work will be performed in conjunction with farmers' organizations and other government agencies, applying a social networks logic, in order to exploit synergies and avoid duplication and lack of coordination. Through these initiatives INDAP looks to take over the paradigm shift that is observed in the international discussion on the development of family agriculture: innovation, networks, short circuits, indigenous agriculture, women and youth, and environment. All these concepts are emerging strongly in the Chilean rural development agenda, and gradually changing public policy. We hope this process will culminate with a battery of more modern and integrated public policies that have a significant impact on the economy and on the lives of rural families.

Family farming: the New Zealand experience

Terry Copeland, Chief Executive Officer, New Zealand Young Farmers

New Zealand is a very good example of how successful family farming can drive a country's economy forward and provide the basis of strong community values. New Zealand is also very fortunate that for a small country, it has plenty of land available for agriculture, enough clear and pure water for irrigation, and a small population only requiring 10 per cent of production, allowing for a strong export supply at the top of the value chain and providing important export earnings.

There is also a strong culture of education in New Zealand with tertiary education participation being among the highest in the world. However, like most places, agriculture is not seen as a favourable profession for the younger generation and the urban drift within New Zealand's population means that the number of young people working within the primary industries is a challenge.

Using 2012 data, around 16 per cent of the New Zealand workforce is employed in the primary industries — around 350,000 workers. This is broken down into three main groups with 39 per cent of workers being on-farm, 33 per cent of workers in the processing or manufacturing area, and 28 per cent in the support services side.

New Zealand Young Farmers is an organization focused on attracting, developing and retaining young people in the primary industries. Part of this is pastoral care and the benefits of being a network or integrated group of clubs around the country. Running events and social activities to engage and motivate members is vital in making life enjoyable in and around their rural lives.

Image: New Zealand Young Farmers

There is a need to inform and educate the broader population about the farming sector

Secondly, a key to the organization's success is its investment in leadership development. New Zealand Young Farmers wants to produce the next generation of rural leaders and industry experts. With generational change happening on farms (the average age of farm owners in New Zealand is late-50s) there is a strong need for well-educated and technology-aware people to come through.

Lastly, New Zealand Young Farmers works with schools and the education framework to improve and increase the awareness of what this primary industry is and does for the New Zealand economy. Not only is it important to get more skilled young people into the industry, which incidentally pays around 8 per cent higher than the national average for all jobs, but there is also a need to make urban and city people aware of the issues around the primary industry.

New Zealand conditions

New Zealand is made up of two major islands in the South Pacific, completely surrounded by water, so not affected environmentally from the effects of other nations' policies and practices in a physical sense. It has a temperate climate and plenty of rainfall, giving New Zealand a clean and green reputation. This is important for a number of reasons.

Being able to produce clean and pure food enables New Zealand farmers to command a premium price for their products in the global market, giving them better average income than most Organisation for Economic Co-operation and Development countries (incomes before subsidies). It is important to note that New Zealand farmers do not receive any government subsidies at all since 1986, and need to operate efficient and environmental operations on their own.

Image: New Zealand Young Farmers

New Zealand has ideal conditions for producing milk and milk solids and it exports powdered milk to 113 countries

In addition, New Zealand is very focused on sustainable resources, food safety and authentic provenance of product. This adds value to the price of New Zealand's products in the global market. This reflects the very soul of New Zealand, whose principles include being staunchly anti-nuclear (since the mid-1980s) and anti-whaling in the southern ocean.

New Zealand also has ideal conditions for producing milk and milk solids and has one major cooperative (Fonterra) which controls about one third of the global dairy trade. Most milk producing countries satisfy domestic consumption and any surplus is exported. With only a small population of 4.5 million people, New Zealand has harnessed its resources through a single desk platform and exports powdered milk to 113 countries, especially those countries where there is insufficient production to satisfy domestic demand.

Issues for New Zealand farmers

Like most countries, large percentages of young people in New Zealand want to live in the cities and are migrating away from rural living. There is also a problem that urban schools don't recommend the primary industry to bright students and therefore the number of available talent going to university to study Agriculture, Agricultural Science, or Agricultural Commerce is very weak. In fact current figures suggest that there are 2,000 jobs annually available for agriculture-qualified graduates but only around 200 graduates to fill the positions.

With nearly a third of New Zealanders living in its biggest city Auckland — and this figure projected to rise to 40 per cent over the next 20 years — a major issue is that a large voter base of people, who have little or no understanding of the issues or importance of agriculture to the economy, is going to dictate rural policy. There is a need to inform and educate the broader population about the sector and ensure governments do not erode the viability of farming.

The average size of farms is increasing in New Zealand and herd numbers (particularly on dairy farms) are also increasing. This means that family farmers are now significant employers as a sector. Most farmers have little or no experience in managing staff, and this has been identified as one of the critical issues in maintaining and enhancing the viability of farming. With many farmers' children not wanting to work on the farm and moving to the cities, it is extremely important that family farmers become good employers to attract and retain farm workers.

Climate change is another issue, with the increase of severe weather events and increasing drought conditions. For large parts of rural New Zealand there is sufficient water access for irrigation, but for other areas, this is a major problem with the costs of supplementary feed being expensive and stock being sold off to allow the land to recover. Ironically, New Zealand allows 98 per cent of its river flows to run out to sea. Research and investment in retaining water in storage lakes is vital.

Image: New Zealand Young Farmers

New Zealand Young Farmers works with schools and the education framework to increase awareness about farming

Image: New Zealand Young Farmers

New Zealand Young Farmers is helping to produce the next generation of rural leaders and industry experts

New Zealand has relatively few diseases or pests which globally affect crops or stock, so it is very important that its biosecurity measures are stepped up to maintain this position. Family farmers individually have little ability to address disease or pests coming across the country's borders, but the industry does have very good monitoring of stock movements and traceability. The Government of New Zealand is putting a lot of focus and resource into biosecurity to ensure long-term protection of the farming sector.

Positive developments for family farmers

Primary industry organizations that support farming in New Zealand are creating significant progress in value chain benefits for the economy and sector. Because New Zealand is a very small country in both land mass and population, there is only a limited amount of food and fibre that can be produced and sold into global markets. Therefore it is critical for New Zealand that these products have significant value added to them rather than competing in the commodity market in which its small scale is disadvantaged. The philosophy is to niche-market the highest quality products directly to affluent consumers in key export markets with a very clear New Zealand brand, so as not to confuse consumers or impede access to local producers. It is especially important to note that New Zealand family farmers are very supportive of local market access for local farmers and support farmers' rights for developing countries.

If New Zealand can produce high-quality food for 40 million people, the maximum benefit is to be positioned at the very top of the market. This can only be done if the country has clear provenance, demonstrates commitment to food safety, is environmentally sustainable and has high-quality and nutrient-rich products.

Driven by the next generation of rural professionals, there is a keen sense of taking this to the next level. Rather than produce enough food for 40 million people, New Zealand should target 10 per cent of the diet of 400 million people and effectively become a global delicatessen rather than a regional supermarket.

New Zealand is recognized as a world leader in farming and is beginning to use its capability in production, use of technology and sustainability to advise and support other countries in their efforts to develop and improve efficiency and productivity. There are two world-class agriculture-based universities in New Zealand which are gaining significant enrolments from students across the world who are taking advantage of cost-effective degrees and top facilities and learning opportunities.

Image: New Zealand Young Farmers

Around 16 per cent of the New Zealand workforce is employed in the primary industries

In addition, there are New Zealand farmers travelling overseas to advise and consult at a local level (especially in South America) which will make a real difference.

Lastly, there is very strong cooperation between the Government, industry bodies and farmers themselves. This collaboration is driving the industry forward, benefiting farmers and the country as a whole. There is also good focus on research and development combining universities and Crown research agencies — and while a lot more can be done in this space, the results of dozens of research projects is flowing through the industry. The establishment of a pan-industry organization, the Primary Industries Capability Alliance (PICA), which is driven by industry and brings together Government, industry sector bodies, education providers, and farmer representative organizations, will allow a coordinated approach and direction to enhance farmers and the broader New Zealand economy.

One of the key platforms for PICA is to align key industry messaging to young people, to coordinate a schools engagement programme whereby teachers and students are not bombarded by individual sector groups within the primary industries but have a single comprehensive contact point representing the broader industry. This will make it much clearer and simpler for teachers, parents and students to be aware of the positive benefits of careers, environmental issues and economic sustainability.

The New Zealand climate and proportion of arable land is ideally suited for being a vibrant, productive and innovative agriculture-driven economy and society. As the population continues to grow significantly, the percentage of people employed in the sector is slowly dropping — it will be 15 per cent of the workforce by 2025. Family farming is both a way of life in New Zealand and the basis for a lot of small-scale employment beyond family members.

As an economy, primary industry represents a staggering 70 per cent of merchandise export and there is a tangible belief that it is helping to feed the world. New Zealand is a very responsible country as well — focusing on environmental sustainability while striving for productivity gains, focusing on authentic provenance for high value products, and ensuring that its biosecurity and food safety are world leading.

The future relies on more young qualified people entering the industry, carrying on the proud traditions of family farming and progressing though to farm ownership themselves. It is a bright future, taking advantage of the natural resources New Zealand has, and having stable government and a strong equality within society.

Sustaining small-scale fishers and fish farming families in South Asia

Yugraj Singh Yadava, Director, Rajdeep Mukherjee, Policy Analyst, Md. Sharif Uddin, Fisheries Resource Officer, Bay of Bengal Programme Inter-Governmental Organisation

The fisheries sector constitutes an important economic activity in the maritime nations of South Asia. Its importance lies in creating millions of jobs in capture fisheries as well as fish farming (also referred to as aquaculture), ensuring food security and earning considerable amounts of foreign exchange.

The small-scale fishers and fish farming families of Bangladesh, India, Maldives and Sri Lanka are also members of the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO). Bangladesh and India are coastal countries while Sri Lanka is an island and Maldives is a chain of atolls. As such the countries are considerably different in their abundance of fisheries and fish farming-related resources, communities and fishing and aquaculture practices. However, what binds them is the significant dependence on fisheries both to meet nutritional requirements and to ensure livelihoods.

The sector contributes on an average 1.5 per cent to 2.0 per cent of gross domestic product (GDP) in Bangladesh, India and Sri Lanka and about 5 per cent of GDP in Maldives. India and Bangladesh are also major global players in capture fisheries and aquaculture, ranking among the top 10 fishing nations in the world. These countries are also leading exporters of fisheries products, catering to major markets in Europe, the USA and Japan. Fish is a staple diet in Bangladesh and Maldives and highly favoured in Sri Lanka and India.

For a larger part of its history, fisheries in South Asia largely remain an activity that can be identified as subsistence and, to an extent, artisanal,[1] where the family plays a major role in harvesting and utilization of fishery resources. In these family enterprises, men are usually involved in harvesting and women in preparation and post-harvesting activities. With the expansion of markets and increasing demand, capture fisheries and fish farming are becoming increasingly commercial and market values are now well-enshrined in fisheries practices. However, in terms of their productive assets (fishing vessel or landholding), fisheries and fish farming activities in the region are still small-scale[2] in nature.

The fisheries production in South Asia (comprising both capture fisheries and aquaculture) now stands at about 12.9 million tonnes (2012), increasing from about 11.6 million tonnes in 2011. Both capture fisheries (8.25 per cent) and aquaculture (14.1 per cent) production has increased considerably during this period.

Marine capture fisheries

Marine capture fisheries form an important source of livelihoods along the coastline in South Asia. The region is host to

Image: Md Nahiduzzaman, Worldfish, Bangladesh

A Bangladesh women fish farmer showing a carp netted from the family pond

Image: S Jayaraj, BOBP-IGO

Ms Anarkali, a social worker and activist from the Bangladesh fisher-community

Fisheries production in South Asia (tonnes)

Country/year	Capture fisheries		Aquaculture		Totals		Change (%)
	2011	2012	2011	2012	2011	2012	
Bangladesh	1,600,918	1,535,715	1,523,759	1,726,066	3,124,677	3,261,781	4.39
India	4,311,132	4,862,861	3,677,584	4,213,917	7,988,716	9,076,778	13.62
Maldives	120,836	120,001	-	-	120,836	120,001	-0.69
Sri Lanka	428,204	475,799	1,1912	8,840	440,116	484,639	10.12
South Asia	6,463,101	6,996,388	5,215,266	5,950,835	11,676,356	12,945,211	10.87

Source: FAO Fisheries and Aquaculture Department, Statistics and Information Service, FishStatJ: Universal software for fishery statistical time series. Copyright 2011

one of the largest concentrations of small-scale fishers in the world. Presently, about 1.7 million people are actively fishing in the region (including the collection of fish seed, excluding fish marketing and other support activities). The number of active fisherfolk in the region has grown by about 1 per cent per year during 2003-2012. In Sri Lanka, the number of active fisherfolk has increased by 4.5 per cent per year during 2004-2012 and in India by 2.2 per cent during 2005-2010. In Bangladesh, the number of fisherfolk increased marginally from 0.51 million to 0.516 million. However, in Maldives, the number of active fisherfolk is decreasing gradually, possibly due to structural changes in the economy (increasing scope in the service sector) and changing demography (improvement in education and the younger generation seeking alternative livelihoods).

The available information on fishing craft in the region shows that fishing is carried out with the involvement of family labour, although over time there is a marked shift from non-powered fishing vessels to powered fishing vessels. However, the increasing use of power in fishing operations and therefore increasing capitalization of the fisheries is changing the way families conduct business.

Traditionally, in small-scale fisheries, fisher families were a complete production unit with full ownership of fishing craft and gear. But with increasing capitalization, ownership of craft is slowly going out of their hands. Increasing trade potential of fish and fish products in the region has also led to the emergence of fishing companies, especially in Maldives and Sri Lanka, where such companies are providing end-to-end solutions from harvesting to marketing.

However, presently the interest of the fishing companies is mostly limited to high value species such as tuna, which enjoys a large export market. The artisanal and small-scale fisheries continue to play an important role in coastal fisheries.

Family farming

Family farming as defined by the Food and Agriculture Organization of the United Nations (FAO) is a means of organizing primary sector activities which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's. This is also the major feature of artisanal and small-scale fisheries. Sustaining the small-scale fisheries has long been a major global agenda. It is not only important from a livelihood perspective, but various studies have also shown that negative impacts of fishing (such as discards) are much less in small-scale fisheries compared to their industrial counterparts.

Fish farming

India and Bangladesh are the key fish farming nations in the region and also major global players. India ranks second to China in fish farming. Aquaculture contributes 75-80 per cent of production from inland sector (including brackish water) and about 46 per cent of total fisheries production. Indian major carps and exotic carps (mainly Chinese carps) form the backbone of freshwater fish farming in the country. In brackish-water aquaculture, white leg shrimp (*Littopenaeus vannamei)*, an exotic variety introduced from Latin America is now the dominant farmed species and the source of major export earnings from seafood. In India, both fresh and brackish-water aquaculture is small-scale in nature, comprising largely family enterprises with small pond holdings (<2.0 ha area) and low use of inputs.

Bangladesh is the fifth largest aquaculture producer in the world and the sector contributed about 55 per cent of the country's fish production during 2012.[3] Fisheries and aquaculture play a major role in nutrition, employment and foreign exchange earnings. More than 16 million people are associated with the fisheries sector, of which 1.3 million women rely on fisheries-related activities, mainly in fish farming.

Developments in small-scale aquaculture are changing the features of rural Bangladesh. Feed and labour comprise the two most important components of the total operating cost for most aquaculture systems. A large number of rural women are involved in several aspects of aquaculture activities to minimize the total costs. In most homestead ponds, fish farming is associated with poultry, duckery and horticultural crops grown on the pond embankments to increase the per-hectare yield from the land holdings.

Women have started playing an important role in fish farming by adopting new technologies. They are engaged in production

Growth in the number of active fishers in South Asia

Country	Base year	Number	Latest year	Number	Growth
Bangladesh	2007	510,000	2011	516,000	0.3%
India	2005	901,815	2010	1,002,723	2.2%
Maldives	2003	14,891	2012	10,264	-3.5%
Sri Lanka	2004	132,600	2012	180,693	4.5%
South Asia	2003	1,547,019	2012	1,697,040	1.1%

Source: BOBP-IGO Annual Report, 2012/13

activities such as fingerling stocking, preparing and feeding fish, pond management through fertilization and liming, net making and repairing, fish harvesting and marketing, and fish drying. Children also help the family in their spare time. Recently, cage culture has been effectively introduced in Bangladesh and women are involved in raising fish in the cages.

In Sri Lanka, fish farming is now being promoted with the aim of doubling production from aquaculture sources, as only one-quarter of the area suitable for aquaculture is currently in use. Government-sponsored programmes aim at achieving this goal through sustainable aquaculture development, technology transfer, training programmes, food safety and quality, and environmental integrity. The land-based farming sector in Sri Lanka is also receiving increased attention. Traditional earthen pond farming of shrimp and finfish is slowly increasing, and families are now following a strict coastal zone management plan regulating the time for stocking and harvest in different farming regions. Stocking densities are steadily increasing with good environmental monitoring and control.

Involvement of families

In India, about 864,550 families are engaged in the marine fisheries sector according to the recent marine fisheries census (2010). This translates to a population of 3,999,214 and of this, 91 per cent are traditional fishers. In Sri Lanka, about 172,100 families are engaged in marine fisheries with a population of 825,200 in 2010. While information on the number of families engaged in Bangladesh and Maldives is not available, the total marine fisher population in Bangladesh is approximately 0.9 million and in Maldives about 14,000.

Fisheries census data from India shows that about 65 per cent of the total population is adult and about 41 per cent is employed. Comparing these two ratios, it can be said that nearly every able-bodied fisher family member participates in the production process. The same can be seen in other countries. As a unit, a fisher family participates in harvesting (male), unloading and auctioning (male and female), processing (female) and marketing (female and male). Although women are not much engaged in production, in some areas, they do collect seaweed and also operate push nets.

Marine capture fisheries being a high risk activity, accidents are common and in most cases the male members engaged in production fall victim to such calamities. In such a scenario, women play a major role in providing for the families. For example, in the Indian scenario, the census shows that in 41,239 fisher families, only women are engaged in the fisheries sector. In Bangladesh, fisherwomen are also playing an important role in advocacy, especially in improving the safety at sea of their menfolk.

Apart from marine fisheries, large numbers of people are also engaged in inland fisheries and aquaculture. Especially in India and Bangladesh, where inland fisheries and aquaculture are at par with the marine fisheries sector, many families derive their livelihoods from these activities. However, specific information on families engaged in inland capture fisheries is sparse.

Sustaining family farming

Much like versatile fisheries resources, fishing practices in the region are also varied. With increasing capitalization, the role of family farming is waning while commercial enterprises are emerging. Although, in most places, nearly all eligible members of a fisher family participate in production (including distribution), they are now becoming labourers and implementing decisions, rather than being the owner-labour and decision-makers they once were. There is also a noticeable trend of in-migration to marine fisheries from other sectors for better returns. In such cases, the migrant enters marine fishery as an individual answerable to a particular company or owner of the fishing craft he is employed with.

As far as marine fisheries are concerned, the situation is like a cyclical trap. Increasing capitalization is leading to depletion of resources, especially in near-shore waters, and depleted resources are leading to the need to invest more to venture further into the sea, with efficient gear and better fishing vessels. For example, a study carried out in India shows that during 2000, non-mechanized (non-powered/artisanal) fishing vessels landed 7 per cent of the total landings of fish by employing 33 per cent of the workforce while the mechanized (trawlers, gillnetters, purse-seiner etc) landed 70 per cent of the total by employing 34 per cent of the workforce. The differences in landings reflect heavily on the fishers' incomes and while an artisanal fisherman earned about INR13,200 per year, a fishermen engaged in mechanized fishing earned in the tune of INR127,200 (INR60 = US$1).[4] Resultantly, people engaged in non-mechanized artisanal fisheries are increasingly moving towards mechanized fishing.

Ownership of fishing craft in India

Type of craft	Total	100% owned by fishers	Share (%)
Trawler	35,228	11,247	32
Gillnetter	20,257	16,642	82
Motorized	71,313	40,718	57
Non-mechanized	50,618	40,349	80

Source: CMFRI, 2010. Marine Fisheries Census, 2010. Department of Animal Husbandry, Dairyingand Fisheries, Ministry of Agriculture, Government of India

Meeting family aspirations

Mahbub Mridha (52) is a small farmer living in Alampur village with his wife Selina and two school-going daughters. A decade back, Mahbub owned a small pond where he started fish farming to meet the daily requirements of his family. With good farming techniques, he was able to sell part of the fish harvested after meeting his family's requirements. This success encouraged Mahbub and his family to undertake fish farming on a commercial basis. He constructed another, larger pond with technical assistance from the Department of Fisheries and adopted an integrated model where agricultural and animal wastes are used as manure in the fish pond, thus cutting operational costs. Selina assists him in pond management and fish husbandry works and their daughters help out after school hours. This diversification of livelihood has helped the family to improve their income and savings, ensuring better education for their daughters. As immediate needs are met, the children are now planning to pursue university degrees, something their parents could not afford.

These changes have also led to a change from village-based production systems to harbour-based production systems. With increasing landings, distribution has become more organized. In areas where fishing companies are involved, they are taking care of all the post-harvest requirements and thus negating the role of fisherwomen in post-harvest activities. This is also the case with marketing, as local marketing is being replaced by marketing to distant city centres and more men, often from outside the sector, are carrying out marketing activities and gradually replacing the traditional women fish vendors.

Government measures

The fisheries sector receives assistance from the Government through various schemes and support programmes. However, of particular importance is the legal protection provided to artisanal fishers in the region. Fisheries come under the jurisdiction of provinces in India. The coastal provinces in India under the Marine Fishing Regulation Act have demarcated 3-5 nautical miles from the coastline for artisanal fishing. Trawlers and other mechanized fishing vessels are not allowed to fish in this zone. In Bangladesh, industrial trawlers are prohibited from fishing at less than 40 metres deep. In Maldives, protection is provided to reef fisheries.

Apart from legal support, the governments also provide monetary benefits to fishermen. However, such benefits are not particularly targeted to promote or sustain family farming, but are geared more towards improving income and welfare across the fisher population. In India, the Government provides support for improvement of fishing vessels including the purchase of outboard motors, improvement of housing conditions, incentives for educating children and support during fishing bans as well as insurance coverage. In Bangladesh, support is provided during the period when fishing is prohibited.[5]

International efforts

Sustainability of small-scale fisheries is an important international agenda. The 1995 Code of Conduct for Responsible Fisheries of the Food and Agriculture Organization (FAO) of the United Nations and its Technical Guidelines highlight the importance of the small-scale fisheries sector and emphasize increasing contributions from this sector. The code also suggests a pro-small-scale fisheries stance if there is a conflict between the small-scale fisheries and others. However, the problem in defining small-scale fisheries in legally acceptable terms is a major obstacle in targeting the sector. FAO has also recently published the International Voluntary Guidelines on Securing Sustainable Small-scale Fisheries, accepting that countries should form their own definitions of small-scale fisheries and should follow a human rights-based approach to the sector's development.

Image: Y S Yadava, BOBP-IGO

A Sri Lankan fisher couple preparing for a fishing trip

Family farming and its manifestation in the fisheries sector, artisanal and small-scale fishing and fish farming is the link between the past, when institutions and opportunities in use of resources were quite different, and the present, when markets have become interconnected and a globalized society has emerged. Therefore, to survive in this new society, artisanal and small-scale fishing and fish farming families need to change. The challenge now lies in identifying the core value of small-scale fisheries, such as equitable access to resources and distribution of benefits, and empowering the sector to pursue these values in the changed environment. Both state and non-state actors need to play a major role in this regard. The FAO Guidelines on Small-scale Fisheries provide a general direction on the possible role of different stakeholders and the same could be adopted based on national priorities to realize the full potential of the small-scale sector.

Empowering smallholder farmers in Senegal

Sharon Kabalo, Director, Policy Planning and External Relations Department, Ministry of Foreign Affairs, Israel

Agricultural growth is the primary source of poverty reduction in most agriculture-based economies. Three-quarters of the world's poorest people get their food and income from farming small plots of land, most of them under difficult climatic conditions. The majority of these smallholder farmers are women; therefore, the expansion of smallholder and family farming can lead to a faster rate of poverty alleviation by raising the incomes of rural cultivators and reducing food expenditure.

Increasing food and nutrition insecurity and growing poverty, in the face of a rapidly changing climate and degrading natural resources, are daunting challenges for agriculture in general and for smallholder farmers in particular. To address these challenges, there is a need to move towards the implementation of an integrated climate-smart agriculture approach including the development of efficient agro-technologies to allow smallholder farmers to move towards more productive and sustainable food systems.

Within this framework, Israel's Agency for International Development Cooperation (MASHAV) is implementing Technological Innovation for Poverty Alleviation (TIPA) — a family drip irrigation system which combines two important strategies to mitigate the effects of climate-change: effective water management and making relevant technologies available to smallholder farmers.

As one of the oldest international development agencies in the world, MASHAV is committed to sharing with the developing world the State of Israel's own creative solutions and first-hand experience in agricultural and rural development, to develop the agro and rural sectors under semi-arid and arid climatic conditions. This includes the management of limited natural production resources and the integration of appropriate agro-technologies, water and irrigation, research and development, agricultural extension and the delivery of know-how to farmers and to the rural areas at large, to enhance overall national employment and economic growth.

Sharing the goals set by the international community for greater cooperation between donor and partner countries, TIPA is currently being implemented in Senegal by the State of Israel through MASHAV in cooperation with the Government of Italy through its General Directorate for International Development Cooperation. Through this triangular cooperation, Israel and Italy are providing the necessary expertise and

Image: MASHAV

The TIPA family drip irrigation system provides effective water management for smallholder farmers

Image: MASHAV

The TIPA project helps to empower women by creating a context for the promotion of gender mainstreaming related to the role of women in society

technical support to set a common framework to improve Senegalese farmers' capacities to adapt to climate change and to ensure sustainable agricultural development.

The Sahel subregion is one of the most vulnerable regions of the world. Poverty is pervasive and agriculture is the most important sector and the principle source of livelihood for the majority of the people. The agricultural sector faces high exposure to risks and extreme climate conditions, leading to repeated cycles of droughts and desertification.

Most of Senegal lies within the drought-prone Sahelian region, typified by irregular rainfall and generally poor soils. With only about 5 per cent of the land under irrigation, the heavy reliance on rain-fed cultivation results in large fluctuations in production. About 75 per cent of the working population is involved in farming. The vast majority of crops are rain-fed, making water availability one of the country's biggest agricultural challenges. Successive droughts and mismanagement of natural resources have led to declining yields as soils have become degraded, mostly due to erosion.

Intensification of agriculture through the production of irrigated high-value crops (particularly in dry regions) is a way to overcome the constraints of climate and soil while significantly increasing farmers' income. The relative advantage of growing labour-intensive vegetables lies in small-scale family units where the smallholder can utilize family labour to achieve better results.

The activities of the TIPA project in Senegal focus on the improvement and support of the horticulture sector in the central regions of Thies, Djourbel and Fatik. Basic drip irrigation technology is being introduced in order to achieve increased productivity, quality and marketing of the produce, and to create better value and production chains.

The present programme has been formulated upon a specific request of the Ministry of Agriculture of Senegal, thus representing an important tool in support of the national strategies for the reduction of poverty. Moreover, the programme is based on a participatory approach focused on the role of the community, and especially on women's associations and local community, as socioeconomic development promoters.

In sub-Saharan Africa 70-80 per cent of smallholder farmers are women. As a means to empower women, the TIPA project creates a context for promoting gender mainstreaming related to the role of women in society, creating a ripple effect for sustainable development.

The TIPA project also takes into consideration aspects of environmental sustainability. Surface irrigation and extensive use of groundwater could be detrimental to soil quality and plant production, leading to land abandonment and desertification. Fragile environments need particular care for reducing soil degradation. Using drip irrigation to increase horticulture productivity in semi-arid areas of Senegal allows a more rational use of water to reduce soil degradation and protect the aquifers.

TIPA is a family drip irrigation system based on the concept of the African market garden — a small-scale horticultural production package based on low-pressure drip-irrigation, a mix of vegetables and tree crops, and a management package that leads to optimization of the production system. The biggest benefit of TIPA is the decreased labour requirements for irrigation and weeding. Benefits of using the system include water saving, higher yields of improved quality vegetables and fruits, the ability to produce crops year-round, and greater likelihood of maintaining the productive capacity of the soil. The mix of crops allows households to meet their own needs and sell any excess in local markets.

The hardware components of the basic model comprise a concrete reservoir, a plastic drip irrigation kit, and a water pump. The size of individual market gardens can range from

Image: MASHAV

The TIPA project helps people achieve sustainable development, food security and community development

Image: MASHAV

Producing irrigated high-value crops can enable small-scale family farm units to achieve better results

The family drip irrigation system

A reservoir and an irrigation kit are combined to make up the basic irrigation system. The reservoir capacity is determined by the size of the field to be irrigated, and the long-term evapotranspiration averages in the region.

Irrigation kit
The irrigation kit uses the pressure of gravity from a height of one metre and above to distribute water evenly throughout a field allowing:

- maintenance of low soil moisture tension and ample soil aeration
- reduced leaching of fertilizers compared with pressurized systems
- water application based on crop evapotranspiration
- application of nutrients based on crop demand.

The basic low-pressure drip irrigation kit is composed of taps, a filter, the main distribution line and 500-1,000 metres of laterals (in which the drippers are embedded).

Operating system
Irrigation water is applied every day. It takes three to four hours to complete an irrigation cycle. The continuous maintenance of low soil moisture tension (due to the lengthy irrigation period) results, particularly in sandy soils, in higher growth rates and hence in higher yields. Under low-pressure discharge, water moves mainly horizontally resulting in very little vertical leaching of nutrients. This special characteristic eliminates the need to apply soluble fertilizers — which are not always available — in the water with every irrigation event (as practiced in conventional drip systems).

Maintenance of the system is confined to daily cleaning of the filter prior to irrigation, and periodical flushing of the reservoir and laterals. The rigid drip systems developed and manufactured by Israeli companies can last for more than 10 years with little or no maintenance.

tens of square metres to a few thousand square metres. The most common size is 500 square metres. Since the minimal pressure needed for operation of the drip system is only one metre, TIPA can use low-energy water sources such as surplus water from village water towers (most common in Senegal), solar energy and artesian energy.

The technical requirements to establish a TIPA project of 100 units (100 farmers) are:

- an area of 5 hectares divided into 100 plots of 500 square metres each (20 x 25 metres) — one 500 square metre plot per farmer
- a sustainable water resource for the daily supply of up to 400 cubic metres of water to the project, with pressure not lower than 3.5 metres (0.35 Atmosphere)
- basic water infrastructure for distribution of the water to the plots: each plot with access to a water tap
- protection/fencing of the area allocated for the project
- a building to provide necessary storage space, packing space, sanitation services and other elementary needs of the project.

The estimated cost for installation is around US$1.5 per square metre. The estimated profit is about US$2.0 per square metre per year, with an investment return period of six months.

Developed at Ben Gurion University of the Negev in cooperation with world-renowned Israeli irrigation companies, the TIPA model was later enhanced by MASHAV in cooperation with the International Crops Research Institute for the Semi-Arid Tropics. It was first started in Senegal in 2006, as an initiative of the Embassy of Israel in Dakar and of MASHAV. Together with the collaboration of the Senegalese Water Services and two local partners, three communities and locations were chosen for the establishment of the first TIPA projects in Senegal. The results were impressive: 60 families, most of them headed by women, tripled their agricultural income in less than two years. A new source of income was created.

Following the success of the model, the Senegalese Government decided to expand the TIPA project, adopting it as a national programme to be implemented throughout the country. Within this framework, the trilateral partnership established between the governments of Israel, Italy and Senegal addresses the issue of food security and enhancing income generation, including the installation and operation of about 500 hectares of TIPA which will directly benefit a population of over 10,000 people in rural Senegal.

By placing people at the heart of development, the TIPA project identifies efficient ways to help family farmers to fulfil their potential and contributes to human development by enhancing and expanding human capabilities to achieve sustainable development, poverty alleviation, provision of food security, the empowerment of women and community development.

Families on the farm: a portrait of generations and migrant workers in Canada

Nathan Battams and Nora Spinks, The Vanier Institute of the Family

Family farms have played a significant role in Canada's history, both in terms of the economic contributions that agriculture has provided in the development of local and provincial economies, and with regard to the role farming has played in shaping community and familial identities. Farming has a strong impact on the lives of families involved in the practice, as it often ties together notions of home, work, culture and kinship. Family farms have been critical to Canada's development throughout its history, and despite the overall decline in the proportion of Canadians and gross domestic product devoted to the farming sector over the past century, Canada remains one of the world's largest agricultural producers and exporters.

Farming in Canada is characterized by diversity because its geographical landscape is diverse, with products ranging from wheat and barley in the Prairie Provinces, to corn, produce and dairy in Central Canada, to potatoes and cattle in the Atlantic Provinces.[1]

Image: The Vanier Institute of the Family

The overall number of family farms is decreasing as farm operations are consolidating to remain competitive

The number of farmers in Canada is declining. According to Statistics Canada, the agricultural farm population (farm operators plus the individuals living in their households) stood at 650,395 in 2011, accounting for 1 in 50 Canadians. Approximately 45 per cent of the farm population were farm operators, while the remaining 55 per cent were other members in the household. The number of farmers in Canada has been in decline for decades: in 2011, there were 293,925 farm operators in Canada, a 25 per cent drop since 1991.

Not only is the number of family farmers decreasing, but so is the number of farms. The number of farms in Canada has decreased, from 280,043 in 1991 to 205,730 in 2011. While they come in a diversity of sizes ranging from small organic farms to large-scale agricultural operations, the overall average size of farms has increased, from an average 598 acres per farm in 1991 to 778 acres in 2011.[2] Economic necessity is driving farm consolidation, as many small farms don't generate enough income to support the families who own them and bigger farms are better able to manage risk. When farm income isn't enough to support a household, off-farm income becomes more important to the well-being of families. A study by the George Morris Centre found that among farms with sales that exceed C$100,000 per year, off-farm income accounted for less than half of total family farm income, while for farms that bring in less than C$100,000, off-farm income accounts for 76 per cent of family farm income.

Agriculture in Canada has become increasingly mechanized, which allows for larger operations and reduces some of the need for hired farm labour. Automated steering systems allow for driverless tractors, mechanized milking machines help farmers increase milk production and air seeders limit the need to till the soil. Smartphones now provide farmers with a variety of applications that can help with farming responsibilities such as identifying pests, monitoring livestock and scouting for crops — tools that are mostly used by younger farmers, but are becoming more widely utilized as family farms continue to grow.

While technological advances have reduced some farm workloads, many farms — particularly larger operations — rely on hired labour from outside the family to effectively manage farmland during planting and harvesting seasons. According to Statistics Canada, more than one-third (34 per cent) of farms in Canada report using hired labour to facilitate farming and food production.

Despite the declining number of farmers and farms, as well as the consolidation of farms in general, the farming sector is still predominantly in the domain of sole proprietors and their

families. Data from the Census of Agriculture has shown that while the number of corporate farms is on the rise, the proportion of these corporations owned by families is increasing. Whether corporate or not, family farms are usually intertwined with the resources of a family household, and family members are often involved with farm work. One study found that for many leading Western farmers, their spouses participated in roles such as farm management (84 per cent), ownership (76 per cent) or labourer/other roles (31 per cent).[3]

Family farms have been central to the development of local economies throughout Canada's history, as agriculture-based settlement created primary economic activity in many rural areas that hadn't previously existed. Farming continues to contribute to local economies today, whether through providing local vendors and markets with produce, hiring labourers from within the community during planting and harvesting seasons, or spending locally on fertilizers, seeds and equipment.

According to a report by the Conference Board of Canada, family farms have advantages that other businesses often seek to replicate. They typically have higher levels of commitment to their work than other farms due to the direct impact of the farm's success on their family unit and the resulting well-being of people to which they have strong emotional connections. Family farmers are also more willing than other workers to engage in some unpaid work, and the low or non-existent turnover rate of family workers on their farms helps avoid recruitment and training costs. These traits contribute to the uniqueness and resilience of family farms.

Despite these advantages, a number of issues are fuelling discussion about the future of family farms in Canada. To begin with, Canada's farm population is ageing — a demographic reality that coincides with the overall ageing of Canada's population, but one that can pose risks to the safety of family farmers due to the intense physical nature of their work. According to Statistics Canada, the average age of farm operators increased from 47.5 to 54 years between 1991 and 2011. The number of operators aged 55 and older increased by 13 per cent during this period, while those under the age of 55 decreased by 43 per cent. The declining size of the farm population and the increase in the number of retiring farmers has raised concerns about succession planning. Only one in five Canadian farming operations reported having a written succession plan in place in 2007, according to the Conference Board of Canada report.

In Prince Edward Island, Canada's smallest province with a population of under 150,000, more than 90 family farms have been in continuous operation since Canadian Confederation in 1867. (PEI Agriculture Sector Council, 2014)

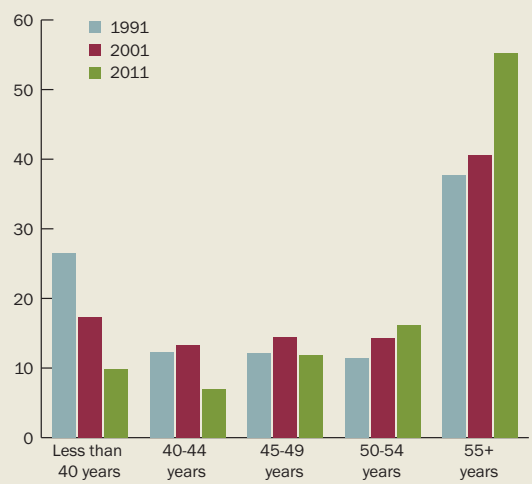
Automation through advancing farming technology reduces some of the physical workload, allowing some farmers to work later into life than in previous generations. But since rates of chronic health conditions, disabilities and ageing needs increase with age, a greater share of farm operators face risk of injury or other obstacles to participating in farm work. According to the Canadian Agricultural Injury Surveillance Program, farmers aged 60 and older account for approximately 15 per cent of the farming population but for 36 per cent of all agricultural fatalities and 74 per cent of all machine-related injuries.[4]

Concerns have been raised about potential financial barriers faced by the next generation of family farmers, many of whom may find the necessary access to capital elusive. The capital investments required for purchasing farm assets, such as land, machinery, fertilizer and farm technology, are increasing along with farm operating expenses. Another factor is rising land costs,

Image: Alan Mirabelli

Family farming is an intergenerational practice, shaping community and familial identities across the country

Distribution of farms by age of the oldest operator, Canada 1991, 2001 and 2011



Source: Statistics Canada, Census of Agriculture, 1991, 2001 and 2011

Image: The Vanier Institute of the Family

Family ties contribute to the uniqueness and resilience of family farms

Image: Alain Mirabelli

Farming in Canada is characterized by diversity because its geographical landscape is diverse

which have grown significantly in recent years. According to Farm Credit Canada (FCC, a federal Crown Corporation and the largest lender to Canadian farmers), the value of farmland grew by more than 22 per cent in 2013, which is the largest annual increase since the FCC began reporting in 1985.

Other financial factors can also affect whether or not younger Canadians decide to continue family farming, as it is by no means a guaranteed route to financial success; in 2010, nearly three in 10 farms in Canada lost money. Many young Canadians are already managing debt (79 per cent of the under-35 age group reported having debt in 2012)[5] and may not want to complicate their financial situation further by taking on new expenses or loans needed for starting or continuing the family farm. While these potential obstacles are not new and many youth do continue to work on the family farm, further financial concerns down the road may pressure some to reconsider their options.

Operating a family farm is extremely labour-intensive, and fewer Canadians are available or inclined to work in the fields than in the past. The number of resident Canadians reporting a willingness to work in horticulture (the cultivation of fruits, vegetables and flowers) declined by 25 per cent in the 1990s alone.[6] Some family farms manage labour shortages by hiring migrant farm workers from abroad on a temporary basis through programmes such as the Seasonal Agricultural Workers Program (SAWP), which was established in 1966 to help farmers through their planting and harvesting seasons for specified commodities. Initially intended as a temporary measure to manage an immediate labour shortage, the programme has since grown and many family farms in Canada — particularly those in Ontario — now rely on the yearly influx of thousands of workers who have been recruited by officials in their home countries.

Migrant workers earn more money and experience greater job security in Canada than they might have in their home countries. SAWP permits migrant farm workers up to eight months per year in agricultural operations, although the average time spent working in Canada is between 17 and 20 weeks.[7] Many of these workers return to work at the same farms for years on end. Some of these farm workers are following in the footsteps of other family members who had participated (or are still participating) in the programme. The money they earn is often sent back home to support their families and communities. This revenue stream can contribute to the development of local economies in their home country, as can entrepreneurship skills and knowledge the farm workers may have learned while abroad.

While agricultural work in Canada provides income for migrant farm workers, leaving their home country has its costs to their well-being. They are not only separated from the people they love and support, but also from the communities and culture they leave behind, even if only on a seasonal basis. Many report that working away from home has had detrimental effects on their families, such as marital strain, distant parent-child relationships and increased depression and anxiety.[8] Employers must provide "adequate living accommodation" for SAWP workers, but the rural settings of most Canadian farms generally pose significant language and mobility barriers to participating in recreational activities outside of work. Feelings of isolation and stress can be magnified by the long hours and physically demanding nature of farm work.

Migrant farm workers' families in their home country can also face increased stress and household workloads due to the absence of a family member. When one parent leaves to work abroad, the partner or spouse who stays behind often faces a significant increase in responsibilities while in precarious financial situations. These families often adapt to this strain with help from extended family members. When mothers come to work on Canadian farms, young children are left with kin while older children are often left on their own. Despite the difficulties faced by migrant farm labourers, through their work in Canada they are able to provide support to their families and they play a vital role in ensuring the success of many family farms.

Family farms have been integral to Canada's social and economic development throughout its history, and despite the changing nature of agricultural work — and the farmers, farm families and migrant farm workers — these farms will continue to be significant players in local and provincial economies, as well as the national economy.

Transforming rags to riches: ending the age of poverty

Dr Mohamad Roff Mohd Noor, Dato' Dr Sharif Haron and Rohani Md Yon,
Malaysian Agricultural Research and Development Institute

The Malaysian Federal Government's Transformation Programme was introduced to improve the quality of public sector delivery to achieve vision 2020 and one of the seven National Key Result Areas is to enhance the living standards of low-income households. Among the low-income key result area initiatives is the Akhiri Zaman Miskin (AZAM) Tani project (akhiri zaman miskin means 'ending the age of poverty'). The project is entrusted to the Ministry of Agriculture and Agro-based Industry to be implemented across the states in Peninsular Malaysia.

Implementation of the AZAM Tani project is headed by the Secretary General of the Ministry of Agriculture and Agro-based Industry, Dato 'Mohd Hashim bin Abdullah and implemented by all 11 departments and agencies under the Ministry of Agriculture and Agro-based Industry. One of the agencies that is entrusted to implement this project is the Malaysian Agricultural Research and Development Institute (MARDI).

The specific objective of the project is to improve the income of the hardcore poor through economic assistance in activities such as crop planting, fisheries, livestock, processing of agricultural products, agro-based businesses and agriculture services.

Low-income people are classified in three groups: hardcore poor, poor and vulnerable to poverty. The measurement in poverty level is based on per capita monthly income of each member of the family or the so-called poverty line income (PLI). Based on the 2007 PLI, the per capita income of the hardcore poor is below RM100, for the poor it is between RM100 and RM160 and for those vulnerable to poverty it is between RM161 and RM232. The focus of this project is to help eradicate the hardcore poor and the poor.

MARDI was requested to implement this project by the Ministry of Agriculture and Agro-based Industry in August 2009. The project gave new responsibilities to MARDI in the management of a poverty eradication project in three parliamentary areas of Batu Pahat, Johor; Alor

Image: MARDI

Food processing equipment given to a participant

Image: MARDI

A participant selecting cucumbers for sale

Image: MARDI

A chest freezer was given to this participant for selling food products

Gajah, Melaka and Jempol, Negeri Sembilan. A total of 200 participants were selected for the project: 100 from the hardcore poor in Batu Pahat, 50 from the poor category in Alor Gajah and 50 in the vulnerable to poverty group in Jempol. The provision for each participant (family) is different, such that RM10,000 (100 per cent support) is given to the hardcore poor (Batu Pahat), RM8,000 (80 per cent support) to the poor (Alor Gajah) and RM5,000 (50 per cent support) to the vulnerable to poverty group (Jempol). Participants were selected from a list given by the various State Development Offices in October 2009. Allocations of RM2.05 million were given in November 2009 and the project started in December that year.

In 2010 MARDI was given four new parliamentary constituencies with 335 families involved in the project; 70 per cent of the participants are hardcore poor and 30 per cent from the poor category. A budget of about RM6.35 million was available and each participating family was given RM10,000 assistance to start the project.

In implementing the project various innovations were carried out, especially in aspects of the selection of project activities, financial assistance, development of a standard operating procedure (SOP), technical training and motivation. Continuous project monitoring is an important element in the implementation which is supported by the efficient work culture practiced by the staff in the institute. A working group was formed to implement and monitor the performance of the project.

To implement the project, participants were given the choice to determine their own project activities based on their interests, experiences, abilities and capabilities. This is very important to determine the success of the project. The scope of the project activities must be agro-based which includes field crops, livestock, food processing and services in the field of food and agriculture. The project activities proposed by the participants are evaluated and only activities that can generate revenue quickly, and are viable and sustainable, are recommended.

In general, the types of projects proposed by the participants are closely related to the daily activities of the village communities which involve the production of livestock and fisheries (chickens, ducks, catfish, tilapia, snakehead and climbing perch), crop production (vegetables, bananas, sugar cane, mushrooms), food processing (traditional cakes, frozen and fried products), small businesses such as kiosks and stalls selling food and beverages (sugarcane juice, soy products, cold drinks and fruit slices), and mobile stalls using three-wheelers selling fish, vegetables, food and drink. Assistance is also given to activities involving fishing and cleaning services for farms and paddy fields.

A list of simple materials and equipment given to various project activities

No.	Project activity	Materials and equipment
1.	Chicken rearing	Chicken shed building materials, fences, 1-2 month-old baby chicks, chicken feed, feeding containers, medication
2.	Duck rearing	Duck shed building materials, fences, 2-3 month-old ducklings, duck feed, feeding containers, medication
3.	Fish rearing	Canvas/cement tank, fences for the tank, 1-2 month-old brood stock, fish feed, medication
4.	Mushroom growing	Shed building materials, shelves, matured mushroom blocks, simple tools, chemicals, pesticides
5.	Fertigation	Irrigation systems, pumps, tanks, meters, cocopeat, seedlings, fertilizers, pesticides, electrical connections
6.	Food processing	Equipment/machinery, electrical and water supplies, raw materials, processing workshop
7.	Business/services	Kiosk, three-wheeler motorbikes, ice boxes, chairs/tables, canopy/umbrellas
8.	Fishing activities	Boat, engines for boats, various types of nets
9.	Farm cleaning services	Lawn mower/bush-cutter, power sprayer, knapsack sprayer, water pump

Source: MARDI

An SOP was developed by the project team for each project activity. Assistance was given to the participants in terms of materials and equipment to enable the project to be implemented. No cash was given, to prevent the abuse and misuse of funds. Each project activity was assisted in stages and the participants were given appropriate technical training before implementing them. To ensure that the activities were smoothly implemented, continuous assistance and advisory services were given to the participants.

All participants were given technical and hands-on training before each economic activity was implemented. Training was performed in groups in community halls close to the project vicinity so as to facilitate full attendance from the participants. Each training session was also attended by all family members, including wife, husband and children since each project activity needed participation and support from every family member.

For each training session the local leaders such as the village head or members of parliament were involved during the opening ceremony and presentation of certificates of attendance. This is a measure to inform local leaders about the implementation of the project activities. Local leaders are also requested to deliver motivational speeches to inject greater enthusiasm among the participants.

The performance of each project activity was monitored weekly in terms of the progress and income earned by members of the project team. The implementing officer made sure that the participants were given assistance and advisory services, and the economic activity produced results in the shortest possible time in accordance with the SOP. Monitoring of the project activities is done regularly to ensure the project runs smoothly so that it can survive and continue to provide additional income to the participants.

The participants start to earn revenue and income one month after the project's implementation. Revenue and earnings can be obtained immediately due to the different concepts and approaches undertaken by MARDI as follows:

- The project activities were selected by the participants. Therefore, they are responsible to ensure the success of the project.
- Members of the project team developed the SOP for project implementation.
- Expenses for construction of infrastructure were limited to 20 per cent of the allocation given and 80 per cent of the allocation is used for purchasing raw materials such as advanced planting materials and matured brood stock. This concept enables the participants to earn revenues quickly.

The income of the participants stabilized after six months of project implementation. Participants who are productive, diligent and always work hard get results faster. The main factor that contributes to the success of the project depends on the ability of the participants to work hard based on the choice of a suitable project in accordance with their skills. Successful project activities are those that are easily managed such as selling food at kiosks or stalls, fishing, food processing, crop production and cleaning services. Livestock projects such as rearing chickens, ducks and fish are very difficult to sustain because the participants are not able to retain the capital funds since the costs of brood stocks and feed are high, selling prices are uncertain and there is also the risk of diseases.

After two years of implementation, participants who chose simple projects such as food processing and small businesses (kiosks/food stalls) had increased their income to micro-entrepreneur level with earnings of more than RM2,000 per month, some even earning RM5,000 a month. Approximately 20 per cent of participants achieved this level. Participants who chose projects according to their own skills such as simple crop production (mushrooms and fertigation), fishing and farm cleaning services increased their earnings between RM1,000 and RM2,000 per month. These types of project

Image: MARDI

A participant selling food products to local tourists

activities are difficult to expand due to land and labour constraints. About 50 per cent of the participants belong to this group and they were able to increase their income above the poverty line. About 30 per cent of the participants have not been able to increase their monthly income due to lack of hard work and choosing difficult projects such as rearing chickens, ducks or fish. The income of participants in this group is still at the poverty line. In general MARDI has helped 526 families in various economic project activities and 325 (61.8 per cent) were able to increase their monthly income above the poverty line.

The experience of implementing this project has given MARDI officers some guidance in the implementation of projects involving the poor and destitute. The enthusiasm of the participants was one of the most important factors that determined the success of the project. Selection of project activities by participants was solely based on the participants' capability to implement them and not based on the economic potential of the business.

The performance of each project activity chosen by the participants varies in terms of their potential and the expected level of success. Project activities involving direct business dealings such as selling food products in kiosks and food stalls, farm cleaning services and fishing are easier to implement and maintain. Project activities that are closely related to the ordinary activities of the village community such as crop production, food processing and selling of beverages are equally successful. These projects are categorized as 'Quick Win'. They can be easily implemented and continued because no technical skills are required (except for food processing) and they only require minimum capital with the provision of basic facilities.

Project activities that are difficult to succeed in and sustain are those involved with the rearing of livestock and fisheries, mushroom cultivation and fertigation. The successes of these activities are difficult to predict due to factors such as the requirement of technological knowledge to manage them and combat disease attack. The high cost of inputs such as seeds/breeds, fertilizers and feeds, uncertain sale prices and the high cost of investment are also factors that affect the success of the project. From this experience, it was indicated that in a poverty eradication programme, Quick Win project activities should be given priority to ensure success.

Supporting family farms for food security and sustainable development

Daniel Constantin, Deputy Prime Minister and Minister of Agriculture and Rural Development, Romania

Small-scale agriculture has an essential role to play in reaching food security and sustainable development for humankind. However, this resource is not valued enough, and we need to find ways to change our development paradigms in this direction.

As I grew up I spent most of my vacations in the countryside with my grandparents. They had a small piece of land and they valued their farm very much. That's where I learned most about the strong connection the peasants have with their land and their cultural heritage.

Romania has a long tradition in family farming; it was the pillar on which Romanian society developed. Family farm activities are not limited to agriculture. They also comprise important social activities for the community and family, preserve traditions and crafts, attract rural tourism and agrotourism, and help to protect the environment through extensive agricultural practices.

After the First World War, Romania became one of the largest producing countries of agricultural commodities in Europe, exporting mostly maize, wheat and other grains. The reforms made by the Government at the time helped families secure a living, by giving them land and know-how in the field. The connection between people and their land was embedded in Romania's rural society and it is still present in today's villages.

The Second World War destroyed all the agricultural infrastructure and communism took over rural life. Large state farms were built and the land was taken away from the people. Most farmers were moved to the cities and were employed in newly developing industry. Those left in the villages worked at low productivity levels for the state farms. The farming know-how gathered over centuries, along with traditions and crafts, were lost. The new industrialized agriculture system took over and family farmers were replaced with simply employees. The only land people kept was that around their houses, where they kept growing some crops for the family.

After 1989, many moved back to the villages due to the closing of the industry plants. They and those who still lived there became farmers in order to survive. Their methods were poor and their means were very low. The bad memory

Image: Ministry of Agriculture and Rural Development of Romania

In Romania, agriculture employs most rural inhabitants and most farms are under five hectares

of communism made people very reluctant to join any form of association; families individually worked the small and fragmented parcels of land inherited from their pre-war ancestors. The persistence of the fragmented land structure of Romania through the last 20 years, despite the expectations of many land consolidation experts, is largely due to the important role subsistence and semi-subsistence farming plays in providing livelihoods where pension and welfare payments are extremely low, food prices are similar to those in developed countries, and access to credit is very difficult. These small-scale farmed landscapes, strongly associated with family farming, are still under increasing pressure due to loss of economic viability, failure to provide adequate living conditions for young farmers, and resulting abandonment.

Taking land away from the families had a huge negative impact on rural social consciousness and the effects of this can be seen today. Rural society was shaken to its core. Family values and traditions built over centuries were lost, the landscape and the environment suffered and the peasants were in a great distress, not being able to secure their most vital needs. Irreversible damage was also done due to huge migration from the villages to areas where people could earn a short-term, non-sustainable living. Abandoned villages and families found themselves rethinking what their real values were.

Smallholding-based production has persisted, especially in Romanian mountains and upland regions. However, livestock numbers have fallen since 1990, initially as a result of the dissolution of state and cooperative farms, and later due to rises in input costs and loss of market share, as a result of cheap imports after Romania's accession to the European Union (EU) in 2007. The sharpest decrease in cattle numbers began in 2009 when the milk market failed. Many small farmers sold their cattle because the milk price was too low.

Worldwide, and in Romania alike, the trend was to develop a performing agriculture. Subsidies help mostly large farms achieve performance, but they had almost no impact on the poverty of rural areas. This bipolarity has been increasing over time.

It is painful to accept and understand the damage done by the shift away from the cell on which rural development was based: small scale family farming. The International Year of Family Farming comes at a good time to spotlight these unfair development paradigms and points to the importance of insuring a decent living for humankind.

If support has so far gone mostly to developing large-scale agriculture, it is now time to reconsider this approach and to increase the support for family farms, in order to achieve sustainable development. Family farms are the prevalent agricultural model and the most important food supplier in developed countries and in developing nations alike. Family farms use environmentally friendly techniques, can offer excellent quality products and keep rural areas alive. Small- and medium-scale agriculture employs a large number of farmers and our objective should be to assist them in gaining access to knowledge and to markets. Family farms are not only occupied with agriculture, they also lead important community social activities, they preserve traditions and develop crafts, they help tourists discover rural areas and, by using extensive agricultural practices, they help protect the environment.

Small-scale farms have the power to build a network capable of organizing production and distribution chains that bring their products straight to the consumer market and provide work at a local level. Those products can also be used by public institutions and administrations, local restaurants and hotels, so developing the economy in the region. Local food systems stimulate the growth of local economies; global food systems only help a few. Developing the family

Image: Ministry of Agriculture and Rural Development of Romania

Family farms use the land around their houses and keep rural areas alive by preserving traditions and enabling rural tourism

Image: Ministry of Agriculture and Rural Development of Romania

The beauty of Romanian rural landscape, where the land is rich in resources for agriculture

farm agriculture system not only enables better environmental and sustainable agroproduction, it also helps to solve severe social issues.

When food is processed in the production area with smaller food processing systems and products are transported for shorter distances, they offer fresher products to the final consumer, compared to the industrial food chain that offers mostly processed food and intensive agricultural practices and uses large quantities of energy and fuel throughout the transport, storage, packing and freezing process. There is increased interest in society in eating better, healthier local food. Family farms are the ones able to fulfil this demand.

Statistics show that, if in the 1990s the migration was from villages to cities, nowadays, past the economic crisis, more people are turning their faces towards sustainable living in the countryside. As we know, family farming is the most common operational farming model in Europe and thus of great importance in the EU. Romania now has hundreds of thousands of families who want to live well in the countryside, ready to fight the poverty flagella, ready to bring back to life lost traditions, crafts and knowledge.

Romania's rural area is an asset that has recently been brought back to attention. The landscape is beautiful, the land is rich in resources for agriculture and the remote villages have kept their local vibe in a way that is attracting more and more visitors. Large-scale tourism, most of the time, damages the environment and produces huge amounts of food waste, another main focus of attention this year. Rural tourism is sustainable, helps people gain an extra income, keeps traditions alive and does not waste food, especially because it uses food produced locally, with home-style cooking practices.

In Romania agriculture employs most rural inhabitants, and most farms are under five hectares. There are 3.9 million farm holdings in Romania, the majority of which are family farms of extensive semi-natural grassland pastoral systems and mixed farming systems. These semi-natural small-scale farmed landscapes are of significant economic importance. For example, the 1 million holdings between 1 and 10 hectares (3.1 million hectares, 20 per cent of Romania's agricultural area) are classified as semi-subsistence farms producing for home consumption, local sales and for their extended families. Yet these farms are estimated to produce 25-30 per cent of national food consumption. They also provide rural vitality, compared to the largest farms which are associated with rural poverty.

Image: Ministry of Agriculture and Rural Development of Romania

Family farms can fulfil the demand for better, healthier locally produced food

Image: Ministry of Agriculture and Rural Development of Romania

Increasing numbers of visitors are attracted to Romania's remote villages

Romania's family farms are centred in villages and communities. The traditional farmhouses and courtyards are gathered into villages. Crops are grown on the arable valley floors, and the valley slopes are given over to hay meadows and large expanses of communal grazing land for both sheep and cattle, which are managed separately.

The typical family farm consists of a farmhouse, barns and sheds for cattle, sheep, pigs, chickens and hay; a vegetable patch for household use, and an apple, plum and pear orchard. Family farmland is usually divided into small parcels of arable land and hay meadow, often no more than 0.3 hectares in size, near the village. Further from the village are the common grazing pastures and forests which are a source of wood for cooking and heating.

In order to ensure the viability of Romania's farms and since their majority is small, we had to target our support tools in their direction. We found that by supporting family farms, not only did we solve social issues related to unemployment, but we are also able to connect the people working in production to market tools. Not to mention that they were able to standardize their production so they could sell it on the European (international) market as well. Great importance was given to the diversification of production, in order to ensure their revenues all year round.

Three main priorities were identified in order to better support family farms:

- promoting the family farm as a sustainable, inclusive growth model
- creating an institutional framework to implement support measures
- including family farms in the food supply chain.

We are supporting over 60,000 small farms with a total of almost €400 million. We have created a tool to help family farms gain access to bank credits, given the fact that banks are still reluctant to support a field such as agriculture, which is associated with great risks. The 2007-2013 Rural Development Programme supported young farmers, encouraging them to stay in the rural area and to secure themselves a decent life. The programme entailed almost 13,000 projects, at a total of €326 million.

Based on our experience, only by continuing to give incentives for small farms can we achieve viable development in rural areas and a healthy economy. The effects of this support will be seen long-term; not only will people learn to connect to the market, use better technologies, educate themselves better and protect the environment, but the communities as a whole will keep their traditions and will be able to flourish.

Sustainability of family farms can be ensured only if they are supported in various forms on a long-term basis, providing advice on the application of environmentally friendly technologies and maintaining local traditions of animal husbandry and farming. Thus, it is necessary to identify more accurate specific needs of family farms and provide a package of measures with regard to both agricultural and non-agricultural specificities for these farms to develop both at national and community level.

In February 2014, in Paris, together with my fellow Ministers of Agriculture from 20 countries, we confirmed our desire to participate fully in the International Year of Family Farming, proclaimed by the United Nations General Assembly. We also commit through our public policies to creating a favourable environment and allowing family farming to contribute to inclusive sustainable development of our countries, adapting our development paradigms to the specificity of our land and people.

Engaging and promoting family tea farmers through cooperatives in Nepal

Rabin Rai, General Secretary, Central Tea Cooperative Federation, Nepal

Nepal is primarily an agricultural country. It has a population of 30 million, 66 per cent of whom are farmers, and more than 85 per cent of those farmers live in rural areas with marginal land holdings. The farmers usually engage members of their families as inputs in cultivation.

Unfortunately, at present the young population is attracted to work in foreign countries for more lucrative jobs and easy income. Each day, more than 1,500 young people are going to work abroad and finding less interest in agricultural activity in Nepal.

The Central Tea Cooperative Federation of Nepal (CTCF) was established in 2010 and registered with the Ministry of Agriculture and Cooperative Department to address farmers' needs through tea cooperatives. CTCF is a member-based national apex body of tea farmers' cooperatives and their district federations. Currently, 85 tea cooperatives and five district tea cooperatives are members of CTCF. Some 18,000 small family farmers are involved in the tea sector in Nepal.

CTCF's vision is focused on economic development through tea cooperative promotion. It works on a central level to improve the situation of the small tea farmers through the cooperative movement. CTCF's goal is to assist the development of socioeconomic conditions for tea farmers through cooperation. It operates in the districts of Ilam, Panchthar, Dhankut, Therathum, Jhapa, Lalitpur, Udayapur, Taplejung, Sankuwasava, Taplejung, Ramechap and Bhojpur with more than 5,500 family tea farmers. The family members engage in all the activities of tea farming and culture. Along with tea, these families also engage in raising livestock, subsistence farming and cultivating cereals.

The proclamation by the United Nations of 2014 as the International Year of Family Farming creates a unique opportunity to develop the means to assure, in the medium and long term, prosperous and sustainable family agriculture development in rural areas on all continents, and especially in developing countries.

Nepali agriculture is based on small family farms that are mainly subsistence oriented and yet are not capable of feeding the people and facilitating the economic development of the country. But tea is a cash crop which ensures foreign exchange for Nepal. More than 20,000 hectares of land are cultivated with tea, out of which 85 per cent belongs to small family farmers.

Lack of infrastructure in rural Nepal is the most important hindrance for development, and the most affected people are the farmers. In addition to this, lack of access to finance creates more difficulties. Farmers are facing different problems such as a lack of the technical knowledge needed to increase productivity or improve processing and marketing. Overall, they also don't have the capacity to negotiate.

The Government's tea policy of 2000 was inadequate to address all the issues faced by tea farmers. In this scenario CTCF was formed to address these issues and lobby with the Government to solve the problems faced by the smallholder tea family farmers of Nepal.

Image: CTCF

A mother and son plucking tea in the family tea fields

Image: CTCF

A rural village in Nepal: agriculture here is based on small family farms

These challenges include a lack of infrastructure and access to market, as well as a lack of the technical human resources and production inputs (fertilizers, manure, equipment and so on) the family farmers need. The rural population is ageing due to the migration of younger generations to urban centres, and this is reducing the number of young people involved in agriculture. There is also a lack of participation among small farmers in decision-making processes and policy formulation. Market prices are volatile due to factors such as the monopoly of big tea processing factories and inequitable trade practices. In addition, there is a lack of policies and institutions that facilitate and strengthen the family farming of tea.

CTCF currently engages to address these family farming issues through activities such as lobbying and advocacy, capacity building, marketing linkages, monitoring and coaching.

CTCF's lobbying and advocacy activities aim to:

- organize policy dialogue with stakeholders from grassroots to central level, in order to increase and encourage investments in small tea family farming
- lobby and advocate to amend the national tea policy 2000 and assure the representation of small tea farmers in the decision-making process
- ensure the guarantee of soft loans, incentives, marketing, the development of a pricing mechanism for raw materials and inputs and fair trade
- organize interactions between policymakers, local governments, donors, non-governmental organizations and rural farmers to improve the tea family farming culture in Nepal
- lobby the Government to secure the market for the small farmers' production.

In terms of marketing, CTCF aims to ensure the improvement of quality through training and coaching for tea farmers. CTCF monitors evaluation tea tasting sessions in every tea growing district, to ensure the quality of teas produced by small family farms. It also works to build linkages with other value creators in the value chain, as well as incorporating buyers and helping processors to negotiate business deals and transactions. CTCF provides support for small farmers to sell their produce collectively from a common platform. With the support of CTCF, national and international tea buyers have become interested in buying tea from cooperatives, and they have already started to buy in small quantities.

CTCF seeks to increase the livelihoods of family tea farmers in several ways. It provides support to help establish mini processing units and works to build the capacity of youth and farmers by exposing them to new technologies, organic farming methods, processing methods, tastings and cooperative awareness. CTCF provides support to help tea cooperatives produce a business plan and to address the problems faced by their farmers. In addition, CTCF supports tea cooperatives in obtaining soft loans from different financial institutions and banks, on minimum interest rates. It also supports the development of savings and credit systems and their use by cooperatives. Unemployed youths are encouraged to become involved in family farming with tea, and successful family farms are promoted in order to encourage young people in sustainable agriculture. In addition, CTCF works to sensitize beneficiary farmers to the issues of food security and sovereignty, and to sensitize local and national media to the issues, importance and achievements of family farming.

Farmers are getting soft loans from the Nepal Rastha Bank and the Youth Self Employment Fund with the support of CTCF, and they are using these funds to increase productivity in a sustainable manner with additional livestock and manure production.

Social protection another important challenge for family farmers. CTCF's main priorities are small farmers, females, marginalized people, Dalits and other ethnic groups in rural areas. CTCF is working to sensitize primary cooperatives so that they recognize social protection issues and address them by providing education, training and information. It is also conducting leadership training for women, so that they can become more involved in the decision-making process. Awareness training is provided for marginalized people, to enable their involvement in cooperatives.

Since CTCF was formed, the price of the green leaf sold by the small farmers to the factories has increased by more than 35 per cent. The small farmers have increased their income and invested in better education, health, and improved living standards with adequate sanitation.

Image: CTCF

A tea tasting session, with CTCF monitoring the quality of teas produced by small family farms

Image: CTCF

The green leaf collection centre of Boarboteli Tea Cooperative Society in Ilam

The essential role of family farming and agricultural cooperatives in Japan

Akira Banzai, President, Central Union of Agricultural Cooperatives (JA-ZENCHU)

Japan is located in the Asian monsoon region where people consume rice as the basic foodstuff, and small-scale family farmers have built the foundation of Japanese agriculture by helping and cooperating with each other. Rice growing would be by no means viable without proper water utilization and conservation, and it has been well-managed and become sustainable only by all stakeholders working together. This is why "agriculture is the foundation of our country," and Japan has been called 'Mizuho No Kuni', which means 'the land of abundant rice'. Based on the ground ploughed by our forerunners' cooperative efforts for thousands of years, our present day cooperatives have achieved remarkable success.

Family farming is an integral part of local communities. According to the latest statistics from Japan's Ministry of Agriculture, Forestry and Fisheries, the total number of agriculture management entities is 1,471,200, of which 18,800 are under corporation management.[1] Although there have been various structural changes over time, with a significant increase in the number of corporation management entities as the total number of entities continue to decrease, it is important to recognize that the vast majority of farming is operated by families as the mainstream of farming in Japan.

With over 70 per cent of the total number of management entities — largely comprised of rice farmers — gaining more from off-farm income, a 2013 report by the Food and Agriculture Organization (FAO) pointed out the importance of off-farm activities as a way of providing additional income and diversifying risk.[2] These contributions to the stabilization and development of local economies and societies should not be underestimated.

In fact, family farmers have been playing significant roles in a number of areas from maintaining local cultures and traditions which form the basis of a local society, to preventing crime and disasters which are important for local

Image: The Japan Agricultural News

JA members and staff work together to meet the standards demanded by consumers and reach new markets

Image: The Japan Agricultural News

The JA Farmers Market provides a unique opportunity to secure incomes for small-scale farmers

residents to live safely, as well as providing the vast majority of the food production in Japan. They have also been playing a leading role in revitalizing local communities through rediscovering attractive points of the rural area and making them appealing to urban residents in recent years.

The JA: a mutual cooperative organization

A 'JA' (an agricultural cooperative) is an organization that is capitalized, managed and utilized by its members. A hamlet-level settlement, which is a cohesive unit of neighbour families, is recognized as an operationally fundamental organization of a JA. Each JA represents 224 settlements on average, and each settlement consists of around 25 households.[3] Representatives of the members and executive board members of the JA are elected from those settlements.

Recently, efforts to conserve agricultural land as farmland and assure successive local farming to the next generation have become more critical as farmers are ageing. Therefore, the JA Group is now promoting a Local Farming Vision movement, in which people get together to envision their desirable future of local farming and living as a whole, and to put this vision into action in each hamlet-level settlement or several hamlet organizations together. A local JA in unison with a local government provides necessary assistance towards achieving the vision from the aspect of businesses, activities and policies.

The movement aims to build rich and sound communities by increasing farm production and farmers' incomes through thorough intensive discussion on how to make an attractive production area by clarifying each individual farmer's role. These objectives or goals have in part resulted in the growth of the above-mentioned corporation entities, quite a few of which are community farming groups that have been incorporated as consolidations of family-operated farms. The JA Group has been promoting this nationwide movement in order to achieve more attractive farming based on each family-operated farm as a solid foundation, through enhancing productivity and encouraging individual family farmers to play more active roles in their local communities.

Assistance to family farmers

Each JA has many member groups which are organized by members' common interests, besides hamlet settlement organizations that serve as the fundamental unit. Every JA makes every effort to foster its members' awareness of participating in the JA movement, and to strengthen its organizational basis through encouraging members to act on their own initiative as well as providing necessary assistance.

For instance, member producers organize each 'commodity group' by their respective commodities within a JA, and they make collective efforts such as improving the quality and the quantity of their commodities, as well as their safety management in farming, by making use of farm guidance services provided by a JA. Member producers also make their best efforts together to meet strict shipping standards that reflect Japanese consumers' voice, from size, shape, taste and appearance to chemical usage reduction, so that they can sell their products at the best price and find new markets.

In addition, younger-generation farmers who will play leading roles in the future of JAs and local communities, and local women residents interested in issues including food, environment and the safety of their communities,

Image: The Japan Agricultural News

JA women's associations work together to address their common issues and interests such as food, environment and the safety of their communities

The JA charter

The JA Group set its common charter in 1997, in which it proclaims its commitment to play a major role in contributing to local economies and societies.

JA charter: our aim

We, members, executives and staff of a JA shall act, based on the basic definition, values and principles of the cooperative movement: volition, independence, participation, democratic member control, equity, solidarity and more.

We shall also commit to innovate our organization, businesses and operation from the global perspective of environmental change. In addition, we shall make our best efforts to realize a more democratic, equitable society through collaborating with cooperative allies at a local, national and global level.

For this reason, we shall play our social role as an organization rooted in agriculture and local societies through engaging in the following. We shall make our best efforts to:

- Keep our food healthy and conserve greenery and water in our country through promoting local farming
- Realize prosperous and secure local societies through contributing to environment, culture and welfare
- Achieve our goal in a cooperative manner through voluntary participation and solidarity
- Operate a JA soundly based on principles of voluntary and independent management and increase the public trust
- Pursue a meaningful life together through learning and practising a philosophy of cooperation.

Image: The Japan Agricultural News

Family farmers play an important role in maintaining local cultures and traditions, producing food and revitalizing local communities

Nationwide promotion of the 'Local Farming Vision' movement

- In order to conserve agricultural land as farmland and assure successive local farming to the next generation, JA Group promotes the 'Local Farming Vision' movement.
- In the movement, member family farmers take initiative to envision their desirable future of farming and living in the community, based on discussions in each settlement or district.
- JA and national/local administration integrally support the setup and practice of 'Local Farming Vision' from aspects of businesses, activities and policies.

Support by JA on business and activity	Local Farming Vision for each district	Policy support by government
• Help in setting up their vision • Help in accumulating farms for 'Leading Farmers' and offer business proposals • Help in organizing community farming • Support to 'New Farmers' • Other	• Clarifying 'Leading Farmers' and securing farmland for them • Clarifying respective roles of various farmers • Developing attractive production area with local features • Developing rich community through agriculture	• Subsidy for Farm Accumulation • Subsidy for Youths' Agricultural Engagement • Other

Source: JA-ZENCHU

gather under each JA. They organize JA youth groups and JA women's associations respectively, so that they work together to address their common issues. Members of a JA also organize various multilevel groups in order to deal with key issues in local communities, such as pension recipients' groups and volunteer groups to care for the elderly. They contribute to energizing their local community together with local residents.

Each JA provides economic business services, including purchasing, marketing and farm guidance, which help members' farming. The members' farms are mainly operated by families. JAs also offer credit service and mutual insurance businesses that provide funds for members and help them provide against accidents and illnesses, based on the JA philosophy. Furthermore, each JA provides other various businesses and services, such as medical, nursing, welfare services and supplying daily necessities in its role as an essential organization to support the lifeline of a community.

In addition, a number of JAs manage farmers' markets called the 'JA Farmers Market', where many small-scale local family farmers sell their products directly to consumers. These are unique places where farmers have benefited in recent years.

The JA Farmers Market provides a unique opportunity to secure incomes for small-scale farmers, especially for aged farmers who don't produce a large quantity of products, new farmers and female farmers that need assistance to raise children. They can accommodate consumers' needs appropriately since the farmers' market functions as a personal point of contact with consumers. Conversations with consumers encourage farmers, and especially aged farmers, to continue farming. New farmers take advantage of the experience to enhance their skills in order to advance their career to a more professional level.

Each JA is dedicated to revitalizing local communities by focusing on family farming. They encourage local farmers to produce more diversified products, rather than produce a bigger quantity of each product, by assisting them in technical issues and networking them, so that the farmers' market becomes more attractive to consumers as it becomes filled with a large variety of locally grown products. In addition, they hold various attractive programmes such as the 'Rice Planting Experience', 'Harvest Rice Experience' events for children and 'Cooking School' for local residents.

Family farming uniquely offers a universal value in local economies and broader society. The above-referenced FAO report further notes that well-functioning cooperatives and farmers' organizations act as a catalyst to empower small agricultural producers. To recognize the International Year of Family Farming 2014, we, JA Group, will rededicate our efforts to play a role as 'cooperatives deep rooted in communities with the axis of food and agriculture'. We will also redouble our efforts to continue to be an organization that responds effectively to the needs of our family farmer members and communities and to serve as a model for others to follow.

Tropical fruits as a source of nutrition and income for farm families

Yacob Ahmad, International Tropical Fruits Network

Tropical fruits are defined as fruits that are grown in the hot and humid regions within the Tropic of Cancer and Tropic of Capricorn, which covers most of the tropical and subtropical areas of Asia, Africa, Latin America and Oceania. Tropical fruits have always been part of the rural landscape of these regions, with the sole purpose of providing food and nutrition for human well-being. Fruits such as bananas, breadfruit and jackfruit have been used as staples in Asian, African and Asia-Pacific countries, to complement other grain or root crops.

Due to increasing demand over the years, some of the popular fruit types gradually developed from a subsistence level to one that can generate income. This includes the major globally traded tropical fruits such as bananas, mangoes, pineapples, avocadoes and papayas. Others are minor fruits which are grown commercially now such as guava, rambutan, durian, jackfruit, pitaya and passion fruit. Besides providing nutrition to farm families, cultivating tropical fruits now is an important income-generating activity for these families, which in turn improves the local economy. Tropical fruits are reasonably inexpensive, which makes them another export option for producers to diversify exports. It has been estimated that there will be an uptrend in the demand for tropical fruits in domestic and export markets, especially from consuming countries such as the USA, European Union (EU) and Japan.

Banana is the major tropical fruit with an estimated world production in 2011 of 183 million tonnes. Of this total amount, 17 per cent was traded by mostly multinationals. Smallholders including farm families therefore produce about 80 per cent of global production. Excluding bananas, world production of tropical fruits increased from 64 million tonnes in 2002 to 95 million tonnes in 2011. Mango was the main fruit produced, accounting for almost 40 per cent of total production, followed by pineapple at 25 per cent, papaya at 10 per cent and avocado at 4 per cent. Other minor tropical fruits such as durian, rambutan, litchi, guava, and mangosteen made up about 20 per cent of total tropical fruit production. Asia

Image: International Tropical Fruits Network

A range of farmers cultivate tropical fruit, from subsistence farmers to more commercial, plantation-style operators and cooperatives

Image: International Tropical Fruits Network

Fruit processing helps to minimize wastage and is usually organized by the women in the farm community

remains the main producer of tropical fruits, followed by Latin America and the Caribbean, Africa, and Oceania. It is estimated that 90 per cent of the fruits produced are consumed domestically, with only an estimated 5 per cent traded as fresh fruits and another 5 per cent processed. Ninety per cent of tropical fruit farmers are from developing countries.

It is also common practice for tropical fruits to be part of the mixed farming system where other food crops such as maize, rice, root crops, and even livestock are integrated with the main objective of providing food for the family. However, the trend is changing as most farmers now cultivate them more for increasing the family income, therefore contributing to the local economy. Tropical fruit cultivation covers the range of farmers from subsistence to the more commercial, plantation-style operators, group farmers and cooperatives.

In most tropical fruit producing countries, farmers are now more commercial, growing more marketable fruit types to sell, rather than just for food. Processed products such as purees, chips and dried fruit are also being produced to minimize wastage during seasonal glut. Processing of fruit is commonly organized by the women in the farm community. Even though the outlook for tropical fruit seems bright with an expected gradual increase in demand, there are challenges which affect farm families.

One of the biggest challenges is that the seasonal nature of some topical fruit types such as mango, mangosteen and rambutan adds to the problem of wastage and low prices during the glut season. At times of low prices, the fruits are sometimes left unharvested.

Post-harvest is another major challenge for tropical fruit farmers. Losses occur from the harvesting stage up to packing and distribution. Causes include inappropriate and repeated handling along the chain during reselection, grading and repacking. Generally, post-harvest losses in developing countries for tropical fruits have been estimated to be about 30 per cent. This situation is worsened with poor infrastructure and logistic to transport the produce to the market.

Farmers are sometimes unable to access appropriate production technologies such as suitable cultivars, suitable cultural techniques, off-season production techniques and good agricultural practices. An efficient extension system is also imperative in order to impart these latest production technologies to farmers.

As an indirect effect of climate change, pests and disease outbreaks have seriously affected production and income for tropical fruit growers. While some diseases and pests can be contained some, like the banana wilt and citrus greening disease, continue to devastate farms, affecting the farmers' income and prompting changes in the choice of crops or other agricultural activities.

There is also lack of farmers' integration into the value chain and access to the market. The main players in the value chain are the farm collectors, traders, processors, wholesalers, distributors and retailers. Tropical fruit farmers are involved in the production end of the chain and are seldom aware of what happens to their produce once it is sold. It is quite common for farmers to be paid prices that are three times lower for their products because of the intermediaries in the market chain. Efforts to enable the farmers to play a more active role in the chain should be encouraged. This includes partnerships or contract agreements with other chain players such as retailers and the provision of credit facilities.

With increasing demand and changing consumer trends for safe and quality fruits plus certification, farmers have

Image: International Tropical Fruits Network

Growing demand promises an optimistic future for the tropical fruit industry, including family farms

Image: International Tropical Fruits Network

In most tropical fruit producing countries, farmers are growing more marketable fruit types to increase family income

to adjust their production techniques and operations to comply and be more aggressive in the competitive market. One aspect of safety is the minimum residual level, which sets the levels for chemical use.

Products destined to the export market are subject to compliance to the sanitary and phytosanitary requirements of the importing countries. In this regard, the farmers have to be informed and trained on the importance of such regulations to ensure that the fruits are acceptable, not only for the export but also for the domestic market.

The increase in prices of farm inputs is another major issue which can affect sustainable production. Organizing farm families into groups or cooperatives is one way to reduce cost through the bulk purchase of inputs, besides utilizing means to increase production such as better-yielding cultivars and improved production technologies.

The ever-growing demand for tropical fruits in the domestic market as well as from consuming countries such as the USA, EU and Japan, promises an optimistic future for the tropical fruit industry, not only for multinationals but also for farm families. Appropriate policies need to be formulated and implemented to provide support for farmers to produce more efficiently. Research and development on improving quality and production, such as the introduction of better cultivars and improved modern production technologies, need to be better focused on marketable fruits. Extension systems need to be reviewed for their effectiveness in the transfer of technology besides other knowledge such as market demands and the importance of food safety. To sustain production, fruit farmers must also have access to credit facilities, which are needed to expand production.

It would be an advantage for farm families to be institutionalized into farmers' groups or cooperatives to improve collective capabilities. With the development of collection and processing centres for fruits, there will be more job opportunities available in the rural areas. However, infrastructures such as roads are necessary to reduces losses and improve accessibility to markets.

For the past few decades, extension has been focused on methods to improve fruit quality and food safety in tropical fruit producing countries, sometimes with the assistance of non-governmental organizations. Farmers now have a better understanding of the type of produce desired by consumers. The trend is now shifting for fruit farmers to go into monocropping, or growing more of the most profitable fruit type. While this may be preferred to increasing income for better profit and for boosting the local economy, fruit farmers also need to have a few other fruit types on their land to provide nutrition for a balanced diet.

Besides being labelled as exotic, tropical fruit has been promoted as healthy and nutritious in containing minerals, vitamins, antioxidants and fibre. This makes it a good alternative or complement to other temperate fruits. With the expected increase in domestic and global demand, farm families growing these fruits should be given the opportunity to integrate into the value chains and have access to the markets, so that production can be sustained and their livelihoods will be improved.

Family farming in New Zealand

Mark G. Ross, General Manager, Policy and Advocacy, Federated Farmers of New Zealand

Family farming in New Zealand has a proud history that can be traced back to the first European emigrants in the late 1840s. The country's early pioneers were important in the development of its economy, often leaving their families behind in the United Kingdom and other countries to make a new life in a faraway land.

When the early settlers arrived on New Zealand's shores they often found out the hard way that the country's climate and terrain can be harsh at the best of times. The isolation, landscapes and weather created many challenges to the first farmers as they adapted to the new environment. Given this, many of the early settlers were preserved by buying land, clearing forests and establishing farms as a means to make a living. The work was hard and the farming immigrants had to be self-sufficient as there was no outside help from a wider community. Many of the large sheep farms on the eastern coasts were farmed by single men who could survive the elements, and farming families were initially very sparse.

As time progressed and farms became more productive, family farms took on more importance. Men, women and children all worked in unison to ensure that food was produced to feed their families. Even small children had their farm tasks like feeding hens or picking vegetables, with men doing the hard farm labour such as ploughing and shearing. Men also had to work off the farm to bring in additional income as there was often not enough money coming off the land to support a growing family. In the nineteenth century families often had six or more children, and it was hard work to feed and clothe them all when relying only on what was produced from the family farm.

At first the majority of the New Zealand farms were focused on producing wool from sheep and milk from cattle. It wasn't until refrigerated ships were invented at the end of the nineteenth century that the farmers could sell meat and dairy products (like butter) overseas. The creation of these new markets changed the family farming make-up as it enabled surplus money to be made, thus allowing for the purchase of machines like tractors. Work was not so hard and people had time to develop communities and go to local dances or play sports.

A golden period followed for the farming sector, with the creation of large and buoyant communities throughout New

Image: Federated Farmers of New Zealand

Rounding up sheep on a coastal New Zealand farm

Zealand. Farming was seen as the backbone of the economy, with sheep numbers growing exponentially. Families were proud of their rural heritage, and much of the government support focused on helping people establish farms throughout the country. Subsidies were abundant, with many farmers living off government hand-outs rather than aiming to create wealth through their own endeavours.

Unfortunately, during the 1970s and 1980s new challenges arose for New Zealand's rural farming families. Farming became less prosperous due to the country's financial situation and the loss of some key export markets. On-farm costs rose, returns fell, and yet land prices remained high.

To add to this in the early and mid 1980s, farmers were faced with the sudden and unexpected removal of subsidies. Until then nearly 40 per cent of the average New Zealand sheep and beef farmer's gross income came from government subsidies. Farmers were used to the extra income and calculated the subsidy payments into their overall profit forecast. A year later, almost all of these subsidies were removed. It was a shock to the whole of New Zealand and as a result family farmers lost a large part of their income and were left to their own devices for keeping the farm viable.

You may think that this major policy change would have destroyed the make-up of the family farm, but looking at the current situation, the conclusion is that New Zealand farmers have come through that experience stronger than ever. Left to face the market, farmers and rural communities have continued to prosper and they are determined never again to be dependent upon government hand-outs or subsidies.

Outside New Zealand, farmers in many countries have been facing radical change and are coming under the pressure of less support for farm production. In many cases they have been confronted with the reduction or elimination of government subsidies while more recently there has been a fall in commodity prices in the wake of the global economic downturn. Farmers and their supporters fear for the future of those who work on the land, their families, and the communities in which they live. The fear of the long-term destruction of the traditional family farm haunts many farmers' dreams.

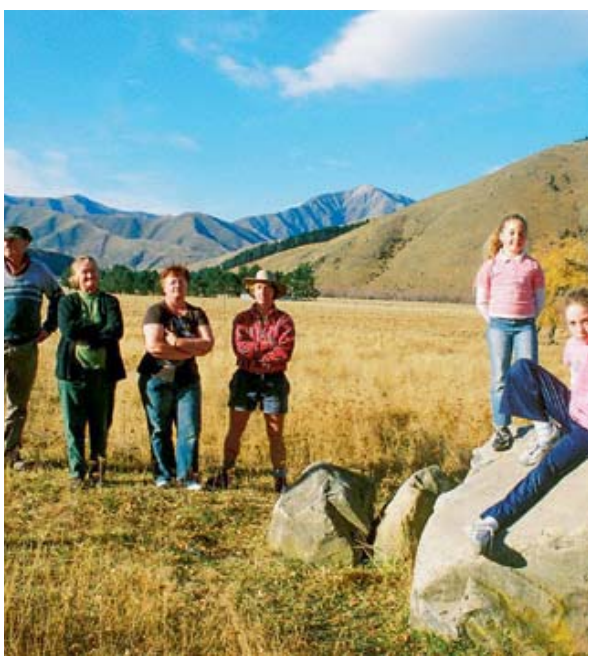


Image: Federated Farmers of New Zealand

Farming in New Zealand extends across family generations

Yet using New Zealand as an example, the truth is otherwise. For family farming, there is life after subsidies. Indeed life after subsidies is better than farming that is dependent upon government hand-outs and reliance on others to produce food. New Zealand has prospered under a subsidy-free regime, with families becoming smarter in the way they operate and communities adjusting to changing market demands. The removal of farm subsidies in New Zealand has given birth to a vibrant, diversified and growing rural economy. New Zealand's experience over the last 30 years has thoroughly debunked the myth that the farming sector and the environment cannot remain healthy and prosper without government subsidies.

The removal of subsidies has proven to be a catalyst for productivity gains. Such improvements in productivity are readily apparent at the level of the individual family farm. Lambing percentages, lamb export slaughter weight and milk fat processed per cow have all increased. The diversification of land use prompted by the removal of subsidies has been beneficial for farmers and has increased the size and scope of the New Zealand agricultural sector as new innovative products have been developed.

Farmers are now farming better than ever. They are much more conscious that their activities must make good business sense. No longer are they chasing subsidies, pursuing maximum production at any cost. Farmers maintain cost structures that reflect the real earning capacity of their farms. They invest in protecting their environment and the value of their land is based on its earning capacity in the market.

Good management of the environment is an integral part of sustainable agricultural practice by farmers. With the removal of subsidies, agricultural practice is now driven by the demands of the market and by consumers. The removal of subsidies has also broadened the base of family farming to encompass activities, such as rural tourism, that bring management of the landscape and the rural environment to the fore.

The New Zealand agribusiness sector has become far more professional and innovative. As a result, it is more efficient at providing the world with top quality foodstuffs and fibres. The farm servicing sectors have also become more efficient as farmers have insisted on greater value for money.

New Zealand farmers are now more in charge of their own destiny and no longer at the mercy of government price or subsidy fixing. Farmers and their families have proved far more resilient and adaptive than was expected when subsidies were first removed. Early predictions of huge numbers of farmers walking off their land did not occur. Official predictions were that 8,000 farms would fail, but in the end only about 800, or 1 per cent of the total number, faced forced sales.

During the transition, many family farmers supplemented their incomes. As with the first settlers, often a spouse worked in town

Image: Federated Farmers of New Zealand

A husband and wife working together on the family farm

to supplement income derived from the farm business. Some farmers diversified into other activities and altered their enterprise mix. But mainly farmers just reduced costs and focused on producing higher value products where these were shown to be profitable. Financiers were quick to realize that there was little point in forcing farmers off their land. Throwing away the skills of farmers made no business or banking sense. Many farmers had their debts restructured and then continued farming.

New Zealand now boasts the lowest level of agricultural support for industrialized countries in the Organisation for Economic Co-operation and Development. The level of assistance to agriculture in New Zealand now represents around 1-2 per cent of farming income. What support New Zealand farmers receive is mainly in the form of government funding for agricultural research.

From a global perspective the main message coming from New Zealand is how different and advanced its family farming structures are to those of the rest of the world. One of the key differences between New Zealand and other countries is that New Zealand exports the vast majority of its agricultural production. This makes it a significant player in world trade of food stuffs, where it is either top or very high on the lists of exporting countries for a wide range of food products, including meat and dairy products.

New Zealand is fortunate that agriculture is well accepted as its economic strength with the commodities produced forming its main income, and as a general rule it is a country where no one suffers from malnutrition. Its infrastructure and support systems are world leading, with innovation being a core stay of its leadership in the production of safe food.

Farming remains New Zealand's core income earner. It employs a large number of people, supports many families and is the main contributor to local communities. In the success story of New Zealand's agriculture it is often forgotten that farming offers more than just safe food. The food that farmers produce provides fuel for human activity, delivers environmental services and social goods that facilitate community development, industrialization and diversification.

Families have changed the way they farm, with one family often owning more than one property. New Zealand is in a new era of farming with an increase in the 'corporate family farmer', a changing climate and more scrutiny on its environmental performance. Even with all the many external pressures and no subsidies, it is encouraging to see rural communities flourishing. Farmers are meeting the demands of modern consumer expectations around producing safe and environmentally friendly food.

New Zealand is proud to be one of the world leaders in the production of healthy and sustainable food. There is nothing like eating a freshly picked apple or a barbequed lamb chop from a New Zealand family farm. With all the ups and downs facing farmers, New Zealand is certainly playing its role in supporting local communities, providing food for the world and protecting the environment through the family farm model.

With the continual changes on New Zealand's farms, succession has changed from the traditional father-to-son handover. Now, farmers are exploring new models of succession that will ensure the farm business stays strong, and that all involved members of the family derive a long-term benefit from the farm and have a level of involvement they are comfortable with. This often involves increasing land ownership and stock numbers, and seeking outside investors. Because of the larger farms, the number of operating family farmers has reduced, but it remains high at around 90 per cent of all farming businesses. A family farm in New Zealand is defined as one or more farms that are owned and operated by members of the same family.

According to latest statistics New Zealand has around 58,000 farms covering approximately 54 per cent of its total land area. Of this total, around 25,700 farms are sheep, beef cattle and grains farms, and around 16,000 are dairy cattle farms. Other farm types include deer, pigs, goats, poultry and horticultural operations. New Zealand's agricultural sector in total remains an important source of employment. Approximately 79,000 people (excluding farm owners) are employed in agriculture — around 4 per cent of all employees. Many more are employed in downstream and upstream activities. This highlights how family farms are important in boosting local communities and providing economic security to New Zealand.

As farming becomes more innovative and attuned to consumers' demands, New Zealand will remain at the forefront of the world. The country has entered in a new era of farming with greater use of technology, a change in what it produces, an increase in larger corporate farming, a changing climate and more scrutiny on its environmental performance.

New Zealand is a proud nation that relies on farming as its main economic mainstay. It is thanks to the removal of government subsidies and the resilience of the early farming families that it can truly say that what it has achieved in agriculture production from a population of 4.5 million people is yet to be equalled by any other country. If the global world of family farming could follow New Zealand's lead then maybe between us all we would be able to produce enough extra food, so that all of us can be fully nourished as we work towards preserving the environment for future generations.

Creating an oasis in rice: the women farmers of Nagwa Village, Uttar Pradesh

Lanie Reyes, International Rice Research Institute

A car can usually travel down the narrow concrete road in Nagwa Village of Maharanjganj district in eastern Uttar Pradesh. However, during this second week of November – harvest time in the fields surrounding the village – piles of rice straw clogged the way, making passage virtually impossible.

Most of the women, including Prabhawati Devi, were busy cutting the straw and piling it neatly on jute sacks that were cut open to serve as mats for the straw. As she was gathering the edges of the stalks, Mrs Devi said with a smile, "These are Sahbhagi." Sahbhagi is what the farmers and villagers call Sahbhagi dhan, a drought-tolerant rice variety released in India in 2009.[1] The straw of Sahbhagi dhan is popular among the women in Nagwa, who feed it to their cattle.

Brick and mud houses, scattered along the road of Nagwa, are not big enough to shield from view the residents inside as they go about their daily chores. One woman was cooking just inside her front door, squinting under the almost-midday sun and shielding her eyes with her hands from the smoke of the burning fuelwood. Outside her house, another woman was threshing rice manually – raising her arms as high as she could as she smashed a bunch of rice stalks on a surface covered with fine mesh net. She gathered the separated grains with her hands, placing the grains at the centre of the net and putting the empty stalks neatly to her side. She rose once in a while to straighten her back from her squatting position. Yet another woman had just returned from harvesting rice bundles in the field. Women often harvest rice in staggered shifts because they want to give the fresh rice stalks to their cattle.

Nagwa looked like a village of women in a flurry of activities. Their bright saris made them more visible under the scorching sun.

Image: IRRI

As more men migrate from rural areas to the cities, women take on the farming activities they leave behind

Image: IRRI

Studies show that women contribute 60-80 per cent of the labour required in rice farming

Abha Singh, a gender specialist who worked under the mentoring wing of Dr Thelma Paris of the International Rice Research Institute (IRRI), commented that, as more men migrate from rural areas to the cities to look for "greener pastures," women then take on the farming activities that the men leave behind. Studies show that women, especially those from the lower caste, contribute 60-80 per cent of the labour required in rice farming, including post-harvest activities.

According to Dr Paris, migration of men farmers and farm labourers from rural areas to cities is a trend that will continue in the near future. As a result, more women are left behind to manage their farms and households, and care for their young family members and the elderly. This transformation in agriculture has changed the potential roles of women farmers. They are now taking the reins in leading a farming household.

Knowing the crucial role of women and the amount of their contribution in rice farming, IRRI has been working closely with its national agricultural research and extension system partners in order to assist women farmers in getting access to technologies they need. In fact, it has been a standard operating procedure of IRRI to invite more women farmers (at least 30 per cent are women) into participatory varietal selections in stress-prone rice areas or areas that are prone to climate-related problems such as floods, drought and salinity. They are given access to seeds of climate-smart rice through self-help groups. Self-help groups are organized by women or men as village-based financial intermediary committees mostly with 10-20 members for on- and off-farm income-generating activities.

Smallholder farming families in developing countries, especially in rain-fed areas, are the most vulnerable to climate change. In eastern Uttar Pradesh, where rice production is predominantly rain-fed, growing rice is so risky that farming families take a gamble every cropping season and can only hope for the best. They have no choice but to place their bet. When luck is on their side, during a year with ample rainfall, the farmers are blessed with enough food to sustain their families till the next cropping season. But when drought strikes, the price of crop failure is losing all their investments – labour, seed and inputs – and long, lean, hungry months ahead.

"The eastern part of India was considered a 'hunger belt' before IRRI started working on the dissemination of stress-tolerant rice varieties in 2008 through the Stress-Tolerant Rice for Africa and South Asia (STRASA) project," said Umesh Singh, STRASA's regional coordinator. "The project aims to develop rice varieties that can withstand flood, drought and salinity, among other stresses brought about by climate change."

STRASA researchers evaluate these varieties, including participatory varietal selection involving farmers. Gender is integrated into most activities under STRASA and the Global Rice Science Partnership, the Consultative Group on International Agricultural Research programme on rice, which aim to give women farmers input into the selection of improved rice varieties that are approved for release.

Women farmers such as Mrs Devi and her family are benefiting greatly from STRASA. Her concrete house has sturdy concrete posts; its blue paint is faded just slightly,

Image: IRRI

Sahbhagi dhan is a short-duration crop, enabling farmers to plant three crops in a year including vegetables such as peas and onions as well as rice

Image: IRRI

Village-based self-help groups provide farming families with low-interest loans, dividend payments, and access to climate-smart rice seeds

hinting that she has lived there for just a short time. As I made myself comfortable on a wooden stool, I noticed a gathering crowd of women, children and some men blocking the natural light coming in from the door. Mrs Devi grabbed a chair and sat in front of me. Her smile concealed her age and the hard life she has endured.

"This year, I harvested around 22 quintals per acre of Sahbhagi," she said excitedly (22 quintals is equivalent to 2.2 tons and one acre is 0.4 hectares). "Over the last two years, when planting Sahbhagi, I earned around Rs20,000 (about US$330) per acre."

Dr Singh confirmed that the average yield of Sahbhagi dhan is 4-5 tons per hectare when other traditional varieties yield only about 2.5 tons under normal conditions. "What is remarkable is that there is no yield penalty with Sahbhagi dhan when a drought spell hits for 10-12 days," Dr Singh said. Under drought, traditional varieties often yield nothing. And, since Sahbhagi dhan is a short-duration crop that matures in 105 days (long-duration traditional varieties take 120 days to mature), another bonus is that farmers can plant three crops in a year.

Mrs Devi plants peas after rice, and then follows with onions. She usually earns US$750 from her peas and as much as US$580 from the onion crop. The ability of smallholder farmers like Mrs Devi to grow other crops such as vegetables, in addition to rice, allows them to serve a more diverse diet to their families, thus improving the chance of having better nutrition. For the last two years, she has also been selling Sahbhagi seeds at about US$0.50 per kilogram compared with US$0.25 per kilogram when sold as grains. This gives her an extra US$250 per ton of rice.

While a traditional variety such as Sarju55 requires four irrigations, Sahbhagi dhan requires only two. Farmers can save up to two irrigations; each irrigation usually has an energy cost of US$30. Therefore, farmers planting Sahbhagi dhan can save US$60 per crop.

The strong-spirited Mrs Devi is known in the village for having a progressive outlook. She took on the role of the family breadwinner when her husband was stricken with hypertension and a heart problem, making him unable to work.

"God has blessed me with four cows, so no worries," she said with an air of cheerfulness that had never left her face since I met her two hours before. Cows are considered 'helpmeets' in rural India as they provide milk, a source of protein for the family. Mrs Devi sells some extra milk to her neighbours. A cow can assure additional income of about US$3 a day. Cows will continue to give milk for several months as long as they are healthy and well-fed. This is why Sahbhagi dhan straw is very important to most farming households.

"Four of my five daughters are married," Mrs Devi proudly related. In her village, a married daughter implies that a household has a healthy financial status because the cost of the dowry can range from US$400 to more than US$800 – an amount that is difficult to come by for ordinary farmers.

"My life is now easier as I have only one daughter left to marry," she said. After that day comes, Mrs Devi dreams of enhancing her 'oasis' by purchasing a new house and maybe even a new car. She already owns a second-hand white van that she rents out as a public utility vehicle.

When a young man in his early twenties approached Mrs Devi, she proudly introduced him as her son, who graduated from a three-year college course and now works in Bombay. Mrs Devi has become an inspiration to other women in Nagwa. She has been able to save US$800 through a self-help group for women. This amount was added to the self-help group's capital that is available for loans to members at very low interest rates. They can use the money for household or farm-related needs.

At the end of each year, the members distribute the dividends among themselves. One woman farmer bought a pair of earrings with the dividend she got. "This speaks a lot about these women," Dr Paris later pointed out. "The money they've earned themselves can now be used in any way they want. To them, jewellery is a valuable asset they can claim as their own. They can sell it, use it as collateral for more loans or give it as a gift for a daughter's dowry. This is empowerment in plain clothes."

In search of the oldest family farm in the Netherlands

Dutch Ministry of Economic Affairs in association with Dr Ilse A. Matser, Professor of Family Business Management, Windesheim University of Applied Sciences and Anne-Marie Rops, Editor at Dutch Federation of Agriculture and Horticulture

The business landscape in the Netherlands consists of a rich mixture of firms with a majority of family firms. In the agriculture sector this prevalence is even stronger, with an estimated figure of 87 per cent family firms. In research, education and policymaking there is a growing interest in the unique challenges this group is facing.

The family is a central stakeholder and its influence on the business is of crucial relevance for both the firm's identity and its success. To gain a better understanding of its unique characteristics, the family firm can be analysed as an open-system model comprising three overlapping, interacting and interdependent subsystems of owners, family and employees. The overlap of these three systems indicates that individuals have up to three roles simultaneously. With each role comes different obligations, interests and goals which can conflict with each other. As a family member, the prime concern is the welfare and harmony of the family. As an owner, the focus is on ensuring stable returns on investments and the continuity of the firm. As a manager, the primary interest is the firm's operational effectiveness.[1] The family business system is dynamic since individuals' roles and positions change during the life cycle stages of the individuals, the family and the business.

"Family businesses have a promising future in farming. These enterprises are the backbone of food production, not only in the Netherlands but all over the world. I am proud of this centuries-old tradition of farming in which families show their attachment to the land they farm, their animals or their products. The contest of the oldest Dutch family farm will give us the name of an old farming family with a long-standing tradition. But young entrepreneurs have the future; that is why I supported the special measures for young farmers in the new Common Agricultural Policy of the European Union."

Sharon Dijksma
Dutch Minister for Agriculture

Family farms can be considered as firms where the family factor has a relatively dominant influence. This relates to the context in which the firm operates. In the Netherlands almost all farmers live on their farm, so family life and business are highly intertwined. The farm is dependent on the family members for its labour force. It is not uncommon for multiple generations to live on the same grounds in a relatively remote area. This means that the family is rather isolated from the rest of the world and that its identity and culture has a strong influence on the business. The family often has a long tradition of farming with a strong attachment to the profession. Furthermore, farms are capital-intensive, making the succession process complicated. The difficulty of succession is one of the reasons why the number of farms has dropped sharply in recent decades. Finding a suitable and willing successor, within or outside the family, is becoming increasingly difficult.

Besides the family factor, the sector faces many business challenges. Producing more with less resources is a crucial development if Dutch farmers want to maintain their worldwide top position as food producers. Therefore, the sector focuses on innovation in sustainable food systems to produce high-quality food using fewer resources. The sector aims to promote a varied and healthy diet, partly with new products that meet the wishes of consumers. Small and medium-sized enterprises play a crucial role in all these innovations, particularly when it comes to applying new knowledge. The sector wants to strengthen the Netherlands' leading position on the world export market by offering expertise and technology, as well as food, to areas with underdeveloped agriculture and food production. To achieve these ambitions the sector needs sufficient qualified professionals and innovative entrepreneurs. Therefore the sector turns to young people — the professionals and entrepreneurs of the future — to give direction to these changes. Since most of the entrepreneurs of the future will stem from the family resource pool it is of utmost importance for the sector that the next generation of farmers have what it takes to run a family farm. This brings us back to the family factor.

For long-term prosperity of the family business it is widely acknowledged that the system requires positive outcomes in both the business dimension and the family dimension.[2] Sharma argues that recognition of the intertwinement of family and business leads to the definition of high-performing family firms as organizations that take financial and non-

Case study: relocating to grow the business

Image: Family Jeuken

Image: Geert Job Sevink

Leon Jeuken grew up in Boven Leeuwen, where his parents had a mixed farm. The history of the family business dates back 12 generations

Leon Jeuken and his wife Tiny, both 52 years old, have a dairy farm in Winsum in the northern part of the Netherlands. They have three children: Erwin (19), Harry (17) and Marita (15). Erwin attends the secondary agricultural school and helps out on the farm as much as possible.

The history of this family business dates back 12 generations to before the year 1600. Even then one of Jeuken's ancestors was active as a farmer. Later, some ancestors farmed in Germany and some in three more places in the Netherlands.

Leon Jeuken grew up in Boven Leeuwen, where his parents had a mixed farm with fruit farming, pigs and dairy cows. Later his father specialized in dairy farming. When Jeuken was in his early twenties and working at the farm, he discussed its future with his parents. The young entrepreneur was eager to continue with the farm, preferably in a location with space for business development such as the nothern part of the Netherlands.

"In Boven Leeuwen we didn't have many opportunities," said Jeuken. "The farm was not modern enough, the ground badly parcelled out. One day, in 1985, my father said: 'We'll sell the farm and go to the north of the Netherlands.' I had never expected that my parents were willing to take that step, more than 200 kilometres to the north. But of course it was only in the interest of our family."

Since 1987 the Jeuken family has got on well in Winsum, where they bought a farm which grew increasingly larger. Currently, 120 milk cows and 80 young cows are kept. "We are planning to grow to 140 cows," said Jeuken. "From 2015 onwards we'll have the opportunity for that, when the milk quota will disappear."

Jeuken says that 140 cows are an excellent basis for the future: "I see no reason to grow bigger. Then you go to work with foreign staff and the charm of the family-run business is gone. We stay in command and can make our own choices. That's worth a lot. And at this size it is also possible for a successor to take over the company."

financial goals into account when attempting to meet the expectations of various stakeholders, including the family, the business and owners. Sharma proposes that family firms can overcome low levels in one of the two dimensions in the short term. However, in the long term, family firms need to achieve positive scores in both dimensions.

Research has identified four typical strategies for family farms to overcome difficult economic times: diversifying activities, maximizing debt to expand the business or to increase income, sacrificing family needs, and accepting less income but retaining something else.[3] the bottom line is that economic goals are not always prioritized.

What does it take to survive as a family farm? John Ward's seminal study on family firm succession[4] is still the most influential to put a number to the rate of success in intrafamily business succession. The 30/13/3 statistic describes that 30 per cent of firms survive through the second generation, 13 per cent survive the third generation, and only 3 per cent survive beyond that. This gloomy picture has led to a focus on the fundamental 'problem' of succession in family firms which stems from family relationships complicating business activity and a talent pool limited to a few family members. However, more recent research has shown that continued family control can be efficient when families make a positive contribution to their firms. Key in this success is a family that drives new entrepreneurial activity and has led to the definition of transgenerational entrepreneurship as "the processes through which a family uses and develops entrepreneurial mindsets and family-influenced resources and capabilities to create new streams of entrepreneurial, financial and social value across generations."[5] Insights into this process are important in order to gain a better understanding of the succession process in family farms. Success of the family farm is not only important for the family business itself, but also for society as a whole. As mentioned above, family farmers are a key resource in the worldwide ambition for food security and food quality. But next to that, family farms have a strong connection with local communities, and as a result they are a main driver of the economy in rural areas and supply jobs for many people. In addition, there is a growing group of family farms that can be characterized by portfolio entrepreneurship where multiple activities are developed.

What makes family firms successful in realizing transgenerational entrepreneurship? The focus on entrepreneurship stems from the idea that it is not enough to simply pass on the business to the next generation. Instead, families have to create new streams of value through the exploration of new ways of doing things and, at the same time, through

Case study: from whaling to arable farming

Images: John Oud

Over the centuries, the Blaauboer family has moved from whaling to arable farming

For dozens of years the distant ancestors of Jaap Blaauboer were, apart from being farmers, also engaged in whaling and fishery. The family could not make both ends meet only by farming.

As far as they can verify, the family Blaauboer have been working as farmers at their Barsingerweg farm in Wieringerwaard since 1710. Many generations grew their crops, kept cattle and were also active in fishery. "They even went whaling as far as Greenland," 73-year-old Jaap Blaauboer explained.

As well as the farm, Jaap's grandfather, Cornelis Blaauboer (born in 1870), had two ships, the Wieringerwaard I and II. His father Pieter Blaauboer and his father's brother had no interest in fishery, so at the age of 78 grandfather Cornelis Blaauboer sold the ships. The farm, built in 1893, had a gateway named 'Agriculture and Sea fishing', recalls Blaauboer. "Rust ended its existence."

Until 1960 the company was a mixed farm with dairy and arable farming. Jaap Blaauboer chose to specialize in agriculture. He married Marietje Jimmink (71). They had a son Pieter (47) and a daughter Simone (43). Pieter, who lives at the farm, is married to the Polish Ursula Przybyta (37), who is a teacher. Their daughter Charlotte is eight years old. Jaap and Marietje Blauwboer live next to the farm.

Blaauboer senior is still very active on the farm. Jaap and Pieter Blaauboer grow seed potatoes, sugar beets, wheat, barley and grass seed. The company owns 27 acres of land and the other plots of land are further afield in the polder. "It's toilsome farmwork," said Blaauboer.

Asked about his choice to be a farmer, Blaauboer said: "You used to have no choice. My father said, 'Don't dream of becoming rich from this work.' But my choice of becoming a farmer was well considered. The work is varied, from sowing to harvesting. No office work for me."

exploitation of existing products. In this respect, analysing old farms that have been successful for ages may be helpful. How have these sustainable farms balanced family and business interests while at the same time being innovative and creative through 200, 300 or maybe even 400 years? The search for the oldest family farm in the Netherlands is one of the projects that has been initiated in the context of the International Year of Family Farming. The search process is led by the Family Business Research Centre of Windesheim University of Applied Sciences and the Dutch Federation of Agriculture and Horticulture. A public call has led to 135 submissions. In the summer, information was gathered from the 50 oldest family businesses. The focus is on the oldest family that still runs a farm, so the search is not for the oldest business as such, but for the oldest entrepreneurial farming family. We need to investigate the year the farm was established and from that year to see a continuing link between the family and the business. A jury of historians will check the information sent in by families. With the help of these historians, we will try to establish a list of old family farms and will perhaps find the overall oldest family firm. For now, this is Royal Tichelaar Makkum, a well-known ceramic factory. This company has been a family firm since 1640, and it is now in the twelfth generation under the successful leadership of Jan Tichelaar. In November the list will be made public.

The list of old farms will offer insights into best practices in transgenerational entrepreneurship. Farmers can learn from these best practices. The project draws attention to the major achievement of the families behind these old farms. For the sustainability of the agrifood sector in the Netherlands it is important that society as a whole acknowledges the important role family farmers have played in the past, in the present and will play in the future.

International Year of Family Farming national committees: fruitful assets to boost family farming

Joseba Imaz, Communications Coordinator, World Rural Forum

The activity of International Year of Family Farming national committees has had a positive impact on public opinion and public policies related to family farming.

The dream came true on 21 December 2011, when the United Nations General Assembly unanimously declared 2014 as the International Year of Family Farming. Behind that declaration were several years of intense campaigning, coordinated by the World Rural Forum and backed by more than 360 organizations: rural federations, non-governmental organizations (NGOs) and research centres, among others. It was a common goal joined by the Government of the Philippines — which presented a draft resolution for the declaration before the United Nations — and co-sponsored by 40 countries including Argentina, Brazil, Sierra Leone, Cuba, Spain, Colombia, Togo, Niger, Tanzania, Australia, Guinea, Thailand, India and Switzerland. The unanimous approval of the declaration by the United Nations General Assembly was great news and a well-deserved recognition of the silent work of so many men and women — family farmers, peasants, indigenous communities, artisan fishers and pastoralists — whose work and potential have been so often forgotten and underrated.

Image: FNV/AFA

Asian women family farmers planting rice

The International Year of Family Farming began with that declaration, but everything remained to be done. Since then, civil society has continued working on its organization, trying to add new wills in favour of the rights of those engaged in family farming. Likewise, many governments and international agencies joined the preparations for the International Year of Family Farming, in dialogue with rural organizations. Fruitful dialogue between civil society, governments and international agencies has been generated across the world in order to push the main goal of this international year: to attain public policies that support the activities of family farmers.

Within the framework of civil society's global International Year of Family Farming preparation programme, the creation of national committees was promoted by the World Rural Forum with the support and participation of other rural and social sectors, public institutions and international organizations. These national committees would be led by organizations of men and women farmers, fishers, pastoralists and indigenous communities.

The national committees have incorporated as many farmers' organizations and other representatives of civil society as possible. Together with government representatives and international organizations, these civil society representatives make up the three pillars required for the creation of an official national committee, or at least an official dialogue on the improvement of agricultural policies. The result of the activities developed by the International Year of Family Farming national committees can be summarized in two words: extremely positive!

This overall result is the fruit of remarkable efforts by civil society which has admirably organized itself in order to advocate for the rights of a sometimes significant proportion of their nations' population: family farmers. Civil society organizations have not stopped at calling upon governments, but have often invited them to actively join this movement by taking part in

the national committees they have set up. Certain international organizations and research centres have also joined.

At the time of writing, there were over 600 different entities (NGOs, farmers' organizations, ministries, international organizations and research centres) organized at national level, forming over 60 national committees in five continents. Despite their varying composition, size and level of progress in terms of activities underway, all these national committees defend the same overarching vision: to enable their nations' family farmers to feed their inhabitants despite the wide-ranging diversity of local situations.

Intense efforts of organization, consultation, reflection and negotiation within the national committees have resulted in the definition of national goals for the International Year of Family Farming, the establishment of working plans and the implementation of specific activities. In parallel to the dozen or so national committees being formed at the time of writing, 16 national committees in Africa, 16 in the Americas, eight in Europe, four in Asia and one in Oceania had organized more than 300 activities for promotion, political impact and public awareness raising in barely six months. In most cases, these activities required many consultation meetings, and the results of this intensive work emerged rapidly.

Promotion and political impact

To begin with, declarations and roadmaps restating proposals to improve national public policies emerging from exchanges between civil society actors were drawn up and presented to the competent authorities by, among others, the national committees of Mexico, the Philippines, Côte d'Ivoire, the USA, Paraguay and Costa Rica. Other highly pertinent position papers such as manifestos or concept notes were issued by the national committees of Burundi, Senegal, Indonesia and Zimbabwe.

In France, the Association des Régions de France (Association of French Regions) issued the Rennes Declaration, which recognized the importance of promoting local food production systems. In South America, 15 national committees and 12 other organizations belonging to the Confederation of Family Farmers of MERCOSUR issued the Regional Montevideo Declaration comprising some 20 concrete demands relating to family farming.

At a more global level the Declaration of Abu Dhabi, approved by farmers' organizations from the five continents, attracted broad support from farming and other agricultural organizations. A number of governments also issued official declarations in favour of family farming: the Paris Ministerial Declaration, the Andean Parliament Declaration and the very recent Baku Declaration of the Parliamentary Assembly of the Organization for Security and Cooperation in Europe.

In parallel with the adoption of these various declarations in support of family farming, new and very specific draft laws emerged within the framework of the International Year of Family Farming. This is the case in Paraguay with its Decree 1056 including the Presidential Law on public procurement of food products from family farmers. Similarly, in Colombia, a Family Farming Programme was launched by Ministerial Resolution 267, officially establishing the concept of family farming along with a technical committee for the sector. A budget of more than €217 million was allocated to the implementation of this programme.

Image: INADES FORMATION

Women dehusking cashew nuts in a cooperative in Côte d'Ivoire

In Argentina, the Government issued Decree 1030/2014 providing for the establishment of a State Secretariat for Family Farming. In Burkina Faso, the Ministry of Agriculture promised a budget allocation to strengthen family farming during the forthcoming growing season, while the Government of Nepal allocated subsidies totalling €78,000 for the promotion of family farming in 2014. International Year of Family Farming national committees played a key role in these countries in achieving all the aforementioned resolutions.

Images: World Rural Forum

Raising awareness: International Year of Family Farming 2014 national committee meetings in (left) Ecuador and (right) Nepal

Together with these achievements, numerous national committees have already carried out studies and issued reports focusing on the problems faced by rural areas, for example in India, Nigeria, Burundi and Côte d'Ivoire. The strengthening of knowledge concerning the broad range of economic, social, political and environmental problems confronting family farmers and restricting their rights to deriving a decent livelihood from their work serves to help orient policies in their favour.

Public awareness building

Numerous activities have focused on public opinion in order to raise awareness about the importance of family farming, the multiple functions it fulfils and the challenges it faces. The national committees of Bolivia, Brazil, Burkina Faso, Colombia, Costa Rica, Slovakia, Switzerland, Nepal, El Salvador, Senegal, Mexico, New Zealand and Indonesia thus organized or participated in numerous fairs, public fora or festivals in their countries. Leisure activities such as exhibitions or competitions themed on family farming were organized in Canada, New Zealand, France and Mexico.

In Brazil, Uganda and Nepal among others, national committees organized marches and rallies attended by several hundred people. Awareness-raising materials (banners, posters and T-shirts) were on show to give high visibility to these social mobilization events.

Numerous media — newspapers, magazines, television and radio — also contributed to broadening the visibility of the International Year of Family Farming, as well as national committee activities thus reaching and informing a good part of the population. To achieve this, national committees organized numerous press conferences so as to brief the media about the international year, raising their awareness about the reality and importance of family farming so that they in turn could project a positive and accurate image of it. This also enabled the creation of professional communication networks for the announcement of events throughout the year. Following press conferences, articles were often published and sometimes republished in the print media in, for example, Burkina Faso, Burundi, Côte d'Ivoire, Spain, Belgium, Switzerland, New Zealand, Gambia, Nepal, El Salvador, Guatemala, Uruguay and Senegal.

Programmes and jingles related to family farming were widely broadcast on radio, for example in Nepal, the Democratic Republic of Congo, Uganda, France and Costa Rica, while television features were filmed and frequently shown in Spain, India, Nepal, Côte d'Ivoire, Burundi and the Democratic Republic of Congo.

All these examples of activities are only the tip of the iceberg of the impressive dynamism underlying the International Year of Family Farming national committees. As reported above, concrete political improvements emerged during 2014, foreshadowing a much more optimistic future for family farming in various countries. Due to this energy, the global image of family farming is also being upgraded everywhere and is attracting broadly based attention from governments and the public.

However, much remains to be done in order to recognize the true value of women and men family farmers as the worthy ambassadors of food security and sovereignty. Many awareness-raising and political advocacy actions are still needed to permanently move away from certain paradigms which clearly work against family farmers, whatever their origin, specialization, income levels or holding size. In this context, the International Year of Family Farming national committees have proved to be the best assets to boost family farming worldwide.

For more information on International Year of Family Farming 2014 and the declarations mentioned above, please consult: www.familyfarmingcampaign.net

The International Land Coalition: upholding the land rights of family farmers

Michael Taylor and Jan Cherlet, International Land Coalition Secretariat

The International Land Coalition (ILC)[1] is a global alliance of over 150 organizations, spanning from peasant and indigenous people's movements to global multilateral organizations. Despite wide differences in perspectives and methods of working, ILC members share a common perspective that the developmental challenges facing our planet — food security, reducing poverty and inequality, environmental stewardship and adapting to climate change — can only be overcome with a strong focus on equitable and secure land and natural resource rights.

When ILC's members came together in 2013 for their biennial assembly in Antigua, Guatemala, the host national peasant organizations provided a glimpse into the critical role of family farmers in a country where two-thirds of the population lives below the poverty line. Members visited dynamic cooperatives in which family farmers worked together to market their high-quality produce to markets within the country and beyond.

ILC members also heard from families in Guatemala who had been forcibly removed from their land to make way for corporate agricultural production — for instance in the Polochic valley. The context of Guatemala showcases the dramatic challenges that are common to family farmers in agrarian economies across the world:

> *Agrarian economies are profoundly affected by corporate and other interests that are external to local territories, taking control of land, productive resources and food value chains, alienating land-users from their environment, and posing great risks of marginalizing small-scale producers and family farmers.*[2]

Despite some cases where investments create opportunities, the global rush for land is transforming vast swathes of land previously used or accessed by smallholders at a severe cost to local family farmers, including their dispossession. Evidence suggests that a key determinant of whether family farmers gain or lose in this context of rural transformation is whether or not they have secure land rights.

An estimated 2 billion people on this planet, the majority of which are family farmers, live and produce their food on land to which they enjoy customary rights, but on which national law does not recognize or defend their tenure.[3] Although in many cases they have been using the land for generations, in the eyes of the law they are seen as nothing more than 'squatters' on state land.

The urgency of recognizing land rights has attracted global attention. A significant step towards this has been the development and adoption in 2012 by governments, civil society and the private sector of the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests* by the Committee for World Food Security.

The following six case studies illustrate some of the ways in which ILC and its members have successfully worked together, at local, national, regional and global levels, to support family farmers to secure their land, water and natural resource rights, an important step in securing the future of family farming.

"We will work together as a coalition to … ensure equitable land distribution and public investment that supports small-scale farming systems"

— *Antigua Declaration of the International Land Coalition,* 2013

"Negotiation, negotiation, negotiation. It works."

— *Esther Obaikol, former Uganda Land Alliance Executive Director*

Image: Image: ILC Secretariat

Women are often denied land rights, and this is a key area of activity for ILC

Policy reform through popular participation

In order to secure land and natural resource rights for family farmers, ILC and its members work at many different levels. The greatest focus, however, is at the national level, where members try to influence or collaborate with governments to formulate and implement land laws and policies that are created with and for the people that work the land. An example is the National Land Policy of Uganda, approved in 2013 after more than 10 years of engagement between the Government and civil society.

Two-thirds of the Ugandan population depends on agriculture as their livelihood, and most of them are small family farmers whose use of the land is customary. Around 80% of land in Uganda is under customary tenure. While the 1995 Constitution of the Republic of Uganda and the 1998 Land Act recognized four types of land tenure, including customary, very few Certificates of Customary Ownership were issued.

Around the turn of the millennium, the Government of Uganda began formulating a National Land Policy. It received strong criticism from civil society that there was insufficient consultation with land users themselves, and it did not support the needs of the majority of citizens. With support from ILC, its member Uganda Land Alliance was successful in turning around a situation of mutual distrust and supporting the Government to widen its consultations and address unresolved land issues.

The collaborative formulation of a new version of the National Land Policy was launched, and was eventually approved by Cabinet in 2013. The policy incorporates to a large extent the views of the civil society organizations involved in the formulation process and, as a result, strongly supports the land rights of women, pastoralists, family farmers and minorities on customary land.

Holding governments accountable

Given that ILC members operate in an increasingly interconnected world, country-level efforts to promote people-centred land laws and policies are most effective when complemented by global work. Hence, the coalition is also very present internationally, where it provides a platform for the voices of local land users in multilateral forums. One area in which ILC has been very active is in the area of women's land rights. For instance, ILC supported Cambodian civil society to present a shadow report to the Convention to Eliminate All Forms of Discrimination Against Women (CEDAW) that shed a different light on their government's official report to the convention.

Women play a crucial role within the family farming system and are commonly responsible for the production of food crops, especially where the farm produces both food and cash crops. Nonetheless, women are often denied land ownership, and where they have access to land their holdings are usually several times smaller than those of men.

An overwhelming majority of countries have signed up to and ratified CEDAW. However, formal commitments to women's land rights often fail to change practices locally. How can governments be persuaded to comply with the obligations that their states have entered into? ILC supports member organizations to develop shadow reports on their government's record of compliance with international human rights treaties.

In Cambodia, ILC facilitated its member STAR Kampuchea to consult communities and produce a report on the extent to which the CEDAW articles on rural women's rights were being respected. According to STAR Kampuchea, this had a positive impact on building collaboration on women's land

Image: Trócaire

Now they have received titles for their land, the people of Doliambo Village, Odisha can rely on a steady source of food and income for their families

rights between civil society organizations at the national level, while the CEDAW committee took up issues raised by STAR Kampuchea in its questioning of the Cambodian Government on compliance with the convention.

Making the law real for local land users

Often, countries do have laws and policies that protect vulnerable land users, such as indigenous peoples or users of customary land, but the laws and policies are not adequately implemented. Many members of the coalition are active on the ground to assist these vulnerable land users to claim their rights. Two common ways of doing this are through direct legal assistance or by training some community members as 'paralegal' experts. ILC member Trócaire, for instance, assists Indian family farmers that depend on forests for their livelihood in obtaining formal recognition of their forest tenure, in accordance with the Forest Act approved in 2007.

In India, 375 million people live in forests or on their fringes and are entirely or partially dependent on the forest for their livelihood. The majority of these forest-dependent people are family farmers from marginalized social groups such as Adivasi (indigenous) and Dalit (untouchable).

In 2007, India formally granted the right to individuals and communities to live in and cultivate forest land, through the Tribes and other Traditional Forest Dwellers Act, also known as the Forest Rights Act. However, the process of accessing individual and community forest rights is highly technical, and government agencies are not very proactive.

In Doliambo Village, Odisha, 105 Adivasi families and 18 Dalit families who depended on the forest for their livelihood, lacked any form of formal tenure. The village Forest Rights Committee (FRC), the community institution tasked with determining individual and communal forest rights, was set up by the Government back in 2009, but not equipped with the understanding or skills to fulfil its tasks. In 2009, ILC member Trócaire engaged with local non-governmental organization Pragati to conduct trainings and awareness programmes for the FRC members and villagers on the steps necessary for resource mapping, lodging and attaining individual and community forest rights.

After two years of lengthy bureaucratic procedures, 59 tribal families from Doliambo secured a title for their land. All these titles were issued jointly in the name of husband and wife. The families are now able to farm their land in a regular manner, and can rely on a steady source of food and income for their families. "I had no land of my own," said Gopinath Muduli of Doliambo Village. "At last I have got a title over land. I can say that I own land and my children will not be treated as landless."

Promoting inclusive land governance

ILC also aims to be a hub for the identification, development and uptake of innovative solutions in promoting inclusive land governance. In the case of community land rights, the coalition pilots and tests new solutions in order to demonstrate that they are replicable and scalable. A consortium of ILC members is working with the Tanzanian Government to pilot participatory village land use planning. The technique has already been demonstrated to be effective at mediating long-standing conflicts between herders and family farmers and as a way to increase their land and water tenure security.

Image: ILC Secretariat

Participatory village land use planning in Simanjiro District, Tanzania

Inhabitants of rangelands have engineered livelihood systems that are particularly apt to their fragile environments, such as livestock raising, small-scale farming and hunter-gathering. However, increasing pressures on land are leading to conflicts between different groups over the limited resources in this fragile landscape, and undermining their production systems.

For years, the village of Msitu wa Tembo in Simanjiro District, Tanzania, was the scene of land-related conflicts — mainly between farmers and pastoralists. Several ILC members working in the area, together with the District Council, assisted the villagers in establishing a land use plan and setting up borders indicating different land usage, as well as livestock routes. All this was done in the spirit of compromise, with each group agreeing to give up some of their demands. The farmers opened up some of their land for cattle routes, and the pastoralists stopped letting their animals into the fields to graze after harvest. Regular meetings are now organized to air views and resolve conflicts in their early stages. The Minister of Livestock and Fisheries Development has called for this model to be replicated in other livestock production areas of Tanzania.

Promoting transparency

The activities and actions of the coalition and its members generate a huge amount of information, experience and knowledge about land governance — about what works and what does not work for family farmers. Knowledge sharing and joint learning is therefore essential for the coalition, not only to inform and improve actions, but also to promote transparency and enable land users to hold decision-makers accountable.

Image: ILC Secretariat

Civil society organizations helped formulate Uganda's National Land Policy, which supports the land rights of women, pastoralists, family farmers and minorities on customary land

One well-known initiative of ILC is the Land Matrix,[4] a global partnership aimed to monitor large-scale land acquisitions. The Land Matrix has evolved from a data collection effort into an independent, decentralized partnership to promote transparency and accountability in land governance.

Initially a small ILC blogging initiative about large-scale land deals, the Land Matrix soon became a global reference for data on large-scale land deals. The Land Matrix project has collected verified data of large-scale transnational land deals that cover over 37 million hectares,[5] equivalent to over four times the size of Portugal. The tentative data suggests that much of this land was under family farming prior to its conversion.

The Land Matrix has also evolved from a data collection effort into an independent, decentralized partnership. Its goal is to facilitate an open development community of citizens, researchers, policymakers and technology specialists to promote transparency and accountability in decisions over land and investment. The Land Matrix partnership continues gathering data on large-scale land deals through an open online tool, the Observatory, which allows wide participation in constantly upgrading, correcting and improving the data.

Supporting land users to claim their rights

ILC is a coalition of member organizations. While all members share a common vision and commitments, they also have strong individual identities. This diversity in the coalition is a unique asset, and the combined work of ILC as a coalition with the work of single members tends to be very powerful in both political and operational terms. The case of the earlier mentioned indigenous family farmers in the Polochic Valley, Guatemala, is a good example in this respect.

In March 2011, the Government of President Álvaro Colom violently evicted fourteen Q'eqchi communities (769 families) in the Polochic Valley, Guatemala, in order to make way for sugar plantations. One year later, following a huge demonstration organized by the Guatemala Farmers' Unity Committee in which over 10,000 people marched 212 kilometres to Guatemala City, the newly elected president Otto Pérez Molina promised to return the land to the communities and to guarantee their security, access to food, health care and housing. However, no immediate action was taken.

ILC member Oxfam connected its global GROW campaign to the cause of the Polochic in Guatemala. Through the campaign, Oxfam obtained more than 107,000 signatures from 55 countries in support of the Polochic. In 2013, the ILC Global Land Forum brought President Molina face to face with peasant leaders on this issue and the ILC Members, who expressed their concern about lack of tenure security of family farmers and indigenous communities in Guatemala, explicitly called on the Guatemalan Government to revoke the evictions of the Q'eqchi communities in the Polochic Valley.

The Government started considering the farmer organizations as legitimate interlocutors and the cause of the Q'eqchi could be discussed openly. These factors may have contributed to the President of Guatemala, in October 2013, publicly handing over land titles to 140 of 769 families and promising to resolve the situation of the remaining families in the course of 2014.

The International Year of Family Farming and the importance of family farms

Pekka Pesonen, Secretary General, Copa-Cogeca

In the United Nations International Year of Family Farming in 2014, Copa-Cogeca Secretary-General Pekka Pesonen highlighted the increasing importance of family farms — the backbone of rural economies. He outlined key actions needed to realize their full potential in creating jobs, boosting European Union (EU) economic growth, providing quality food, helping to feed the world and caring for the environment.

Coming from a family farm himself, Pesonen said: "I am glad that the United Nations chose 2014 as the International Year of Family Farming to focus world attention on the role of family farms in alleviating this hunger, malnutrition and poverty at the same time as protecting the environment. It is crucial to have a dynamic, modern, resilient agriculture in the future which gives family farms a viable future and ensures food security for millions of people across the world. This is particularly important given that world food demand is expected to grow by 60 per cent by 2050."

The EU agriculture sector, which employs almost 26 million people, most them on family farms handed down for generations, is a key driver for growth and jobs in rural areas, providing quality sustainable food supplies for 500 million European consumers at the same time as maintaining the environment and biodiversity. EU-28 agricultural production is worth over €400 billion. The EU is also the world's number one exporter of agricultural and food products, representing three-quarters of the EU net-trade balance.

Yet family farms are facing increasing challenges such as high input costs, climate change and an increasing risk of extreme weather events, and barriers to trade. They are also currently being hit by international politics — something which they are not responsible for. Often the producer price drops resulting from these are not passed onto consumers, providing a new opportunity for retailers to cut prices to producers further and causing additional imbalances in the EU agrifood chain. With farmers getting, for example, only 8 per cent on average of the price of a loaf of bread, family farms

Image: Copa-Cogeca

Copa-Cogeca Secretary-General Pekka Pesonen highlighted the increasing importance of family farms as the backbone of rural economies

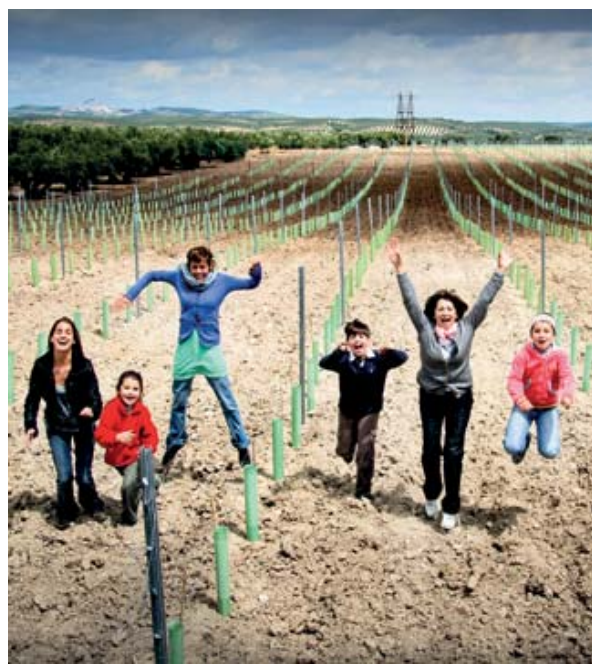


Image: Copa-Cogeca (Winning photo from Asaja Photo Competition)

Family farmers need a quality of life and income that is comparable to other sectors of the economy

Image: Copa-Cogeca

Researchers have found that in EU countries with higher market shares of cooperatives in the milk sector, farmers receive significantly better prices

increasingly need to gain more income from the market. It is essential for them to be able to get a better market return. They need a quality of life and income that is comparable to other sectors of the economy.

A recent survey that Copa-Cogeca commissioned to an independent company estimated that the impact of the unfair trading practices of the retail sector in the agrifood sector amounts to €10.9 billion per year in loss of turnover. Moreover, with 842 million people suffering from chronic hunger in the world — that is one in eight people — it is crucial to improve the situation of family farms to meet this demand.

Ways of improving the situation of family farms, of making them more interactive with society and of stimulating policies, have consequently been looked at in key events organized by Copa-Cogeca this year and also in collaboration with the Food and Agriculture Organization of the United Nations, the World Farmers' Organisation and the European Commission.

We believe that agri-cooperatives can help farmers to meet upcoming challenges and improve their positioning and the economic performance and viability of their members. They enable farmers to join forces to market their produce and add value to produce to get a higher return. They help farmers to better manage the extreme volatility of agricultural markets and help to strengthen their position in the food chain by concentrating their farming members' production. They are an excellent model to help family farms exist across the world. A recent study by the European Commission has demonstrated that in EU countries with higher market shares of cooperatives in the milk sector, farmers receive significantly better prices (by some 10-15 per cent), compared to countries with low market share of dairy cooperatives.

But we need to see how farmers and cooperatives can develop more successful marketing strategies and ensure prices for their products actually cover their production costs. A key point for this is innovation: it is crucial for family farmers and cooperatives to be innovative and for cooperatives to develop innovative strategies and products to secure better market returns for their members.

In this context, farmers in Europe can help farmers in African and other less developed countries in the world by passing on their agriculture expertise and knowledge and helping farmers' unions and cooperatives to set up. Many farm organizations and cooperatives across Europe have been active on this.

We also urge heads of state and governments to provide support for market research in order to find new market outlets for their produce and increase export promotion. Investment in the sector must be stepped up and education and training improved.

Non-tariff barriers to trade also prevent the EU from maximizing its trade potential in agrifood exports. Different labelling and packaging regulations can increase red tape and the price of a product dramatically. This must be tackled.

In addition, women make an irreplaceable contribution to family farms and it is important that this is acknowledged across the world. In some countries, there are many women farmers and they have equal rights in relation to their spouses. But in others, a lot more has to be done to improve the status of women. The status of co-owner is

Image: Copa-Cogeca

To ensure generation renewal in the future, family farms of all types must be economically viable and profitable

Image: Copa-Cogeca (Winning photo from Copa-Cogeca Photo Competition on Family farms and Agri-Cooperatives)

Copa-Cogeca calls on heads of state and governments to ensure that family farms are prioritized in their agendas

vital for spouses and should be regulated at European level. As such, this status will confer production rights to women farmers who will be entitled to participate fully in decisions applying to their family farms, with the same rights as the head of the farm.

Member states must also provide the same advantages to assisting spouses as to the head of the farm, in terms of social security and retirement benefits. Amendments to social benefits, contributions and taxation may be needed. There should also be participation by women farmers in all decision-making bodies which affect them, with the possibility of establishing a gender quota system.

Furthermore, social equality must be ensured: farmers, both men and women, should have the right to a similar standard of living as those working in other sectors, as regards their income, working hours, living conditions and so on.

In addition, women's unions and women's rights movements must be given support so they are able to complete their projects properly, such as creating women's rights movements within agricultural unions in countries where they do not currently exist and strengthening those that do. This would all ensure that the rights of women farmers are indeed defended.

The different roles of women within farms should also be recognized in order to acknowledge the value of the varying tasks they carry out along the production chain, which, although bringing value, are never quantified.

To ensure generation renewal in the future, family farms — in all their forms — must be economically viable and profitable. Copa-Cogeca therefore calls on heads of state and governments to ensure that family farms are prioritized in their agendas, that key tools are provided and barriers to trade tackled. In particular, they must ensure that:

- access to land and natural resources is provided for family farms
- investment in the sector is stepped up and research and innovation are boosted with knowledge transferred to farmers to encourage the uptake of innovative solutions
- conditions are established to help producer organizations like agri-cooperatives set up so that farmers can join forces to market their produce, add value to produce to get a higher return and better manage extreme market volatility
- farmers are given proper training and education
- the contribution of women to family farms is recognized across the world
- young farmers are given support as they face difficulties when getting started
- unfair and abusive practices in the food chain are addressed so that farmers have a better chance to get an income from the market
- non-tariff barriers to trade are tackled and support to find new market outlets and export promotion boosted
- family farms have access to internet and other infrastructures, in line with the rest of society.

Concluding, Pesonen said: "With family farmers' income half the average level in Europe, it is vital for family farmers to earn a decent income from the farm and for policies to be connected to the economic production role of farms in providing good quality food supplies for millions of consumers. Too often policies are devised by people who are remote from farms.

"I hope that 2014 was not seen as a way just to celebrate the International Year of Family Farming, but to really change some policies in order to improve their situation. And we need to make sure that this process continues into 2015 and well beyond that."

Investing in family farmers for the future we want

Raşit Pertev, Secretary of IFAD

Family farmers are women and men involved in any area of agriculture who derive a significant portion of their income or food from working and managing their own farm or livestock, relying exclusively or predominantly on family labour and capital. Family farms are a global phenomenon. They are extremely diverse across countries, regions and production systems. A common feature is that the family and the farm are closely linked, coevolve and combine economic, environmental, social and cultural functions. In fact, family farming is the dominant model of agriculture, and its prevalence across areas with diverse levels of development suggests that family farming offers specific comparative advantages to other forms of agriculture.

It is estimated that smallholder family farmers produce four-fifths of the food consumed in the developing world. These women and men are key contributors to local, national and global food security. They are custodians of vital natural resources and biodiversity, and central to climate change mitigation and adaptation. Despite this reality, they are disproportionately represented among the world's poor people. The potential economic and social returns to investing in family farms are enormous, yet remain frequently neglected.

The International Fund for Agricultural Development (IFAD) has always recognized this. Awareness of the wide-ranging potential returns of investing in smallholder family farmers was one of the main rationales behind the establishment of IFAD in 1977 as the United Nations specialized agency and international financial institution focusing exclusively on agricultural and rural development. It is why IFAD has, over the course of decades, invested over US$15 billion in grants and low-interest loans to developing countries through projects empowering more than 430 million rural people to break out of poverty, thereby helping to create vibrant rural communities.

As the post-2015 global development agenda takes shape, the world faces a historic opportunity to put in place measures to shape the future we want. There is now wide agreement that a shift to development models that are sustainable, inclusive and equitable is indispensable to complete the task of eradicating poverty. This shift in thinking about development has important implications for the types of investments and policies to be prioritized. It also offers a potentially ground-breaking opportunity to address the structural causes of poverty.

The debate goes on against a background of social, economic, political and ecological changes that are reshaping the conditions, challenges and opportunities faced by the estimated 842 million poor and hungry people in the world today. Key factors include higher and more volatile food prices, a projected 60 per cent increase in demand for agricultural products by 2050 and the growing tension between a more populated and urbanized world and a more fragile planet and unpredictable climate.

One thing that has not changed, however, is that the majority of the world's poor people still live in rural towns and settlements. For most of them, family farming is a vital part of their livelihoods. Hence, if poverty is to be reduced on a broad scale and global food security is to be achieved, investments that help family farmers improve their livelihoods are and will remain critical. Investments are needed in key areas such as rural infrastructure, on-farm irrigation and equipment, research and extension systems, and risk mitigation mechanisms. Family farmers also need favourable policies, supportive institutions,

Image: IFAD/Pablo Corral Vega

The Reconstruction and Rural Modernization Programme in El Salvador contributed to the empowerment of women

social services in rural areas, and access to resources, inputs, financial services and markets. Most importantly, they need secure access to land and they need to strengthen their own producers' organizations and cooperatives.

IFAD is committed to investing in family farmers, which has multiple development benefits, particularly for poverty reduction and the improvement of food security and nutrition. IFAD investments in family farmers encompass all the elements that make up the livelihoods of this diverse group of women and men, including productivity, capacity building of farmers' organizations, infrastructure, women's empowerment, access to financial services, access to markets, value chains development and land policy.

Furthermore, IFAD is mainstreaming climate change adaption in all these investment programmes. In 2012 IFAD launched the Adaptation for Smallholder Agriculture Programme to channel climate and environmental finance to smallholder farmers. The objective is to improve the capacity of at least 8 million smallholder farmers to expand their options in a rapidly changing environment. The programme empowers community-based organizations to make use of new climate risk management skills, information and technologies. These include improved weather station networks, which can provide farmers with more reliable seasonal forecasts and cropping calendars; geographic information systems, which improve understanding and monitoring of landscape use in a changing environment; and economic valuation of climate change impacts, which inform more robust policy decisions.

In The Gambia, the Participatory Integrated Watershed-Management Project is building bridges to reclaim land. Simple concrete bridges, built above the level of seasonal floodwaters, have enabled farmers to access paddy fields even in the rainy season, when previously fast-flowing muddy water and rickety wooden bridges had restricted access to only the strongest swimmers. Thus far, the project has helped reclaim over 34,000 hectares of land for cultivation.

The Reconstruction and Rural Modernization Programme in El Salvador contributed to the empowerment of women by providing technical and legal assistance to women's groups to enable them to participate in negotiations on land access agreements. Political pressure to avoid land evictions was also applied in some cases. The programme also gave women and men training to develop business plans, which allowed them to obtain credit.

In Bangladesh, recognizing the need for innovation in financial services, IFAD initiated a public-private partnership with the Palli Karma-Sahayek Foundation, which in turn channelled funds to microfinance partner organizations for lending to smallholders. The organizations were trained in agricultural financing and farmers were instructed in the use of modern agricultural technologies. Over 200,000 smallholders accessed funds under the project, with a loan recovery rate of 98 per cent. Annual household income was estimated to have increased by 63 per cent as a result of the project.

Family farming, supported by suitable investments, public policies and institutions, can contribute both directly, through food production, and indirectly, through the income it generates for smallholder farmers. This enables them to purchase more varied and nutritious food. Successful development in smallholder family farming will play a key role in reducing inequalities between and within countries, which will be indispensable to achieving development that is inclusive and sustainable.

IFAD's experience has repeatedly shown that investment in family farming is a key instrument to empower women. For example, the Districts Livelihood Support Programme in

Image: IFAD/G.M.B.Akash

In Bangladesh, seasonal loans available through IFAD are used for the purchase of agricultural products such as seeds, fertilizers and pesticides

Image: IFAD/Marco Salustro

Young people in Egypt have been provided with small plots of farmland by the West Noubaria Rural Development Project

Image: IFAD/Momodou Gassama

In The Gambia, the Participatory Integrated Watershed-Management Project is building bridges so farmers can access their paddy fields despite floods

Image: IFAD/Susan Beccio

Putting family farming at the centre of the development agenda will be key for promoting equitable and sustainable development

Uganda uses volunteer mentors to transform gender relations within the household. Participating households have reported not only increased household income and food security, but also improvements in women's decision-making influence and more harmonious household relations.

Investment in family farming can also empower young people. Given that the majority of poor young people are still living in rural areas, finding ways to enable young rural women and men to obtain decent livelihoods must be a priority. Although young rural people will have to be key players if global agriculture is to meet the diverse challenges it will face in the coming decades, the present absence of employment opportunities in rural areas is one of the primary reasons young people are migrating at unprecedented levels. This deprives rural communities of their most energetic and innovative members. But there is potential to create productive opportunities for young rural people, which can provide a viable alternative to migration and ease pressure on saturated labour markets.

In Egypt, the IFAD-supported West Noubaria Rural Development Project has provided unemployed young people with small plots of farmland in newly reclaimed desert lands outside the Nile delta. These new farmers have received training and technical support, and marketing associations have been set up to help them compete with larger-scale farmers. Nearly 45,000 young graduates have benefited from this project, which has created more than 60,000 permanent and 80,000 seasonal jobs.

In Senegal, the IFAD-supported Project for the Promotion of Rural Entrepreneurs has provided youth-sensitive capacity building for producer organizations in selected poor regions. It has offered training for business development service providers, with a focus on enabling young entrepreneurs to access services. Thus far, 1,500 new enterprises and 4,000 jobs have been created, 63 per cent of which have been for young people.

Increasingly, investment in family farming is coming from family farmers themselves and from other private sector actors involved in agricultural value chains. Many IFAD-supported projects already involve partnerships between groups of farmers, cooperatives, processing or marketing companies and commercial banks or microfinance institutions. In addition, there has been widespread commitment from governments to broaden public investments in agriculture, which also supports efforts to reduce poverty. Generally, however, governments have reduced direct investment, shifting their focus to facilitating investment by farmers themselves and other private enterprises. Remittances also play an important role in fostering investment in family farms. IFAD's multi-donor Financing Facility for Remittances demonstrates notable examples deriving from 50 remittance-related projects in some 40 countries, which have tested innovative mechanisms and products. For example, the Philippines' Atikha Overseas Workers and Communities Initiatives Inc., through an IFAD co-financed grant, has helped change the lives of thousands of Filipino migrant investors by means of its financial literacy training programme.

What is clear is that there can be no food and nutrition security without family farming. A future where family farming is at the centre of agricultural, economic, environmental and social agendas will be key for promoting equitable and sustainable development. Emerging global and national realities present even wider opportunities and potential returns from investing in family farming than ever before. These realities demand new investment innovations, new kinds of partnerships and enabling policies. IFAD, in collaboration with its member states and partners, is developing new approaches to respond to these challenges and opportunities for family farmers in order to enable them to participate in and benefit from inclusive growth, to realize the future we want.

Family fishing to sustain the well-being of fisher communities

Margaret Nakato, Rehema Namaganda, Kelly Pickerill and Editrudith Lukanga,
World Forum of Fish Harvesters and Fish Workers

The benefits of family fishing, like family farming, cannot be limited to either food security, traditional food products, balanced diet, safeguarding biodiversity, sustainable use of natural resources, boosting local economics, or the social protection and well-being of communities. Those benefits are all part of the package, to varying degrees of intensity in different communities.

The World Forum of Fish Harvesters and Fish workers (WFF) is an international organization that brings together small-scale fisher organizations. Its objective is to empower small-scale fisher organizations to influence both national and international policies that affect their rights of access, use and control, and the sustainability of fisheries resources for improved livelihoods.

WFF brings together 37 small-scale fisher organizations; 13 from Africa, two from Asia, six from Europe, 12 from Latin America, and three from North America. Family fishing is an important aspect of the work of all WFF member organizations as they work with and support small-scale fisheries across the globe, most of which are family fisheries.

The Katosi Women Development Trust (KWDT) is a member of WFF with 425 women organized in 17 groups in fishing communities along the shores of Lake Victoria in Mukono, Uganda. KWDT empowers women to continue the fishing activity that used to employ families, not only to provide social protection but also to contribute to the well-being of the community. Similarly, the Environmental Management and Economic Development Organization (EMEDO) is a member of WFF based in Lake Victoria basin, Tanzania. It supports fishing communities towards being organized, having their voices heard and their rights recognized and respected, and influencing local, national and international policies.

According to a recent report by the United Nations, about 805 million people in the world, or one in nine, still suffer from hunger.[1] Although there is a positive trend which has seen the number of hungry people decline globally, we cannot underestimate the fact that some sections of the population are more vulnerable and at more risk than others.

Image: KWDT

With credit from KWDT this woman acquired a boat which sustains her access to fish for processing and trading

Small-scale fisher communities are particularly vulnerable to food insecurity. According to a 2014 publication on nutrition and food security by the Food and Agriculture Organization (FAO), the vast majority of small-scale fisher communities are located within developing countries and many of these are severely affected by poverty and inadequate food security.

Promoting family food production such as farming and fishing is one sure way of fighting and eradicating hunger and malnutrition at the family/household level. Family fishing is specifically instrumental in improving food security in fishing communities as it ensures that households are food secure and can have a decent living.

Access to fish in fishing communities, and more specifically for women, is determined by who is fishing and which market is being targeted. This is further made difficult and determined by other factors such as access to financial resources to enable the family to engage in fishing.

In some fishing communities, funding for the acquisition of boats, nets and fishing materials is obtained through access to credit. The result of this is usually that households fish to service the loan, benefiting the creditor most, whose main motive for fishing is export. This drains small-scale fisher communities of access to fish for food and fish to trade, especially for women. Women are more vulnerable in such circumstances as their access to fish, which is mainly for processing, to trade is limited and in most cases that right is taken away.

KWDT supports women to access credit to invest in fishing activity, be it the acquisition of fishing boats or credit to trade in fish. With the ownership of boats in their hands, the women decide on the proportion of fish to be used for processing and for direct home consumption. Enabling women to access fish for trade has provided meagre profits that have continued to sustain rural fisher households, many of them headed by women.

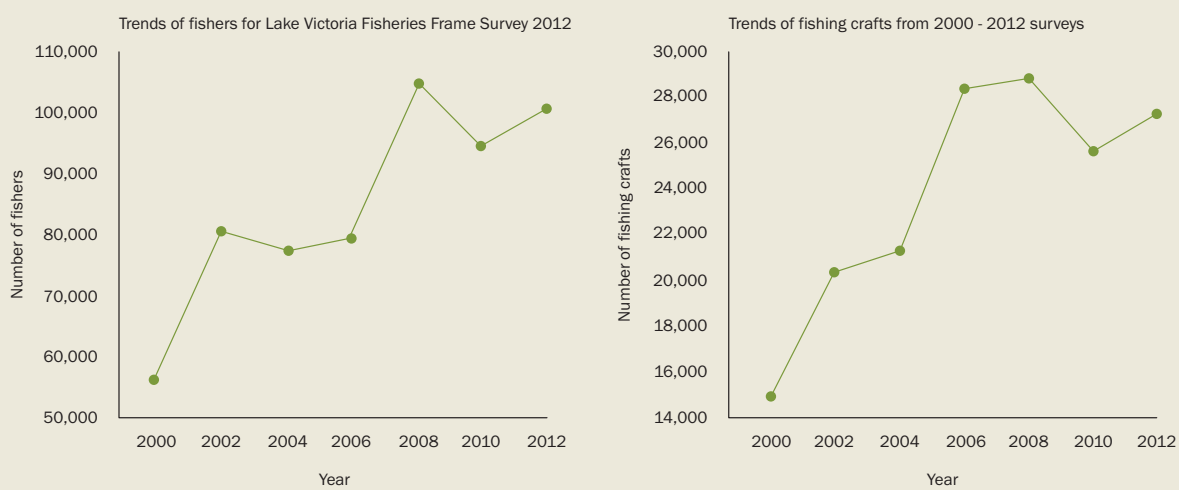
The current wave of large-scale land and water acquisition that has been sparked off by the food crisis in 2008 has greatly contributed to the rapid vanishing of family farming generally and family fishing specifically. Commercial fishing owned by big corporations, the development of beaches, real estate development and other recreational activities have proved to provide stiff competition for family fishing. This is exacerbated by inadequate funding for women engaged in small-scale fishing, as well as ineffective governance structures and poor policies.

Unsustainable fishing practices worsen the situation. In October 2012 Olivier De Schutter, Special Rapporteur on the right to food, noted: "Without rapid action to claw back waters from unsustainable practices, fisheries will no longer be able to play a critical role in securing the right to food of millions. With agricultural systems under increasing pressure, many people are now looking to rivers, lakes and oceans to provide an increasing share of our dietary protein." This is the exact situation for the Lake Victoria basin, which is continuously facing environmental, social and economic challenges posing a great threat to resources and livelihoods in the basin. These challenges have resulted in decreased incomes, unemployment, and food and nutritional insecurity in the fishing communities.

EMEDO's capacity empowerment approach enables fishing communities to analyse their situations, identify development challenges and possible causes, and seek solutions. This creates ownership and entrusts the community with responsibility to take charge of its own development.

Family fishing, for instance, does not only have to be managed and operated by the family members, but should also primarily benefit them directly, both in the form of income and fish for direct consumption. Under the umbrella of family fisheries, the family should be the primary target of fishing

Lake Victoria Fisheries Frame Survey 2012



The Fisheries Frame Survey, conducted in Lake Victoria, Tanzania in 2012, reports a notable increase in overall fishing effort

Image: KWDT

A Deputy District Speaker responds to issues raised during the community dialogue to address arising fisheries management issues in Mukono

Image: EMEDO

Community sensitization on sustainable fisheries through public meeting in Ukerewe Island Tanzania

activities. However, most of the families in fishing communities that provide the cheapest labour to the fishing companies cannot afford fish anymore, nor can that they sustain their livelihoods through fishing as it used to be. One wonders who should be the direct beneficiary of fisheries resources.

FAO has identified a number of factors that are key for the successful development of family farming, such as agroecological conditions and territorial characteristics; policy environment; access to markets; access to land and natural resources; access to technology and extension services; access to finance; demographic, economic and sociocultural conditions; and the availability of specialized education, among others. Access to land and natural resources, as well as a conducive policy environment, are evidently crucial to promote family fisheries so as to support the food security and well-being of the communities.

In Uganda, the substantive law that currently provides for the regulation of the fisheries is the Fish Act 1964 (Cap. 228). The Act is now considered inadequate to cope with the current domestic and international changes in fisheries administration and the latest policy direction and focus. By current standards it is neither comprehensive nor flexible enough to provide for the proper management and conservation of the fisheries.[2]

The Local Government Act of 1997 also mandates districts to manage their lakes or waters, within their areas of jurisdiction. Essentially, local governments are granted powers for effective governance. They are also mandated to enact appropriate district fisheries ordinances and enforce these as well. However, experience shows that the current large-scale land purchases and acquisitions are beyond the capacity of the local government to address sufficiently. So there is also a need to revisit the Act, and other fisheries laws and policies, to incorporate emerging issues and concerns in the sector.

The prevailing worldwide uncontrolled acquisition of land by private investors denies the families their access rights to the lake, which for them is the source of fish for food, water, employment and income in general. Unfortunately, the pressure to acquire/buy certain parts of the lake by commercial fisheries has made those parts inaccessible for the local communities. Making parts of the coasts/lake inaccessible and confining local people to one particular part not only diminishes their catch, but also threatens their livelihoods. The prevailing tendency to privatize water bodies under the guise of improved governance of fisheries, especially for small-scale fisheries, has jeopardized the rights of the fishers and threatens family fishing.

The limited information — if any — among families on the existing land laws and regulations governing the use of land and water resources in the community, not to mention the international instruments where they exist, is written in the official language, English. This is usually a second language for the families, and the majority of the local people who are affected by these measures are unable to read and interpret or understand the information. Communities engaged in family fishing are therefore ignorant of the very laws and policies that are meant to protect them.

There is clearly a lack of involvement of the local communities/families in the decisions that directly affect their lives. It is evident that fisher communities have not been involved in many of the decisions regarding use and access to the lake where they live and on which their lives directly depend. Interventions to address prevailing issues are required at all levels, with concerted efforts to work together even between sectors such as farmers, fishers, pastoralists and other food producing sectors.

Image: KWDT

Improving infrastructure was cited as a major challenge during the exchange visit to Mbour by WFF members from six African countries

Image: KWDT 2013

KWDT supports family fish farming to meet the increasing demand for fish, ensure food security and create household incomes

Through community dialogues, the community members come together to discuss issues related to governance and the use of natural resources in the community, as well as possible solutions. However, it has been observed that most of the challenges of access to natural resources cannot be solved by the community members alone, since the outside community such as national and international policies contribute to the emergence of these challenges. Therefore the participation of all parties is important in these initiatives.

Community theatre has proven to be an important tool to gather communities through public meetings at village and ward levels. It enables them to reflect, internalize and analyse their situations and challenges, but also to come up with action plans on how to improve the situation.

Disseminating relevant national and international policies that are related to fisheries, to create awareness and form a strong foundation for advocacy and lobbying for improved services in the community, is essential in order to protect family fishing activities worldwide.

With a steady increase in the demand for fisheries resources, many local communities must consider aquaculture as a potential way to provide an alternative source of fish to support families, especially women in fish farming activities.

There is a need to improve access to fisheries resources for fisher communities as advocated for by WFF during its engagement in the intergovernmental negotiations on the International Guidelines for Securing Sustainable Small Scale Fisheries (IG SSF) of the FAO Committee of Fisheries. Access to fisheries resources is vital to enhance food security and thus promote family fisheries.

Actions like increasing the amount of fish available for trading locally will not only combat production for export but also guide nations to make trade policies that will achieve national food security. Harvesting and trade in juvenile fish is a thriving alternative in many rural fisher communities which cannot be reached by enforcement officers, due to decreasing access to fish for those communities. This, however, is exacerbating the problem of sustaining fisheries resources in the lake.

Making and reviewing policies with the active participation and engagement of local communities and their organizations is key to transforming both the policies and their implementation. Seven members of WFF from Africa, Asia and Latin America were engaged in a national consultation on what they would like to see included in the IG SSF.

Evidence reveals that women engaged in fishing do so for reasons directly related to food security at the family level. According to the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security (2014), while women's financial remuneration for their work in small-scale fisheries is often insubstantial compared to that of men, their contributions to family nutritional needs is thought to be integral to their households' food security. Developments in the sector should explore solutions that will minimize women's vulnerability and increase their active participation in the governance of fisheries resources.

The concept of family fisheries must trickle down to the country level if it is to be appreciated, understood and given substantial implementation structures on the ground. To enable long-term investment in fisheries at the family level, land ownership needs to be addressed coupled with increasing access to expertise and support in fish farming, access to credit especially for women, and development of the rural infrastructure.

The environmental, social and economic sustainability of family farms in the dry areas

Dr Mahmoud Solh, Director General, International Center for Agricultural Research in the Dry Areas

Approximately 75-80 per cent of the food produced in the drylands results from the hard work of women, men and children cultivating small plots of land. Agriculture is the main livelihood and source of food for these family units. While some small family farms enjoy successful production units, many others are negatively impacted by changing environmental, social and economic conditions that threaten their existence.

The 2014 International Year of Family Farming is revitalizing the emphasis placed by researchers, policymakers and development actors on the importance of family farms. Such emphasis is highlighting the need to integrate family farms into equitable and sustainable development agendas. Various successful approaches, exemplified by case studies, are capable of enhancing the potential of small family farms in dry areas and improving the quality of the lives of the women, men and children that constitute them.

Dry areas cover over 41 per cent of the Earth's surface and are home to about 2.1 billion people, many of whom depend on land, water, livestock, rangelands, trees and fish to sustain their livelihoods. About 16 per cent of the population in the drylands lives in chronic poverty. These areas are experiencing rapid population growth and high urbanization. For example, according to the World Bank, the 2006-2011 drought in north-east Syria caused thousands of small herders and small farmers to migrate to urban areas, swelling the urban slums and potentially contributing to social and political unrest.

Social and political unrest, coupled with weak governance, negatively impacts food security. Additionally, significant gender gaps in access to livelihood opportunities, large youth populations, and the world's highest unemployment rate, particularly for the youth and for women, increase the vulnerability of the dry areas to generational poverty. According to the International Labour Organization, unemployment among the youth in North Africa and the Middle East is 23.6 per cent and 25.1 per cent respectively, compared to a world average of 12.6 per cent.

Dry areas have limited and degrading natural resources, particularly water. Water scarcity is one of the key limiting factors in food production. The demands of a growing population and their economic and social development further exacerbate the region's increasing water deficit. Additionally, drylands suffer from various forms of land degradation, including desertification and the loss of biodiversity.

Climate change is another cause for the extreme vulnerability of farming in dry areas. Climate change is causing more

Image: ICARDA

Weeding of lentil crops is labour-intensive and a common family task in smallholder farming

Image: ICARDA

ICARDA has been working in the drylands for more than 35 years to improve the livelihoods of small family farmers

Image: ICARDA

Producing more high-value, quality products increases the sustainability of family farms

frequent and intense periods of drought, resulting in a trend of drier soils. With already fragile ecosystems, the unreliable precipitation pattern from climate change has increased the vulnerability of farmers in dry areas to crop failures and falls in crop and livestock productivity.

In addition, family farms in the drylands are challenged by political marginalization, limited access to markets and credit, insufficient infrastructure and poor quality social services. All these factors combine to limit the options available to family farms and their members, driving them further into poverty and pushing some of their members — particularly the young — out of the family farm to seek off-farm or non-farm work elsewhere. Breaking this vicious cycle of poverty requires robust institutions, fair policies, larger investments, increased research and a renewed focus on science, technology and innovation. A strong political commitment is required to address the complex factors affecting family farming in the drylands and their evolving needs.

The challenges facing family farms in the drylands are daunting. Much more needs to be done by the research, development and policy communities, working in close partnership with all members of the family farm, to increase their productivity while encouraging the sustainable use of the natural resource base.

The environmental sustainability of family farming in the drylands can be addressed by helping family farms conserve and sustainably use their land and water. There must be a focus on improving water availability and enhancing water productivity, as well as on building soil fertility, combating land degradation and conserving biodiversity.

The social sustainability of family farms can be addressed by generating employment opportunities for family farming members, increasing access to resources and opportunities for women, and attracting youth to agriculture by making farming more intellectually challenging and economically rewarding.

From the economic sustainability perspective, science and development efforts should focus on helping small farms improve their income by increasing the productivity of their lands and reducing production costs. Producing more high-value, quality products increases the sustainability of family farms. In some cases, the key factor to the success of the family farm is the ability of its members to access microcredit and have the capability to link directly to the market.

The International Center for Agricultural Research in the Dry Areas (ICARDA) has been working in the drylands for more than 35 years to improve the livelihoods of small family farmers by helping increase crop productivity through the sustainable intensification and diversification of their production systems. It is clear that there is no silver bullet to cope with challenges faced in dry areas; science-based technological change is necessary to fuel the transition from traditional to sustainable agriculture.

For example, in 2010, a wheat stripe rust epidemic in Ethiopia wiped out crops and left thousands of family farms devastated. Protecting farmers against the destructive effects of stripe rust was the aim of a USAID-funded initiative that

Image: ICARDA

Increasing access to resources and opportunities for women will help to ensure the sustainability of family farms

works to rapidly increase farmer access to improved varieties of wheat. Implemented by the Ethiopian Institute of Agricultural Research in partnership with ICARDA, the project strengthened national wheat breeding programmes, assisting in the development, fast-track testing and release of rust-resistant varieties.

Since its inception, the initiative has extended its operations to 45 districts throughout Ethiopia, distributing approximately 618 tons of quality seed to over 13,200 farmers in affected areas. A further 19,258 tons have been produced and shared through informal exchange or formal sale, and 15.7 tons were delivered to small-scale seed producer associations. In total, an estimated 400,000 hectares of land are now covered with new rust-resistant wheat varieties, benefiting over 67,600 households. Farmer field days, including both men and women of the family, were organized to help spread the knowledge of these rust-resistant varieties. Village seed-based production systems and participatory seed multiplication initiatives of the improved varieties have also facilitated the availability of improved seed varieties to neighbouring farmers, which has helped upscale the improved technology. The increased income from these improved rust-resistant wheat varieties is now ensuring the economic sustainability of family farms in Ethiopia, where wheat is a major component of their production system.

Improving the sustainable use of water resources is vital for small family farms. Research has focused on improving water use efficiency while building soil productivity and fertility and combating land degradation. For example, small-scale mechanized raised bed systems in Egypt — where crops are grown in elevated wide beds between deep furrows using a simple machine adapted from the traditional seed drill — is saving 25 per cent of irrigation water while increasing the grain yield of wheat by 30 per cent. In the Sharkia Governorate in Egypt's Delta, family farms have widely adopted this technology — from 1,670 hectares in 2010 to a 21,250 hectares in 2013.

Conservation agriculture and water harvesting are also enhancing the environmental and economic sustainability of family farming in the dry areas. For example, the barley-livestock production systems in Jordan and Iraq, which receive less than 200-350 millimetres of annual rainfall, are benefiting from zero-tillage. This reduces farmers' cost of production by eliminating all costs incurred in ploughing their field, while conserving moisture because of stubble retention and preventing evapotranspiration from lower soil depths.


Image: ICARDA

Most of the food produced in the drylands comes from small family farms

Crop rotations to increase soil fertility and microcatchment water harvesting have improved livestock production, including the milking and health of the small ruminants such as sheep and goats. Small ruminants are a major source of income for the women members of the family, and any improvements in production benefits the family at large. In Iraq, zero tillage on 40 farmer fields demonstrated an almost 50 per cent increase in barley yields in some cases. The technology is finding its way to family farmers with wide-scale adoption because it saves on energy, labour and time. Economic analysis in the case of Iraq shows that adopting zero tillage improves profitability by US$355 per hectare, a big economic gain for the family in the current context of Iraq.

The social sustainability of small family farming can be achieved through generating more lucrative on-farm activities and additional off-farm employment opportunities for family farming members. Adding value to smallholder livestock production, especially, is a big boost to the family because livestock is often under the responsibility and care of women members of the family. In the dry areas in Afghanistan, a project funded by the International Fund for Agricultural Development and implemented by the Afghan Ministry of Agriculture, Irrigation and Livestock along with ICARDA developed a package of technologies to improve goat and forage production systems for women farmers, the poorest and most vulnerable group in the country. More than 1,000 women have been trained on goat management, hygienic milk production and improved feeding methods with a good market potential for a range of products such as cheese, yoghurt and cashmere. Working also with women members of family farms in Kyrgyzstan and Tajikistan, ICARDA is improving livestock productivity and quality to develop value-added yarn products such as felt rugs and carpets for export to the United States and to Europe.

In addition to raising household income and productivity at the level of the family farm, there is also wide scope to improve other aspects that contribute to the quality of life for family farming members in the drylands. Many of the world's family farms can benefit from improving infrastructure in the rural areas where they are located (roads, bridges, electricity, water and sanitation) and by providing institutional services such as childcare facilities, primary and secondary education, health services, and youth and women's programmes. There is huge scope for social safety net programmes and initiatives to empower women to take decisions about agriculture and to improve their control over resources, as well as by building policies and institutions that support social and gender equity.

Small family farmers have always struggled with accessing markets, with middlemen often distorting prices and impacting returns to farmers. Consequently, a significant amount of work is needed to link family farmers to local and international markets directly. There are many examples of successful farmers' associations and cooperatives which have connected farmers directly to markets and created immediate benefits to farming families. There is also scope for communication technologies, such as cell phones, to empower farmers with up-to-date information on market prices to be able to negotiate with buyers from a position of strength. Finally, family farms also need access to credit and insurance to be able to run their farms as small businesses. Institutions, processes and policies are needed, with the engagement of both the public and private sectors, to facilitate the access of both women and men members of the family farm to credit and insurance.

Supported by new types of partnerships, enabling policies, institutions, political commitment and investments in innovative research and development, family farms in the drylands can be economically, socially and environmentally sustainable. They can also be the key to rural transformation. Tapping the potential of the family farms will require keeping them the central focus of research and development efforts and will require new innovative modalities for action to support equality, fairness and inclusion of the millions of small family farms located in the dryland regions. Policy, research and development dialogues must — above all — guarantee the inclusion of the youth and women.

It is useful to recall the example of Viet Nam, where strong pro-smallholder development activities, many of which were focused on family farms, transformed the rural landscape from a poor underdeveloped and food insecure country to a country that is now exporting food and classified as lower middle-income. The drylands can learn from the experiences of Viet Nam and other countries.

Many smallholder farmers in the region are trapped in a perpetual cycle of poverty, poor crop yields, scarcity of natural resources, and a lack of supportive policies and institutions. Existing science and technology tools and resources offer the capability to increase the agricultural production of small family farms, but sustainable management of natural resources must be the cornerstone of the family's agricultural practices in the fragile drylands. As demonstrated by the examples above, investment in science and technology to support agricultural development for family farms is critical.

Family farming in the European Union

Jerzy Plewa, Director-General, Agriculture and Rural Development, European Commission

Family farming is the most common operational farming model in Europe — representing 97 per cent of the European Union's (EU) 12 million farms.[1] Thus it is of great importance in the EU. It covers a diverse range of situations, including farms of all sizes.

While there are obvious differences across regions and countries of the world when it comes to family farming, there is also much common ground. Below some of the key challenges and opportunities for family farms across the EU are identified, together with the policy solutions introduced in the EU to address them.

The new 2014-2020 Common Agricultural Policy (CAP) that was agreed in 2013 offers a robust policy to maintain the rich diversity of family farms in the European agricultural sector and to ensure sustainability. The CAP continues to provide support to farmers through direct payments and measures to support agricultural, environmental and territorial development under the rural development programmes. Some of these measures are of particular relevance for family farming.

Under the new direct payment regime,[2] Member States now have the possibility to establish a simplified scheme for small farmers under which they will be able to receive annual direct support ranging from €500 to €1,250. They will be subject to reduced administrative formalities, and exempted from certain environmental obligations. Member States can also choose to pay a redistributive payment — a top-up to support small and middle-sized farms. Furthermore a scheme will specifically address the challenge of generation renewal by giving farmers up to the age of 40 an additional top-up payment for up to five years. As part of the market measures, the reform also contains measures to enhance producers' organizations.

Under the rural development elements of the CAP, the modified European Agricultural Fund for Rural Development (EAFRD) also enables spending on a raft of proven measures to strengthen the sustainability of smaller family farms through regional or national rural development programmes. These measures include support for training and advice,[3] economic improvements (such as physical investments, business development),[4] cooperation to overcome small-scale disadvantages (such as setting up producer groups, jointly developing short supply chains, new technologies),[5] and compensation for environmental commitments (such as voluntarily improved environmental or organic farming standards).[6]

Image: European Commission

Modern techniques help family farmers to preserve traditional production methods and meet high food standards

Image: European Commission

Annual agri-environment payments encourage farmers to carry out environmentally beneficial activities on their land

Modernization and innovation

There is a need to promote innovation within family farms, taking into account their diversity, the different natural conditions under which they operate and their varying degrees of technological development. There are a number of obstacles to the uptake of innovation that need to be addressed: lack of access to knowledge, insufficient information flow, weak exchange of research results and too little responsiveness to the needs of farmers.

The revised CAP is ready to support innovation, whether it is led by individuals, public sector organizations or enterprises. A fully fledged EU innovation package is available for the agri-food sector, comprising the new rural development policy,[7] the Europe 2020 Flagship Initiative on the Innovation Union,[8] Horizon 2020,[9] and the European Innovation Partnership: Agricultural productivity and sustainability.[10] This combination of policy measures aims to encourage researchers, farmers, advisors and other agricultural sector stakeholders to cooperate more actively. In particular, it is hoped that a more direct and systematic exchange between farming and science will accelerate the speed of technological transfer and innovation.

Case study: Young farmer, Idálio Ramos Martins, from Portugal's Algarve region, keeps a flock of goats and produces cheese from their milk using traditional production techniques. Equipped with modern technological solutions for milking and dairy processing, he now produces high quality goats' cheese according to rigorous hygiene and safety standards while maintaining traditional practices. Thanks to an increase in production capacity, the family farmer improved profitability and now also processes milk from other goat breeders of the region.[11]

Provision of environmental services

Traditional, small-scale, low input and High Nature Value agricultural systems are essential when it comes to making sustainable use of natural resources in areas with natural constraints, such as challenging terrain, poor soil quality or difficult climatic conditions. Such systems are often maintained by family farms, but are threatened by declining profitability and continued rural depopulation.

The 'Less Favoured Areas' measure under the rural development pillar of the CAP was designed to halt land abandonment in such areas. It will continue in classified areas with natural constraints. Furthermore, in all types of territories, agri-environment measures have also allowed family farmers to continue their engagement in actions that support the environment, as well as climate change adaptation and mitigation, despite more economically efficient alternatives. In addition, the combination of agri-environmental programmes with the development of rural tourism and other businesses (such as local food products) has often helped to maintain highly valuable environmental and cultural landscapes.

Case study: The Bangala family from Brasov County, Transylvania (Romania), manage their sheep and cattle farm in accordance with an agreed five-year environmental management plan. Around 250 hectares of uplands are also exploited for the grazing of livestock in the summer. Strict application of traditional agricultural practices excludes the use of chemical fertilizers, but reduces the potential agricultural output of the farm. Furthermore, to protect insects, birds, flowers, animals and other species during breeding, nesting or pollination periods, mowing is controlled and managed, again with the risk of reducing productivity. The annual agri-environment payment of €3,276 covers the costs of hand moving and turning of hay, as well as those of labour-intensive shepherding carried out with the help of local manpower. The application of traditional farming practices continues, while at the same time the family members can focus their attention

Images: European Commission

Many regional and traditional foods – often produced on family farms

Image: European Commission

Family farms are dominant in EU agriculture, and the CAP's role in addressing the challenges they face will be key to assuring the sector's future

on the production of traditional meat and dairy products and diversification into rural tourism.[12]

Developing economic flexibility

Mixed farming and diversification aims to maximize the potential utilization of the farm's fixed assets to improve production, efficiency and profitability. Opportunities to enhance family farm income can also arise from career, family and life experiences.

Social farming, for example, is a specific form of on-farm diversification that enhances job opportunities, in particular for women and young people. Very often a family member not previously involved in the farm business joins and makes use of farm facilities and livestock to develop and offer new services related to sectors such as education, welfare and health.

Since many social farming initiatives are pursued by family members other than the farm owner, they can obtain funds through the farm and business development measure of the EAFRD, which is further developed 2014-2020.

Case study: The Coorevin Farm in county Tipperary, Ireland is a family-owned medium-sized intensive livestock farm of over 50 hectares. Padraig Moran and his family wanted to enhance their income from rearing suckler cows and ewes by diversifying into non-agricultural activities such as farm tours and providing learning experiences for students and other interested individuals and groups. An initial investment of €33,000 was made, supported by €6,600 from the EAFRD and €2,200 in national funds. Padraig's agricultural experience allows him to offer hands-on instruction to advanced students and adults, meeting a need that was not adequately met by the existing syllabus for agricultural science education. Farm tours are tailored to the specific needs of each group. Since Padraig started the new activities at the Coorevin Farm, the additional revenue generated has become an important part of the family's income.[13]

Cooperatives and inter-professional organisations

Agricultural cooperatives can help family farms to overcome the scale constraints inherent to smallholdings, while enabling small farmers to respond more effectively to changing market demands. Participating farmers also have more power and control over production than through contract farming, making food security less vulnerable.[14]

The increased access cooperatives provide to resources, information tools and services encourages members to increase their levels of food production, while reducing transaction costs, improving quality and creating jobs.

The CAP has supported producer cooperation working through the Common Market Organisation[15] of products, which has enabled improved coordination of specific supply chains. The CAP provides a reinforced framework for producer and other organizations, as well as support for the setting up of producer groups. These should facilitate producer cooperation by granting legal certainty, financial support and economic advantages to willing farmers. There are also new opportunities through the European Innovation Partnership[16] Operational Groups that can enable new and existing cooperatives to explore and develop their own working practices and penetrate new markets.[17]

Case study: The Peasant Evolution Producers' Cooperative was established in 2004 as a collective of small-scale producers in Dorset, in the south-west of England. Thirty-three small

Image: European Commission

Innovative approaches to the promotion and sustainability of family farming will continue to be a subject of discussion

family farms have come together to form the cooperative, providing support to ensure they are able to develop a viable income from their farms. Initially, the cooperative focused on developing short supply chains to capture more of the profit from their produce, build relationships with their consumers and raise awareness of their farms. This led to the realization that they needed processing facilities to add the maximum value to their products. In 2008, they secured funding through their LEADER[18] Local Action Group and built a multipurpose processing barn as a community project, including a juicing and preserves room, herb processing facilities, a meat-cutting room and a dairy. Following this success the cooperative has added further value to its products through catering and the sale of 'street food' in its mobile café, and is extending this initiative into a mobile shop to service local rural areas.[19]

Short supply chains

Local food supply chains make it easier for customers to identify the origin of their purchases, and they are often willing to pay a premium for fresher and healthier options. By strengthening the relationship between consumers and local farmers, such supply chains promote local family enterprise and boost regional identity.

The organization of food chains is a priority in the 2014-2020 rural development policy.[20] The EAFRD-funded measures aim to help family farmers to sell their products directly to consumers[21] or at least to become involved in short supply chains, and to better integrate family farms into distribution channels by providing support for quality schemes,[22] adding value to agricultural products, promotion in local markets and short supply chains, producer groups and inter-branch organisations.[23] In addition, the LEADER approach will continue to provide Local Action Groups with the grounds they need to support innovative and experimental approaches to stimulate direct sales and the development of local food markets, where foreseen as part of the Local Development Strategy.

Case study: A Hungarian family farm in the Borsod-Abaùj-Zemplén region grows and sells local fruit varieties and the family also runs a tourist attraction, whose visitor numbers are increasing. To strengthen the overall viability of the family business, the farm's operations were expanded to include added-value fruit products. EAFRD funding helped to partly offset the total cost for the purchase of modern fruit processing equipment, compliant with EU food quality standards. The fruit processing plant has shortened the supply chain for quality fruit products, adding value to local agricultural products and enhancing the economic sustainability of both the beneficiary's family business and other local fruit growers.[24]

Adding value

Many regional specialities and traditional foods are produced on family farms — foods that are closely associated with the farms they came from. Many of these can qualify for status as protected Geographical Indications (GIs). This is a proven way for small farmers to communicate directly with the wider market, but also to protect valuable assets in the names and traditions of local specialities.

The CAP includes schemes to protect farmers' rights and traditional products, by protecting product names from misuse and imitation and helping consumers by giving them information concerning the specific character of the products. These are the GI schemes which cover agricultural products and foodstuffs closely linked to a geographical area, and the 'Traditional Speciality Guaranteed' scheme which highlights traditional character, either in the composition or means of production.[25]

The future of family farms

Family farming has survived in Europe over centuries, re-emerging from crises, wars and natural disasters, adjusting to changing economic fortunes and, in some countries, to dramatic changes in political context. This has never been a smooth and painless process, as many small farmers have disappeared over decades to give way to more efficient and competitive farms, able to adopt new inputs and technologies. It is beyond doubt that family farming will survive and will continue to be dominant in EU agriculture as far as the number of farms is concerned, and that traditional smaller-scale family farming will continue to be the core of agriculture in many regions.

With the majority of the EU's farms being family farms, discussion about innovative approaches to the promotion and sustainability of the family farming model is certain to continue. The CAP's role in addressing the challenges set out above and the new ones which will arise, not least as a result of climate change, will be key to assuring the future of the family farming sector, and with it the preservation of the EU's rural communities and their local economies, traditions and agricultural practices.

Realizing the potential of family farms with farmers' organizations

Martin Dahinden, Director General; and Markus Buerli, Global Programme Food Security, Swiss Agency for Development and Cooperation

Some 70 per cent of the people living in poverty around the world live in rural areas and depend to a large extent on agriculture for their livelihood. Smallholders produce about 50 per cent of the food worldwide and 500 million small farms are located in developing countries, where hunger is most prevalent.

The small production entities of family farms have many advantages such as their higher diversity for nutrition, biodiversity conservation and resilience, their knowledge of the local production system, and their role for social security in times of crisis. The family farming system also has challenges: producing for a growing urban population increases the need for bulked produce, and inputs are provided cheaper and easier to bigger entities. In tackling these challenges producers organizations have an important role to play.

The future of viable family farms will strongly depend on their ability to organize themselves for:

- accessing production inputs, financial and information services and output markets
- the sustainable use of natural resources
- raising the concerns of family farms in policy debates at different levels and influencing decision-makers.

Family farms are able to produce healthy food for well-balanced diets, but they need to be provided with an enabling environment. Farmers' organizations have a key role to play in that respect but they need to be well governed and oriented towards the members' needs. That is why supporting viable and strong farmers' organizations is one clear focus of Switzerland's engagement in favour of productive, profitable, socially adapted and ecologically responsible family farms.

Family farms are entities for agricultural, forestry, fisheries, pastoral and aquaculture production which are managed and operated by a family and predominantly reliant on non-waged family labour, including both women's and men's. They play an important role in food production, job creation and rural development in general. However, family farms face a series of challenges on the way to realizing their potential in food production and for rural development.

In comparison to large-scale agriculture, smallholder farmers' productivity is about one third lower. This low productivity is the result of a decade-long neglect of family farmers in local and global political and economic policy. Their small size, the rising pressure on natural resources and their low political power further contribute to this lower productivity. Strong farmers' organizations are essential to

Family farming has multiple benefits

The Swiss Agency for Development and Cooperation (SDC) has been working with family farms in various countries from the beginning of its activities. In SDC's view family farms hold the key for providing a growing world population with healthy and balanced diets and supplying jobs and income opportunities, particularly in rural areas. At the same time, family farms enable sustainable management of the world's natural resources for future generations.

This approach of a multifunctional agriculture supported by Switzerland in its development cooperation is also anchored in the Swiss Federal Constitution for the development of agriculture in Switzerland. Therefore it is based on long-term domestic experience:

Article 104 of the constitution states that the confederation shall ensure that the agricultural sector, by means of a sustainable and market oriented production policy, makes an essential contribution towards:

a. the reliable provision of the population with foodstuffs
b. the conservation of natural resources and the upkeep of the countryside
c. decentralized population settlement of the country.

Image: Markus Buerli, SDC

Producers' organizations have an important role to play in tackling the challenges that face family farmers

Farmers' organizations in a fruit-producing region of Armenia

For centuries, Armenia's Meghri region has been famous for producing high quality persimmons, pomegranates and figs. The region's sub-tropical climate is perfect for growing, and consumer demand for these fruits is high. But the collapse of the Soviet Union and a lack of investment in agriculture has meant that many local farmers have been unable to maximize their potential.

A key challenge for farmers has been the difficulty of accessing agricultural supplies such as fertilizers and pesticides. Most have to be purchased in Yerevan, and the small size of Meghri's farms means that farmers have little bargaining power, and often have to pay high prices for supplies. Being aware of this challenge, SDC encouraged farmers to get together to bulk-buy supplies. After only a few years this measure has led to a reduction of about 20 per cent in the price paid at farm level.

The same farmers' organizations were also instrumental in selling the fruits: wholesalers and supermarket chains are much more willing to buy in bulk than to bargain with individual farmers for small amounts of produce. In this way the farmers' organizations opened new markets to Meghri's small family farms. Even better, the fact that there is a functioning market for fruits attracted new investments to the region. A local fruit processing plant now plans to expand for producing a new variety of fruit juice, and this will increase the possibilities for famers to sell their produce.

In the future it is envisaged that input suppliers will set up shops in the region so that farmers can buy directly from them. A good indicator that this could be successful was a two-day agricultural fair organized with the help of the project in Meghri town. It was attended by 250 farmers and 10 wholesalers of agricultural supplies. Five wholesalers sold their products at the fair, and the interest of the farmers and the level of sales were far higher than the suppliers had expected.

Image: Markus Bueri, SDC

Local farmers' organizations can enable farmers to buy modern, labour-saving equipment that reduces losses through spillage and damage to crops

Image: Séverine Weber, SDC

By bulk-selling produce, farmers' organizations can open up new markets to small family farms

overcome these challenges and to lobby for policies, regulations and investments to realize the potential of family farms.

Access to services and markets

The most frequent reason for farmers to get organized is to jointly market or process a common product such as milk, fruits or grains and to access inputs as well as information and financial services for its production. Due to the small size of most family farms in Africa and Asia they face higher transaction costs and lack negotiating power. Considering all farms worldwide, 73 per cent are of less than one hectare and 95 per cent cultivate less than 5 hectares of land. But the estimated 500 million family farms located in Africa and Asia are sustaining the livelihoods of about 2 billion people and providing food to at least half the world's population.

On the input side, service-providing farmers' organizations bulk-purchase agricultural inputs and resell them to members at a favourable price. On the output side they bulk-produce and benefit from lower transaction costs and higher bargaining power in sales. Farmers' organizations also play an important role in the provision of information to family farms. As a group it is easier to access information on new production technologies, new crop varieties or approaches for sustainable natural resources management.

In production, family farms still rely heavily on manual labour. While locally adapted mechanization would be available on the market, this is not affordable for individual small entities. Labour in rural areas is often scarce due to increased rural urban migration, a lack of interest among youth in farming and, in some regions, a diminished workforce due to early death caused by conditions such as HIV-AIDS. In a post-harvest management programme in Ethiopia for example, it was a local farmers' organization that enabled the farmers to buy modern threshing equipment that makes threshing easier while also reducing losses of maize due to spilling and damaging grains.

Sustainable use of natural resources

Farmers' organizations are essential for the definition of regulations for the sustainable use of natural resources. Family farms in many cases use common natural resources such as pasture land, forests, lakes or rivers and often lack legally recognized and secured access to these resources, which form the basis for their production and livelihoods. Unsecured access to natural resources discourages investments whose benefits — for example trees or works to halt erosion — only occur several years after the investment. Furthermore, unsecured land tenure rights inhibit the use of land rights as collateral for credit. In areas with increasing population pressure, unsecured tenure rights also lead to the overuse of the resource and to conflict in society.

Farmers' organizations can play a regulative role and act as the first level in conflict mitigation. In Mongolia for example, Switzerland is supporting pasture user groups to sustainably manage state-owned and free-to-use pasture land. In this de facto open access situation where each herder tries to maximize his or her animal production, the natural resource base is put under heavy pressure and is strongly overused, particularly

Image: Markus Bueri, SDC

Family farms hold the key for providing healthy and balanced diets across the world and for providing jobs and income opportunities, particularly in rural areas

Image: Karl Schuler, SDC

In order to fulfil their potential, farmers' organizations need to be built on clear strategic orientation, good internal governance and member participation

in regions that are easy to access and close to urban markets. Through collaboration among herders, sustainable pasture use plans were established that were recognized by local governments. Furthermore, these groups were better equipped to access veterinary services and able to establish common works such as water points or fenced reserve pastures.

Advocating for producers' interests

The third important role of farmers' organizations is to voice family farmers' concerns and influence policy debates. In most developing countries, farmers and the rural population in general are underrepresented in national and regional policy debates. This leads to the neglect or farmers' needs in policy decisions and often in a higher consideration of urban versus rural populations' interests. For example, the reliance on cheap food imports compared to supporting domestic food production led on the one hand to affordable food for the poor, but on the other hand food producers in these countries have suffered from low incomes. In fact, 70 per cent of the poor today live in rural areas and depend to a large extent on agriculture and herding.

In this context, organizations that defend the interests of the poor rural population have a key role to play when it comes to the definition of national priority investment areas. An important success of farmers' and pastoralists' organizations can be seen in West Africa. The Common Agricultural Policy of the Economic Community of Western African States (ECOWAP) recognizes the important role of family farms for the national economies and food security of the countries in the region. This has only become possible as particularly the Network of Farmers' and Agricultural Producers' Organizations of West Africa (ROPPA — Réseau des Organisations Paysannes et de producteurs de l'Afrique de l'Ouest), but also other regional producers' organizations, were able to voice the concerns of family farms in the related negotiations. With Swiss and other international support, ROPPA as well as the Association for the Promotion of Livestock in the Sahel and Savannah and Réseau Billital Maroobé have succeeded in being recognized by policymakers at regional level as key actors in respect to policy decisions in agriculture and food security.

Ensuring benefit to members

To enable farmers' organizations to fulfil one or more of the above described roles, they need to be built on a solid fundament of a clear strategic orientation, good internal governance and member participation. In too many cases more powerful farmers were able to dominate an organization and to use it mainly for their personal benefit. This destroys the trust among the producers in a region, and without trust no such organization is able to function.

Countries need to invest into the creation of an enabling environment for farmers' organizations, and in a regulatory framework that allows for checks and balances within these organizations and for transparency on their conduct for members. Switzerland supports farmers' organizations by investing in building the capacities not only for delivering services to members and for lobbying, but also for internal governance. The biggest challenge, particularly for regional farmers' networks, is to manage the information flow within the network or organization. Only if local farmers' organizations are linked to national networks that are than organized at the regional level can credible and strong statements be made that eventually influence regional policies. In the opposite direction farmers' organizations can only provide needs-oriented services if they have a mechanism that allows members to influence the orientation of the organization.

In the example of the three regional farmers' and pastoralists' networks in West Africa, the big task for these organizations in the near future will be to contribute to the implementation of the ECOWAP and to make sure that institutions at all levels follow the policy framework that has been decided. One important step in this direction is that now, the three mentioned networks not only depend on donor funds but have also been able to lobby for support directly from the Economic Community of Western African States.

From Arms to Farms: battlefields become farming communities in Southern Philippines

Renelle Joy A. Tabinas, Project Development Officer, Agricultural Training Institute — the Apex Agency in Extension in the Philippines

Insurgency still proliferates in the highlands of the southern portion of the Philippines. For decades now, Mindanao has been a home to rebel groups continuously fighting against the Government. This has become their way of life, a struggle that has brought fathers, husbands and brothers away from their homes in the hope of addressing hunger and alleviating their impoverished state. For years, they felt deprived, longing for the Government's assistance.

The rebellion, however, did not improve their livelihood, nor did it give them enough to feed and protect their families. In 2008, after suffering for a long time, a number of rebel leaders and their followers yielded to the Government.

Nevertheless, surrendering their firearms didn't mean an immediate life of ease. Rebel returnees had to deal being ostracized in the lowlands and even feared for their own lives as some people wanted to take revenge. They knew of nothing else to do, no other means of living aside from pulling the rifle's trigger. Employment in the nearest government office was not even an option since they were illiterate and had not experienced any form of education. For a time, the former rebels remained idle though they have tried tilling their land areas to put something to eat on their tables. Despite their efforts, the land they wanted to develop was nowhere near productive.

Family farming has always been a culture and tradition among Filipinos, including rebels. Their farms may not be as productive compared to other farmers in peaceful rural communities, but they still work through the day making the most of what their soil can offer. They were not fortunate enough to be informed about farming techniques like those in the lowland areas, who were reached by the Government.

Addressing these needs and not wanting the leaders to go back as rebels, in 2012 Director Asterio P. Saliot of the Agricultural Training Institute (ATI) initiated the programme From Arms to Farms: Fostering Peace through Agriculture and Fishery Development in Conflict Areas. This was after his first meeting with Commander Batman — the first Moro Islamic Liberation Front (MILF) rebel returnee who sought ATI's assistance after failing for years to get the attention of other government agencies concerned with rural development.

Image: Clemente Gabion

A Maranao mother and son tending their goats in a field in the former stronghold of Commander Ismael

The programme mainly aims to nurture harmony in areas where rebellion was or is still existent through advocating agriculture and fishery. As the extension arm of the Philippine Department of Agriculture, ATI took the initiative to look into the needs of the commanders and their respective groups. This was made possible with the support of the local government unit of Kauswagan, Lanao Del Norte in Mindanao.

ATI risked going the extra mile and passing through the bumpy roads infested by unseen insurgents ready to attack at any time in the mountain ranges of Lanao Del Norte. Setting aside fear, the leaders' camps and communities were visited by the programme initiator to directly determine what assistance the agency could provide. Extension services were then delivered through technical assistance and trainings on organic agriculture, vegetable production, livestock and other capability building and skills exercises that help in capacitating the marginalized in the countryside. Post-training support and education support for the out-of-school youth were likewise dispensed through the programme.

The former rebel leaders, who are also heads of specific Maranao ethnic groups, were first trained by ATI. Being the forerunners emulated by their followers, the commanders were taken to experience and see the developments made by other successful farmers in the region. From the farm visits, leaders were able to choose commodities that are suitable in their own areas. The trips also enabled the former commanders to gain insights into how they could improve their own lands.

The rebel leaders were shown that the real enemy is not the Government but hunger. The real war is the combat against poverty and illiteracy. ATI has not only promoted agriculture and fishery among the former rebel families, but has also provided non-formal education to the constituents of the commanders by administering trainings. More importantly, a number of out-of-school youth from the Maranao community were given the chance to become scholars of ATI's ladderized training courses on agri-entrepreneurship. The ladderized training course programme is a two-year agriculture-based curriculum wherein 30 per cent concentrates on the theoretical aspect of agriculture entrepreneurship through lectures while 70 per cent focuses on hands-on practicum where students get first-hand experience of farming technologies in the developed farms of productive farmers.

Among the former rebel leaders who are now catering to students in their farms are Commander Malic Dimakuta and Commander Aga Macabato. Through the Schools for Practical Agriculture programme — also an innovation of Director Saliot — former rebel leaders Malic and Aga have become farmer lecturers. Their farms serve as the school while they act as the teachers imparting knowledge learned from ATI's trainings to students taking up the ladderized programme. With the scheme, farmers are able to earn more than enough from their honorarium as teachers and from the lodging fees of the scholars. This goes to prove that farming, provided with the appropriate techniques, generates income; that indeed there is money in agriculture.

Bringing in technologies and promoting farming in the war zones did not just convey peace and non-formal education and eliminate hunger in the conflict communities that committed to do so. More than that — family groups have been uplifted and strengthened.

The endeavour has served as an avenue for achieving peace, addressing hunger, providing education and alleviating poverty in certain farming communities in Mindanao. To date, the programme is assisting 12 leaders, of whom 10 are commander returnees while two are still active rebels who have been encouraged to join the programme. They need not surrender their firearms; the only thing asked from the rebel returnees and rebels who wanted to be part of the programme is their change of heart — a heart committed to farming and not to warfare. In a dialogue, the rebel returnees convinced by the intervention have expressed their commitment to the goals of the programme in promoting

Image: ATI-RTC 10

Commander Ismael demonstrating rice technologies to his villagers

Image: Renelle Joy Tabinas

Youth scholars and villagers fishing in Commander Aga's tilapia pond

Image: Renelle Joy Tabinas

'Kuya' (an older brother) showing his little brothers how to catch fish using a bamboo fishing rod

development through agriculture and fishery. They have surrendered their hearts so that the idle lands they own, which used to be camps, will become productive, and the returnees themselves will become effective leaders, farmers and eventually agriculture entrepreneurs in each of their communities.

As taught to them by the Director Saliot, going into battle is never the answer to overcome poverty. They may still be able to hide from bullets but they can never run away from hunger. Thus, cultivating their soils and vast land areas is the ultimate solution to their never-ending cries. The former rebels have also considered the future of their children. They no longer want to see their young boys handling guns and hiding up in the mountains experiencing the same anxiety as they have. Education is the primary desire of Commander Benjie Lucsadato for his children, and is among the reasons why he turned away from rebellion. "It is not only feeding our stomachs, it is also feeding our brains," he said. At present his children, together with other out-of-school youth, have undergone the capability and skills trainings administered by ATI while some are among the scholars of the agency's ladderized programme.

Since its conception in 2012, 10 commander returnees and two active ones, with their followers, have joined the From Arms to Farms programme. Among the 12 leader partners, three are already farmer lecturers currently providing assistance and technology demonstrations to their people including out-of-school youth scholars. The assistance greatly contributed to how they now operate in the fields. Vermicompost areas were constructed, tilapia ponds cultured in the uplands, and diversified commodities grown in the vast tracks of land which used to be their base camps. The farmer rebel returnees also learned about raising livestock and poultry, and feeding them organically. It was proven that the natural way of growing crops and raising animals without the use of any chemicals is the best alternative. Aside from being affordable, families are assured that they are consuming healthy and safe food.

By introducing the farming technologies, the ingenuity of the Agricultural Training Institute has strengthened not only farming families but also the communities covered by the respective MILF camps of the Maranao groups. Battlefields have been cultivated to become rice fields and the rebels formerly armed with heavily calibrated guns are now cultivating with their hoes, planting crops and making a living out of their farms.

Farming has indeed come a long way in addressing peace, hunger, poverty and education in certain Maranao groups in the rural communities of Southern Philippines. Reaching out to them and empowering people in the highlands is the sole intent of the programme. ATI continues to pursue interventions for the betterment of the lives of Filipino farming families and rural communities, including the rebels in conflict areas. With the present administration's aim of inclusive growth, even former rebels can become productive farmers; war zones can become greener fields, and weapons can be replaced with tools for farming.

It is hoped that through the programme, other rebel communities will be encouraged to follow in the steps of their brothers and engage in farming. Setting as examples the surrender of hearts by the commanders-turned-farmers and lecturers, other families and communities in the rural areas of the Philippines have distinct chances to be uplifted through devoting themselves to farming.

Empowering Uruguay's family farmers

José Olascuaga, General Director, General Directorate for Rural Development, Ministry of Farming, Agriculture and Fisheries, Uruguay

It was a pleasant August afternoon in the south of Uruguay where, by the end of winter, the days are sunny and warm but a little windy. Don Oscar had begun his working day early in the morning. He woke up at 4 a.m. and, after drinking mate[1] beside the stove, he had milked the cows with his eldest son, Julio. Don Oscar's wife, Mariana, had fed the calves and washed the entire milking parlour.

That day, after taking the cattle to the grassland, Don Oscar and Julio worked to prepare a piece of land for the next corn crop. In the morning a tanker from Conaprole, the National Cooperative of Dairy Farmers,[2] had picked up the milk later than usual while Carmencita, the youngest member of the family, left for school on her bike, carrying her ceibalita[3] laptop in the school bag Mariana had lovingly prepared for her. The rural school, attended by 15 children, is 2 kilometres away from Carmencita's home on a secondary road. When she was younger her mother had to take her there.

It has been 25 years since Don Oscar and his family took on a farm of 150 hectares that belongs to the Instituto Nacional de Colonización,[4] a public institute that provides land to family farmers in Uruguay. Even though they have overcome many issues, hard work, accomplishment and discipline remain constant in their lives. Dairy production, the main source of family income, requires the collaboration of the whole family. This is real team work that has to be done every single day of the year, no matter how cold it is in the winter or how hot the summer days become. Mariana is a key person in this team. She helps Don Oscar with planning the general tasks of the farm, she does the housework and she breeds the calves and poultry. Julio wants to continue his life in the country and has recently graduated as a Farming Technician from the Universidad del Trabajo del Uruguay (Public Technological University of Uruguay). This has enabled the family to incorporate modern farming technologies more easily, and they have started new complementary activities such as horticulture and bee keeping.

On this particular afternoon, Don Oscar and Julio attended the birth of a heifer which happily developed without any complications, leaving both the calf and its mother in good health. After that, while they were listening to a football match

Image: Ministry of Farming, Agriculture & Fisheries, Uruguay

Governmental support and educational opportunities allow farming families to incorporate modern farming technologies and complementary activities

on the radio, they inspected and adjusted the water pump and all the pipes related to the water distribution for troughs in the grazing areas. This system, which was installed two years ago with governmental support, has improved dairy production as well as enabling the family to reduce the amount of manure in the waiting room and the milking parlour. Adjusting the equipment was therefore an important task to keep the mechanism in good working order.

Afternoon milking time was approaching, and while Don Oscar was preparing the parlour and distributing the cattle's rations in the troughs, he observed that Julio was hurrying the cows into the waiting corral.

"What's the hurry, mate? Is your girlfriend waiting for you?" Don Oscar asked in a cheerful tone.

"No old man. It's just that I want to finish early so I won't be late for the Sociedad de Fomento[5] meeting," answered Julio.

"And what is the topic for discussion?" asked Don Omar.

"In the Mesa de Desarrollo Rural[6] we were asked to evaluate the public policies put in place for family farmers so far. It's a good opportunity to discuss some things that are not working properly," Julio answered.

"But there has been a lot of progress," Don Oscar replied, and he kept thinking while he was milking.

"Julio is young and doesn't remember the old times, but I do," Don Oscar thought. "Gone are the days in which family farmers were invisible to the Government and their role in food production, as well as their importance in populating rural areas, went unrecognized. Those were hard times, when there was no state intervention with differentiated policies. Now, there are governmental plans that help to improve production, to introduce new technology and to enable easier access to technical assistance, keeping in mind the need to care for the environment and the living conditions of rural people. A Register of Family Farmers was created to ensure that resources properly reach them and the Sociedades de Fomento and cooperatives have been empowered to give better services to their members. Electricity now reaches every corner of the country. Although there are still a lot of things to improve, we must recognize the progress that has been made."

When he finished milking, he said to Julio: "Wait for me, I will tidy up and go with you. I have some things to say in the meeting too."

Image: Ministry of Farming, Agriculture & Fisheries, Uruguay

Governmental plans are helping Uruguay's family farmers to improve production, introduce new technology and access technical assistance

Image: Ministry of Farming, Agriculture & Fisheries, Uruguay

The Government of Uruguay's One Laptop per Child programme means that farm children can learn using a ceibalita, or XO laptop

Image: Ministry of Farming, Agriculture & Fisheries, Uruguay

Dairy production is the main source of income on family farms like Don Oscar's, and requires the collaboration of the whole family

Moving from destitution to self-sufficiency: family farming resilience and food security in Kenya

Dr Johnson Irungu, Director of Crops Management and Tom Dienya, Head of Food Security and Early Warning Unit, Ministry of Agriculture, Livestock and Fisheries; and Esther Musyoka, Monitoring and Evaluation Officer, National Agricultural Accelerated Input Access Programme National Secretariat

Agriculture is the mainstay of Kenya's economy. The agricultural sector accounts for 61 per cent of employment and 25 per cent of gross domestic product. Over three-quarters of Kenya's population lives in rural areas and 61 per cent are dependent on agriculture, livestock, fisheries and related production for their livelihoods. In Kenya's northern regions, pastoralism accounts for 90 per cent of employment and 95 per cent of family incomes.

Over 75 per cent of Kenyan farmers are smallholder subsistence farmers who largely depend on natural rainfall for their farming activities. Owing to many challenges that affect Kenya's agriculture, including climate change and unfavourable weather conditions, inadequate access to finance, low use of recommended inputs, high cost of agricultural inputs, poor rural infrastructure, inefficient marketing systems for farm produce and poor farmer organization, among others, most of these small-scale farmers are poor and vulnerable.

Stella Kosgei, a farmer in Sachangwan location, Molo subcounty, Nakuru County is a successful farmer who was once a typical small-scale subsistence farmer, farming solely for household consumption. But through hard work and a desire to move out of poverty, Mrs Kosgei has managed to change her family's livelihood through farming to become a shining example of adaptive resilience from unproductive to high-return agriculture; she shares her joy through the following story as captured by the area agricultural extension officer, Ernest Githinji.

It all began in May 2011 when Mrs Kosgei was selected to be one of the beneficiaries of a government-sponsored, pro-poor, voucher-based farm subsidy programme known as the National Agricultural Accelerated Input Access Programme (NAAIAP). Established by the Government of Kenya in 2009,

Image: NAAIAP

NAAIAP's primary objective is to improve access and affordability of the key agricultural inputs needed by millions of resource-poor, smallholder farmers

Image: NAAIAP

NAAIAP helps poor households break their poverty cycles through the adoption of intensive, business-oriented farming systems

the primary objective of NAAIAP is to improve input access and affordability of the key agricultural inputs needed by millions of resource-poor, smallholder farmers. In so doing, the project aims at helping poor households to kick-start their asset-deprived farming systems and break their poverty cycles through the adoption of intensive, business-oriented farming systems. Overall, NAAIAP is implemented within underdeveloped rural settings that are dominated by poor and vulnerable communities. According to the programme national coordinator Rose Mwangi, what makes the NAAIAP concept very special is its fabled beneficiary-selection activities. The starting point is the criteria for selecting the implementation site. The stringent measures include a requirement that the place must be inhabited by a poor farming community with a poverty index above 30 per cent; no history of government-support programmes over the last decade; inaccessibility of basic production assets and other essential rural infrastructure; and very low agricultural productivity of less than a quarter of the national average.

As a pro-poor targeted programme, the criterion for selecting the beneficiaries is equally rigorous. First, the target beneficiary must be a subsistence farmer who is unable to procure required farm inputs on their own. Secondly, the farmer must have at least half an acre of land available for maize production, which is the commodity used as a crucible for changing the farmers' livelihoods. During selection, preference is given to households headed by women or children households. The other factors for a household's selection include demonstrated evidence of vulnerability, the household head being a person with a disability or infected by the HIV/AIDs virus, and the household's willingness to change through the adoption of intensive farming based on a sustainable business model. To ensure the utmost transparency, the ultimate beneficiary must be brazenly vetted and approved by the community leaders in an open forum (known locally as a Baraza) with members of the community as witnesses. To NAAIAP beneficiaries, the word 'vulnerable' has a second meaning: undo vulnerability.

Image: NAAIAP

Beneficiaries of the programme are able to apply the knowledge they gain and become local trainers for their community

Mrs Kosgei became a NAAIAP beneficiary through a quirk of fate. Initially, she had applied to be a NAAIAP beneficiary but fell short of the project's meticulous criteria. But her house happened to be the home of Johnston Yegon, who had become disabled through a grisly road accident and therefore could not provide for his young family of a wife and two children. Mr Yegon, a distant relative of Mrs Kosgei, is the one who was initially selected by the community leaders to be the NAAIAP beneficiary. And so when Mr Yegon was called upon to receive his farm inputs voucher by the NAAIAP team during the project launch, it was Mrs Kosgei who turned up to receive the voucher on his behalf. The knowledge that Mrs Kosgei's household accommodated Mr Yegon facilitated the crafting of a secondary condition: Mrs Kosgei's household would use the subsidized inputs in line with the NAAIAP approach and pass over part of the gains to the Yegons. The only danger this arrangement carried was that of a mixed reaction among local leaders who defined the last vetting lines. But after the leaders gave a no-objection nod to the arrangement, Mrs Kosgei never looked back.

When Mrs Kosgei received the farm inputs package, she vowed not to join the bandwagon of those willing to cross the river without getting wet. Recalling her household's situation before she became a NAAIAP beneficiary, the harvest of a meagre seven bags of maize which, as the best she ever received from planting 1.5 acres of land, was far below the area's potential yield of 25 bags per acre. "Due to lack of resources and knowledge, I used to plant maize seeds recycled from the store and did not use any fertilizer," said the farmer on being questioned about low yields.

In the 2012 long rains planting season, Mrs Kosgei received her Kilimo Plus (Inputs Grant) starter kit comprising a 50 kilogram bag of Basal fertilizer (DAP), 50 kilograms of topdressing fertilizer (CAN) and a 10 kilogram bag of certified maize seed (H614) worth a total of KSh8,000 (about US$9). From her Merry-go-round social group, she borrowed a further Ksh5,000 to plough and plant her 1 acre farm using the NAAIAP inputs. After planting, Mrs Kosgei joined other NAAIAP beneficiaries to undertake training on

Lessons learned

1. Social protection programmes targeting poor and vulnerable community members can work if targeting is rigorous and involves the direct participation of community members.
2. To succeed with inputs subsidy programmes, the beneficiaries should be willing to learn and comply with the recommended agronomic practices including the correct use of inputs in raising productivity per unit of land.
3. There is value in applying technical knowledge gained through trainings and graduating the beneficiary to become a local trainer for the community members.
4. Most small-scale farmers are trapped in a poverty cycle because there are no sufficient social protection programmes. Several smallholder, poor farmers in Molo are yet to get NAAIAP assistance because of inadequate funds available for project expansion.

Image: NAAIAP

The programme uses maize to change farmers' livelihoods

'farming as a business', and attended a field demonstration on maize agronomy and field management practices that was conducted by the local extension officer with facilitation from NAAIAP.

The onset of the 2012 long rains was timely and Mrs Kosgei's maize, which was planted by the third week of March, took off with a splendid tempo. By the fourth week of April, however, the rains stopped suddenly. This happened despite early predictions of good weather by the national meteorological department. "In the last decade, we have suffered a series of unreliable rainfall," decried Mrs Kosgei when she went to the NAAIAP local coordination office to enquire about her fate and the predicament that the extension office attributed to climate change. Sympathetic with her situation, the NAAIAP team toyed with various options, the best being that of insuring the 1 acre of maize in order to recover at least the cost of invested inputs should the crop fail completely. Unfortunately, however, the insurance option was untenable because of a lack of relevant crop-based insurance service providers. An insurance consortium known as UAP-Syngenta was the only one in the country that offered a weather-based index at that time. Unfortunately, Molo division where Mrs Kosgei farmed was not covered by this insurance service.

The unpredictability of the weather, however, turned out for the better in the following months of May and June 2012, which enabled Mrs Kosgei's maize to recover though not to fullness. By the end of the second week of May, Mrs Kosgei was able to complete her second weeding, which she followed soon after with top-dressing and the application of pesticide to manage stem-borer, a common maize pest in the region. By the end of the season, Mrs Kosgei managed to harvest 18 bags of maize from her 1 acre piece of land. According to the area extension staff, this yield represented 72 per cent of the potential maize yield in the division, which is about 25 bags per acre. According to Mrs Kosgei, however, this was the highest maize yield she had ever realized. "This is my greatest joy. I have discovered that using the right inputs at the recommended rates really works," remarked a cheerful Mrs Koskei as she proudly displayed her maize harvest to local extension staff who visited her soon after harvesting.

Post-harvest loss is one of the major problems that blight smallholder farmers in Africa. In Kenya, for example, the national maize post-harvest loss is estimated at 10 per cent, with common losses emanating from poor storage, pest and rodent damage as well as discolouration and rotting due to poor drying. Equally significant is the Aflatoxin menace which is a challenge when rains come during the harvesting period.

To contain post-harvest losses, Mrs Kosgei attended further training on cereal storage and post-harvest management practices that was conducted by the World Food Programme in conjunction with the Cereal Growers Association (CGA), to which Mrs Kosgei enrolled as a member. The CGA is an umbrella body for cereal farmers that was formed with the objective of empowering farmers and championing their rights. It also helps farmers to market their produce.

With good post-harvest management and agribusiness knowledge, Mrs Kosgei stored seven bags for family consumption and sold six bags to generate Ksh18,000, which she used to pay school fees for her daughter in a nearby secondary school. Later, she sold the remaining five bags at a much better price and raised Ksh17,500 which she used to hire an additional acre of land and procure certified maize seed and fertilizer to plant in the following season. Commodity marketing is a major challenge among smallholder farmers in rural areas. According to Mrs Kosgei, most farmers sell their commodities cheaply to brokers and thus remain poor because, first, the farmers have no proper plans and means to manage pressing family financial needs. Secondly, most farmers lack appropriate grain storage facilities. Lastly, most farmers have not joined farmers' associations that help poor farmers gain market knowledge in addition to access to negotiated credit.

By the start of the fourth planting season in March 2014, Mrs Kosgei's family had broken the poverty trap to become successful medium-scale farmers in Molo division. She now uses 7 acres of land under maize production, with estimated annual gross income of Ksh 350,000. On her farm, she now employs one permanent and six casual workers. She has opened a bank account with Equity Bank in nearby Molo town. To finance her farming activities, Mrs Kosgei now gets a farming loan from Equity Bank. During 2014, she borrowed up to Ksh105,000 to support various farming activities. Further, Mrs Kosgei is now a role model and uses part of her farm to educate other smallholder farmers on the best methods of maize cultivation and post-harvest management. She intends to enter politics during the next general election as a Ward Women Representative. Mrs Kosgei is forever grateful for the initial small support she got to start her off. She continues to support Mr Yegon whose initial voucher was the pathway to her family's prosperity.

Versatility as strength in Finnish family farming

Petteri Orpo, Minister of Agriculture and Forestry, Finland;
with Nilla Möller, Annukka Lyra and Kati Leppälahti

Family farming has brought many opportunities and benefits to Finland's society. The base of Finnish farming lies on small and mid-sized farms that are often family owned. Finland has a unique geographical profile with arctic climate conditions, vast forests and numerous lakes that characterize and define the farming models. Due to that, and for historical reasons, Finnish family farming is a source of innovations in combining sources of livelihood — such as tourism, bioeconomy and forestry — with family farming. Family farming in Finland boosts local economies by being versatile and innovative.

Finland is an arctic country and the most northern agricultural country in the world. The population is around 5.5 million and it is the eighth largest country in Europe with an area of 338,424 square kilometres. The growing season is short; in southern Finland it lasts 160-190 days, and in the north 110-150 days. The temperatures vary a great deal through the year, and the highest and lowest temperatures range from +30 to -30 degrees Celsius. Cold temperatures and night frost in both early and late summer shorten the growing season. In northern Finland the summer has a period of nightless nights, when the sun does not set at all. However, the plants cannot take full advantage of the warmth accumulated over the long day. Adverse climate is a serious handicap for animal husbandry as well. Because of the arctic conditions with the long, cold winter, the building costs of livestock buildings and warehouses are high. Additional costs are created by the short pasture season, heating and insulation, and storage of feed during winter. Cold conditions also have some advantages for agriculture, as many plant diseases and pests don't survive over the winter.

On the European scale the country's average yields of arable farming are very low. Almost a quarter of Finland's area is covered by water and 86 per cent of the land area is

Image: Marianna Lattinen

Petteri Orpo, Minister of Agriculture and Forestry: "Family farming in Finland boosts local economies by being versatile and innovative"

covered with forests. Only 8 per cent of the land is farmland, and it is difficult to create larger uniform arable areas within this. Not only do the vast water areas and forests patch the land into smaller entities, but also the soil type determines various aspects of the production structure, such as the size and shape of the land parcels and their distance from farm headquarters. The scattered location of parcels causes extra costs and makes it difficult to increase the farm size. That is often an obstacle for farms to increase their profitability. It has caused family farmers to seek livelihoods in other business activities. Most Finnish farms are already in forestry as well as farming, and diversified farming is getting more popular. Over 30 per cent of farms practice other gainful activities in addition to agriculture.

Small and plenty

Finnish agriculture is based on family farms, characterized by a large number of relatively small farms. The number of farms was at its highest level during the 1960s. Since then the number has fallen rapidly, mostly due to urbanization. Since Finland joined the European Union (EU) in 1995 the number of small farms has decreased significantly. The amount of land used for agriculture has been at a stable level for a long time. In 2013 it covered 2,283,300 hectares.

In 2012 there were 58,607 farms in Finland. During the years 1995-2012 the amount of farms decreased by over 38 per cent. Meanwhile farms that have received support payments have increased in size by almost 70 per cent: from 22.8 hectares of farmland to 38.6 hectares. In 2013, only 2.5 per cent of Finland's farms were big farms, with over 150 hectares of farmland. However, the size of farms keeps growing. Nine per cent of all farmland is organic agriculture, and organic farms tend to be slightly bigger than other farms.

Agriculture provides full-time employment for 78,000 Finns, which is 3.1 per cent of the workforce. The amount of family members participating in farm work is significant: in 2010 it was 48,706 people. Labour that has been employed outside the family accounts for only 2,963 people in the entire country. Due to the trend of growing farms, the use of employees is also growing.

Over 30 per cent of farms practice other gainful activities besides agriculture. These are often small businesses, part-time or seasonal activities. The work is done mostly by the families, but it also has employment effects. Many of the businesses that have expanded their activities outside farming are active in the service field, food-related businesses or in machinery engineering. The rising popularity of local food has enhanced the success of small food companies. Many Finns are willing to pay for clean, locally produced food because they know the producer and the production conditions. The trend of local food is beneficial for family farms, and consumers value ethical food that is family produced.

Traditionally farms have also had forests, which have been an important addition for the economic stability and welfare of the families. Forest income is commonly used to finance farm investments. Family-owned farms, as well as other private forest owners, also make an important contribution to the Finnish economy through forest management. The forest industry is a major contributor to well-being in Finland and approximately 80 per cent of Finnish wood used by the forest industry comes from privately owned forests. The value of forest industry exports accounts for approximately 20 per cent of all Finnish exports.

Image: MMM/MAVI/Yrjö Tuunanen

Supporting the generation shift in farms is crucial – without it, many young farmers would not continue their parents' work

Image: Ponsse Oyj

Forests are a traditional source of income for family farmers. New innovations in bioeconomy, such as forestry, boost the local economies

Image: Sampo-Rosenlew´s archive

It is vital to have appropriate machinery to manage the growing size of family farms in Finland

Today, forests have also gained value as a source of bioenergy. About 80 per cent of Finnish renewable energy comes from bioenergy. Biomass entrepreneurship has become a new business model for farmers, supplying typically local customers with energy produced from wood fuels. Wood is a very useful commodity; it can be used to replace non-renewable materials and fuels.

The possibilities in bioeconomy are remarkable. The green economy creates vast opportunities for farms and creates new kinds of jobs and businesses in the rural areas. Farms are being encouraged to invest in bioenergy production and new bioenergy businesses are supported.

It is expected that innovations in the bioeconomy field will boost sustainable development, employment and competitiveness in the rural areas. By increasing energy efficiency we are also increasing the profitability of agriculture and reducing emissions.

The service sector is another rising business combined with family farms, especially tourism. Rural areas that are close to cities or tourist areas, such as ski resorts, profit most from the different kind of services that farms and farmers can provide to visitors. Finns highly value the clean natural landscape, and this offers many seasonal activities — not to forget Lapland and Santa Claus — both to Finnish and foreign tourists.

The tradition of cooperation is strong in the rural areas and there are numerous networks among local entrepreneurs. For example, cooperation between a local food producer and a tourism entrepreneur brings them both benefits. Also, online shopping has opened a wide market for small-scale producers.

Policies supporting family farming

Finnish agriculture's competitiveness is supported as a part of the EU agricultural policy. These supports have made it possible to enlarge production volumes and to modernize production. For example, an increasing amount of dairy cattle are kept in loose housing where they can move around freely. Finnish rural development is based on local needs.

The average age of a Finnish farmer is now 50.7 years. The number of farmers under the age of 35 has decreased, but the support given to farms in the process of generation is aimed at keeping young farmers involved in agriculture. According to many studies the support given to farms is significant in developing activities and changes. Supporting the generation shift in a farm is crucial. Up to 40 per cent of applicants for this support would not have continued their parents' work on the farm had there not been support. This support has lowered the average age of farmers. A fifth of new generation farmers are women.

Image: MMM/Mäivi Martina Motzbauchel

It is important to leave behind an environmentally sustainable and competitive farm for the next generation

Enhancing transparency and food safety

Finnish food safety is of top international standard. This has been achieved by serious, long-term and comprehensive efforts involving actors in the food chain, public authorities and scientists. Maintaining the high standard calls for constant updating of the food safety systems and proper crisis preparedness.

Quality thinking throughout the food chain is one of the core strengths of the Finnish food sector. Quality starts on the farms, with farmers widely attending voluntary quality programmes, and covers the whole food chain.

Maintaining food safety obviously costs money. The Finnish Food Safety Authority Evira[1] estimates that entries relating to own-checks alone cost the food business operators about €188 million a year. The annual costs of municipal food control are about €26 million and the costs to the state are about the same.

A high standard of food safety is, however, far less expensive than paying for the costs that would result from people or animals falling ill and loss of the special competitive advantage of the Finnish food chain. Compared to the total annual cash flows of €24 billion in the agriculture and food sector, the costs of ensuring a high standard of food safety are very low.

Farms that sell their own products are becoming more common. When consumers buy Finnish eggs, berries or vegetables from a local producer they can be sure that they are safe and have no harmful bacteria. Consumers are also interested in knowing where the food comes from, how it has been produced and where it has been before it arrived in their hands. For that purpose, different kinds of coding system have been developed for different products. Eggs, for example, have an EU coding that tells how they were produced and the farm they came from. Similar kinds of national voluntary coding systems are used in meat products.

A characteristic of Finnish food production is that it is done on family farms, with dedication and professional pride. Farmers want to tell consumers about their product and consumers appreciate the openness and safety this creates.

The next generation

Almost all Finnish farms (90 per cent) have committed to environmental activities in a programme for developing rural areas. Farms are owned by the same family for decades and therefore it is important to leave behind an environmentally sustainable and competitive farm for the next generation.

In a recent study by the Finnish rural newspaper M*aaseudun tulevaisuus*,[2] Finnish farmers see their future increasingly on diversified farms. They want to invest in production quality instead of quantity and to focus on the well-being of animals. The interviewed farmers dream of a modest sized farm, where they can practice farming according to their values.

Croatia: promoting and supporting family farmers

Tihomir Jakovina, Minister of Agriculture, Croatia

Croatian agriculture has come a long way, emerging from the closed system and market of the former Yugoslavia to become integrated into the common market system of the European Union (EU). During this time there have been a lot of changes in Croatian agriculture. Today there are between 180,000 and 200,000 family farms from which, depending on the year, around 95,000 are under the subsidies system.

In terms of land ownership, Croatian agriculture and rural areas are still characterized by many small plots with an average of 5.7 hectares per farm. This is still not enough for competitive agricultural production.

The process of coming out of the previous socialist system and into the market economy has brought many problems to Croatian producers, and agricultural policy did not encourage the expansion. The most important reason for that was that the Government is the biggest owner of agricultural land, with other small, private parcels of land divided between many owners. Croatia joining the World Trade Organization and the EU Single Payment Scheme has resulted in some processes being introduced, but these are still not enough to ensure competitive and developed family farms. On the other hand, for some agriculture producers the idea of joining cooperatives still holds negative associations with the socialist period and a 'must join' attitude. Efforts to encouraging the consolidation of agricultural land as the basis for competitive production began a few years ago, and the Government has tried to change limiting factors through legislative solutions over the past two years. The Law on Agricultural Land and the Law on Land Management will accelerate consolidation, especially for livestock breeding, a sector which is in an unenviable position in Europe.

The Ministry of Agriculture has prepared these two laws, which have passed extensive public discussion and gained

Image: Minister of Agriculture, Croatia

Croatian wines are recognizable across the world, and the combination of wine, food and tourism is becoming a Croatian brand

the support of farmers who believe that these two parallel processes could start a new trend of consolidation. For example, in Croatia there are still family farms that cultivate the land on 20-30 different pitches, often 30-40 kilometres apart. Imagine how much hard work that takes, and how much is lost to the competition. Farmers' interest in land is huge, but for many farmers the earth is a necessary evil. A large number of farmers are now forced to buy food for their cattle. They cannot become more profitable, while on the other hand changing the incentive system in the EU means losing those privileges that they had — the special support and additional national benefits for the maintenance and survival of this important agricultural sector. Ministry of Agriculture analysis found that about 100,000 hectares of land needs to be assigned to livestock production by mid-2015, while it is still possible to sign a new right to payment for farmers under the new Common Agricultural Policy (CAP) subsidies system. Because of this, the Agency for Agricultural Land is working to intensify tendering procedures and simplify applications so the job can be completed within the set deadline.

Croatian farmers pin their hopes to the ordered system of the CAP, which should help them to stimulate investment cycles in rural areas, primarily through Pillar 2 — rural development. As an EU member state, Croatia has at its disposal €423 million a year for the first system of direct aid, and about €300 million for the second pillar, rural development. During the summer, the Ministry of Agriculture has prepared a Croatian model of support that is compliant with CAP rules. Through this, Croatia aims to maximize protection of sensitive sectors such as livestock and fruit and vegetable production. There is huge potential for the development of fruit and vegetable growing and for stimulating the transfer to manufacturers for chopped cereal production for the cost-effective production of fruit and vegetables. In addition, there is enormous potential for growth in exports, as well as in tourist spending, since in recent years Croatia has achieved tremendous growth in tourism and is becoming one of the most sought after tourist destinations. In addition to the first pillar of the CAP, Croatia has high hopes for rural development.

By the end of 2014, Croatia should get the 'green light' for the €323 million Programme of Rural Development. This programme will encourage projects in rural areas, with an emphasis on young farmers.

Official records say that over 50 per cent of all agricultural land in Croatia is owned by elderly family members (over 60 years old). This is a limiting factor to the faster growth of agriculture. Low levels of education and an elderly model of farm business conduct necessitates a fast transfer of ownership and the stimulation of young educated farmers to take a modern approach to farm management.

During the International Year of Family Farming, the Ministry of Agriculture is working with the Croatian Association of Young Farmers to organize a series of events that show that Croatia has is a huge number of young, educated farmers willing to change and rapidly adapt to global trends. Young Croatian farmers want to encourage farmers' education in the countryside, and by the end of the year they plan to encourage education in regional centres to help as many young people as possible join their organization and forge links with producer organizations and cooperatives.

Image: Minister of Agriculture, Croatia

The flavours, fragrances and beauty of Croatia have made it a recognizable culinary destination

Image: Minister of Agriculture, Croatia

Croatia has one of the most important fisheries sectors in the Mediterranean

During one of these events, the Croatian Prime Minister and Minister of Agriculture visited several young farmers' farms, and spent the whole day with them to get important information about what they want and where they see Croatian agriculture in the future.

Young farmers are linked with their counterparts from other EU countries and are preparing projects for rural development. They monitor everything that happens on the global market and expect the state to start the important process of transfer of ownership of family farms from the old to the younger generation. They have great expectations of the EU to encourage this process, and they think it important that the banking sector strongly encourages young people to enter into this business with favourable credit arrangements. With the strength of the young and support from the EU budget, in the next decade Croatia could become a good example of how agriculture progresses when the young take the lead.

Apart from this reform policy, the other way forward is to join together. Former models of agricultural product sales on the Croatian market and in export have shown that small producers cannot sell their products independently. Big retail chains dominate the market which is not ready to repurchase small quantities of products. It has been noticed that in a farm-to-table chain, the integral part which links producers with retailers — cooperatives, clusters and product organizations — is missing.

As mentioned above, Croatian farmers still have negative connotations from the past with these associations, as they were once forced to join. Today's global movement is compelling them to change their way of thinking and the establishment of numerous cooperatives and producer groups is expected soon, especially in the fruit and vegetable sector and in the production of authentic Croatian products. The CAP encourages more fruit and vegetables, but it is a prerequisite that the producers are affiliated. For this reason Croatia, during the summer, launched an awareness campaign to encourage the process of association to be put in place as soon as possible.

Today, Croatia is a part of the European community and offers a variety of authentic products — perhaps not yet recognized on a wider European market but with big potential through tourism — as one of the major sectors of the country's economy. Every tourist who visits Croatia will enjoy village farm products such as vines, olive oil, mandarins and Slavonian kulen. It is hoped that most of the food produced in Croatia can sell itself through tourism. In that way, Croatia can become recognized throughout the world and reach out to the consumers outside its borders.

Over the past 10 years, Croatia has invested a lot of money in wine and grape production, and now there are recognizable Croatian wines on the world wine industry map. The combination of wine, food and tourism is something that becomes a Croatian brand. The enormous growth of tourism and the fact that Croatia has become one of the top tourist destinations confirms that the sector still has room for growth and development. Wine roads, fine wine cellars, restaurants and beautiful scenery have become the subject of numerous international travel magazines, and many television companies that have visited these places in Croatia have been amazed by the blend of flavours, fragrances and beauty.

Through tourism, Croatian food becomes recognizable. Visitors in Istria or Dalmatia are always impressed by the taste and quality of olive oil, for example, or of cheese produced from the milk of cows and from goats walking freely on the islands. Croatia has no shortage of beautiful and important

Image: Minister of Agriculture, Croatia

Olive oil is among the village farm products enjoyed by visitors to Croatia

food-producing areas, such as the region of Slavonia which has won visitors over with its sausages and other delicacies.

Croatia already has 16 nationally protected local products, all of which have been submitted for protection in the EU. This list of products is expected to expand each year, with the producing areas becoming recognizable culinary destinations through tourism and the involvement of young people in agriculture. Croatia's fisheries sector should certainly be added to this list. It is one of the most important fisheries sectors in the Mediterranean. It can be seen through its tuna exports to Japan that Croatian fishermen are connoisseurs of their craft, representing the country with the best of gastronomic products.

A large part of the food produced in Croatia is sold through tourism, and in this manner Croatian products have the best marketing so they become recognizable worldwide. Croatia is a small country that does not have the ambition or the potential to become a mass producer of food, and the global market is struggling with large countries. It is a strategic objective of Croatia to be recognized as a specialist in the production of products which Europe and the world increasingly demand, and as a producer of distinctive flavours, aromas and quality. While it is impossible to achieve volume production for huge export, it is a known fact that Croatia has one of the biggest food companies in this part of Europe, which is increasingly exported. Croatian farmers — family farms — are increasingly tied to its manufacturing industry, to encourage the production of value-added products that bring more money and a better life. Today is safe to say that Croatia, through its different regions of Slavonia and Baranja, through the Mura region, Lika and Gorski Kotar, Istria and Dalmatia, has a huge number of different products that are becoming increasingly specialized and profitable.

Although Croatian family farms are still small, they have a power that can be recognized. This has been shown during the celebration of the International Year of Family Farming, in the country's project to select the best family farm. This award was called 'Gold worthy', because food is gold and it is produced by worthy people.

It is hoped that this award will become a Croatian Agro Grammy or Oscar. The project was launched in collaboration with the biggest media house in the country and more than 100 family farms. Some 21 stories about nominated farms — one in each Croatian county — were published during August in the highest circulation daily newspaper. Media interest in these stories was huge, showing that Croatia has something to be proud of and that Croatian citizens have reason to believe in their food producers and in buying directly from their farms/estates and small stores.

In its own way, the award produced a new image of Croatian agriculture and small producers who, through their stories, told of a job that is difficult, lasts all year and affords no rest, but that is done by hardworking people who enjoy what they do and, thanks to their energy and enthusiasm, can maintain life in the countryside. It would be good to see this selection spread to other countries of the EU to show the beautiful life stories of small farmers. Small farmers do not have huge budgets for advertising and marketing, but they have the toughness and heart to produce high-quality products, to struggle courageously with global trends and believe that life in the countryside is something worthwhile that ultimately provides a quality of life far better than in the big cities. Croatia is proud to mark the International Year of Family Farming by showing the best of Croatian rural life, and to promote and support its small producers at all times.

Supporting young Australian farmers to support and feed the region

Georgie Aley, Chair, Future Farmers Network

Family farming is the lifeblood of Australian agriculture with an estimated 90 per cent of Australian farms owned and operated by families. Australia has a rapidly ageing population and agriculture is not immune to side effects associated with the shift in demographics.

The International Year of the Farming Family is an opportunity for Australia to look at the contribution family farms make within Australian society, to prepare for the future opportunities and to develop strategies around barriers or threats to ensure the realization of these opportunities.

Future Farmers Network (FFN) is Australia's only national youth agriculture organization to support young people aged 16-35 years through education, advocacy and communication as they develop their careers in the industry. Here the network reflects on some of the opportunities and challenges facing family farms in Australia, especially through the lens of young farmers.

One of the opportunities Australian agriculture has now and in decades to come is to be a preferred supplier to Asia. A strong appetite and demand for Australian produce and fibre from its Asian neighbours, as they look to feed and clothe their growing populations, provides a tremendous growth opportunity for current and future farmers, as articulated by an FFN New South Wales member in a recent FFN attitudinal survey: "There is plenty of opportunity within the primary industries, global opportunities, given the impacts of rising middle classes in South-East Asia, rising demand for protein consumption and furthermore a greater consumer knowledge of their food and where it comes from — particularly in niche markets, such as organic and low food kilometres."

In order for the next generation to take full advantage of these opportunities, government, industry and farmers need to work on solution-based approaches to some of the current issues impacting on family farms such as succession planning,

Image: Future Farmers Network

Australia's current and future family farmers face great opportunities in the very near future

continuing to build thriving regional and rural agricultural communities, and making sure that the cultural divide between city and country areas of Australia is closed while ensuring that metropolitan-based Australians have a good and correct perception of the Australian agriculture industry and the contribution it makes to the country.

Handing over the family farm

One of the major issues the ageing population brings with it for family farming is successful secession planning of the farm from one generation to the next. Succession planning and successful implementation remains a major barrier to retaining young people in agriculture. Making sure these family farms are financially viable and finances are managed correctly is another key factor.

The attitudinal survey revealed the vast majority of FFN members (90 per cent) indicated that being able to afford the services of a succession planning and financial management consultant was their main barrier in undertaking planning. The membership agreed that government assistance to make the provision of these vital business services attainable is essential.

"My grandfather's farm is currently being torn apart by a very long and unsuccessful succession planning process. Help is needed in the areas of planning for succession before it is needed to be implemented. Also maybe we shouldn't talk about it as succession planning as I think that scares my grandfather, maybe just call it future planning as that's what it is and that to me sounds like a much simpler and easier task to do," said one FFN Queensland member.

"It [government assistance] would encourage more families to participate in succession planning, which as we know is integral in achieving the farm being passed onto future generations and managed in a successful way that fulfils all family wishes," said an FFN New South Wales member.

FFN has recommended to the Australian Government that through the Department of Agriculture, it should create a succession planning programme, aimed at helping to finance family farms to implement succession planning as the farm transitions from one generation to the next. This would help to ensure the next generation of Australian farmers can continue to boost the country's economy through lucrative Asian trading opportunities and build upon the strong operational foundation the generation before them has created.

Building better regional and rural communities

Australia is a sparsely populated nation, with 22 million residents living in 7,692,024 square kilometres, the majority of whom live in capital cities. This means that for the most part, regional and rural towns in Australia are very spread out with small populations ranging anywhere from a few hundred residents right up to 10,000. It is very common for these residents to be hours and hundreds of kilometres away from their nearest capital city.

Geographical isolation brings about certain community issues. However, Australia is combating these issues through trying to build more dynamic and vibrant rural and regional communities. It is focusing on empowering women living in these areas who work in agriculture by ensuring that they have access to health services, particularly mental health support services, and by bridging the divide between rural

Image: Future Farmers Network

Australia is combating the issues of rural isolation by working to build dynamic and vibrant rural and regional communities

Image: Future Farmers Network

Government, industry and farmers need to work on solution-based approaches to some of the current issues faced by family farms

and metropolitan Australia so that those in the cities have an understanding of the agriculture industry and a good perception about the role it plays in Australian society.

Organizations like Australian Women in Agriculture, the Queensland Regional, Rural and Remote Women's Network and the Country Women's Association have helped foster a culture where the role of women and the contribution they make to Australian agriculture is widely understood, accepted and appreciated by the industry. These organizations also help develop and support women in a meaningful way. This is not to say that it has always been an easy journey, but the perseverance of organizations like these has helped find solutions to any issues or barriers faced by women in agriculture.

These organizations also serve a secondary purpose which helps women living in these areas to grow their professional and social networks, helping to reduce social isolation. The Country Women's Association and its members often volunteer at community events, fundraise, and work on local projects aimed at making their community a better place for all of its residence to live in.

As part of the attitudinal survey the FFN membership was asked if they believe they live in a vibrant regional or rural community. The majority (65 per cent) indicated that they did, while also noting that building vibrant communities does not happen by itself, it takes the work of the community to remain active, put on events and be welcoming to newcomers.

"We have a busy little community that is very welcoming to newcomers, especially since we have a large international/backpacker/grey nomad workforce who comes through twice a year to help harvest fruit. We are pretty lucky to have a lot of hard working community members," said an FFN New South Wales member.

Another member of FFN New South Wales said: "Walgett is the strongest community I have ever lived in — everyone gives 110 per cent, is willing to help out and very vocal on farming issues and just generally gets things done. They have a very strong art group, rugby committee, sports, and a very strong agricultural community. It's incredible what you can get involved in here and where it will take you."

There are of course other regional and rural towns which are not vibrant and where people suffer from social isolation. In this regard FFN and its members believe that the Federal Government has a support role to play in the provision of better services to regional and rural Australia. That includes better infrastructure, greater access to health and education services, and support for existing community clubs and initiatives.

The strength and determination of regional and rural communities is demonstrated best whenever they are faced with uncertain times including long periods of drought. Without consistent rainfall these communities literally dry up. The consequences of this are often devastating to many farmers and their businesses and when entire towns are facing these issues, living in agricultural parts of Australia can be extremely difficult. However, by residents using their networks and looking out for one another, many of these affected communities have been able to survive and ultimately prosper in the tough times and get through it together.

Australia is fortunate enough to be in a financial position to offer drought assistance packages to affected farmers. In recent

Image: Future Farmers Network

FFN is Australia's only national youth agriculture organization to support young people as they develop their careers in farming

droughts these packages have extended to the provision of mental health services being made available to those community members who need them to get through the drought. Australia recognizes that a balanced approach of finance and service provision is needed to maintain the best outcomes for communities that are affected by natural disasters.

Changing the city view of agriculture

The way metropolitan Australia thinks of and perceives people working in agriculture remains a dominant issue for young people entering and working in the industry. FFN members' main concern as part of the recent survey was that people living in cities had no idea where their food and clothing came from, or the important contribution that agriculture makes to the Australian economy.

"I think on the whole there is much misunderstanding from city folk on what actually happens on farms," said an FFN New South Wales member. "I feel that city people are so removed from the country lifestyle and the ways of farming that they do not even understand simple things such as were their food comes from or how it is produced. As a recent university graduate I feel that people even in country areas undervalue the importance of people that work in the agricultural industry and misjudge their intelligence somewhat. For example other students think that studying agricultural science is for dummies when in actual fact it requires in-depth scientific prowess. Overall I think that the wider community could do with some education in the agricultural area."

Young people working in Australian agriculture would like to see their city counterparts more educated on the reality of the industry, explaining the scientific nature of modern farming and the skill set farmers need to have to remain competitive in today's marketplace. Equally it must be noted that a baseline study aimed at understanding city perceptions of Australian agriculture and its workers must be undertaken. This will help identify what the real perceptions are and set out what can be done to correct false perceptions.

FFN has recommended to the Federal Government that it should commit to funding the 'agriculture within society' perception study through the Blueprint for Australian Agriculture, an initiative of the National Farmers' Federation, and accept and help to implement the findings of the study once completed. Without knowing what the real perceptions and issues are, then no real meaningful changes can be made.

Australia's current and future family farmers face great opportunities in the very near future, as its Asian neighbours start to look towards the country to start feeding and clothing citizens of the Asia-Pacific region.

In order to be successful in these future endeavours, Australia must address issues relating to succession planning support services being made available to transition family farms from one generation to the next. It must continue to build vibrant rural and regional communities. And it must quickly bridge the divide between city and country areas of Australia, so people living in cities have a better understanding and appreciation of the role and contribution of agriculture in Australian society.

Public policies for family farming in Brazil: towards a sustainable development model

Laudemir André Müller, Minister of Agrarian Development, Brazil

In recent years the concept of development has been increasingly linked to sustainability. Indeed, at the United Nations Conference on Sustainable Development in Rio in 2012, world leaders recognized the need to strengthen the three dimensions of sustainable development — economic, social and environmental — in a balanced and integrated way. Rural populations, and family farmers in particular, are increasingly seen as a part of the solution.

Since 2003, Brazil has undergone a political transformation leading to the creation of a large and dense network of public policies for family farming in partnership with rural social movements. The creation, expansion and fine-tuning of specific public policies for family farming is the main nexus for resolving a triple paradox of family farming worldwide, being:

- the main source of employment and income while representing most of the extreme poor (economic dimension)
- the main provider of food while constituting the majority of the world's hungry (social dimension)
- the main actor responsible for sustainable management of natural resources and conserving biodiversity, but also the sector most vulnerable to climate change and the loss of biodiversity (environmental dimension).

During the military regime from the 1960s to the 1980s, Brazil focused mainly on developing capital-intensive, large-scale, export-driven agriculture. The subsequent democratization process — significantly driven by organized segments of civil society including rural social movements — enabled the marginalized rural poor to be taken into account by government institutions, eventually resulting in the creation of the Ministry of Agrarian Development (MDA) in 1999. Participatory institutions and mechanisms at municipal, territorial and state level, and a National Council for Sustainable Rural Development, have enabled a rich, permanent dialogue between rural social movements and government representatives.

Another milestone was the approval of the Family Farming Bill in 2006, which consolidated the nascent public policies and the national registry system by which individual family farms and cooperatives become eligible to access the ministry's different policies. These measures have all been fundamental to the success of Brazil's rural development strategy, and are the result of persistent government commitment to prioritize the strengthening of family farming.

Economic sustainability

Eradicating poverty is considered the most pressing global challenge today, and can only be achieved by addressing the concerns of rural populations. About 70 per cent of the 1.4 billion people below the poverty line live in rural areas, many among the world's estimated 2.6 billion family farmers. In many parts of the global south, there is unexplored potential for labour-intensive productivity rises in small and medium-scale production, which can only be met with the creation of specific public policies for this sector.

In 2003, most of Brazil's 4.3 million family farms — which employ 74 per cent of the country's agricultural labour — had no access to credit or other policies and were engaged mainly in subsistence farming. MDA created a set of policies which have expanded in range and scale to increase coverage and account for the rising production of family farmers. For instance, the budget of the National Programme for the Strengthening of Family Farming (PRONAF), which provides public and private loans at preferential rates to family farmers, has risen tenfold since 2003, reaching R$24.1 billion in 2014. Likewise, public investment to rebuild a national system of

Image: Eduardo Aigner

Family farming provides most of the food consumed in Brazil

technical assistance and rural extension increased from R$56 million in 2002 to R$945 million in 2014.

Brazil's family farmers include indigenous peoples, afro-descendant rural communities, traditional fisherfolk, land reform settlers, smallholders and cooperatives. Following the criteria defined in the Family Farming Bill, synergic policies involving actors from public institutions, the private sector and civil society organizations were implemented to increase coverage of this diversity.

Registries have also enhanced policy coordination, and are an essential element of effective agricultural policy — for instance, if farmers only have access to credit without proper technical assistance and market access, they run a higher risk of defaulting on their loans. Farmers must present a technical project in order to access the credit lines designed for them, and they are eligible for public procurement schemes that facilitate their access to markets. Coordination of these mechanisms alongside government-subsidized low interest rates account for the consistently low default rates (around 1.5 per cent) for Brazilian family farmers who access PRONAF.

Significant results have been seen in terms of income generation and poverty reduction in the Brazilian countryside. In Brazil and Latin America, despite roughly equivalent absolute numbers of rural and urban poor, the poor represent a higher proportion of the rural population than the urban one. Over the last decade, poverty reduction in these countries has been more pronounced in rural areas, and public policies for family farming have been a crucial factor in this process. In Brazil, rural income also grew faster in the relatively poorer north-eastern region — which concentrates roughly half of the country's family farms — than in the south-east. If current trends are maintained, the proportion of the rural population in the middle income quintile will have risen from one-fifth in 2003 to half by the end of 2014.

Strengthening family farming can also produce countercyclical macroeconomic effects that go beyond the rural economy as family farmers are both producers of agricultural goods and consumers of industrial goods and services. For instance, Brazil's More Food Program, launched as a credit scheme to increase family farmer productivity during the international food price crisis of 2007/08, drove 61 per cent of Brazil's tractor sales in January to May 2009, becoming an important cog in a national-scale industrial policy as well as boosting local and regional economies.

By supplying most of the food consumed in Brazil, family farming contributes to long-term price stability in the overall national economy. Its importance was especially felt during the world food price crisis of 2007/08, as average domestic food prices in Brazil climbed by 25 per cent compared to a global average increase of 83 per cent.

The economic and social ascension of 42 million people and the lifting of 36 million people out of extreme poverty in the last 11 years has considerably increased the national demand for food products, and family farmers have risen to the challenge. For instance, 15 years ago, Brazil was among the largest importers of milk worldwide. Now, Brazil has attained self-sufficiency in milk production, which today stands at 35 billion litres per year.

Social sustainability

The articulation of a network of public policies directed at family farmers with an array of social programmes such as Bolsa Família (Family Grant) have been central to the success of comprehensive national strategies such as Zero Hunger and Brazil without Extreme Poverty (Brasil sem Miséria — BSM). Strengthening family farming was one of the four pillars of the Zero Hunger strategy and MDA is the main ministry responsible for policies aimed at eradicating extreme poverty in rural areas under BSM.

Image: Empresa Brasileira de Correios e Telégrafos

A postage stamp commemorating the International Year of Family Farming illustrates the importance of family farming in all aspects of sustainable development

Image: ASCOM MDA

Family farmers across the world are the main source of food, rural employment and income while constituting the majority of the extreme poor and hungry

As most of the people facing food insecurity are family farmers, especially rural women, raising their income levels through economic and social policies increases food security. The 52 per cent rise in Brazilian family farmers' income over the last decade was a determining factor in reducing the country's undernourished from 10.7 per cent in 2000-2002 to 1.7 per cent of the population today. Family farmers produce 70 per cent of the world's food, the vast majority of them on a small proportion of its agricultural land, so increasing their productivity and land share results in increased and more evenly distributed food output for farmers and consumers worldwide. In Brazil, and increasingly in other parts of the world, social programmes for food security and humanitarian assistance purchase products from family farmers. Non-monetary food consumption, such as that delivered by the free National School Meal Programme (PNAE), is estimated to have reduced food insecurity in Brazil by about one third.

Approximately three-quarters of the world's 805 million undernourished people live in rural areas — most of them family farmers in developing countries. Rural women are discriminated against in their access to land, natural resources and public policies. This exclusion reveals why 70 per cent of the world's undernourished people are women, despite the fact that most women in developing countries are family farmers and that rural women are responsible for producing 60-80 per cent of food crops in countries of the global south.

MDA's Programme for the Productive Organization of Rural Women aims to promote the economic empowerment of women and strengthen their organizations by tailoring the ministry's entire set of policies towards their specific needs and ensuring they are equally attended through institutionalized quotas. Many rural women lack identity documents, let alone land titles or bank accounts, and the award-winning National Documentation Programme for the Female Rural Worker has provided basic identity documents to more than 1.2 million rural women in its 10 years of operation. Similarly, since 2003, all land acquired through land reform and regularization programmes must be jointly titled. As a result, almost half of all agrarian reform settlers were women as of 2010, compared with 13 per cent in 2000.

Limited access to land is another severe constraint faced by family farmers worldwide. Equitable access to land and natural resources is key to the eradication of hunger and poverty. Despite inheriting one of the world's most concentrated land tenure structures, during the last 20 years Brazil's National Programme for Land Reform has settled 957,000 families on 88 million hectares of land. Additionally, in recent years government actions directed at land reform settlers have been consolidated, streamlining access to a series of credit lines that range from initial settlement support to productive investment loans, and integrating these with policies that provide basic social services such as access to running water, energy, housing or transport infrastructure.

Another major instrument of Brazil's food security strategy lies in public procurement schemes such as the Food Acquisition Programme (PAA), which purchases food from family farmers and donates it to institutions serving vulnerable populations or to furnish public food stocks. In 2012

Image: Eduardo Aigner

Traditional peoples and communities play a vital role in the conservation of biodiversity and the sustainable management of natural resources

Image: Albino Oliveira

Originally launched as a credit scheme, the More Food Program drove 61 per cent of Brazil's tractor sales in January to May 2009

alone, PAA purchased food from 185,000 family farmers. Similarly, since 2009, PNAE must by law purchase at least 30 per cent of its food directly from family farmers and school menus, prepared by nutritionists, must reflect local eating habits. By 2012, 80 per cent of public schools were sourcing at least part of their food from family farms, and half had reached the 30 per cent minimum target.

Environmental sustainability

Family farming provides environmental services for the conservation of biodiversity, the sustainable management of natural resources, and to limit or reduce greenhouse gas emissions. Traditional peoples and communities — about 4.5 million people in Brazil — play a vital role. More than 800,000 indigenous peoples in Brazil live on 13 per cent of the national territory, with 250,000 in the Amazon rainforest. In this context, the Sociobiodiversity Products Minimum Price Guarantee Policy pays family farmers the difference between government fixed prices and actual sale prices for products such as açaí, Brazil-nut, babaçu palm almond and rubber. The programme combines income generation with non-harmful extraction of forest products, ultimately preserving communities' livelihoods and promoting sustainable use of natural resources.

The Amazon rainforest represents over half of the planet's remaining rainforests and the greatest biodiversity in tropical forest in the world, covering 5.5 million square kilometres distributed among nine countries (60 per cent in Brazil). The Brazilian Amazon is inhabited by 24 million people. Secure land tenure is key in making it "worth more standing than cut down" for those who depend on it for their livelihoods. The Legal Land Program, coordinated by MDA in partnership with states and municipalities, aims to regularize rural and urban public lands to an estimated 150,000 families in 55 million hectares in the nine states of the Amazon region. The legal certainty obtained through land titles allows family farmers to access public policies that combine income generation with sustainable management of natural resources, and enhances accountability mechanisms for landowners to fulfil their legal duty in terms of preservation and respecting reserve ratios.

The overexploitation and degradation of natural resources resulting from human activity and the increasing frequency and intensity of extreme weather events are interconnected and — as in the case of desertification and drought — mutually reinforcing. In 2013, Brazil's north-east region faced its most severe drought in 50 years, with more than 1,400 municipalities affected. The drought did not provoke mass migration to the urban centres of the south-east and south, as in the past. A comprehensive set of public policies of coexistence with the semi-arid region proved crucial to the adaptation of family farmers. In particular, MDA's Harvest Plan for the Semi-Arid Region 2013/14 included actions such as the Harvest Guarantee insurance scheme, which compensates family farmers who can prove the loss of at least 50 per cent of expected production. The Cisterns Program ensures water consumption for a family of five for approximately eight months through a simple and inexpensive social technology to capture rainwater and store it in a 16,000 litre reservoir. The Second Water Program uses

Image: Eduardo Aigner

MDA's Programme for the Productive Organization of Rural Women aims to promote the economic empowerment of women and strengthen their organizations by tailoring the ministry's entire set of policies towards their specific needs

similar technology for 56,000 litre reservoirs, and provides water to irrigate food crops for families who have already benefited from the previous programme.

Finally, agroecological transition entails gradually increasing forms of production and consumption, and research and rural extension services, which promise a symbiotic relationship between sustainable natural resource management, healthier food production and income generation. This should be done through the enhancement and preservation of traditional knowledge and agricultural practices, in conjunction with efforts to gradually reduce the use of pesticides while promoting alternative forms to increase food production and income, thus creating the conditions to make agroecological and organic production economically viable for family farmers.

The overarching vision for Brazil's rural development in the medium to long term lies in the gradual drive to transition to an agroecological production model, in synergy with an increasingly robust economic organization of family farmers' associations and cooperatives. This decision has been ratified at the highest level, with President Dilma Rousseff's launch of the National Plan for Agroecology and Organic Production (PLANAPO 2013-2015) in 2013. PLANAPO includes the development of technologies to increase production and productivity of selected seeds. For instance, the National Program of Seeds and Seedlings provides R$150 million for the acquisition and distribution of plant and animal genetic resources through the PAA programme, and R$17.1 million in the implementation of infrastructure for seed banks and community houses.

Family farmers can fulfil their potential to contribute to sustainable development if states around the world create and implement public policies that correspond to their various needs. Those needs are best addressed through permanent dialogue based on mutual trust and accountability between government officers and family farmers' organizations, through institutionalized mechanisms at all levels. Brazil's recently approved National Plan for Sustainable and Solidary Rural Development (PNDRSS) resulted from just that: 436 conferences at territorial, municipal and sectoral levels which congregated 42,000 people, culminating in a national conference with 1,500 delegates representing the diversity of Brazil's family farmers. The plan compiled 100 priority proposals and fused them with existing government plans to form a strategy to guide the Brazilian Government's actions for rural development and family farming in the short, medium and long term.

The entire process of the International Year of Family Farming — from the campaign initiated in 2008 to the creation of national committees and its celebration in 2014 — has marked significant milestones on the road to deepening the dialogue between rural social movements and governments and driving public policies that strengthen family farmers worldwide. The continuation of this process after 2014 should enable more sustainable development models to emerge.

A holistic approach in support of family farming in South Africa

Aggrey Mlulami Mahanjana, Secretary-General, African Farmers' Association of South Africa

Agriculture is one of the most strategic and important sectors of African economy. It is the primary source of livelihood for about 65 per cent of Africans. It represents 30-40 per cent of Africa's gross domestic product and accounts for almost 60 per cent of Africa's export income.[1] As things stand today in Africa, agricultural production is carried out mainly by family farmers. According to the 2008 World Bank report, 1.5 billion people live on small farms. In sub-Saharan Africa, 80 per cent of farms are owned by families and about 60 per cent of the active population work on these family farms.[2] These facts and figures show that family farming plays an essential role in food production, sustaining rural economies and stewardship of biodiversity.

Rising demand for food and fuel, coupled with resource depletion and inadequate governance of the global food system, has increased the fragility of the food economy, giving rise to calls for a fundamental redesign of how food is produced, accessed and utilized. As the food system presents us with an unprecedented level of complexity influenced by so many drivers, existing strategies fail to adequately address the food security challenge and recasting the current trajectory requires a multi-level, multisectoral and multi-actor response.

Researchers have documented that South Africa is afflicted by widespread food insecurity and hunger in both urban and rural areas. While, in aggregate, the country has enough resources to feed all of its inhabitants, one out of two households is at risk of hunger; almost 16 per cent of South Africans consume less than adequate energy to meet their needs; and about 22 per cent of children under nine years of age are stunted. These statistics indicate that many South Africans live in a state of chronic malnutrition.

Farming is a system by which human beings use resources, especially land and water, to produce food and other crops, livestock and aquaculture products for their own consumption or the markets. Any person who performs such an activity is regarded as a farmer. Family farming is thus when a family engages in the production of food, fibre or livestock as a way of producing food for their own consumption or for sale to get income which can be used to buy other goods the family might need.

According to the Food and Agriculture Organization[3] family farming (also family agriculture) is a means of organizing agriculture, forestry, fisheries and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's. The family and the farm are linked, coevolve and combine economic, environmental, social and cultural functions.

Image: AFASA

Family farming is often more than a professional occupation, reflecting a lifestyle based on beliefs and traditions about living and work

The wagon wheel holistic approach to farmer support and development

Source: NERPO

Categories of farmers in South Africa

CATEGORY A: Established commercial farmers	CATEGORY B: First-generation commercial farmers	CATEGORY C: Subsistence communal farmers
Mainly white farmers farming for national and global markets	Mainly black farmers who are developing first-generation commercial farms for local and national markets	Only black farmers farming on a communal system for household food security
About 35,000 farmers	About 5,000 farmers	About 2,800,000 households
Most of the title deeds transferred from generation to generation	Most farm on state land with short-term leased agreements (five years)	All farm on tribal land with no security of tenure
Well organized collective action policy and legislative matters	Weak farm structures with inadequate capacity on policy and legislative matters	Ineffective farm structure on policy and legislative matters
Mostly highly mechanized and use latest technology	Mostly rely on manual labour to greater extent and use outdated technology	Most rely on government mechanization programmes and technology

Source: AFASA

The concept of family farming covers various elements. From a sociological perspective, family farming is associated with family values, such as solidarity, continuity and commitment; in economic terms, family farming is identified with specific entrepreneurial skills, business ownership and management, choice and risk behaviour, resilience and individual achievement. Family farming is often more than a professional occupation because it reflects a lifestyle based on beliefs and traditions about living and work.[4]

Since the majority of families in Africa reside in the rural areas, the main activity they engage in is agricultural production and that is the reason why family farming is regarded as a way of life for most African families. In as much as most families practice or perform farming activities, in most cases it is more for a sociological purpose than a business and most families still use traditional ways of farming and can hardly produce enough to feed themselves let alone for sale.

South African agriculture has been described as being of a dual nature — with a sophisticated, technologically advanced and globally competitive commercial sector on one hand and, on the other, a subsistence sector that is underresourced, unsophisticated and with a low technology uptake. This was largely a direct result of centuries of neglect and marginalization of the subsistence sector where the vast majority of Africans still trying to make a living or livelihood in the rural areas find themselves. Since the advent of democracy in 1994 the focus of the successive African National Congress-led governments has been firstly on redress and secondly on transformation in order to try to bridge this divide. At the heart of these programmes have been land reform initiatives.

In order to come up with policies and farmer support programmes in South Africa, it is necessary to put these farmers into categories so that the policies and support packages are designed in a category- or segment-specific way. The South African farmers are segmented into the following categories:

- subsistence farmers (only black farmers farming on a communal farming system for household food security)
- emerging farmers (mainly black farmers who are land owners and lessees and are developing first-generation commercial farming for local and national markets)
- established commercial farmers (mainly white farmers farming for national and export markets).

Farmers in the subsistence and emerging categories face a number of impediments to the growth of their family farming enterprises. The major ones that have been identified by the African Farmers' Association of South Africa (AFASA) and National Emergent Red Meat Producers' Organisation (NERPO) over the years include:

- access to agricultural land with adequate infrastructure
- limited technical and entrepreneurial skills, which cost the farmer high losses in production and the value of the product
- limited access to timely and applicable production and marketing information
- limited access to affordable finance/credit
- low volumes and poor quality of products, largely as a consequence of the farmers' limited skills and capital resources
- poor access to competitive markets
- weak collective action by farmers on policy and legislative matters as well as input and market bargaining power.

Any intervention strategy must understand and recognize the needs of each category. For established commercial farmers, the focus must be on policy and the regulatory framework that affects commercial farming (trade and protection policies). For first-generation commercial farmers, the focus must be on increasing production levels and participation in formal markets. And for subsistence communal farmers, the focus must be on the provision of consistent social support packages (free basic farm inputs like seed, fertilizer and herbicides;

Image: AFASA

Agriculture is the cornerstone of rural development in South Africa. There is a need to support smallholder farmers so they can increase production

highly subsidized tillage means; free government extensions services; free vaccination, dipping, fodder banks and good quality livestock breeding material).

When dealing with family farming challenges, one should always have a holistic approach, where all relevant elements share equal attention rather than focusing on one isolated element of farmer support and development. Based on AFASA's 'on-farm practical experience', NERPO has developed a 'wagon wheel' holistic approach to farmer support and development. In this approach, the farmer is the core focus, needing a balanced support. Over the years, AFASA and NERPO have tabled a number of policy proposals to the South African Government in support of the farmers, especially with regard to land issues, access to credit, information and formal markets.

AFASA and NERPO are the main national farmers' associations in South Africa that facilitate the development of African farmers in order to increase their meaningful participation in the commercial agricultural sector. The two associations advocate for partnerships based on complementarity of the strengths of public and private sector role-players.

The public sector, for example, has been spending much money in the development and transformation of the agricultural sector but not achieving the intended results, probably due to limited expertise or capacity. Hence, there is a need to partner with the relevant private companies or entities with the necessary skills and resources for better results. Putting the smallholder farmers at the heart of partnerships and involving them under fair terms and conditions as well as ensuring effective mechanisms of cooperation is imperative.

The South African Government has put in place a number of programmes to assist smallholder farmers, but these programmes seem not to be enough to boost agricultural production. The government support system is failing to transform emerging farmers into commercial farmers who can sustain themselves and contribute to the growth of the agricultural sector. There is also lack of a proper strategy to design support packages that deal with the needs of specific groups of farmers. Lack of coordination of the farmer support programmes is another problem that hinders farmers in maximizing the benefits they can get from government support.

The easiest way of segmenting farmers in South Africa is through the land tenure system. There are basically three tenure systems in the country, namely land ownership with title deeds; land owned through leasing from the state; and communal/tribal land (former homeland areas, land owned through the local authority of a chief).

Cooperatives are a good conduit to use in order to have coordinated support for farmers. These cooperatives are structures that can coordinate all agricultural activities on behalf of their members. However, a number of cooperatives in South Africa are dysfunctional even though they are properly registered. This calls for a support package that ensures that the cooperatives that are active and producing are given first preference with respect to farm machinery, inputs and insurance subsidies in order to boost their production capacity. Part of the package should include a revitalization strategy to resuscitate the dormant agricultural cooperatives.

The AFASA cooperative chamber has embarked on a drive to bring the agricultural primary cooperatives together and form one secondary cooperative per district municipality. The thinking behind this is to create a coordinating structure that will spearhead agricultural production and ensure that the farmers also access local, national and international markets in a structured way. The secondary cooperative model will create an organized structure, taking responsibility for receiving government funding and implementing agricultural production projects using evidence-based planning. This structure will have sole responsibility for coordinating all agricultural activities and ensure that there is proper planning from production on the farm to the marketing of agricultural produce.

Agriculture remains the cornerstone of rural development in a country like South Africa. Hence there is a need to support smallholder farmers so that they increase agricultural production. The smallholder farmer support package model must be farmer segment-specific to address the needs of smallholder farmers in these segments. Monitoring and evaluation of progress is very important so as to make adjustments where necessary, and to continuously supervise the farmers to ensure that they focus on production on their farms. These farmers must also accept that once they start to operate profitable agricultural production on their farms, support for them will gradually be withdrawn and transferred to more needy fellow smallholder farmers.

Family farms in the Republic of Serbia

Snezana Bogosavljević Bošković, Minister,
Aleksandar Bogunović & Ljuba Ivanović, Ministry of Agriculture and Environmental Protection, Serbia

Serbia has a population of 7.2 million across nearly 78,000 square kilometres of territory. The rural population accounts for 40.6 per cent of those people. Agriculture accounts for 21 per cent of Serbia's employment, generating €29.6 billion of the country's gross domestic product.

Among Serbia's 631,000 agricultural holdings, 99.5 per cent are family farms, and 17 per cent of those are held by women. The average farm size is 5.4 hectares, which is 2.7 less than the European Union average. Small-scale producers are prevalent in the livestock sector. Farms of between 2 and 10 hectares make up the largest share of the country's farms while holdings of less than 1 hectare account for 29.2 per cent.

The legal framework of agricultural policy and rural development in the Republic of Serbia is based on the Law on Agriculture and Rural Development[1] and the Law on Subsidies in Agriculture and Rural Development.[2] The Law on Agriculture and Rural Development foresees that a strategy for agriculture and rural development of the Republic of Serbia will define long-term development tendencies in agriculture for the next 10-year period. The National Programme for Agriculture and Rural Development will determine mid-term and short-term goals; the means, hierarchy and a time frame for achieving these goals; anticipated results; and the form, purpose, category and scope of certain subsidies for a seven-year period.

The Law on Subsidies in Agriculture and Rural Development prescribes conditions for the creation of consistent and predictable long-term agricultural policy. This law defines types of subsidies such as direct payments, subsidies for rural development measures and special subsidies — defining the means of use and conditions for applying for subsidies, as well as minimal amounts per subsidy. Subsidies for rural development measures include support for programmes that apply to investments in agriculture for the improvement of market competitiveness and reaching certain standards; sustainable rural development; enhancement of the rural economy; and the preparation and implementation of local rural development strategies.

The Ministry of Agriculture and Environmental Protection is paying special attention to the development of small family farms. These farms enable the establishment of a sustainable development system and significantly contribute to the preservation of rural areas, as well as keeping the population, especially young people, in the countryside. Therefore the ministry has recently adopted the new Strategy of Agriculture and Rural Development 2014-2020 of the Republic of Serbia. The strategy took over a year to develop, with contributions from more than 200 relevant representatives of the sector, led by Sector Working Groups and Expert Teams.

Small family farms enable the establishment of a sustainable development system and significantly contribute to the preservation of rural areas

This long-term strategic document, defines:

- objectives, priorities and frameworks of political and institutional reforms in the field of agriculture and rural development
- a framework of budget support (total and per pillar), which reflects the development commitment of the new strategy
- indicators for monitoring the objectives realization, position of family farms and opportunities for their development.

The main strategic goals of this strategy are the growth of production and income stability; growth of competitiveness with adjustments to the requirements of domestic and foreign markets and technical-technological promotion of the sector; sustainable management of resources and environment protection; promotion of quality of life in rural areas and poverty reduction; efficient management of public policies, and the promotion of an institutional frame for agricultural and rural development.

Looking at farm structure in the Republic of Serbia, it is evident that small-scale farms are dominant. Owing to their number and specific ways of functioning, small family farms represent an indispensable part of Serbia's rural economy. The ageing of family farms, migrations and globalization are causing a significant decrease in the number of family farms. On the other hand, small family farms, as invaluable guardians of the countryside, need to be given special attention in agricultural policy, because of the influence they have on the preservation of rural resources and rural ambience, participation in local commodities and services markets, their own production of food and the rural economy. Therefore, the basic goal of the Strategy of Agriculture and Rural Development 2014-2020 is to define the specifics of rural areas through a rural development policy and to ensure possibilities for the growth of small family farms in Serbia.

Small-scale producers are prevalent in Serbia's livestock sector

Small family farms in Serbia make a very heterogeneous group and could be divide into several categories. The category of poor farms can be further divided to two subtypes: ageing farms which are often run by a single person, and farms owned by people who were once employed outside of agriculture and/or have been long-term unemployed. The next category is people 'returning' from urban areas. These are mostly older, retired people or sporadically young families which prefer rural ambience and are willing to start some alternative activity on a small agricultural farm. The third category is habitants of rural areas with regular incomes from sectors outside agriculture. These could be entrepreneurs or employees of public services or other firms in or near to the place where they live.

The current potential of small rural farms in the Republic of Serbia is modest, inadequate and thus insufficiently attractive for investments. For small rural farms, agricultural land itself is the basis of their security, but equipment, facilities and mechanization are very modest, outdated and rarely used for gaining additional income.

Unfortunately, poverty in Serbia is mostly a rural phenomenon, and in certain periods rural areas have been almost two times more affected by poverty than urban areas. Considering that economic crisis has a strong impact on employment in the agricultural sector — one of the most dominant sectors in the rural economy — it is almost certain that the trend of poverty growth in the rural areas will increase in upcoming years. As the socioeconomic profile of small family farms is very diverse, their survival strategies and consequently their attitude towards agriculture and rural development should be significantly different.

With all this in mind, the Ministry of Agriculture and Environmental Protection has prepared the National Programme for Rural Development of the Republic of Serbia 2015-2020 as a long-term plan that will address most of the issues that rural areas are currently facing. It defines special activities, all aiming to support the income of small family farms. The policy of rural development for the Republic of Serbia, defined by this programme, will focus on efficient mechanisms that will coordinate agricultural development and other activities in rural areas with principles governing sustainable development, in an effort to improve living standards and quality of life in rural areas.

Diversification of the rural economy and the income of small family farms has represented an important part of the agrarian policy of the Republic of Serbia for many years now. Agrarian policy is also orientated towards the production of traditional food products, intended not only for local markets but for international markets as well. An important part of the Programme for Rural Development is dealing with the diversification of rural activities, aiming to lessen poverty in small farms by broadening their activities and engaging all resources towards increased employment of members of these farms.

Currently there is an intense concurrency of agricultural products, not only on the national market but also on the global market. In their effort to be concurrent on the global market, many producers are turning to the production of traditional (authentic) products — that is, products with a geographical indication, which are distinguished not only by

Diversification of the rural economy and the income of small family farms is an important part of Serbia's agrarian policy

special quality and characteristics resulting from their specific composition, means of production and processing, but by their geographical origin as well.

The Republic of Serbia has huge potential in this segment, as it is a country with vast climate and geographical differences, rich in culture and tradition. In order to fulfil this potential, the Programme for Rural Development defines, as one of its most important priorities, protection of the geographical indication of agricultural and food products. Its aim is to define and develop the identity of Serbia's products and to create added value, in order to enable family farms to achieve better prices for their products, better market placement, and higher levels of buyers' trust and branding of their products. This is the right and proper way to achieve one of the priorities of Serbian agrarian policy — to increase the level of concurrency of national food production.

According to the number of traditional agricultural and food products, Serbia is among the countries with a significant number of Protected Geographical Indication (PGI) products. However, for many of these PGI products there are no adequately authorized producers (authorized for the production and marketing of PGI products). Therefore the Ministry of Agriculture and Environmental Protection is focusing its activities on increases in production and the inclusion of a larger number of producers in the production of traditional products with the Protected Designation of Origin (PDO) or PGI label.

Being aware of the fact that it is dealing with small producers, the ministry has adopted the Law on Incentives in Agriculture and Rural Development, which foresees subsidies for small farmers. Producers of traditional agricultural and food products with the PDO/PGI label will receive additional subsidies for control and certification of their products as well as for labelling their products with control stamps.

The Ministry of Agriculture and Environmental Protection recognized the importance and necessity for rural development policy to promote specifications of rural areas and accordingly, the Rural Development Programme will define incentives for development of the countryside in marginal and protected areas.

The future prospect of family farms in Serbia is envisaged in several directions, ranging from the gradual disappearance of ageing farms to the development of innovative products and services from rural areas (farms with a vital and highly qualified labour force and strong social capital), with several transitional solutions like adaptation to different market flows.

The strategic approach of the Programme for Rural Development will define developmental concepts, especially multifunctional rural development, promoting the functionality of rural areas, the significance of the preservation of natural habitat and biodiversity, ethno-ambience and so on — all of which make small family farms an important developmental force in rural areas.

With all the aforesaid, it would be fair to say that one of the priorities of the Strategy for Agriculture and Rural Development of the Republic of Serbia 2014-2020 and National Programme for Rural Development is to support Serbia's traditional food production as one of the main forces of rural development.

Overcoming the shameful paradox in Madagascar's vanilla sector

Anselm Iwundu, Executive Director, Fairfood International

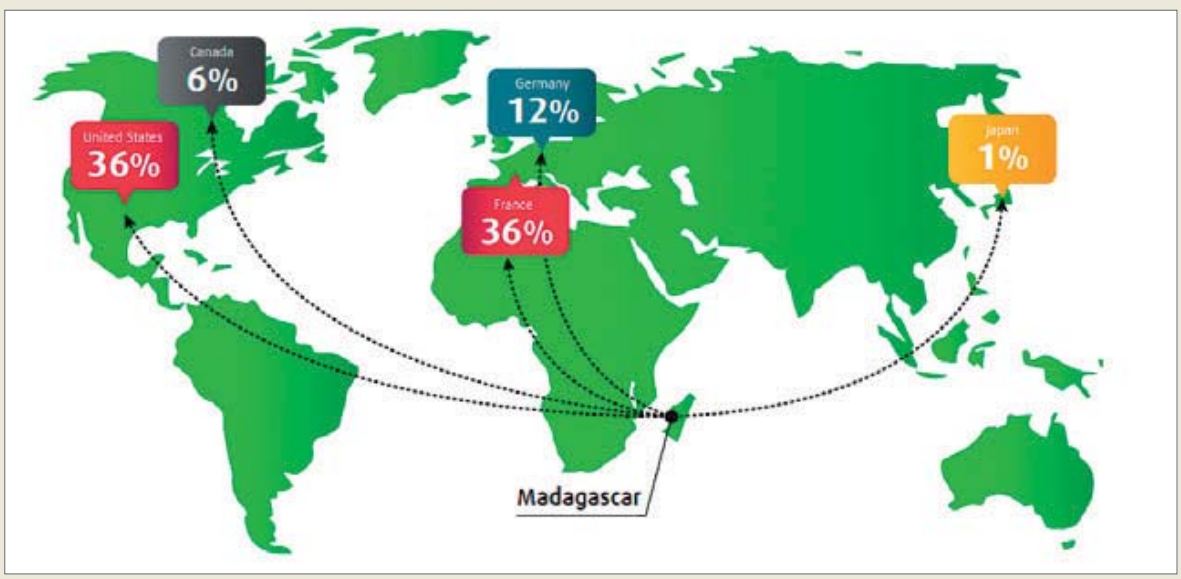
There is absolutely no reason why small farmers producing the world's most used flavouring and the second most expensive spice in the world — vanilla — should live in abject poverty. This is, however, currently the case in Madagascar. About 80,000 small-scale farmers produce Madagascar's vanilla, the majority of whom live off less than US$1 a day and suffer extreme income insecurity. Meanwhile, Madagascar is the world's top producer of natural vanilla.

This paradox is shameful but can be overcome by concerted efforts from key players. Multinational brands and flavour houses sourcing vanilla from Madagascar could ensure that these small farmers receive a fair income. International civil society organizations focusing on Madagascar can empower these farmers to advocate socioeconomic fairness for themselves. African governments and international donor agencies can invest in projects that directly empower these famers and ensure their income security. With the United Nations declaring 2014 as the International Year of Family Farming and the African Union calling 2014 the Year of Agriculture and Food Security in Africa, there is no better time to overcome this paradox than now.

Madagascar is widely recognized as one of the world's biodiversity hotspots, rich in unique wildlife, and with a beautiful and diverse ecosystem. The country is also a major producer and the largest exporter of vanilla,[1] the second most expensive spice and the most popular flavour in the world. Madagascar accounts for about 50-80 per cent of global vanilla exports. It exports vanilla to mainly five countries: the US, France, Germany, Canada and Japan. Over 80 per cent of vanilla imported in France comes from Madagascar.

Despite this, Madagascar is one of the poorest countries in the world and consistently ranks low in major food security indices. Oxfam recently ranked Madagascar as one of worst places in the world to eat,[2] and a country where people face

The top five importers of Madagascar vanilla (2011)



Source: Fairfood (2014)

great challenges to get enough of the right food. Moreover, although its vanilla is highly sought after over the world, the majority of the 80,000 small-scale farmers who produce the vanilla experience food insecurity, as they do not earn sufficient income to adequately provide food for themselves and their families. About 75 per cent of the small farmers in Madagascar's Sambava, Antalaha, Vohemar and Andapa region — the majority of whom are vanilla farmers — live on less than US$1 a day.

Vanilla is chiefly suitable for smallholder farmers and family farmers. The average vanilla farmer owns 1 hectare of land and uses traditional farming methods. The main concerns that cause their income insecurity, and hence their food insecurity, are fluctuating prices and margins. The farmers therefore have very little power to advocate a fair price and are cornered into a vulnerable position, as a result of which their income is often insufficient and unstable all year round. This weak bargaining power is due to the fact that the pricing system is too complex for the farmers to understand, and is largely unfair and not transparent. As such, other players in the world market value chain have the opportunity to benefit from their stronger bargaining power, resulting in relatively higher prices and margins for them.

Other issues affecting vanilla farmers include:

- Lack of resources — the farmers lack access to information, technology and the financial resources to build up savings and invest in insurance against unexpected externalities.
- Poor quality product — desperate to sell their vanilla to make ends meet, the farmers harvest their vanilla too early or cure it too quickly, thus resulting in poor-quality product.
- Theft — vanilla theft is quite high and is a huge issue for these small farmers. Most farmers tend to harvest their crops too early to avoid theft and therefore risk producing poor-quality vanilla.

Image: Fairfood International

Vanilla is the world's most popular flavouring, but most of Madagascar's 80,000 small-scale vanilla farmers do not earn enough to feed their families

Recent research indicates that a handful of food and beverage multinationals and flavour houses are the most powerful stakeholders in the Madagascar vanilla value chain. These companies can and should help farmers to break out of the cycle of poverty by ensuring that these smallholder farmers are paid a fair price for their vanilla. A fair price covers, among other things, a living wage for farmers, any other labour either from family members or hired labourers, plus all costs and risks involved in the production. Earning a fair price will give farmers an opportunity to break out of the poverty cycle and take better care of their families, invest in insurance to recover from unexpected externalities, invest in new and diverse crops, and have savings to fall back on. This is the main topic companies should be focusing on in order to ensure a fair system for these farmers and to contribute to sustainable vanilla production.

Implementing viable sustainability standards, certifications and corporate programmes — though not perfect — can be an additional means to ensure progressive incomes for vanilla farmers. In Uganda, it has been reported that organic and fair trade certifications have helped about 1,200 producer members of the Mubuku Vanilla Farmers Association to improve their income situations.

We have seen that companies have made commitments to improve livelihoods and increase yields through measures such as farmer training programmes, building schools, providing financial assistance and health care. These projects are supposedly impacting several thousands of farmers and their families.

However, many of these programmes are a partial remedy to the root cause of a lack of fair prices being paid to the farmers. In addition to that, as there are about 80,000 small-scale vanilla farmers in Madagascar, there is still a long way to go. Moreover, the concrete impact this has had on the livelihoods of the farmers is largely unknown and not well measured. All in all, efforts from multinational brands and flavour houses therefore need to be scaled up and improved to show a demonstrable effect on farmers' incomes from vanilla.

Support from African leaders and multilateral donor agencies can also make a huge difference. In 2003, African leaders adopted the Maputo Declaration,[3] promising to commit 10 per cent of their respective gross domestic product (GDP) to agriculture and rural development. Improving agriculture was seen as a path towards eradicating poverty and food insecurity on the continent. Since 2003, only a handful of African nations have reached or surpassed this target in any given year.[4] Madagascar has not. The country has consistently maintained a profile as one of Africa's poorest nations. Approximately 29 per cent of Madagascar's GDP comes from agriculture,[5] but seeing as this sector is largely dominated by an extremely poor rural workforce that cultivates 1.3 hectares of family farms on average, and is plagued by mori-

Image: Fairfood International

Vanilla is chiefly suitable for smallholder and family farmers, most of whom use traditional farming methods

Image: Fairfood International

Fluctuating prices and margins are the main causes of income and insecurity for Madagascar's vanilla farmers

bund roads and infrastructure, Madagascar's agricultural sector clearly needs attention from African leaders.

Early this year, the African Union announced 2014 as the Year of Agriculture and Food Security. This announcement bears great significance for a continent where 75-80 per cent of the population depends solely on small-scale agriculture, and where most of the poor live in rural areas. This can be a perfect opportunity for the continent's leaders to support Madagascar in developing some of its important agriculture sectors such as rice and vanilla, and to improve market access and regional trade for them.

The United Nations similarly proclaimed 2014 as the International Year of Family Farming. Most international donor agencies have already declared their recognition of the important role of small-scale family farmers in tackling the food security challenge and are already investing in projects that seek to improve the lives of small-scale farmers in many poor regions of the world. Investing in small-scale Malagasy farmers should be seriously considered.

Following Madagascar's political instability in 2009 and the World Bank's 2012 gloomy analysis of the Malagasy economy, several international donors signalled a reluctance to lend financial support to the country or ceased giving it. This has taken its toll on the development of agriculture and the rural poor. Notably, the International Fund for Agricultural Development has so far funded 14 rural development projects investing a total of US$208.3 million.[6] Most of these projects are sectorial and focus on strengthening farmers' organizations, increasing poor people's access to rural credit, improving market access and boosting production. Following the country's recent presidential elections, the political situation is expected to improve. In February 2014, the World Bank approved US$10 million to assist in improving health and food security in Madagascar. More international donors can therefore seize the opportunity to scale up their support for Madagascar's agriculture.

International non-governmental organizations (NGOs) can help farmers and empower them with negotiation and campaigning skills to advocate for themselves. In Madagascar's vanilla sector, this can be an important intervention for small farmers to have a voice and be able to effectively engage powerful value chain players on pricing and other socioeconomic issues. In addition, international advocacy organizations can help by directly influencing the big multinational companies and flavour houses to improve incomes for Madagascar's vanilla farmers. In late 2013, Fairfood International[7] started its advocacy work in order to encourage the biggest multinationals and flavour houses sourcing vanilla from Madagascar to improve their policies and practices so that they benefit the small farmers and catalyse a positive change within the vanilla industry in Madagascar.

As the world looks towards 2050, when more than 9 billion people will need to be fed, the burden will rest on the shoulders of small-scale farmers all over the world. It is therefore important that key players in the food system — companies, but also NGOs, governments and international donors — enable these farmers to enjoy socioeconomic fairness in the food system. While we continue to enjoy our vanilla-flavoured ice creams, cakes and chocolates, key players must act with urgency to overcome the shameful paradox in Madagascar's vanilla sector by implementing the efforts outlined above. This will go a long way to establishing sufficient financial resources for Malagasy vanilla farmers and create a safety net to lift them out of poverty and food insecurity.

Strong family farms are the key for developing agriculture and rural areas

Dr Sándor Fazekas, Minister of Agriculture of Hungary

Family farms are the backbone of Hungarian agriculture. The national economy benefits greatly from family farming as a contributor both to gross domestic product and to the creation and maintenance of public goods. Recognizing their importance, it is a priority for the Hungarian Government to create an enabling policy environment in favour of family farming and to provide adequate support to maintain and strengthen this farming method.

Family farmers are the guardians of sustainability and the protectors of local biodiversity. It is in their own interest to utilize natural resources — such as land and water — responsibly and preserve them for the next generations. They produce high quality, delicious, healthy food and sell it mainly locally to meet the demand of a growing number of conscious consumers. It is in the interest of the whole of society to sustain these production methods, combining traditional knowledge with innovations and new technologies which are proven to be safe. One of the strengths of Hungarian family farming is producing genetically modified organism (GMO)-free food. Family farmers play a key role in keeping traditions alive, as well as in the transmission of traditional knowledge to their successors.

There is no single definition for family farms in Hungary as they differ greatly, as much in size as in their management. Family farmers can be — among other things — individual farmers, part-time farmers, individual entrepreneurs, limited liability companies and farmers' cooperatives. Family farming also contributes to economic development in rural areas by creating rural jobs and securing rural livelihoods. To maintain rural employment and to increase the economic value and resilience of farms, it is essential to diversify activities.

Strengthening rural economies is among the main objectives of the new Rural Development Programme of Hungary prepared by the Hungarian Ministry of Agriculture. It supports farmers in providing fresh, tasty, quality food for the

Image: Bálint Illés, Ministry of Agriculture of Hungary

Urgent action is needed to ensure that farming and rural lifestyles again become a desirable option for young people

Image: Péter Zentai

Locally produced nutritious food is provided to children through school feeding programmes

local population and it helps to bring producers and consumers closer. Support is provided for investments to develop trade infrastructure, measures for improving food safety in the supply chain, targeted training and extension for family farmers, and incentives for establishing farmers' markets and for promoting national and European Union (EU) quality schemes. Supporting measures of the Hungarian Government include special taxation rules and simplified administrative procedures, improvement of the financial environment (credits, financing tools), development of markets, targeted support for young farmers, creating short supply chains, encouraging diversification of on-farm activities and agrotourism, and supporting organic agriculture.

There are also some elements in the 2014-2020 Programme of the Common Agricultural Policy of the EU which are preferential for family farmers. For instance the Small Farmers Scheme offers simplified payment of agricultural subsidies, less bureaucracy and no 'greening' obligation. In Hungary approximately 70,000 small farmers will choose this option.

Special preferential taxation rules and simplified administrative procedures have been introduced in favour of family farming in Hungary. Family farmers can choose among different options for income calculations, and they may pay a lower rate of personal revenue tax in case of lower income. Up to a certain level of annual income (mainly for semi-subsistence farmers) no tax has to be paid and there is no obligation to submit a tax declaration.

Facilitating access to credits and other financial services is also a key for the development of family farms. Farmers can apply for special credits with a favourable rate, which is offered by the Growth Credit Programme of the Hungarian National Bank. The credit can be used for investments, financing current assets, pre-financing EU supports or for purchasing land. Other agrofinancing tools are also provided such as long-term credits for investments, interest and leasing support for reconstruction and farm modernization, and interest support for agricultural current assets (such as animal husbandry development and the purchase of breeding animals).

Small-scale farmers often have difficulties in accessing markets; they have limited power in negotiating contracts with food processing and retail multinational companies and they lack adequate capacities for efficient lobbying. To prevent the misuse of power of those multinational companies, on the initiative of the Ministry of Agriculture the Hungarian Parliament unanimously adopted a law that prohibits unfair market behaviour towards suppliers of agricultural products. The regulation has proven successful; there has been a considerable increase in compliance with the law in the past few years. The Hungarian Government also signed agreements of strategic cooperation with some major retailers and processing companies to further strengthen their commitments.

Cooperation is essential to improve negotiating power and facilitate market access for farmers. Cooperatives (farmers' cooperatives, producer groups) facilitate access to credit and also to technical, economic and market information. Joining cooperatives can also help family farmers to optimize their production and sales. As cooperative members they can purchase inputs and services jointly, enabling them to bargain for better prices and conditions. They can get financing for development and investment more easily and therefore reduce their dependency on integrator companies. Economies of scale can also be achieved through common processing and sale.

Image: Balázs Bősze, NAKVI

Widely popular local markets are additional outlets at which family farmers can sell their products

Image: Csaba Pelsőczy, Ministry of Agriculture of Hungary

Family farming contributes to economic development in rural areas by creating rural jobs and securing rural livelihoods

One of the primary goals of the Hungarian Government is to provide support to the rural population to improve their living conditions and to enable them to successfully access markets with their traditional products. The adoption of the new food safety regulations concerning local markets and the simplification of authorization processes has been a great asset to enable small-scale producers to sell their products locally. According to current regulation, only smallholders can sell their agricultural products and processed foods at local producer markets.

In Hungary the traditional means of short supply chains — such as local markets and roadside sales — are widespread. However, modern forms like online sales, common purchase groups and community-supported agriculture are less developed than in many Western European and North American countries. The Ministry of Agriculture of Hungary encourages participation in the short supply chain. Participating farmers are usually the smallest ones (private persons or micro-enterprises), so they have weak assertiveness and they are inexperienced in complex forms of cooperation. Therefore it is important to provide them with focused support.

Providing access to natural resources, especially to land, is essential for the development of family farms. The New Land Act, which was adopted in 2013, strengthens family farms with respect to large-scale agricultural farms, by shifting land use towards smaller farm sizes. In the management of state-owned agricultural land in Hungary, guiding principles have been adopted recently. These are in line with the *Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests in the context of National Food Security*, which were drafted by the Food and Agriculture Organization of the United Nations and adopted by the Committee on World Food Security in 2012.

Agricultural land is also allocated for the purpose of boosting rural employment. The Social Land Programme holds a prominent role in handling local unemployment, boosting rural employment — especially for socially disadvantaged groups — and creating sustainable development of a region. Agricultural parcels may be handed over to municipalities' asset management to promote the implementation of the Social Land Programme. The size of the land parcel allocated to one person in the programme may not exceed one hectare. Transfer of land parcels to asset management for the purpose of the programme may be for a two-year minimum or 15-year maximum period. The Social Land Programme contributes to increasing rural communities' potential to maintain their population and to better use local resources, creating a well-planned course for production and sales that includes self-sufficiency, market sales and sustainability as well as mitigating the effect of geographical disadvantages.

Similarly to many countries, the ageing of the rural population — especially farmers — is a great challenge for Hungary. The average age of a farmer is 56 years, and this has increased by five years in the last decade alone. To stop this tendency urgent action is needed. Farming should be a respected and profitable profession, and a rural lifestyle should again become a desirable option for youth. To achieve that, complex development of a wide range of sectors is required including education, extension services, rural infrastructure and public services. Targeted support can be provided for young farmers, as declared in the Hungarian Rural Development Programme for the 2014-2020 period, to assist them in starting their first

business, to encourage investments, to facilitate knowledge transfer and to ease the transfer of farms and early retirement of the previous generation.

Diversification of activities is a key factor in managing the sustainability of family farms and in stabilizing their economic value. Complexity of agriculture, dependence on environmental conditions and changing economic circumstances put pressure on farmers, which can be managed more flexibly by diversifying agricultural activities and performing non-agricultural activities as well. In addition, differences in qualifications and age lead to different priorities among family members, which can also enrich their business through various on-farm activities. These may include the development of infrastructure for agrotourism and providing leisure or recreational activities; producing handicrafts; preserving folk architecture; performing non-agricultural activities such as biogas production; economic diversification by crop diversification, animal husbandry and the development of processing facilities.

Young farmers contribute greatly to the diversification of family farms through new ideas, products, farming methods and other opportunities. The current development of markets contributes to the spread of organic farming, which is often introduced by young farmers as a main or complementary activity. However, diversification is often introduced because of economic pressure and financial restraints of farmers. This often encourages them to use their own labour force for activities which generate higher incomes, such as engaging in organic farming.

Promotion and development of organic farming is included in the existing Hungarian National Rural Development Strategy. Currently about 2,000 organic farms operate in Hungary on 135,000 hectares, contributing 2.5 per cent of total agricultural production. The development of this sector can be supported on the demand side by strengthening consumer confidence and awareness-raising about healthy diets, and on the supply side by encouraging farmers to convert to ecological or organic farming. This is realized among other things through the revision of rules and regulations in harmony with EU legislation, through incentives to increase production volume, processing and sale, through the development of extension services, and by initiating awareness-raising campaigns and promotion programmes.

As the general health condition of the population shows unfavourable tendencies, raising awareness about healthy diet is essential. Consuming healthy food is especially important for those groups which face greater health risks, such as children and elderly people. A new programme has been launched with great success with the aim to reverse these trends. The Catering Model Scheme focuses on healthy catering for the most vulnerable age groups in schools and nursery schools, hospitals and retirement homes. The programme gives preference to locally produced food, and some introduce organic products as well. The recent amendment of the law on public procurement, as well as the regulation of smallholders, has made it possible for local products to get into the public catering system. By supplying the public catering sector with local products a stable market is provided for rural farmers. This improves local employment and local economic development, and can even reduce environmental pollution by shortening of delivery distances. One of the aims of the Catering Model Scheme is to increase the proportion of local and organic food to 30 per cent in school catering. The scheme aims to substitute convenient solutions with labour-intensive meals prepared with good quality ingredients. This would give a boost to public employment programmes, especially targeting women.

National and European quality systems and geographical indications are widely used in Hungary to protect special agricultural areas, traditional specialities and production methods. This protection is especially favourable to family farmers. In general these quality schemes are beneficial for producers as they set higher prices for certified products, and they are also beneficial for consumers because of the high quality and certified content of these products. Certifying products also enables family farmers to enter premium markets abroad, which may ensure long-term profitability for them and an opportunity to grow. Two national initiatives started by the Ministry of Agriculture of Hungary are operating in market conditions on a voluntary basis and have proven particularly successful. The 'Excellent Hungarian Food Product' label increases consumer awareness about high-quality food products in Hungary and abroad. Between 1998 and 2002 about 450 products were certified and labelled. The Traditions-Flavours-Regions programme follows a double goal: enlarging the collection of traditional and regional products in Hungary as well as providing technical assistance and economic advice for their producers. With research and development new technologies can be developed, which enable farmers to produce traditional products with the possible application of new production methods.

Another effective measure in favour of family farmers is the agricultural advisory system, which was launched in 2007. The programme has been developed in compliance with EU regulations. Local Advisory Centres are spread out geographically to cover the country's whole territory, ensuring that advisory services remain easily accessible to farmers. These centres provide agricultural training and consultancy services, such as the preparation of professional documentation for tenders and aid applications, fertilizer provision and plant protection planning, assistance in financial management and sharing good agricultural practices. The Chamber of Agriculture of Hungary maintains a network of 670 advisers servicing about 200 customer orientation centres, providing general information on agricultural policies and aid programmes to agricultural producers including family farmers. The consultancy is free of charge for the farmers.

The measures and policies presented above showcase the complex efforts of Hungary to strengthen family farmers and enable them to increase their share in agricultural production; and in particular their contribution to the country's food and nutrition security. These initiatives have been proven successful in Hungary, and some ideas and practices might be applicable in other countries if adapted to their specific needs and circumstances.

Influencing family farming policy in Eastern and Southern Africa

Baliraine Hakim, Executive General Secretary, Eastern and Southern Africa Small Scale Farmer Forum

The Eastern and Southern Africa Small Scale Farmer Forum (ESAFF) is a network of grass-roots small-scale farmers' organizations working in 15 countries of the Eastern and Southern Africa (ESA) region. It is a small-scale farmer initiated, farmer led and farmer owned movement. Its purpose is to enable small-scale farmers, the majority of whom are family farmers in the ESA region, to speak as a united voice so that issues, concerns and recommendations become an integral part of policies and practices at national, regional and international levels. ESAFF started in 2002 parallel to the World Summit on Sustainable Development, and was registered in 2007 in Tanzania. ESAFF has an independent Regional Board consisting of farmer leaders from15 member countries, and its secretariat is in Morogoro, Tanzania.

Smallholders, crop growers, fisher folk and pastoralists account for 70 per cent of the population of about 300 million in the ESA region. Family farming is fundamental in ensuring food security and food sovereignty across the region (except in Southern Africa where large-scale farming is dominant) to about 70 to 80 per cent.

Family farming and agriculture contributes immensely to gross domestic product (30 to 50 per cent) in ESA countries as well as exports. It provides an opportunity for self-employment for millions of people in the region, and is a source of livelihood for most rural populations. Family farming is not just a practice, it is part of our culture. Not all family farmers are small, but especially in Africa, family farms are often considered to be synonymous with small farms and this can create confusion. Family farms are those in which family members provide most of the labour, including management, and own most of the assets. The size of the farm is limited by labour and capital constraints, but it varies according to the availability and cost of labour, capital, land and the institutions governing their movement.

There has been a general hypothesis that family farmers are resource poor, hence their productivity is limited and as a result they are vulnerable to food insecurity. This is not

Images: ESAFF

Agroecology puts emphasis on healthy soil, biodiversity and local knowledge development as a basis for sustainable increases in production

true, because family farming promises to create agricultural practices that are highly productive, sustainable receptive, responsive, innovative and dynamic. Given all these features, family farming may strongly contribute to food security and food sovereignty. It can also strengthen economic development, creating employment and generating income. It offers large parts of society attractive jobs and may contribute considerably to the emancipation of downtrodden groups. Family farming may also consistently contribute to the maintenance of beautiful landscapes and biodiversity. For food security to be a reality in the region, access to productive assets by family farmers should be prioritized. Family farmer-led agricultural growth strategies must be grounded within the context of prevailing asset distribution patterns. Agricultural assets include physical assets (land, water and labour), production assets (farm buildings, production equipment and infrastructure), intangible assets or services (marketing information, extension services), bulk infrastructure (telecommunication, sewerage and electricity), and production technology (seeds, plants and animal breeds). The majority of family farmers in the region have limited access to these assets; therefore they find it hard to actively participate in the agricultural economy.

Access to productive assets in the region is driven by past colonial policies and market forces of agro-industrialization. Colonization and related oppressive regimes marginalized indigenous communities' ethnic minorities from ownership and access of productive assets. The same economic exclusion policies were also extended to other assets and services such as water resources, extension and infrastructure. The dynamic of the agribusiness industry in the past three decades, also known as agro-industrialization, has also alienated family farmers in the input markets. These corporate outfits have commoditized and commercialized agricultural inputs, putting them out of reach for the majority of the family farmers and smallholder farmers. Water and land resource are still concentrated among few elite groups with the majority of the population who are marginalized from ownership and management of these resources. Many countries have done little to redistribute these resources; this is ironic given that most countries got independence through liberation wars which were premised on redressing skewed ownership of natural resources enacted by past colonial governments.

Access to input markets and agricultural services such as extension, bulk infrastructure and technology remains a challenge for the majority of family farmers in the region. The input markets in most countries are not well developed, and are characterized by the dominance of few foreign multinational firms, poor price transmission, and high transport costs due to distances between the rural population and manufacturing sources. The input market in most countries is also distorted by the dominance of government and donor subsidy programmes. Extension services in most countries operate below par with a high extension-farmer ratio, hence delivery of technical and marketing advice is compromised.

The region's governments have been addressing these issues using the industrial model of agriculture, while in family farming the peasantry agriculture model is used and this is called agroecology. Agroecology is very open to technological innovations but doesn't over-emphasize them. It rather puts emphasis on healthy soil, biodiversity and local knowledge development as a basis for sustainable increases in production. At the same time, it relates very strongly to indigenous knowledge systems. Above all, agroecology provides context-specific solutions rather than a 'one-size-fits-all' approach.

Images: ESAFF

A bumper maize harvest at Shashe after using organic compost

Family farmers by Zimsof, an ESAFF member

ESAFF is sharing an experience of family farmers in Zimbabwe using the agroecology model of agriculture. The main cause of food insecurity for many communal households in Zimbabwe is their reliance upon a form of subsistence-based agriculture which depends on a limited range of inputs often poorly suited to local conditions.

Livelihood Insecurity in a Changing Environment: Organic Conservation Agriculture is an initiative involving 791 resource-poor smallholder family farmers. It was undertaken in 2011 as a partnership between three organizations: Garden Africa, Fambidzanai Permaculture Centre and the Zimbabwe Organic Producers and Promoters Association. Initially an 18 month action research project, it was extended to a further two years, to end in 2015.

The project was founded on social and market research which revealed a steadily growing domestic demand for organic produce. Such demand was being serviced by imports from South Africa while Zimbabwe's resource-poor smallholder farmers remain net recipients of food aid. The initiative therefore sought to facilitate livelihood opportunities based on market realities, while applying sound ecological management to restore ecosystem functions for sustained productivity and growth.

Image: ESAFF

Animals' droppings and urine on maize stoves are mixed as the animals step on it; in three months it will be transferred to the field as manure

The primary objective of this project has been to promote a shift to agroecological farming. This involves rebuilding soil organic matter and protecting it from further depletion, and promoting a return to a productive diversity through intercropping and rotation. By increasing biodiversity and habitats, farmers are restoring the balance between pests and natural predators and attracting pollinators to improve yields. With market in mind, the second objective was to explore opportunities presented by organic certification and market development for Zimbabwe's smallholder sector in providing organic produce.

The project area is in nine districts of Mashonaland East province, which ranges semi-arid to dry sun- humid, providing a strong empirical basis for testing permaculture methods and the different strategies to be employed. The initial baseline revealed that all farming households were producing at below subsistence level, with extremely low levels of agrobiodiversity, leaving them vulnerable to adverse ecological, social and economic pressures. The level of farmers' coordination was low, affecting information sharing transacting costs and collective action to address natural challenges, with food and agricultural inputs regularly used as political tools.

This project is indicative of the situation in the whole country. The average maize yield in Zimbabwe in 2012 was 83 kilograms per hectare, bearing in mind that the US average is 10 tons per hectare. Having started at below subsistence-level productivity, some of the project farmers have since achieved the equivalent of 8 tons per hectare using wholly organic methods. The word 'equivalent' is used here because on their communal smallholdings of between 1 and 1.5 hectares each, the farmers are encouraged to diversify their crops to include herbs, fruits and vegetables, some for household consumption and some for market. This is generally not considered in standard measurements of farm output which focus on primary crop yields only, so it remains invisible to national statistics. The success of the project was measured through a series of indicators such as relative increases in farm diversity, yields and incomes of the initial 591 participating farmers. Within the 18 months of the project, agrobiodiversity had increased by 122 per cent, yields by 72 per cent, and incomes by up to 90 per cent.

By the time the project entered its second phase a further 200 farmers had joined, either through new or existing associations. Furthermore 3,562 more members were incorporated into the national organic membership body, resulting in Zimbabwe's first 160 hectares of locally certified organic land with its produce entering the domestic supply. After only 30 months, the 40 associations, having begun at below subsistence productivity levels, had earned US$69,880 between them.

From the outset, it was clear that aligning the demands of the market with sound ecological practices would be a delicate balancing act. The emerging reality is that the market is also demanding diversity. Central to this project has been facilitating the generation and transfer of knowledge, skills and confidence to harness the potential of natural and social

capital, and aligning this with existing consumer concerns and demand. While organic certification is the not the only way to protect ecosystem services, the family farmers' experience in this project demonstrates that where conditions are favourable, organic certification can serve as a significant market-based mechanism to build confidence in farmer-led ecosystem restoration. Through this approach, viable farming communities can once again emerge in Zimbabwe, and perhaps elsewhere in sub-Saharan Africa.

Gender and family farming in ESAFF

Agriculture is one of the most accessible activities for the world's poorest people. Eastern and Southern Africa are no exceptions. Women constitute the majority of the poor, unskilled, rural people. They are more dependent on agriculture to meet their reproductive and productive responsibilities of feeding the family and raising healthy children. In 2002, in Eastern and Southern Africa (with the exception of Botswana, Mauritius and South Africa), women were more concentrated in agriculture than in any other sector. Women's concentration in this sector is strongest in Tanzania, Malawi and Mozambique, Uganda and Kenya respectively. The way in which labour is divided between men and women and the apportionment of control over land, labour, technology and access to finance in the domestic unit have a bearing on the ways women and men can participate and benefit from the products of the agricultural sector.

Most nations of Eastern and Southern Africa are former colonies; the colonial regimes set up dualistic agriculture systems, a legacy which has persisted to the present. The system has fast-growing commercialized agriculture working along a subsistence system which is characterized by family-based farming in relatively small units in the rural areas. These subsistence systems were established to allow indigenous people to grow subsistence food to supplement their wages from labour on the commercial farms. The system in which males have more access to waged labour and women more or less dominate subsistence agriculture on smallholder farms highlight the need to be sensitive to women when making polices that impact on subsistence agricultural systems.

Access to capital is an important precondition for determining agricultural productivity. Although various credit schemes extend support to farmers in the ESA region, women are marginalized by conditions set for accessing credit. Women receive less than 10 per cent of the agricultural credit. This is because of women's lack of collateral, education, numeracy and information. In some cases women need consent from their spouses to qualify for credit. When women control income, they prioritize expenditure on school fees, food and clothing. In the commercial agricultural sector which is characterized by capital intensive production mainly for the market, women are marginalized as farm owners as they lack access to the capital required to secure and operate large concerns. As a result, women's enterprises are more likely to collapse because they are forced to purchase inferior equipment or materials. In addition, microfinance can burden women with debt repayment while male relatives use the credit and withdraw their contributions to household budgets.

Women in the region remain disadvantaged economically and socially, generally as a result of their subordinate legal status. Discriminatory laws entrenching gender inequality which were crafted during the colonial era still exist, especially in the field of family. Married women do not have the same rights as their husbands over family property and decision-making. Sons and daughters do not have the same property and inheritance rights. Dual legal systems (statutory and customary) remain in effect in all ESA countries. Property rights in patriarchal customary land tenure areas award primary land rights to men. These land rights are acquired through marriage and inheritance. With the exception of matrilineal societies in parts of Zimbabwe, Zambia and Mozambique, women farmers in customary land tenure areas have derived land rights. These rights are derived on the basis of their marriage to a male husband, brother or father. The positioning of women in the customary tenure areas makes their land rights precarious and vulnerable to the death of the male intermediary through which they negotiate access to land.

If we use a value chain approach to gender we can assess how women and other marginalized groups are not currently benefiting from their productive activities, and what can be done to improve the success of this engagement. Gender inequity in agricultural value chains is also a missed business opportunity, as investing in gender equity can improve the overall chain. Although women do most of the agricultural work, their benefits are normally limited to the primary production. This is in spite of the fact that agricultural produce increases in value as it moves up the value chain from the producer to the markets. There is evidence that once women's niche in the value chain becomes profitable, it will be vulnerable to capture by men. There is an important role for government policy to reduce poverty through reducing risk, encouraging sustainable agriculture, education and skills, and implementing measures to tighten rural labour markets and improve access to land.

ESAFF has the following recommendations to make. There is need to implement land tenure reforms which offer family farmers and smallholder farmers a regulatory mechanism so they use the land as an investment asset. Water sector reforms need to be implemented by reallocating water rights to ensure fair distribution between big business (industry and large-scale commercial farmers), family farmers or smallholder farmers. Investment in the construction of irrigation facilities is needed to counter the cyclical production challenges facing rain-fed agriculture. There is also a need for investment in appropriate technology development to allow family farmers to improve on their varieties and technology, hence boosting productivity.

Efforts must be made to refrain from anti-competitive behaviour which distorts the family marketing approaches, and to create strategic partnerships with government to improve family farmers' access to productive assets, for example microfinance products to fund family farms. Organisation among farmers is a priority at primary (cooperatives), secondary (commodity associations) and tertiary (farming unions) levels to coordinate and lobby their access to productive assets.

Slovenia: where family farming underpins nature and strengthens local economies

Tanja Gorisek, Ministry of Agriculture and Environment, Slovenia

For Slovenia, a small, predominantly hilly and mountainous country located in the middle of Europe, family farming has been a principal model of agriculture for centuries and it is certain to remain so in the future. This model has proved adaptable to the diverse natural characteristics of Slovenia and resilient to the societal, political and market turnovers the country has faced over the years as part of different political constellations.

Slovenia's territory is characterized by its diversified terrain, rich cultural heritage and abundant and diverse natural sites. Almost 90 per cent of its territory lies 300 metres or more above sea level, while plain areas in the form of closed valleys and basins account for less than 20 per cent of the entire territory. The diversity of natural conditions directly influences dispersed settling, with a large number of small settlements. It is also the reason for an exceptionally diverse and relatively well preserved natural environment. Less favoured areas for agricultural activity cover 86.3 per cent of the entire territory of the country, of which 72.3 per cent are mountain areas. Due to high biodiversity, 37.2 per cent of territory is included in Natura 2000 areas, which is the highest share in the European Union (EU). Forests cover 70.7 per cent of the Natura 2000 area. Forests are in fact a predominant feature of the Slovenian countryside as they cover almost two thirds of the country, placing Slovenia at the very top of the EU in the share of forests. It is, therefore, no surprise that 84 per cent of the 74,646 agricultural holdings in Slovenia also own woodland according to official statistical data. Forests comprised 42 per cent of the entire area of land used by agricultural holdings in 2010, implying the importance of wood as an asset and an additional source of income.

Throughout the centuries, unfavourable geographic conditions have made it impossible for Slovenian farmers to obtain larger plots of agricultural land. According to the Statistical

Image: Kristjan Malačič

Family farming is the predominant model of agriculture in the small, hilly and mountainous country of Slovenia

Office of the Republic of Slovenia (Agricultural Census 2010) and the Slovenian Agriculture Institute, an average agricultural holding cultivates 6.4 hectares of utilized agricultural area and breeds 5.6 livestock units. Considering that most of the utilized agricultural land is located in less favoured areas, the structure of this land is still grasslands and pastures, which account for more than half (59.2 per cent) of agricultural land, followed by arable land and gardens with 35 per cent and permanent crops with under 6 per cent. The relation between grasslands and arable land has lately been decidedly transformed in favour of grasslands. The share of grasslands in the structure of agricultural land use is almost twice as high as the average share in the EU-27. Despite the large share, it is characteristic of grasslands in Slovenia that they are relatively poorly utilized economically, as extensive grasslands still account for a larger share than intensive ones. Traditional, extensive farming caused the emergence of certain types of secondary habitats, which have an exceptional importance in the preservation of biodiversity.

Since 2000, processes of increasing specialization and concentration have, nevertheless, taken place. Moreover, Slovenia has witnessed a steep increase in the number of organic agricultural holdings since the late 1990s. In 1998, 41 agricultural holdings were included in control, while the number had increased to 2,682 by 2012. Despite all this, the competitiveness of Slovenian farms in comparison to EU-27 remains low because of their small size. The average economic size of agricultural holdings expressed as standard income in 2010 was €12,233 (compared with €25,450 for EU-27). A low level of market orientation is another characteristic of Slovenia, as only 40 per cent of family farms place most of their output on the market. A major share of farm products is used or sold directly at agricultural holdings. Due to specific agrarian structure, the majority of Slovenian farms cannot survive on agricultural income alone (less than one fifth can); therefore, they generate income from other sources on or outside the farm.

According to official statistical data, more than more than 208,000 active working persons pursued agricultural activities in farm enterprises and family farms in Slovenia in 2010. Their labour input, together with those who performed seasonal or occasional work, amounted to 77,012 annual work units (AWU) or around 8 per cent of all employed persons in Slovenia. As much as 89 per cent of work in agriculture in 2010 was performed by family labour. One AWU in Slovenia cultivates 6.3 hectares of utilized agricultural areas, which is almost three times less than the EU-27 average. This can also partly be ascribed to the unfavourable natural conditions for agricultural activities.

As far as demographic structure is concerned Slovenia, like other EU countries, is witnessing a trend towards an unfavourable age structure of owners of agricultural holdings, with just 43.4 per cent of farmers being younger than 55 years. Only 4.3 per cent of owners of agricultural holdings are younger than 35, which puts Slovenia among the countries with the smallest share of young owners of agricultural holdings, and means it significantly lags behind the EU-27 average (7.5 per cent). The educational structure in Slovenia is somewhat better than the EU-27 average, as less than two thirds (64.4per cent) of owners of agricultural holdings have only practical experience in agriculture (the EU-27 average is 70.4 per cent), while the share of those with full agricultural education stands at 8.9 per cent (EU-27 average: 7 per cent).[1]

Image: Dunja Wedam

Mowing on steep slopes in Sorica: almost 60 per cent of Slovenia's agricultural land is grassland and pasture

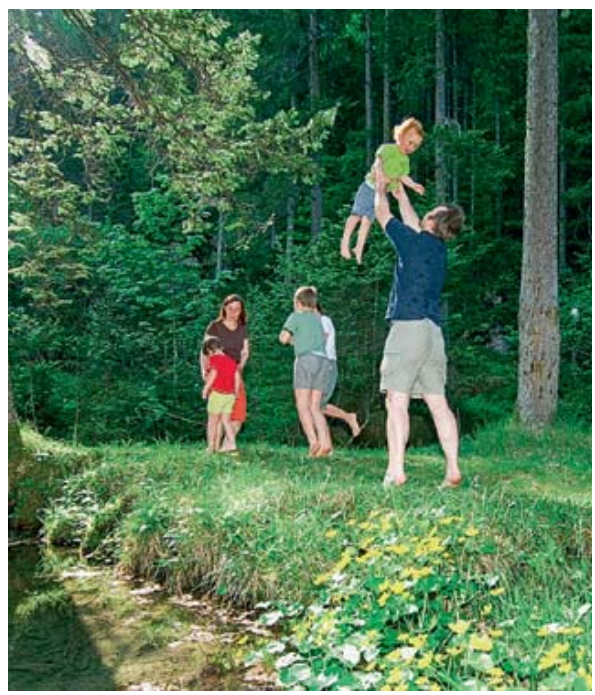


Image: Archive of the Ministry of Agriculture and Environment

Forests are a predominant feature of the Slovenian countryside, covering almost two thirds of the country

Image: Živa Rant

Arable land and gardens account for only 35 per cent of Slovenia's utilized agricultural land

Various structural characteristics of Slovenian agriculture — particularly a low labour productivity, unfavourable demographic and size structure of agricultural holdings, and fragmentation of holdings — therefore reduce the efficiency of the use of production resources and hamper faster development in agriculture. In view of the challenges mentioned, family farming could provide the right answers. The family farming system has proved to be a sufficiently resilient model throughout history to accommodate unfavourable natural conditions, increasingly volatile prices on the internal EU market and worldwide, and changes in consumer patterns and preferences. To a great extent it has remained sustainable, with extensive farming being the predominant type of farming. It has withstood the processes of societal and economic restructuring the country has witnessed over the last couple of decades, with the diminishing economic importance of this sector and the radical change in the demographic structure of the countryside. But what is more, in view of the current economic and financial crisis, it has proved more stable than other economic sectors. Once again, family farming has proved indispensable within local economies.

Today, the concept of family farming stands at the crossroads, not just in Slovenia but worldwide. If all premises of its future development were clear and its existence secured, why then would we proclaim 2014 the International Year of Family Farming? In Slovenia, the importance of family farming has been emphasized in several strategic documents outlining the development of agriculture towards 2020. In 2011, the state adopted the *Resolution on the strategic direction of development of the Slovenian agriculture and food sector towards 2020 —'Ensure our food for tomorrow'*. This document provides a foundation for the Strategy on the implementation of this Resolution adopted in 2014 as well as for a rural development programme (RDP 2014-2020) worth €1.18 billion. This is the most important financial instrument for agriculture in Slovenia, co-financed from the EU budget in the financial perspective 2014-2020.

All these documents refer to agriculture as being an economic activity of special significance, with market-oriented family farms being the cornerstone of a sustainable model of agriculture. The aforementioned resolution states that agriculture should keep on providing an adequate supply of safe food, thus satisfying one of the basic needs of society, while at the same time it should provide other important social functions and intangible (public) goods. The ecological function of farming, for instance, is defined by its decisive contribution to the quality of water, soil, air and biodiversity. Moreover, agriculture still has a significant impact on the cultural landscape and its aesthetic and natural values. Undisputed, too, is the role of healthy, locally produced food and safe production processes in ensuring human health. With its economic and social role, agriculture has an important effect on the vitality and population density in rural areas.

Family farming is considered to correspond to all these aspects of a sustainable agricultural model. But in order to really do so, proper environment and incentives need to be ensured. Future development can only be based on farms which are professionally engaged in agriculture, which have a clear vision of their own development, are able to adapt to market conditions, and will focus on the production of high-quality products with higher added value. Moreover, these farms should have access to modern technology, land, financial assets, knowledge and innovation in order to be able to produce more effectively with significantly less impact on the environment. They should be stimulated to increase their competiveness by being better integrated into the agri-food chain through quality schemes, adding value to

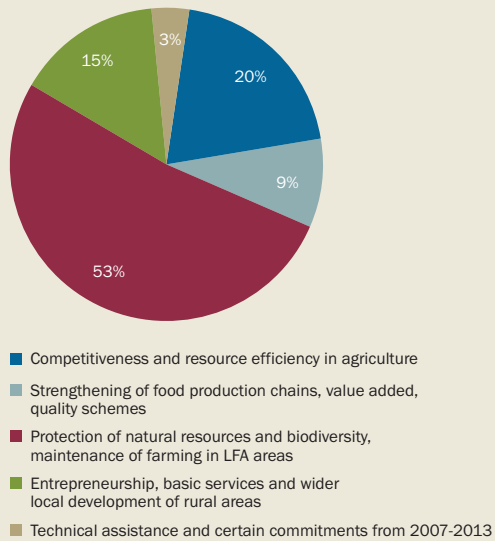
agricultural products, promotion in local markets and short supply circuits, and other forms of cooperation.

These aspects, among others, have all been incorporated in the following six key priority areas of intervention of the future RDP 2014-2020:

- facilitation of processes of structural adjustment in agriculture and, consequently, the creation of conditions for increasing the productivity of Slovenian agriculture
- more efficient organization of the agricultural market, strengthening of food production chains and higher recognizability and quality of locally produced products
- sustainable exploitation of forests and increasing added value of wood, with better market integration in the field of forestry and along the forest-wood chain, and by increasing competitiveness in forestry and non-industrial wood processing
- promotion of agricultural practices which contribute to the good condition of natural resources and adaptation to climate change
- green jobs and coherent and sustainable development of rural areas, based on developing the potential of the local environment
- transfer of knowledge and innovation, environmental care and climate change which are horizontal objectives pursued by all five priority areas, the preservation of natural resources being the strongest objective among these with more than half of the available funding (52 per cent) awarded within RDP 2014-2020.

The common goal of all six key priority areas could be summed up as reinforcing existing family farming systems to be able to cope with new realities by underpinning them in achieving increased economic and environmental effectiveness, and to improve their market access by creating viable local markets. Young families should be at the heart of all these efforts as they are the future backbone of rural economies. Not only could they play a pivotal role in the maintenance of farming, they are also often more inclined towards linking agriculture with other spheres of the local economy such as rural tourism, natural and cultural heritage, traditional knowledge and skills, educational activities, renewable energy production and social care. Young farmers should, in particular, be stimulated to take over the farm and grasp the opportunities of this profession as they are usually more innovative, resource-efficient and entrepreneurial, and can effectively combine the knowledge and experiences of older generations with the latest developments in the sector. This capacity for knowledge transmission from one generation to another, maintenance of tradition, mutual support among the generations as well as involvement in the local community, is another unique characteristic of family farming, which strengthens social tissue and contributes to the vitality of local communities. Taking account of all these aspects, family farming could, indeed, prove to be a challenging but also a promising economic activity for young, entrepreneurial people. The young will be supported under RDP 2014-2020 using the measure called 'Farm and business development', which will offer them start-up aid for the development of their farms. Structural change, increased competitiveness and generational renewal will be allotted 20 per cent of all available funds from RDP 2014-2020.

Allocation of RDP 2014-2020 funding



Source: Ministry of Agriculture and Environment, Slovenia

Since unfavourable structural and natural features prevent Slovenian agriculture from achieving the competitiveness of countries with significantly better conditions, focus will also be laid on increasing the added value of products and achieving greater differentiation in the offer of products which consumer will recognize. Greater emphasis will be laid on developing local markets and short supply chains to stimulate local production, job creation and the wider economic and social vitality of the countryside, as well as market organization and cooperation in agriculture and forestry. Approximately 9 per cent of all available programme funds are intended for this priority. The largest share of funds is dedicated to the processing and marketing of farm products, where different types of repayable assistance (such as credits and subsidized interest rates) will be made available alongside grants.

In the area of promoting wider local economic development in rural areas, emphasis will be given to the preservation and establishment of new jobs, diversification of income on farms, and local partnerships. The intention is to stimulate economic development by activating available local resources and potentials, such as wood, rich natural and cultural heritage, a qualified labour force, tourism, social entrepreneurship, renewable energy production and waste management. Altogether, 15 per cent of the available funds from RDP 2014-2020 are dedicated to this priority, which is targeted at developing economic activities in the countryside and local development. Apart from grants, different types of repayable assistance for start-ups will be introduced, thus addressing the need to ensure better access to funding.

With all the right incentives and the proper environment, family farming with its roots deep in the past could provide the right answer for our future as well.

Thailand initiatives for strengthening family farming towards food security, farmer well-being and sustainable development

Agricultural Extension Research and Development Division and Planning Division, Department of Agricultural Extension Ministry of Agriculture and Cooperatives: Kingdom of Thailand

Thailand's development has been generally based on agricultural production, which is mainly supported by smallholders. Agricultural production continues to be the basis of the livelihood of the majority of Thailand's 65 million people, about one-third of whom are presently engaged in agriculture. Although agriculture's share of gross domestic product in 2013 was only 8.3 per cent and has decreased substantially, it still accounted for 20.2 per cent of the total value of exports, including agricultural products and agromanufacturing products.

Of the country's total land area of 321 million rai (about 51.4 million hectares), 115 million rai or 36 per cent is under agriculture with a farm labour force of 39.1 per cent. Therefore, agriculture is still of great importance to the Thai economy, since the majority of the population still earn their living from it in terms of a key source of income and a base for value-added activities.

Image: MOAC – Thailand

Outstanding farmer, Mr Patphong Monkolkanjanakhun, received the national award in 2014 for integrated farming by practicing the 'New Theory' agriculture

According to farmer registration, in 2013 there were 7,074,355 farm households in Thailand, of which the majority are small-scale farmers who hold an average 3 hectares of land. These farmers not only face the challenges of accessibility to capital, agricultural technologies and inadequate land for farming; they also have to cope with sudden natural disasters such as flood, drought and unusual rain as well as soil erosion, disease epidemics and outbreaks of insect pests. Agricultural chemicals are still used for high yield production, while natural resources have been depleted and the environment has been degraded, causing climate change. Therefore, production is effected in terms of damaged products, lower production, inadequate food intake, insufficient income for family consumption, and malnutrition. These also have an impact on food security, poverty, migration and the use of existing resources. Furthermore, the multi-polar economy and the integration of the Association of Southeast Asian Nations community in 2015 will affect the competitiveness of small-scale farmers.

In order to cope with such phenomena, Thailand has adopted His Majesty the King's Philosophy of 'sufficiency economy' as its guiding principle since the Ninth National Economic and Social Development Plan (2002-2006). In order to achieve sustainable development with a people-centred approach and pave the way towards a good balance between environmentally friendly production and consumption, it is necessary to enhance the country's self-resilience by strengthening its economic and social capital and improving risk management to effectively handle internal and external uncertainties.

Sufficiency economy is a philosophy that stresses the middle path as an overriding principle for appropriate conduct by the populace at all levels. This applies to conduct at the level of families and communities, as well as the level of national development and administration so as to modernize in line with the forces of globalization.

The strengthening of the agricultural sector and the security of food and energy are key development strategies to ensure sustainable agriculture from the family level up to the national level. Thailand, through the Ministry of Agriculture and Cooperatives, has laid down a Food

Security Strategy Framework for 2013-2016 which consists of the following strategies:

- produce adequate food for sustainable domestic consumption
- enable all Thai people to access food at all times
- enhance good quality and safe food production, reduce food waste and promote appropriate food utilization
- promote the sustainable use of natural resources for food production.

Sustainable agriculture in Thailand is classified according to five models. Farmers can adopt one of these alternatives for their farm practice and community empowerment, depending on which is best suited to their context.

1. *The integrated farming model* focuses on the production of more than two activities at the same time, each supporting the other to manage risk and economic needs.

2. *The organic farming model* entails chemical-free production and farming.

3. *The natural farming model* entails farming with an emphasis on the rehabilitation of ecological balance and minimal disturbance to nature.

4. *Agroforestry* is a model for mixed agricultural production and forestry to build up biodiversity.

5. *New Theory agriculture* is the King's theory which is regarded as a new sustainable model of agriculture towards self-reliance for rural households. The main purpose is to make farmers more self-reliant through holistic management of their land, while living harmoniously with nature and within society. The complete practice has three stages:

- Sufficiency at the household level in terms of food, and generating proportionate income from selling extra crops and products beyond the necessary consumption of the household. This provides basic self-immunity for farmers against diverse adversities.
- Sufficiency at the community or organization level, based on farmers' cooperative activities with their neighbours in the community and the sharing of each household's excess resources. This can be compared to a cluster development of businesses in the same locality with similar activities to achieve economies of scale and scope.
- Sufficiency at the national level — the most advanced stage. The community is encouraged to expand its activities by reaching out to cooperative firms, banks and other outside sources in order to develop a production value chain.

Emphasis is also placed on farmers' participation, capacity-building in farm management, and increasing land use for sustainable agriculture by at least 5 per cent in 2020. Implementation guidelines have been devised to promote the benefits of sustainable agriculture, increase sustainable land and encourage awareness of natural resources rehabilitation and conservation.

Activities include promoting the varieties of agriculture activity from the five models. Learning processes have been set up to let farmers learn about their local wisdom, social capital, natural resources, environment, self-help and independence, so that farmers can manage their farms based on their own resources. Farmers are encouraged to produce enough for household consumption before selling extra crops and products to generate additional income.

Efforts are in place to encourage less use of chemicals for agricultural production and to extend the application of the 'Three decreases, one increase and two practices' methodology as follows:

- decrease the seed rate especially in rice production (rice is the staple food of Thai people)
- decrease chemical fertilizer
- decrease chemical input
- increase soil fertility
- practice sufficiency economy
- practice bookkeeping.

The concept, '3 Forests, 4 Benefits,' is also promoted for farmland. The three forests to be planted should be one

Image: MOAC – Thailand

The small scale mushroom production unit can be the source of household protein food consumption and earn daily income, as well

Image: MOAC – Thailand

The pond is aimed to store rainwater and used to support dry season farming, fisheries, swine and poultry production as well as water plants

Image: MOAC – Thailand

Rice farming will provide all year round food for the family. It is the main concept of 'New Theory' agriculture. This is also to reduce expenditure and increase self-reliance

Image: MOAC – Thailand

Fruit trees, perennial trees, vegetables, field crops, herbs, etc. to be used for daily food, with the surplus to be sold as a source of additional family income; while vetiver grass is for soil and water conservation

for timber, one for fruits and one for firewood, all of which would yield benefits to the people in a symbiotic manner. In addition to these, the fourth benefit is the conservation of soil and water.

Linkages between the community and other parties are encouraged, in order to share and involve others in the development of sustainable agriculture.

In order to strengthen the contribution of family farming, the empowerment of farm women is crucial factor. Farm women are important family members who make decisions, carry on agricultural production processes, and manage food consumption and household expenses. Thailand has prioritized and concretely included rural farm women in development policy, focusing on:

- recognizing farm women as agricultural producers
- enabling women to participate in family farming as the partners of men in terms of the decision-making process, planning, access and utilization of resources and technology adoption
- enabling farm women to access credit and other support services
- encouraging the establishment of farm women's organizations and networks to organize agricultural processing and value-added activities to generate family income and decrease household expenses
- assigning officials to be responsible for the development of farm women.

Thailand stresses the importance of encouraging young farmers and farm youth to follow in the footsteps of their parents and engage in farm occupations. Policy has been focused on building up a good attitude towards agriculture and creativity in leadership of the farm business among young farmers, both in school and outside school. In addition, the Young Smart Farmer project has been initiated in order to motivate young farmers to carry out family farming for self-sufficiency while taking into account increased competitiveness.

The participatory approach is the key concept of agricultural extension nowadays, and information communication technology is the main tool for handling any process. Important mechanisms for rural agricultural development include cooperation with mutual-interest networks (public and private organizations, local government units and other organizations) as well as partnerships (such as local leaders, local experts, agriculture village volunteers, smart farmers, youth, occupation groups and community enterprises). Farmers are encouraged to share their needs, interests, knowledge, resources and problems to formulate a community development plan. Subsequently, the extension agents will facilitate the proper interventions by sharing experiences, imparting new technologies or skills, and exploring new information and other farming approaches to improve productivity and quality of life. The sufficiency economy learning centre and agricultural productivity learning centre, located in the village, are learning areas for local farmers. Meanwhile, the agricultural service centre at district level provides agricultural services to farmers and the general public.

His Majesty the King Bhumibol Adulyadej of Thailand has adhered to his ideal in relentlessly devoting himself to the well-being of the Thai people. The main aim of this development work is to enable people to have enough to live on and to eat and to become self-reliant. There are 4,100 royal development projects covering several areas. Moreover, His Majesty initiated the establishment of six Royal Development Study Centres in all regions throughout Thailand. These provide a place for study and experimentation, enabling the successful development of models for various aspects before demonstrating and disseminating the knowledge to farmers and the general public. Farmers and the public can then use these models as development guidelines for earning their daily living, especially engaging in family farming for self-reliance and a better quality of life.

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The family farm in Europe and Central Asia

About the author

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1. The squeeze on agriculture results in low to very low incomes, threatening its viability and reducing the possibilities for an agricultural rejuvenation.

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About ILEIA

- ILEIA – Centre for learning on sustainable agriculture, facilitates practice-based knowledge sharing on agroecology and family farming. ILEIA publishes a global magazine, *Farming Matters,* a unique platform for sharing experience in sustainable agriculture which is read by over 1 million readers in more than 150 countries. www.agriculturesnetwork.org/magazines/global
- ILEIA is the Secretariat of the global AgriCultures Network, with members and allies in Asia, Africa and Latin America and Europe. www.agriculturesnetwork.org/about-us

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1. The definition of food in the Indian context includes major cereals such as paddy and wheat, coarse cereals such as maize, sorghum, as well as millets and pulses.
2. Smallholder agriculture is a term which includes 'small' farmers with up to 2 hectares (5 acres) of land and 'marginal' farmers with less than 1 hectare (2.5 acres) of land; 84 per cent of India's 130 million-odd farm households are classified as small or marginal.

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The author is a civil servant currently working for the Ministry of Agriculture, Government of India. Views expressed here are personal.

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Family fishing to sustain the well-being of fisher communities

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18. LEADER is a French acronym, standing for Liaison Entre Actions de Développement de l'Économie Rurale', meaning 'Links between the rural economy and development actions'. This initiative is designed to help rural actors consider the long-term potential of their region. It functions through Local Action Groups made up of public and private partners from the rural territory, including representatives from different socio-economic sectors.
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20. See section 3 lit. a of article 5 of the new EAFRD Regulation http://ec.europa.eu/digital-agenda/en/news/eu-regulation-rural-development-eafrd
21. E.g. support for construction of an on-farm shop to sell agricultural products or of on-farm tourist accommodation for serving meals made from own produce (articles 17 and 19b of the new regulation on EAFRD funded support).
22. E.g. support to cover quality scheme participation costs (article 16, EAFRD regulation)
23. E.g. organising genuinely local markets and short supply activities, such as farmers markets, box delivery schemes, or food festivals. (article 35, draft regulation on EAFRD funded support).
24. Source: ENRD, RDP Project Database, http://enrd.ec.europa.eu/policy-in-action/rdp_view/en/view_projects_en.cfm?action=detail&backfuse=jsview&postcard_id=6840
25. http://ec.europa.eu/agriculture/quality/schemes/index_en.htm

Empowering Uruguay's family farmers

1. Mate is a typical Uruguayan infusion prepared with yerba mate and served in a special kind of vegetable gourd.
2. Cooperativa Nacional de Productores de Leche (CONAPROLE) means National Cooperative of Dairy Farmers. It is the biggest dairy Company in Uruguay.
3. 'Ceibalita' is the name given in Uruguay to the XO Laptop from the One Laptop per Child programme implemented by the Uruguayan Government since 2007.
4. Instituto Nacional de Colonización means Public Colonization Institute. It is a public institute that provides land to family farmers in Uruguay.
5. Sociedad de Fomento Rural means Rural Development Society, an organization of family farmers, land-based.
6. 'Mesas de Desarrollo Rural' means Rural Development Boards. These are dialogue spaces and public-private partnerships. They have been created by law in Uruguay and they have been working since 2008. Nowadays, 40 Rural Development Boards are functioning all over the country and between 400 and 500 farmer social organizations, communities and rural workers participate in them.

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Overcoming the shameful paradox in Madagascar's vanilla sector

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Notes

The main source for this article is a research report by Fairfood International published on 25 February 2014, titled *Recipe for Change, the Need for Improved Livelihoods of Vanilla Farmers in Madagascar*. Fairfood conducted field-level research in Madagascar's Sambava region using interviews, surveys and focus group meetings. Further, big multinationals sourcing vanilla were given the opportunity to comment on the findings during Fairfood's fair hearing process. http://www.fairfood.org/wp-content/uploads/2014/02/Vanilla-report.pdf, Accessed February 25, 2014

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7. Fairfood is an international non-profit organization. Fairfood's mission is to improve the socioeconomic conditions of vulnerable people, such as smallholder farmers, workers (especially women) and consumers in our food system and to ensure the sustainable production and consumption of food, by influencing the policies of global food and beverage companies and governments. One of the sectors Fairfood is currently focusing on is vanilla in Madagascar.
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