

Mahila Kisan Sashaktikaran Pariyojana An Initiative Towards Empowering Women Farmers



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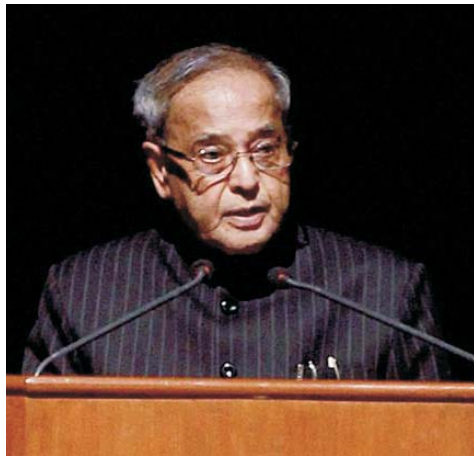
A narrative of Mahila Kisan Sashaktikaran Pariyojana and women farmers who have forged ahead through darkness and despair and emerged in their brave new world

*Endurance, foresight, strength, and skill;
A perfect Woman, nobly plann'd,
To warn, to comfort, and command;*

– *William Wordsworth*

MAHILA KISAN SASHAKTIKARAN PARIYOJANA SCALED UP AS A NATIONAL PROGRAMME

MSSRF initiated the *Mahila Kisan Sashaktikaran Pariyojana*, in Wardha and Yavatmal districts of Vidarbha region, in 2007. The seed sown by MSSRF is now a National Programme. **Shri. Pranab Mukherjee**, the then Finance Minister, Government of India, in his budget speech, in February 2010, announced:



“A **Mahila Kisan Sashaktikaran Pariyojana** to meet the specific needs of women farmers is being launched. I have provided Rs.100 crore for this initiative as a sub-component of the National Rural Livelihood Mission”.

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PREFACE

It has taken a long time to recognise the role of women farmers and their social needs particularly because they often do not have title to land. The National Commission on Farmers (NCF) enlarged the definition of farmers as below:

“farmer” means any person who is, individually or jointly with any other person, –

- engaged in agriculture directly or through the supervision of others; or
- contributes to conservation or preservation of agriculture related varieties or seeds or breeds of farm animals; or
- contributes through traditional knowledge to any type of innovation, conservation or to propagation of new agricultural varieties or to agricultural cultivation methods or practices or to the practice of crop - livestock integrated farming systems.
- Promotes agro-processing, and value-addition to primary products

The term “farmer” will include, but not limited to, agricultural operational holders, landless cultivators, agricultural labourers, planting labourers, pastoralists, sharecroppers and tenants. The term will not include corporate entities operated by or involving farmers. In case of landless farmers migrating or moving from one state to another, if anyone stays in a state for at least six months, such person may be considered as a farmer in that particular state.

“woman farmer” means and includes, irrespective of marital status or ownership of land, any woman who is a farmer.

- any woman living in rural area and primarily engaged in agricultural activity, though occasionally engaged in non-agricultural activity; or
- any woman living in urban or semi-urban areas and engaged in agriculture; or
- any tribal women directly or indirectly engaged in agriculture or shifting cultivation or in the collection, use and sale of minor or non-timber forest produce by virtue of usufructory rights.

Based on NCF reports, the then Finance Minister Shri Pranab Mukherjee introduced in the budget for 2011 a project for the empowerment of women in agriculture. This programme was titled, “Mahila Kisan Sashaktikaran Pariyojana”. In the implementation of this project, MSSRF was invited to take part. This report is a summary of the work done by women farmers under the Mahila Kisan Sashaktikaran Pariyojana implemented by MSSRF under the leadership of Dr. R. Rukmani. The report indicates how farm women’s empowerment can be accomplished. I hope it will be read widely and used for enabling women farmers’ to receive the kind of support the men farmers do.



M S Swaminathan

ACKNOWLEDGEMENTS

Engagement with the Mahila Kisan Sashaktikaran Pariyojana (MKSP) has been one of the most rewarding experiences of my professional life at the Foundation. I am grateful to our Founder Chairman, Prof. M. S. Swaminathan for giving me an opportunity to propose a plan of expansion of MKSP and to oversee and direct the programme's execution. I thank Professor for his constant guidance, motivation and support, and especially for the trust he placed in me and my team.

I received excellent support from a team of sincere, dedicated and committed colleagues in executing MKSP: Kishor Jagtap coordinated the entire field level implementation of MKSP across 60 villages; Charusheela Thakare, Jyotsna Raut and Nalu Shambharkar were responsible for implementation of MKSP at cluster-level; Hemant Thakare and Prashant Deokar provided technical support in the area of agriculture; Sonali Phate and Suchita Ingole gave technical support in promotion of nutrition literacy and kitchen gardens; Anjali, Archana, Atul Naik, Bagyashree, Dhammashila, Kishor Lokhande, Manjusha, Rupali, Satish all have assisted in field activities; Anuradha was involved in devising and implementing a monitoring plan for MKSP as also in the financial management of project funds; Pravin Kumbhalkar and Sakthi Velan took care of maintenance of accounts. Rahul, Avinash, Sonali and Vijaya have worked at different points of time in managing the database. I owe a million thanks to each of my dear colleagues, for the passion, enthusiasm, commitment and integrity with which the work was accomplished.

The women farmers, who are the protagonists of MKSP, showed remarkable enthusiasm in the programme. It is the keen interest, hope and convictions of women farmers that made MKSP a meaningful programme. My salutations to every member farmer (and her family members) for the unconditional support.

MKSP received financial assistance from the Ministry of Rural Development, GoI and the MSRLM, Govt. of Maharashtra. Officials from MSRLM and MoRD provided critical inputs at various points of time in strengthening MKSP. Heartfelt thanks to the government and all the officials. Till 2011, MKSP was supported through funds received from Friends of Swaminathan, Australia and our sincere thanks to them.

The Programme Advisory Committee of MKSP has met on five occasions under the chairmanship of Prof. M. S. Swaminathan. I am grateful to the members of the committee for guiding the programme.

In Wardha, Mr. Vijay Jawandhia, Mr. Balasaheb Pawde, Mr. J. L. Salway and Mr. Atul Sharma have been a great source of support and guided the programme in various ways. My sincere thanks to them.

Association for Stimulating Knowledge (ASK), Gurgaon and Digital Green, New Delhi helped in strengthening MKSP by building the capacities of women farmers and staff in various areas. Sincere thanks to these organisations.

The Executive Director and other colleagues at MSSRF, particularly from Accounts and IEC programme area, have provided support in many ways. Sincere thanks to them.

In documenting the experiences of MKSP in the current form, I have received enormous support from my dear friend Vedavalli. Her critical inputs to the first draft were very useful and my affectionate regards to her. I thank Dr. Anil Kumar for his valuable inputs. I thank my co-authors-Anuradha, Kishor Jagtap and Prashant Deokar- for their valuable contribution towards this publication. Heartfelt thanks to Sakthi Velan for his help in producing this document. Finally, I express my special thanks to Anuradha for her overall support and camaraderie.

R. Rukmani

The MSSRF TEAM that anchored the MKSP with Prof. M. S. Swaminathan



Mahila Kisan Sashaktikaran Pariyojana

An Initiative Towards Empowering Women Farmers

The M S Swaminathan Research Foundation launched the *Mahila Kisan Sashaktikaran Pariyojana* (MKSP-Programme for the Empowerment of Women Farmers) in Vidarbha, following the visit of Prof. M. S. Swaminathan to this region, in 2006, in his capacity as Chairman of the National Commission on Farmers (NCF). Vidarbha, the hot spot of agrarian crisis, had an unenviable record of suicides by farmers. That the crisis has accentuated the vulnerability of farmers in general, and the widows of the farmers who had committed suicide in particular, became clear during the many interactions the NCF members had with farmers. MSSRF initiated the MKSP in Wardha and Yavatmal districts of the Vidarbha region in 2007¹. This report provides a detailed account of this programme: Section 1 provides the objectives of the programme, the basic characteristics of members and the area of operation; Section 2 provides the salient strategies of the programme; Section 3 discusses the major results; and Section 4 provides the concluding observations with a focus on lessons learnt.

Section 1: The Context and the Perspective

MKSP was initiated, in 2007, with a goal to empower women farmers through capacity building measures, which would enable them to take well-informed decisions pertaining to their lives and livelihoods. The programme aims at creating an environment of hope and in building the capacities of women farmers to function effectively in their varied roles as farmers, home makers, and citizens. MKSP worked with the specific objectives of enhancing the skills and capabilities of women farmers with respect to: (i) Grassroot Institutions, namely women farmers groups and their federations; (ii) Integrated/sustainable agricultural practices; and (iii) Household food security.

¹ MSSRF's MKSP became the basis for a National Programme under the same name in 2010. This national programme has become a sub component of the National Rural Livelihood Mission (NRLM) of Ministry of Rural Development and is being implemented in many states with financial support from MoRD and respective State Rural Livelihood Missions.

Membership in MKSP: MKSP is a membership-based programme wherein women farmers are formed into groups at the village level. The groups are called ‘*Jagrit Mahila Shetkari Samitis*’². Membership into a women farmers’ group in a village requires that she should be a resident of the same village and should be actively engaged in farming, with or without ownership of land holdings. In addition to these basic requirements, the criteria for membership in groups ensure that farmers from the most marginalised sections of the society are included. Single women (in particular, the wives of farmers who had committed suicide), the small and marginal farmers, the landless and women from the most deprived castes, are eligible to become members of women farmers’ groups in MKSP. The specific criteria for membership in women farmers group have undergone changes over the years essentially to make the programme more inclusive. To begin with, the programme covered only such women farmers who owned land while from 2009 onwards, the coverage became more inclusive- women farmers who either had family land holdings or landless were also included. However, the focus has always been on farmers who did not have large land holdings. In 2012, the specific criteria for membership in women farmers’ group were further refined to ensure that women farmers from the most disadvantaged sections of the society with respect to caste, class and marital status are included.

² *Jagrit*, in Marathi, means awareness. There are a maximum of eight *samitis* in a village and while the first *samiti* in every village is called **Jagrit** Mahila Shetkari Samiti, the other *samitis* are named after women social reformers, as follows: **Savitri** Jagrit Mahila Shetkari Samiti; **Jijai** Jagrit Mahila Shetkari Samiti; **Ramai** Jagrit Mahila Shetkari Samiti; **Ahilya** Jagrit Mahila Shetkari Samiti; **Muktai** Jagrit Mahila Shetkari Samiti; **Fatima** Jagrit Mahila Shetkari Samiti; and **Bahina** Jagrit Mahila Shetkari Samiti.

Table 1: Preferred Criteria for membership in Women Farmers' Groups of MKSP, Vidarbha

Pro-Poor criteria		Pro-woman criteria
Economic criteria (Size of Land Holding)	Social criteria	
NIL (Landless) Marginal (0 to 2.47 acres) Small (2.48 to 4.94 acres) Semi-medium (4.95 to 9.88 acres)	ST (Scheduled Tribes) SC (Scheduled Castes) NT (Nomadic Tribes) VJNT (Vimuktha Jati Nomadic Tribes) SBC (Special Backward Class) Minority Community	Widow Single woman (deserted, divorced, unmarried)

In table-1, a criterion in each category-economic, social and pro-woman- is given a score of one. A woman farmer who satisfies all the 3 broad categories would get a score of 3. For eg. a woman farmer who is landless, belonging to Scheduled Tribe and a widow would get a score of 3. The maximum score that an eligible woman farmer would get is 3 and the minimum would be 1. Priority for membership in women farmers' group would be given to those who have a score of 3 followed by 2 and 1. Thus, the membership in MKSP takes into account the multiple forms of marginalisation faced by women. Each woman farmers group has a minimum of 10 and a maximum of 20 members.

Spread of MKSP, 2007 to 2016: The idea of MKSP was conceived in late 2007 and the formation of women farmers groups, in villages, was initiated in the year 2008.

Table 2: Coverage of MKSP, Vidarbha

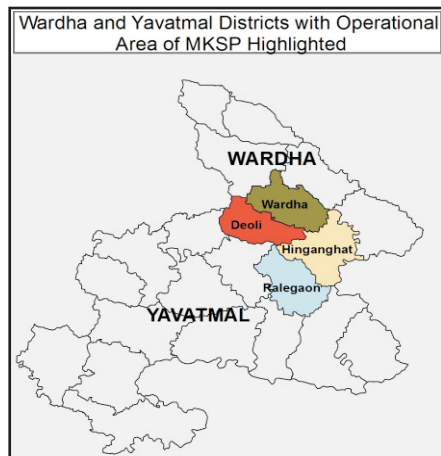
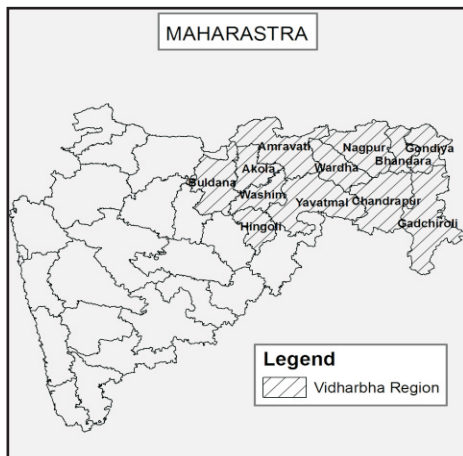
Year	Coverage of MKSP								
	Number of Villages			Number of Women Farmers' Groups			Number of Women Farmers		
	Wardha District	Yavatmal District	Total	Wardha District	Yavatmal District	Total	Wardha District	Yavatmal District	Total
2008	12	0	12	13	0	13	146	0	146
2009	12	7	19	13	7	20	186	97	283
2010	5	4	9	10	4	14	146	58	204
2011	7	6	13	17	10	27	290	143	433
2012	3	3	6	34	23	57	535	351	886
2013	1	0	1	56	28	84	908	403	1311
Total	40	20	60	143	72	215	2213	1052	3265

The spread of MKSP, over the years is presented in Table-2³. The first women farmers' group was formed in the village Talegaon Talatule, in Wardha District, in May 2008. By end 2008, there were 12 groups in Wardha District. In 2008, groups were formed in villages which recorded farmer suicides and in every group that was formed, there was at least one member who was a widow of a farmer who had committed suicide. In 2009, the programme was extended to cover the Ralegaon taluk of Yavatmal District. The first group in Yavatmal District was formed in Parsoda village, in January 2009. Mobilisation of women farmers on a relatively large scale in MKSP, Vidarbha has been achieved during the two years, 2012 and 2013. By 2013, MKSP was spread to 60 villages across the taluks of Wardha, Deoli and Ralegaon, with 3265 member women farmers formed into 215 women farmers' groups. Beyond 2013, the programme did not expand to cover more farmers as the idea was to work with the existing members and strengthen their capabilities in selected spheres⁴.

³ *Mahila Kisan Sashaktikaran Pariyojana* was supported through funds received from Friends of Swaminathan, Australia till 2011. Since December 2011, with the financial support received from the Government of India and the Government of Maharashtra, the MKSP was expanded and strengthened.

⁴ MKSP received a no-cost extension till November 2017.

Figure 1: Operational Area of MKSP



Salient Characteristics of MKSP members⁵: An analysis of salient characteristics of the 3265 women farmers in MKSP indicates that they are predominantly from the most deserving socio-economic groups. A detailed analysis of the marital status of 3265 MKSP members indicates that nearly 490 or 15% have a relatively more vulnerable domestic background, with 398 members reporting their status as widowed and 92 members as deserted/divorced/never married. Among the 398 members who report their marital status as widowed, 24 are wives of farmers who committed suicide in late 2000s due to the agrarian crisis.

Table 3: Caste Composition of MKSP members

Caste	Number of Women Farmers	Percentage
Scheduled Castes	696	21.30
Scheduled Tribes	645	19.80
Nomadic Tribes	172	5.30
Special Backward Class	256	7.80
Other Backward Class	1428	43.70
Others	68	2.10
Total	3265	100.00

An analysis of caste composition of members indicates that a predominant section of the members are from the marginalised sections of population, viz. the Scheduled Castes and Scheduled Tribes (Table-3). A large percentage of MKSP members, 41%, in Wardha and Yavatmal districts are either Scheduled Castes or Scheduled Tribes. In the rural areas of Wardha and Yavatmal districts, SCs and STs account for 32% of population, as per Census 2011. This indicates that the MKSP has covered a relatively larger percentage of SCs and STs than their proportion in the population. Around 44% of MKSP members, that is, 1428 out of 3265 members belong to the Other Backward Classes.

⁵ Data on various attributes of members are collected at the time of group formation and no effort has been made to update this dataset. Therefore, data on land holdings, age, educational qualification, marital status etc of members are to be taken as indicative.

Table 4: Classification of MKSP members by Family Land Holding

Size of land holding owned by woman farmer's family (in acres)	Number of Women Farmers	Percentage of Members
Nil (Landless)	417	12.8
0.01- 2.49 (Marginal)	378	11.6
2.50 - 4.99 (Small)	1639	50.2
5.00 - 9.99 (Semi-medium)	704	21.6
10.00- 14.99 (Medium)	97	3.0
15.00-24.99 (Medium)	20	0.6
25.00 + (Large)	10	0.3
Total	3265	100.0

From Table-4 it is seen that 13% of member women farmers are landless while 62% own small or marginal holdings of less than 5 acres. Another 21% are semi-medium farmers. It is well known that in rain-fed areas such as Vidarbha, the condition of farmers who own less than 10 acres is equivalent to small farmers of irrigated areas. That is, 83% of women farmers in our programme are small, marginal or semi-medium farmers with another 13% reporting nil ownership of land. However, about 127 farmers, accounting to about 4% of all members have land holdings above 10 acres. The 2848 MKSP members reporting ownership of family land, own a total of 11930 acres, amounting to an average of 4.19 acres per household.

Table 5: Classification of MKSP members by Land Holdings in their name

Size of land holding owned by Women Farmers in their name (in acres)	Number of Members	Percentage of Members
0.01- 2.49 (Marginal)	59	10.31
2.50 - 4.99 (Small)	363	63.46
5.00 - 9.99 (Semi-medium)	137	23.95
10.00- 14.99 (Medium)	10	1.75
15.00-24.99 (Medium)	3	0.52
Total	572	100.00

From Table-5, it is clear that of 3265 MKSP members, nearly 572 (18%) MKSP members, have land titles in their names. Of these nearly three fourths own small or marginal holdings. The total extent of land owned by these 572 women farmers is to the tune of 2249 acres. An analysis of age of members indicates that it ranges from 19 to 66 years. A large percentage of members, accounting for 35%, are in the age group 40-49, while 37% are in the age group of 30-39 and about one tenth of all members are above 50 years of age. Just about 18% of members are young and in the age group 19-29.

Analysing the literacy levels of members it is seen that 572 members or 17% of members are reported to be illiterate. With regard to educational attainments of MKSP members, 36% of literate members have completed high school, 15% have completed higher secondary and 2% have completed graduation. However, 29% have completed only up to primary level, that is, classes 1 to 5 and another 19% have completed only upper-primary, classes 6 to 8.

In sum, the salient characteristics of members in MKSP indicate that:

- 15 percent report their marital status as widowed /divorced /deserted / never married;
- 55 percent are from marginalized castes groups ;
- 62 percent are small and marginal farmers;
- 13 percent are landless;
- 17 percent are illiterates;

Analysing the multiple forms of marginalisation faced by MKSP member women farmers, the ‘most marginalised’ group from among them is identified using the social, economic and gender criteria. Of the 3265 member farmers, 2434 are either landless or have small or marginal holdings and considered economically backward; 1548 women farmers belong to Scheduled Castes or Scheduled Tribes or Nomadic Tribes or Vimuktha Jati Nomadic Tribes or Minority Community and considered socially backward; 490 women farmers are either widowed or divorced or deserted or unmarried single women, and 196 women farmers are the most marginalised or the ‘poorest of the poor’ facing deprivations on all criteria considered.

Section 2: Salient Strategies of MKSP

MKSP is a group based programme and the women farmers' groups act as the fulcrum. The programme functions through the groups with a major strategy to empower the groups to form federations that can eventually manage the programme.

In MKSP, the empowerment of women farmers is attempted through a range of capacity building measures. Empowerment, as the process of increasing the capacity of women farmers to make choices, has two essential components: the first, in relation to the creation of the very choice set; and the second, in terms of choosing and improving the available choice set. The programme as of now is largely concerned with the second component of this broad idea of empowerment whereby women farmers are trained to make better choices out of an extant, given choice set. In other words, empowerment in MKSP relates to a situation when enhanced skills and knowledge allow women farmers to overcome obstacles in life and improve their conditions.

MSSRF builds the capacities of women farmers and plays a facilitating role in three focal areas: (i) grass root institution building (ii) integrated agriculture practices and (iii) household food security. In addition to this, there is a specific focus on enhancing the knowledge on relevant socio-economic issues pertaining to each of these focal areas, such that 'socio-economic empowerment' become a cross cutting theme in MKSP.

A range of issues are covered, in the training sessions, to build the capacities of member farmers. With regard to the theme of grass root institution building, the training sessions focus on equipping the women farmers on the following aspects: formation and effective management of women farmers' groups and federations (that is, the grass root institutions); skills for engaging with officials at different levels (*Village Panchayats / Panchayat Samiti / District*); effecting linkages with line departments and other institutions; awareness on different socio-political issues and rights including local self governance. With the formation of federations of women farmers and the initiation of a credit programme by the federations, trainings cover credit management aspects as well.

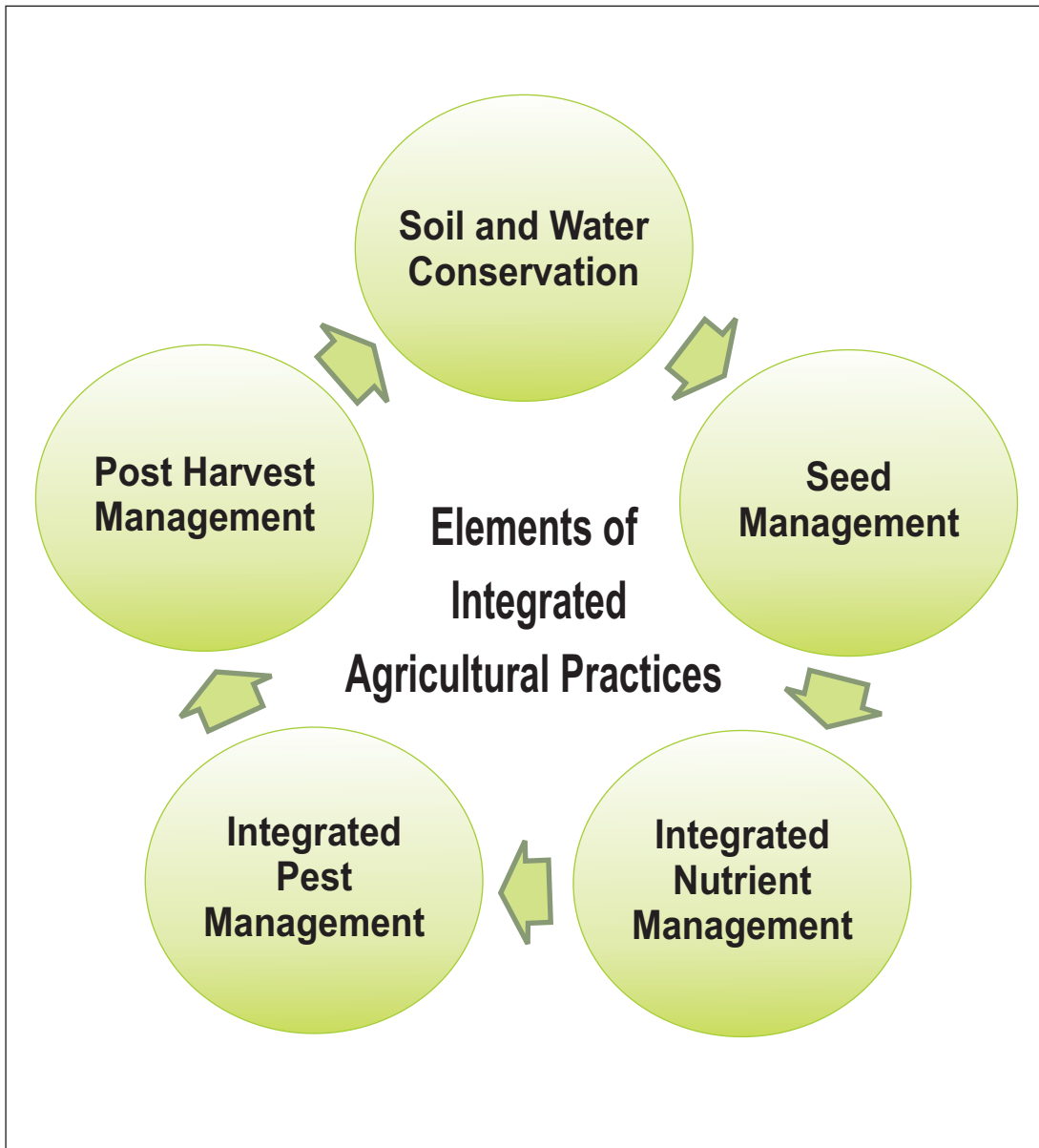
Farming related trainings focus on enhancing the sustainability of agricultural production system. In the predominantly cash crop growing, farmer-suicide prone tract of Vidarbha, promotion of such agricultural practices that includes integrated nutrient management and integrated pest management along with good practices of soil, seed and post-harvest management is chosen as an important initiative given its scope to stabilise the agricultural production system using simple, low cost, techniques. Enhancing the sustainability of agricultural production system, lowering the risk in cultivation and reducing the cost of cultivation through reliance on locally available inputs are the key objectives that underlie the practices that are promoted among women farmers in the MKSP. The set of agricultural practices that are promoted in MKSP is referred to as ‘Integrated Agricultural Practices’ (IAP)⁶. IAP is akin to ‘low external input sustainable agriculture’ (LEISA) that works on the principle of minimal use of external inputs and incorporates both indigenous and modern technologies which are ecologically sound, economically feasible and culturally acceptable. (<http://leisaindia.org>) Trainings in MKSP cover all major dimensions of agriculture practices ranging from soil and water conservation, land preparation, seed management, Integrated Nutrient Management, Integrated Pest Management, harvesting and post-harvest handling of produce. Soil Health Card is distributed to women farmers to record the composition of soil nutrients in their fields. Each woman farmer is given a *Mahila Kisan* Card that provides basic details about the member and lists the trainings attended by women farmers. Facilitation to women farmers' groups for access to bio-inputs on the one hand, and collective sales of agricultural produce on the other, is undertaken to promote sustainable farming.

⁶ The term Sustainable Agricultural Practices is avoided as farmers widely cultivate Bt cotton in this region. Scientists are of the view that genetically engineered crops cannot form part of any agro-ecological farming system. For more details, see Kesavan, P. C (2015): “Shaping science as the prime mover of sustainable agriculture for food and nutrition security in an era of environmental degradation and climate change”, *Current Science*, 109 (3), pp 488-

Table 6: Details of Interventions for promotion of Integrated Agricultural Practices, MKSP, Vidarbha

Major Elements of Integrated Agricultural Practices	Details of Interventions
Soil and Water Conservation	Sowing across the slope Multiple/Mixed Cropping Opening of ridges and furrows Farm Bunding Plantation on bunds
Seed Management	Seed Germination Test Seed Treatment
Integrated Nutrient Management	Soil test based nutrient application Application of organic manure (FYM, Vermicompost, green manure), Biofertiliser/ <i>Jivamrut</i>) Crop Rotation Mixed fertilisers
Integrated Pest Management	Bio pesticide/Botanical extract/ <i>Neemastra</i> Bird stand Yellow sticky traps Pheromone traps Trap crops Early summer ploughing
Harvesting and Post harvesting	Timing and method of harvesting Threshing Cleaning Grading Processing

Figure 2: Integrated Agricultural Practices



To enhance household food security, awareness creation sessions on nutrition, health and hygiene as well as facilitation for establishing kitchen gardens⁷ in the homestead as also community kitchen gardens in common land and promotion of cultivation of food grains (such as sorghum, millets and pulses) in the fields are undertaken. Mixed cropping, promoted in MKSP, has resulted in enhancing the food security of women farmers' households. While cotton or soyabean inter-cropped with pigeon pea is the prevalent cropping pattern in Wardha and Yavatmal, in MKSP the promotion of green gram, cow pea, sorghum, sesame as inter crops along with pigeon pea has been followed. Facilitating access to eligible entitlements from the government is a cross cutting activity across the three focal themes. To help in this, an entitlement passbook enlisting all major government schemes has been prepared and circulated among members.

In MKSP, various training methods such as awareness sessions, hands-on training sessions, information dissemination, demonstration, rallies, exposure visits, and workshops are used for building the capacities of women farmers in specified areas. Trainings on each of the focal theme-integrated agriculture, household food security and grass root institution building-is based on a structured schedule. Trainings are conducted at the village level as also at the block and district levels. In addition to this, setting up model plots in women farmer's fields-farmers' field schools, field days-model kitchen gardens in homestead land, and community kitchen gardens in village common land, are tools used in MKSP to help replication by not only member women farmers but also horizontal spread among other villagers. In village level trainings, participation of male farmers is encouraged. This strategy helps in orienting men towards MKSP principles and thereby earns their support in adoption of programme activities by women.

Information Communication Technology (ICT) is also used as an important tool in reaching information to the household. Technical messages on different components of sustainable agriculture, weather forecasts, and market prices, aspects relating to health

⁷In kitchen gardens all four groups, namely, green leafy vegetables, other vegetables, roots and tubers and fruits are promoted.

and hygiene and government entitlements are disseminated to women farmers through voice messages on mobile phones. Public address system, audio conferencing, film shows, DVDs are also used effectively. Village notice boards are kept in a common area for dissemination of agro-advisories and other important information, on a daily basis. Since April 2014, MSSRF entered into collaboration with Digital Green (DG) to train women farmers on production of short videos. Digital Green is a not-for-profit international development organization that uses an innovative digital platform for community engagement. DG's specialty is to train women farmers to produce short videos on best practices adopted by them and these videos are then used for dissemination. Several opportunities are created in this programme for women farmers to meet regularly and share their views freely with one another. Women farmers' groups are required to meet once a month to discuss, deliberate, and take decisions pertaining to various activities. These meetings also provide a forum where women learn to articulate and express their opinions on substantive issues concerning themselves or the village as a whole. Community Feasts (*Vanbojan*) are organised in the field of women farmers who have adopted some of the best practices across all the 60 MKSP villages. On these occasions, the best practitioners' fields are visited by members from her village as well as neighbouring villages. Such occasions provide opportunities for women farmers to observe specific details and nuances on the adopted agricultural practice in the concerned field. They have a chance to flag their concerns and reservations regarding the 'best practice' they have observed. These forums offer good scope for cross learning and has influenced farmers to adopt recommended agricultural practices. Gatherings of women farmers (*Mahila Melawas*) are organised at the district level once or twice a year, in order to provide a forum for all member farmers, across villages, to interact with one another and share experiences. Pre-Kharif Agricultural *Melawas* are also organised every year where agricultural experts provide technical advice on the planning required for the upcoming season. Techniques such as group singing are adopted in MKSP as a tool towards strengthening the spirit of solidarity, unity and courage. All group activities begin with the rendering of songs by women farmers, celebrating fraternity, equity and secular values. Variety of events are organised at the village level, by women farmers' groups. For instance, meetings to honour the memory of revolutionary leaders such as Savithri Bai Phule and

discussions on socially relevant themes like women's rights, patriarchy, the need for scientific outlook etc. Collective reading of magazines in women farmers' groups is an initiative that enables member farmers to learn about current affairs, news and general information. *Gram Warta*, a newsletter produced by the village resource centre of MSSRF in Wardha, is read regularly by the groups.

Another important strategy in MKSP that aids in strengthening and scaling up of the programme relates to farmer-to-farmer extension of best practices. Highly motivated and progressive member farmers are inducted as community resource persons (CRPs) and the selection of CRPs is done in a participatory manner by the members and MSSRF team. CRPs receive intensive training in areas related to institution building, integrated/sustainable agriculture and food security. They interact with women farmers in their village on a regular basis, clarify doubts, and provide necessary training and facilitation for adoption of programme activities. In other words, CRPs help women farmers in internalising the values imparted through the programme. CRPs' role as motivators and trainers has resulted in other villagers, in particular, the member farmers, to adopt the prescribed programme activities with great enthusiasm. A total of 100 women farmers have been trained so far as community resource persons (CRPs).

A cadre of 18 Community Hunger Fighters (CHF) or *Swasthya Mitra* across three villages have also been inducted into MKSP. These CHF, grass root level community volunteers, are trained to be barefoot extension workers in the area of health, hygiene, nutrition and related government entitlements. They work closely with *ASHA workers* belonging to the National Rural Health Mission, to ensure better delivery of health services to the community.

Section 3: Major Results of MKSP

In MKSP, the capacities of women farmers have been enhanced in many spheres using various strategies, as elaborated above. A thematic discussion of the major results is presented in this section.

3.1. Institution Building: Across the 60 villages where MKSP is in operation, in Wardha and Yavatmal districts, 215 women farmers groups have been formed comprising of 3265 women farmers as members. Three block level federations have been formed and registered under the Societies Registration Act of 1860, during 2014-15. Unlike the Self-Help Groups that are usually formed with a main purpose of saving and lending among the group members, in MKSP the women farmers groups are not engaged in savings and credit. However, a credit programme has been launched by the Federations and the purposes for which credit may be taken by a member woman farmer are the following: a) towards cultivation expenses; b) production and sale of bio inputs for agriculture; c) leasing in of land for cultivation; and d) medical emergencies for the 196 women farmers categorised as the ‘poorest of the poor’.

Once in six months the women farmers’ groups are assessed for their performance on the general compliance of members to the rules laid out in the groups. Regularity in conducting meetings and extent of subscription fees collected in the group etc are some of the attributes for which the groups are assessed for their credit viability.

Self Development: Women farmers in MKSP, by their own reckoning, feel much more self-confident and empowered than prior to their participation in the programme. They are experiencing the strength and energy that comes by being a part of a larger group, which makes them demand and discuss issues with officials on an equal footing. With enhanced self-confidence, self esteem and self worth women farmers have started attaching great importance in addressing issues they confront on a day to day basis. To cite some instances:

- Women farmers actively participate in *Gram Sabhas* and raise pertinent village specific socio-economic issues relating to drinking water, toilets, bus transportation, brewing of liquor, domestic violence, employment in

MGNREGS and Aadhar Card. Women farmers have managed to pass resolutions in their *Gram Sabhas* for the construction of toilets. In 2013, in seven villages (Sonegaon Bai, Lonsawali, Yesgaon, Chikani, Takali Chana, Raveri and Digdoh) construction of 333 toilets have been sanctioned by *Gram Sabhas*; In 2014, in eight villages-Vihirgaon, Sonegaon Bai, Lonsawali, Yesgaon, Chikani, Takali Chana, Raveri and Digdoh- the *Gram Sabhas* passed the resolution for construction of toilets. Based on the resolutions, a total of 588 toilets were approved by the Block Development Officers. In five villages- Takali Channa, Dahegaon Miskin, Kurzadi Fort, Raveri and Zargad- women farmers raised a demand in the *Gram Sabha* meeting to construct a structure for drainage of waste water. With the approval of the Block Development Officer, this work was carried out. Another area where women have shown their collective strength is in influencing the Raveri *Gram Panchayat* to issue house tax receipts in joint names, that of the husband and wife. So far, house tax receipts for 61 houses have been issued by the Raveri *Gram Panchayat* in the names of both husband and wife.

- Federations have been taking up local issues and submitting memorandums to appropriate offices. For instance, the non-functioning of the health centres, representation for rebuilding damaged bridges, construction of toilets in the villages, request for bus services to remote villages, requesting for a change of timing of Gram Sabha to enable women to participate are some of the issues that have been dealt with by the Federations successfully.
- Women farmers' groups across 27 villages have been taking the initiative to stop the production of illicit liquor as well as sale of any liquor in their villages. Though the success rate of all the efforts taken by the groups is very limited, the entire process is indicative of their ability to take up and fight for a larger, social issue.
- Challenging violence against women in the domestic arena is also a reflection of empowerment of women farmers. In village Takali, one of the women farmers was constantly abused by her husband. On one such occasion, in a show of team

strength, all members of women farmers group rushed to her house, rescued her and restrained her husband from assaulting his wife. This act against domestic violence was possible with their united force. This is an example of team support, group strength and their ability to fight against the injustices they encounter. By raising their voice collectively against unacceptable behaviour of men towards their family members, the women farmers of Takali have ensured that such behaviour gets restricted.

- In the local body election conducted in March 2014, three women farmers have been elected as *Sarpanch*, while 25 member farmers have been elected as members of *Gram Panchayats*.
- In 2014, twenty one member farmers have been identified by Maharashtra State Rural Livelihood Mission (MSRLM) as resource persons to train farmers from the adjoining villages on sustainable agriculture practices. This is an important recognition by the State about the capabilities of member farmers. In 2016, one member woman farmer from Krushnapur village of Ralegaon block has been taken as a Taluka Trainer by MSRLM. Further, 4 samiti members have been taken as *Krishhi Sakhi* while 2 members as *Pashu Sakhi* by MSRLM.

Women farmers who have participated in MKSP comment on the various ways in which MKSP has been useful in moulding their lives and livelihood. Ultimately it is their perception that would determine the sustainability of the programme.

Indira Meshram, currently the President of the block level Federation of women farmers' groups in Ralegaon block, is a vocal advocate in dealing with women-centric issues. She remarks:

“...if someone gains the power to speak against injustices then that person helps herself/himself and also inspires others. I am very thankful to MSSRF. It is only because of MSSRF I gained the power to speak and am able to help my people”.

“Because of MSSRF I got a chance to work for the village community, I gained self confidence and the support of people to achieve the admirable position of Sarpanch”, says Ratna Borkar.

Chaya Ghuse:

“If one stops learning it means that one almost stops living. MSSRF has once again drawn us into the learning process and has brought us back to life.” She adds on, “As a CRP I attended trainings and meetings at the district level. To travel alone to the district headquarters and to neighbouring villages was a new but worthwhile experience for me. Today, I am very independent, feel confident, capable of speaking in meetings and participate in decision making at home”.

Maya Gadlinge is appreciative of the effectiveness of MKSP in making women move towards empowerment. She comments, “ If one woman in a village is empowered she automatically empowers 10 women around her. I am thankful that as a member of the samiti i had tremendous opportunities to enrich my knowledge and skills”.

3.2. Integrated Agricultural Practices (IAP):

In the districts of Wardha and Yavatmal, *kharif* and *rabi* are the two agricultural seasons and *kharif* has always been the most important season given the low levels of assured irrigation here. The important crops in *kharif* season are cotton inter-cropped with pulses (pigeon pea) and soya bean inter-cropped with pulses while wheat and gram are the major crops in *rabi* season. Agriculture here is characterised by high levels of instability in crop yields and the promotion of IAP aims to address the unsustainability and unavailability of the crop production system. **Table 7** discusses the major elements of integrated agriculture and provides the extent of adoption of various integrated agricultural practices by women farmers.

A baseline survey was conducted in the year 2012 among the women farmers. This survey assessed the levels of awareness and adoption of the agricultural practices in any of the three years before the survey was conducted. A comparison of adoption of integrated agricultural practices by the member farmers of MKSP during 2009 to 2011 and during 2016-17 indicates significant increase in adoption of many of the recommended practices⁸:

- Sowing across the slope was adopted only by 5 % of the women farmers in the base period while this practice has increased to 72% ;
- Soil test was undertaken by 32% and it has increased to 71%;
- Seed treatment practice has increased from 5% to 68%;
- Bio - fertiliser application has increased from 25% to 54%;
- Bio - pesticide and botanical extract from 29% to 58%;

60 women farmers across the 60 villages have set up seed banks in their homes, essentially to conserve indigenous seed varieties of bajra, sorghum, maize and vegetables. Sharing and exchange of seeds from these banks benefit the village communities.

⁸ Though MKSP was initiated in 2007, the programme expanded and strengthened with the funding support received from MoRD and MSRLM, since December 2011. So, it is meaningful to consider the period 2009 to 2011 as the base period for which we have information from the baseline survey carried out in 2012.

Table 7: Details on adoption of major Integrated Agricultural Practices, in 2016-17 MKSP, Vidarbha

Component	Practices Promoted	Women farmers adopting the practices	
		Number	Percentage
Soil and Water Conservation Practices	Sowing across the slope	2039	72
	Mixed/multiple-cropping system	2144	75
	Opening ridges and furrows	2329	82
	Farm bunding	211	7
Seed Management Practices	Seed germination test	2083	73
	Seed treatment	1931	68
Integrated Nutrient Management	Soil test based nutrient management	2008	71
	Application of organic manure	2168	76
	Bio-fertilizer/ <i>Jeevamrut</i> application	1540	54
	Crop rotation	2301	81
Integrated Pest Management	Cultivation of trap crops for plant protection	1778	63
	Yellow Sticky Trap/ Phermone trap/bird stand	1851	65
	Application of bio pesticide/ <i>neemastra</i>	1648	58
	Early summer ploughing	2431	86
Harvesting and Post-harvest	Cleaning and grading of agriculture produce	2444	86

Note: Percentages are with reference to 2841 women farmers in MKSP who own and operate land and this excludes the 424 landless MKSP members

Source: Quarterly project reports, 2016-17.

3.2.1. Reflections by women farmers

a) High level of conviction on the general principles of Integrated Agricultural Practices among women farmers- From Know-How to Do-How:

In promoting the recommended practices, two basic stages have been planned in MKSP: first, providing training to women farmers on various sustainable agriculture practices; second, providing necessary facilitation for women farmers for adoption of promoted practices. In between these two stages, there is a concept testing stage where women farmers conduct trials of promoted practices in their own fields and evaluate the results. The results of the trial stage provide the basis for further expansion of promoted practices by women farmers. In the trial stage women farmers try and test the various practices in a small parcel of their land and make an assessment of the merit of practicing low cost agriculture. For instance, women farmers often try out the practices in, say, 6 to 8 rows out of say, 40 to 50 rows of cotton in an acre of land. More often than not, the results of the trials act as a motivational factor for them to expand area under the promoted practices. There are numerous, fascinating accounts of women farmers first convincing themselves about the merits of integrated agricultural practices/techniques and then convincing their husbands and sons regarding the same. Thus, there is a very clear and definite pattern of evaluation of various techniques that are taught and a near total absence of blindly following the teachings. This practice of trying out the various techniques hands-on, in a small portion of one's land, and expanding the adoption of these techniques based on one's own experience has resulted in a very high degree of conviction on the general principles of integrated agriculture, for the women farmers. The women farmers, who practice various techniques of integrated agriculture, are highly passionate about the methods they adopt and often act as catalysts in motivating fellow villagers. Thus, women farmers, slowly and steadily travel from the 'know-how' to the 'do-how' path. This practice of testing out the techniques before expanding the coverage of area reminds one of the saying,

“Gentlemen test and then trust, fools believe what is told and written”,

Needless to say the 'gentlemen' here are the women farmers. Thus a scientific approach in adoption is pursued by women farmers.

Anita Lokhande of village Aajgaon reports:

“My interest in alternative methods of cultivation grew once I started attending the training programmes organized by MSSRF. I persuaded my husband to allow me to adopt the agricultural practices on which I received training, in at least two rows of our 4 acre plot. I started preparing compost, farmyard manure, *nimboli ark*, [botanical extract] etc from locally available material, and also carried out seed treatment before sowing the seeds. In 2011 and 2012, two rows of cotton were managed using the compost and pesticide I prepared on the farm. Yellow sticky traps were used to monitor the white flies in the cotton field and to decide on the frequency of pesticide spray. In 2013, looking at the quality of cotton crop, my husband agreed to expand the area under integrated practices by two more rows where I cultivated pigeon pea. My interest in agriculture and the results of my efforts over the last three years have impressed my husband Sudhakar. He is supporting me in my activities and is keenly observing the results. Since 2014, we have expanded area covered by these agricultural practices from four rows to two acres and we grow cotton, pigeon pea, black gram and green gram”.

Usha Shahade, a member of the MKSP from Raveri village succinctly summarises her experience in adopting the integrated agricultural practices as follows:

“It was during the *kharif* season in 2013, I used to argue, bicker and quarrel everyday with my husband till he finally allowed me to test sustainable practices in 1.5 acres (out of our 3 acre holding). Whatever you want to do, restrict it to the 1.5 acres, is what he finally said. So, in the 1.5 acres, I focussed on pest and nutrient management using whatever techniques I learnt in the *samiti* (Women Farmers' Group) meetings. I applied chemical fertilisers as per recommendations of soil test and prepared and used mixed fertiliser as per the trainings. Further, *neemastra*, yellow sticky traps and pheromone traps also I used. While cotton and pigeon pea, in the ratio of 6:1, was grown in all the 3 acres, the cost of cultivation was Rs.8000 for my 1.5 acres while my husband spent Rs.20000 in his 1.5 acres. There was heavy infestation of white fly in his plot and therefore he resorted to spraying of chemical pesticides many a times. In my 1.5 acres, white fly infestation was minimal as I had

tied a yellow sticky sheet in the gap between the two bullocks while ploughing (a technique I learnt in the training) and this practice led to flies getting stuck on the yellow sheet and dying, considerably reducing the white fly population. The yield in my plot was 6 qt of cotton while my husband reaped 7 qt. At the end of the season it was a revelation to us that cost incurred in conventional agriculture is nearly two and a half times more for a marginal increase in yield. So in 2014 we decided that we shall adopt these practices in our entire 3 acre land”.

b) Farmer-to-farmer extension

In addition to self evaluation, another contributing factor towards increasing adoption and enhancing the conviction of farmers regarding sustainable techniques relates to the visual assurances farmers gain from other farmers’ fields. The demonstration effect, seeing the results of sustainable agricultural techniques in other farmers’ fields, either within the village or outside the village (made possible through organised ‘exposure’ visits), has been an important motivating factor. The role of the community resource persons, who are often the 'best practitioners' in transferring knowledge within the village has been immense. This method of spread of knowledge from one farmer to another is often referred to as transfer of knowledge from land to land. This is happening to a great extent in the programme.

In the words of Geeta Tore from Vihirgaon village:

“On my farm, rain water had washed away the loose topsoil layer. Attending the trainings of MSSRF, I learnt the importance of forming bunds and am glad that by building bunds, soil erosion has been arrested, and soil moisture level has also improved. After soil testing I used the recommended dose of fertilizers, thus saving the cost of extra amount of fertilizers I would have normally used. I prepared compost on my farm as learnt in the village-level training given by MSSRF. I prepared and used *Nimastra* and *Bramhastra* [botanical pesticides] for controlling pests, along with yellow sticky traps and pheromone traps. I was delighted to see a decrease in pest infestations, that too at negligible cost. With the adoption of all these practices, I could minimize input cost of cultivation. As a CRP of my village,

I share this information with other farmers in the village and motivate them to adopt these simple technologies. I feel very happy when others follow the improved practices and reap benefits”.

In April 2014, Meera Narayan Bhojar from Krishnapur participated in the Pre *Kharif Mahila Krishi Melawa* and discussed the problem of water logging and related crop loss in her land. She was advised to follow the method of ‘planting on the ridge with paired row’. This method has a higher probability of crop survival in a water logged situation as the plant is on a ridge, a raised area that facilitates better drainage of excessive soil moisture. She followed this advice and created ridges on her field for planting the cotton crop, in *Kharif* 2014. She reaped an above average yield of cotton on her water logged land in 2014-15. With the conviction that the system of planting in paired rows on ridges has reduced the risk of crop failure, Meera has adopted this method in cultivating cotton in the following years as well. Further, two of Meera’s neighbours (non MKSP members) who also have waterlogged lands have also adopted this technique of ‘planting on the ridge with paired row’ in *Kharif* 2015-16, after observing her experience. This case illustrates two significant results: first, the possibility of reduction in crop loss for farmers when they have access to technical guidance and appropriate facilitation for adoption; second, the spread of appropriate technology from farmer to farmer, indicating a positive demonstration effect in the village.

c) Notable benefits of integrated agricultural practices:

(i) The most important benefit relates to the reduction in cost of cultivation, mainly attributed to decline in use of chemical pesticides and fertilisers. In conventional agriculture, in general, farmers use chemical pesticides for cotton and soya bean. With the adoption of sustainable practices of biological and physical measures for pest management, there is a reduction in purchase and use of chemical pesticides resulting in reduction in costs to the tune of Rs.2500 to 3000 per acre for cotton crop and Rs.1200 to 1500 per acre for soya bean crop, in 2014-15 prices. If the reduction in purchased inputs, namely, chemical pesticides and fertilisers, are considered together then the adoption of sustainable agricultural practices reduces the cost of cultivation to the tune

of Rs.4000-4500 per acre of cotton crop and Rs.2000 to 2500 per acre of soyabean crop. Colloquially, farmers refer to the integrated agricultural practices promoted in MKSP as zero-budget farming.

Many farmers admitted that the results of using Yellow Sticky Traps, Bird Stands, Phermone Traps along with spraying of *Neemastra* as prescribed and application of bio-pesticides-beauveria and verticillium- have been so effective that they have either totally given up or reduced the quantum of application of chemical pesticides.

- Sashikala Sontakke of Chondhi village who operates 6 acres (own holdings 2 acres and leased in 4 acres) in 2015 notes:

“In my experience, adopting the recommended integrated practices results in a definite 50% reduction in cost of cultivation, due to nil expenditure for chemical pesticide and low expenditure on chemical fertilisers. Even though i do not own cattle and i purchase cattle urine from *samiti* members within the village for preparation of *neemastra*, my expenditure on pesticide management is way below that of conventional agriculture”.

- Chandrakala Mandhare of Dhamangaon village who owns and operates 2 acres in 2015 remarks:

“I joined the *samiti* in 2012 and has been learning many new things about farming. Video screening in *samiti* meetings on different cultivation practices have been particularly helpful for me. Cultivating vegetables on the bund, having trap crops, preparation of farm yard manure and *neemastra* are some of the major practices I adopted as a result of training. Since 2014, I stopped using chemical pesticide because I have seen the result of neem pesticide and also chemical pesticide is unaffordable. My daughters and I collect cattle urine from neighbours and others within the village and I prepare the required quantity of *neemastra* for my 2 acre plot. I also prepare and use yellow sticky traps. My cost of cultivation has definitely come down though yield has remained the same”.

- As regards chemical fertilisers, in conventional farming methods, there are issues relating to the type and quantum of fertilisers that are used. As farmers are usually

not aware of the nutrient requirements of their land, often there is a mismatch between the requirement and application. Soil test based nutrient management ensures that appropriate type and quantum of nutrients are applied to the field. In addition, farmers also report that the trainings they have received in proper method and timing of application of nutrients ensures higher productivity. Majority of women farmers who own and cultivate land, in the MKSP programme, have a soil test card that provides details of available nutrients in the soil as well as details on the deficiency and requirement of nutrients. Advice on the required combination of organic and inorganic nutrients as per soil test results ensures that uncalled for expenses towards purchase of chemical fertilisers are avoided thereby reducing the cost of cultivation.

- Usha Shahade of Raveri village who operates 3 acres remarks:

“Soil test was done in 2013 in my field and the results indicated nitrogen deficiency. The recommendation was to apply urea, super phosphate and potash. This was a revelation to us as we were always in the practice of applying complex fertilisers, at times indiscriminately”.

- Seema Ganjutte, with a 4.5 acre land holding at Nagzari notes:

“Before I joined the *samiti* we used to broadcast the farm yard manure (FYM) in the field. In one of the training sessions I learnt that FYM can be applied to the bottom of the cotton plant instead of broadcasting and I have been following this practice since 2013. With this method of application of FYM I have managed to extend the area of coverage, from 1 acre to 2 acres, with the same quantity of FYM”.

(ii) Another benefit relates to improvement in the quality of the harvested crop produce and enhanced yield. Farmers are in unanimous agreement that there is an improvement in the quality of the produce with use of prescribed biological and physical measures. The soil and water conservation measures that help in retention of soil moisture and the bio-inputs that are applied to the crops are perceived to help proper growth of crops and enhance the quality of produce.

Lata from Krishnapur, Ralegaon, succinctly summarises her experience as follows:

“ In 2012 I adopted three practices-summer ploughing, *neemastra* and opening of ridges and furrows. I could not significantly find the benefits of summer ploughing and *neemastra* in the first year. But the opening of ridges and furrows brought in enormous benefits for my rainfed land. As a farmer i was aware of this practice but i did not quite know the right timing of this operation. Generally, farmers prefer to perform this practice after rainy season to eradicate weed population. But when I learnt that a main objective of this operation is to harvest the rain water of the last one to two rains and conserve it in the soil for the crop, the importance of timing became clear to me. Therefore, I adopted it at proper time and I found that my crop remained green for 20-30 days more than the crop in my neighbouring rainfed farmers' fields. As a result of which other farmers got 3 to 3.5 quintals from one acre whereas I got 4 quintals of cotton per acre. I am happy that many farmers in my village noticed this perceptible change in crop quality and yield and have started following number of the recommended practices”.

Nirmala of Krishnapur, an ardent practitioner of recommended practices, empathetically argues that due to the various sustainable practices she follows, the early colouring (becoming red colour) of cotton was delayed in her field compared to other farmers. She attributes this result particularly to the practice of foliar application of 2 per cent urea followed by 2 per cent DAP as well as the application of *jeevamrut*. Delay in reddening of cotton impacts cotton yield positively.

(iii) Improvement in quality of soil with application of organic manure and adoption of crop rotation as also various soil and water conservation measures is an aspect that is well recognised by farmers. Farmers are aware that excess dosage of chemical fertilisers affects soil fertility.

- Usha of Raveri village comments:
- “....the plot where i have adopted all the recommended practices such as ploughing, opening of ridges and furrows, application of mixed fertiliser (a mixture of cow dung with chemical fertilisers) over the last 3 years is distinctly different with respect to

soil quality. Over the years there has been remarkable improvement in soil quality and the soil is relatively less hard.”

Comments that are often repeated by farmers on the advantages of recommended practices on cotton quality, in particular with the application of *jeevamrut*, are as follows:

“... plant remains healthy, flowering seems to be more and less incidence of viral infestations....”

“....boll formation is better and yield is better”

“...large bolls, no flower dropping, green crop, fresh crop...”

Thus, reduction in cost of cultivation combined with improvement in the quality of crop produce, crop yield, soil health and enhancement of household food security are perceived as the major advantages of sustainable agriculture.

Jayashree Lokhande of Amboda village succinctly summarises the benefits:

“I started adopting various techniques (on which I received training) since 2011 *kharif* season: formation of farm bunds, sowing across slope, opening of ridges and furrows as soil and water conservation measures; seed treatment; soil test; inter cropping; integrated nutrient management practices; and integrated pest management practices. Cotton yield in my field has increased due to my meticulous adoption of various integrated farming practices. Cost has reduced and earnings have improved. The moisture holding capacity of soil has improved: soil when held in hand, feels soft as compared to soil in other farms; the intercultural and tillage practices have become easy because of soft top soil. I am convinced of the ecological and economic benefits through adoption of integrated agriculture practices”.

An analysis of costs and revenue of cultivation of Jayashree Lokhande reveals that cost-benefit ratio increased from 1:1.4 in 2010-11 to 1:1.7 in 2011-12 and 1:2.2 in 2012-13.

3.3. Food Security

Two key interventions to enhance household food security were promotion of a mixed cropping system with additional varieties of pulses, oils seeds, minor millets and vegetables in the conventional cotton/soyabean and pigeon pea cropping system. Promotion of kitchen garden has also been an important initiative in MKSP. In 2016-17, nearly three fourth of the women farmers who have received training in mixed cropping system, that is 2144 farmers- are adopting this system. This practice has ensured production of pulses such as green gram, black gram, cow pea, lentil and sesame in addition to the pigeon pea that is conventionally grown and thereby enhanced the availability of these pulses/food grains for household consumption. In 2016-17, as many as 2017 women farmer households out of 3,265 members (about 62 percent) have kitchen gardens that ensured access to pesticide-free, fresh vegetables and fruits. In addition, 76 community kitchen gardens (CKG) were developed by 258 women farmers in 52 villages. This resulted in supplementation of vegetables for mid-day meals in 52 village schools.

3.3.1. Views of women farmers

According to Anita Sudhakar Lokhande:

“This year I practiced mixed cropping on 2 acres of land in *Kharif* and 0.25 acres of land in *rabi*. Before I started practicing mixed cropping the space between two rows of cotton was unutilized. This year I have sown chilli, long beans, cow pea, ladies finger, brinjal, tomato, cluster beans, broad beans, black gram, green gram, *Motitura* (minor millet) and sorghum in between cotton rows on 2 acres of land. It is remarkable that with mixed cropping the pest infestation also gets naturally arrested as there is hindrance for pest to move from one cotton row to another. During *rabi*, on 0.25 acres of land, along with wheat I cultivated spinach, fenugreek, coriander, radish and onion. So, in addition to harvesting cotton and pigeon pea I harvested substantial quantity of other crops which I used for our household consumption”.

- Sujata Tamgadge from Sonegaon Station:

“Mixed cropping of food crops- green gram, black gram, cow pea, sesame, corn, sorghum, vegetables and trap crops like marigold has been helpful in increasing the household's food grain availability and in contributing to the soil fertility, due to admixture of crop residue in the soil. By adopting mixed cropping as per the trainings received from MSSRF, I feel I have been able to minimize pest attacks when compared to the mono-cropping pattern we adopted earlier”.

- Kanchan Bais from Kelapur says:

“After I joined the Women Farmers’ Group, I attended village level demonstration on establishing household kitchen garden. I received guidance on the importance of balanced diet and growing diversified vegetables and fruits. I became aware of the importance of kitchen garden and utilized the vacant area in my front yard. I cultivate almost 21 vegetables covering different vegetable groups- green leafy, tubers and roots, green vegetables (fenugreek, spinach, coriander, curry leaves, mint, egg plant, tomato, chilly, ladies finger, pigeon pea, long beans, cluster beans, radish, carrot, cucumber, pumpkin, bitter gourd, bottle gourd, ridge gourd etc.) and fruits such as lemon, papaya, guava and custard apple. After understanding the importance of consumption of variety of vegetables for nutritional security, I started to grow more varieties of vegetables rather than concentrating on one or two vegetables. I could plan a relay cropping system to get continuous supply of vegetables from June to March. Not only have I saved money on purchasing vegetables from the market but I am also able to serve a variety of pesticide-free, home grown fresh vegetables to the entire family. I take excess produce of vegetable to the market and exchange them for other vegetables. I also share surplus with my friends and neighbours”.

- Vanita from Malkapur says:

“I grow *Nachani* (minor millet) along with 20 vegetables in my kitchen garden. This millet is highly nutritious and is said to help in improving the haemoglobin level. I prepare *parathas* with millet flour and this is a new addition to our food basket.

I have started preparing a number of new recipes with vegetables produced in our kitchen garden”.

3.4. Common Facility Centre (CFC):

In a need-assessment workshop in 2011 women farmers were able to articulate the advantages they would have with timely availability of farm implements and the difficulties they were facing due to lack of implements. This initial discussion and clear articulation of a felt need resulted in a series of meetings among various women farmers’ groups to address the issue. This paved the way for setting up of Common Facility Centres (CFC) or farm implements hiring centres in three villages across the blocks of Wardha, Deoli and Ralegaon. Extensive preparation, in the form of orientation for women farmers, preceded the establishing of the centres in the villages. The list of implements needed for the centre, as well as the operational guidelines, was arrived at in a participatory manner. Seed drills, hoes, harrows, ploughs, spades, pick axes, baskets, tarpaulin sheets, spray pumps, etc., have been procured as per the requirement of groups. A core group called *Sanchalan Samiti*, comprising seven members, has been formed in all the three villages, to manage and monitor the functioning of the CFCs. In all three villages, the *Sanchalan Samiti* has decided to charge lower hiring rates from member farmers as against non-members. The *Kendra Pramuk* has the core responsibility of running the centre with the support of the *Sanchalan Samiti*. A bank account has been opened and maintained by the core committee for CFC-related transactions.

A detailed analysis of the functioning of the three centres clearly indicate their usefulness in ensuring timely availability of implements for the small and marginal farmers as well as in procuring employment for the landless⁹. The landless, who lack ownership of farm implements, report that with the new opportunity to borrow farm implements from the centres, their scope for employment has improved. It is encouraging to note that women farmers of Vihirgaon, revealing their tremendous sign of empowerment, have purchased land to construct a permanent building for their

⁹ For more details see Anuradha, G. and Sonali Phate 2016. Custom Hiring Centre of Farm Implements: A Case Study. *Indian Farming* 65(11): 27-29.

Common Facility Centre. This was possible through financial contributions from members of women farmers' groups of Vihirgaon.

Some reflections on the use of CFC by farmers:

- Jyotsna from Sonegaon Bai says:

“I used spray pump, tarpaulin and sieve from CFC. As there are different sieve sizes available in the CFC, I could choose the size as per my requirement. This helped me in obtaining stone-free soyabean produce which fetched a higher price”.
- Narayan Pandurang Chachane, a landless agricultural labourer from Lonsavali says:

“I have a pair of bullocks but do not own any implements. Availability of harrow, hoe, plough, seed drill etc. at reasonable daily rents from the CFC has enhanced my opportunities for wage employment within the village, as I could borrow these implements and use them with my bullock pair”.
- In the words of Ranjana from Vihirgaon village:

“We do not own spray pumps and we used to borrow from neighbours, which invariably delayed our operations. With the establishment of CFC, we are able to borrow spray pumps and carry out operations on time”.

3.5. Access to Knowledge and Information through ICT:

As already mentioned, an important feature in the extension service in MSSRF is the use of ICT tools- audio advisories through mobile phones (local specific short audio messages in Marathi) Helpline service, video conferencing and phone-in programmes with suitable resource persons. ICT tools complement the conventional trainings offered to women farmers, and help in strengthening the programme. So far, 11 women farmers have been trained in production of videos on different themes covering the objectives of MKSP, while 60 women have been trained in dissemination of these short videos. 11 videos have been produced so far and screened across 60 villages.

- the self-confidence and concerns for social issues that make women farmers challenge violence against women in the domestic arena;
- the strength and energy that comes by being a part of a larger group, which makes them demand and discuss issues with officials on an equal footing;
- the importance they attach to attending the *Gram sabha* and the power with which they put forth their views in the *Gram sabha*;
- the conviction with which they adopt integrated agriculture practices and slowly but consistently work towards getting their men folk to accept these practices;
- the comprehension about agriculture–nutrition linkages and the vigour with which they grow food grains, vegetables and fruits for household consumption;
- the correctness with which they demand the entitlements due to them and fellow villagers;

Section 4: Conclusion

The experiences of women farmers of the *Mahila Kisan Sashaktikaran Pariyojana* clearly indicate that in general they feel empowered and much more self confident than before the beginning of the programme. Increased participation of women farmers in gram sabhas is an important outcome of MKSP and this is clearly indicative of their enhanced political awareness. Women farmers' ability to deal with local problems either by petitioning to relevant authorities or by articulating their concerns in meetings, particularly with reference to the status of water supply, sanitation, bus transportation and health centre is a positive development due to MKSP. Further, the ability to manage the women farmers groups and federations quite effectively and address larger social issues concerning women, such as, domestic violence and illicit liquor brewing suggest that MKSP has contributed towards empowering its members.

The importance of various capacity building initiatives in promoting integrated agricultural practices that combine conventional farming methods with organic methods have been received and accepted well by women farmers. There is a high degree of conviction on the merits of recommended agricultural practices among them. However, not everyone who is convinced is able to adopt the practices promoted in MKSP. There are numerous constraints for adoption with regard to the laborious processes involved in the preparation, the meticulous planning that is required, availability of bio-inputs, non-availability of time, lack of support from family members etc. Nevertheless, the practitioners of integrated agricultural practices highlight the advantages with respect to reduction in cost of cultivation, improvement in quality of produce, improvement in soil health, enhancement in availability of food grains at the household level through mixed cropping practice along with cotton or soya bean.

The experiences of women farmers also clearly indicate that the adoption level of practices such as 'opening of furrows and ridges', seed germination tests, yellow sticky trap, bird stand etc. that are not very demanding in terms of input requirement are being adopted much more compared to, say, *Neemastra* (biopesticide) or

jeevamruth (liquid fertiliser) -bio-inputs- that are recommended in MKSP. Cattle urine is a basic ingredient required in the preparation of *neemastra*- and cattle dung and urine are required for the preparation of *jeevamruth*. According to our survey, conducted in 2012, about 55% of member women farmers in MKSP own cattle and the average number of cattle owned is 2 per woman farmer household. Ownership of cattle combined with knowledge and training on preparation of bio-inputs -*neemastra* and *jeevamruth*- have boosted preparation and adoption of these inputs. 58% of women farmers report use of *neemastra* while 52% report preparation and application of *jeevamrut* in 2015-16. However, it is interesting to note that ownership of cattle does not seem to be a necessary condition or the sole determinant for preparation and adoption of these bio-inputs by a woman farmer. Farmers, if convinced about the benefits of application of bio-inputs, resort to various ways to collect (or even purchase) cattle dung and urine for preparation of bio-inputs. Nevertheless, in the overall context of a decline in cattle population it is important to focus on making bio inputs easily available and accessible for farmers at the village level. For instance, bio-fertiliser application can be through the preparation and application of *jeevamrut* or through application of products available in the market such as Rhizobium, Phosphate solubilising bacteria, Azatobacter etc. Similarly, if farmers are unable to prepare the Yellow Sticky Traps required for their fields they should be able to access the same from agro-service centres. In this, the role of the State becomes very crucial. There is a very urgent need for the public sector extension services to be strengthened and to provide required support services including inputs for farmers.

The conviction with which women farmers adopt the promoted practices and the sustainability built into the system through strong farmer to farmer linkages indicate that there is enormous scope for the scaling up and spread of appropriate agricultural practices across the country. To quote Prof. Swaminathan, “A beginning has been made in the technological and skill empowerment of women in agriculture. However, we have miles and miles to go before gender equity and justice can be ensured in all aspects of agriculture and allied enterprises”¹¹. Notwithstanding the positive results of MKSP,

¹¹MSSRF (2014). *Reflections of Women Farmers* . p.iv

the analysis also brings out specific concerns that need to be addressed so that the programme becomes replicative and remains a sustainable model.

a. Necessary to facilitate access to bio-inputs to enhance adoption of recommended practices:

We noted above that there is considerable scope to improve adoption of recommended practices among MKSP women farmers. Farmers often point out the difficulties they face in accessing inputs for following certain techniques recommended in the programme; the lack of availability hinders large scale adoption. This point can be best illustrated with a discussion on *neemastra*. Application of *neemastra*, a botanical insecticide is recommended as one of the Integrated Pest Management measures. The two inputs that are required in the preparation of *neemastra* are cattle urine and neem leaves¹². For one acre of cotton crop, approximately 50 lts of *neemastra* and for one acre of soyabean crop about 30 lts of *neemastra* would be the total recommended requirement over one crop cycle. This dosage will have to be given at regular intervals of roughly 12 days and while the cotton crop would require a frequency of 10 to 12 application (sprays) per crop cycle, the soyabean crop would require a frequency of 7 to 8 applications per crop cycle. This would require collection of required urine and neem leaves once in 12 days for the preparation of *neemastra*. Clearly, tremendous effort is required to prepare this input, *neemastra*, at regular intervals and the effort gets compounded whenever the farmer's family does not have cattle. However, given the high level of conviction of farmers on botanical insecticide, farmers very often collect cattle urine from neighbours who own cattle. This effort is made easy by the fact that in Wardha and Yavatmal districts all the cattle in a village come together in one spot every morning as there is a practice of herdsman taking all the cattle for grazing outside the village. This practice provides some scope for the interested farmers to collect the required cattle urine without much difficulty. There is also the practice of sale and purchase of cattle urine among *samiti* members in villages. However, given the high quantum of input that is required (30 litres of cattle urine and 24 kg of neem leaves per

¹²To prepare 10 litres of *neemastra* 10 litres of cattle urine and 7 to 8 kg of neem leaves are required.

acre for soyabean and 50 lts of cattle urine and 40 kg of neem leaves per acre of cotton), often even farmers who are fully convinced about the effectiveness of *neemastra* are unable to adopt the practice in their entire land holding. The average land holding size of a farmer in MKSP is 4.19 acres, and for reasons elaborated above they find it difficult to extend these practices to their entire land holding.

Unless provisions are made for easy access to bio inputs it would be difficult for farmers to adopt the recommended practices. One effort towards this is to encourage women farmers to set up enterprises for bio-inputs as well as trading in bio-inputs. For instance, a MKSP woman farmer, Sarika Thool of Chondhi village has started an enterprise of production and sale of *neemastra* in 2015. She has 10 animals (4 cows, 4 bullocks and 2 calves) and has cemented the cow shed to facilitate collection of urine. During the *khariif* season of 2015, she sold 200 lts of *neemastra* at the rate of Rs.70/lit. The quantity sold would be adequate for 4 acres of cotton crop or 6 to 7 acres of soyabean crop¹³. In addition, she has sold 90 lts of cattle urine (at the rate of Rs.6/ lit) to farmers who could collect neem leaves and prepare *neemastra* themselves. In all, the *neemastra* unit has served the requirement of say, 4 to 6 farmers with an average 2 acre holding, over and above the requirement for her field.

Sarika Thool proudly says:

“Not only do I make additional income by selling *neemastra* but i am hugely satisfied that I am helping my friends, who do not have cattle, to reduce their cost of cultivation.”

Wherever it is not possible to start *neemastra* production units, facilitation for trading in *neemark* that is available in the market can be made. Similar is the situation with respect to other inputs. Yellow Sticky Traps and pheromone traps are supplied by the Pest Control of India and the Department of agriculture but they are always in short supply. Therefore, it is extremely important to create adequate facilities so that farmers can easily access the required inputs.

¹³The recommended dose of *Neemastra* for one acre of cotton crop is 50 lts and for soyabean is 30 lts.

b. Role of the State in Agricultural Extension:

MKSP is an attempt to enhance the skills and capacities of women farmers to practice agriculture in a manner that is economically and environmentally viable. In a sense, MKSP addresses the vacuum created by the weakened state agricultural extension system¹⁴. Technical guidance on crop cultivation is provided to MKSP women farmers with an ultimate goal of strengthening their livelihood. However, lack of access to bio-inputs has been a constraint for farmers to implement the techniques and practices on which they received trainings. It is important for the state agricultural extension system to revive its role and make available all necessary inputs, including bio-inputs, at the required time to farmers. After all, access to good quality inputs is a fundamental requirement for reaping a good harvest. State extension system has a primary role in supporting the small and marginal farmers to adopt risk reducing, cost saving, economically viable and environment friendly cultivation practices (as promoted in MKSP). Suitable extension strategies need to be formulated to serve the various needs of agriculture and the role of the State is very crucial in this. The efforts of the non-governmental organisations in providing agricultural extension services can only complement the services provided by the State and unless the state ensures a support structure with basic infrastructure and assured supply of inputs (for instance, soil test laboratories and access to bio-inputs) programmes implemented by NGOs will have limited effect.

¹⁴Over the last two decades or more, the country is experiencing a declining role of the public sector agricultural extension system. For more details see:

Srijit Mishra (2007): "Risks, Farmers' Suicides and Agrarian Crisis in India: Is There A Way Out?", WP-2007-014, Indira Gandhi Institute of Development Research, Mumbai September 2007

Sajesh, V. K and A Suresh (2016): "Public-Sector Agricultural Extension in India: A Note", Review of Agrarian Studies, 6 (1),

Roy, Shantanu De (2017): Economic Reforms and Agricultural Growth in India, Economic and Political Weekly, 52(9), pp.67-72.

c. Necessary to focus on households where agriculture is the primary occupation:

In households where the contribution of non-farm income to the overall income is significant, there is a general tendency to avoid time consuming and laborious practices and therefore they do not generally resort to adoption of practices such as those recommended in MKSP.

Ashwini Sadashiv Bhagat of Chikna village does not own land but has leased in 7 acre which she cultivates:

“My husband is a tailor and my son is a student. I manage the farm operations with the help of hired labour. My husband does not cooperate or help in farming. Preparation for sustainable operations involves drudgery. I do not have the time and energy to collect the material required for making bio-inputs. It is not worthwhile to spend so much time in planning and preparing for various farm operations when it does not produce quick results. I do not even attend the *samiti* meetings regularly. What is the point in learning the techniques when I know I cannot practice them alone? Only families where all members are interested and willing to labour are able to practice these techniques. My husband is always busy with his tailoring job and will not help me”.

Kousalya Mandhare of Dhamagaon Vathoda cultivates two acres of land but her family’s income is essentially from labouring in other’s fields. Her two sons, her husband and she work as labourers in addition to cultivating their land. The family has three cows, a major facilitating aspect for following integrated practices. However, Kousalya notes:

“ I have seen the results of *jeevamrut* in others’ fields. I want to try it in my field but my sons neither have the time nor the inclination to help. However, whenever I prepare *neemastra* they help in spraying as they are aware of the cost reduction it entails”.

Further, careful planning and preparation is required to implement the various sustainable cultivation measures and most inputs cannot be bought off the shelf for a price. Only such households where members are capable of diligent planning, have the mental and physical preparedness towards carrying out the work, are able to adopt the recommended practices. Unless all the working members of the household cooperate and contribute it is difficult to carry out many of these operations. For instance, even while preparation of *neemastra* is done by women, the spraying of *neemastra* in the field is usually an activity done by the male members. Moreover, almost all the recommended practices, starting from soil and water conservation and preparation of botanical extracts for pest and disease management as also the different methods of soil health management are time consuming, highly laborious, tedious and involves drudgery.

In sum, the Mahila Kisans (women farmers) aim to mainstream the nutritional factors in the design of farming systems. The problem of malnutrition arising from hidden hunger caused by the deficiency of micronutrients in the diet is well known. The Mahila Kisans and suitable women representatives from the community who have received training as community hunger fighters shall spread their knowledge of nutrition among villagers and will help to establish genetic gardens of biofortified crops. Through these steps it is hoped the Mahila Kisans will not only help in sustaining food security but also promote nutrition security.

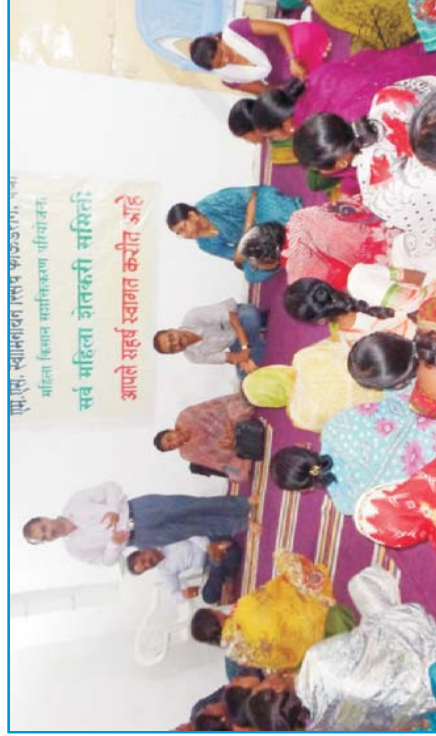
Snapshots of MKSP



Women Farmers receiving the National Award for Women's Development from Shri Jaipal Reddy, Minister for Science and Technology, GoI



Certificate Awarded to Community Resource Person



Interaction of women farmers with Mr. Alok De, MoRD



Meeting of the Project Advisory Committee of MKSP



Need Assessment Workshop



Women Farmers having a discussion with a BDO



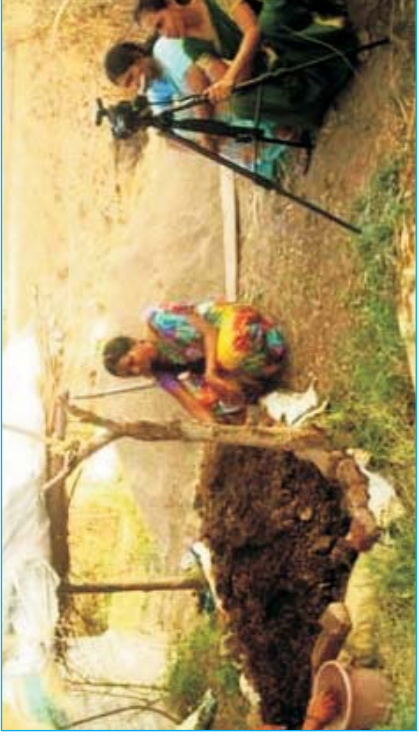
Participation of women farmers in Gramsabha



Women Farmers submitting a complaint on illicit liquor brewing



Project Director, DRDA releasing the booklet of inspirational songs



Women Farmers video shooting a best practice - Shortcut



Women Farmers reading the notice board for important messages



Covergence with Dept. of Agriculture and Spray Pumps received by women farmers



Kitchen Garden



Community Kitchen Garden



Seed bank maintained by woman farmer



Training on balanced diet



Training on Diet & Cooking Methods



Training on Health and Hygiene



Awareness on Health issues



Training on latrine construction



Sowing across the slope



Erection of Farm Bunds



Training on collection of soil sample



Campaign on importance of Soil Test



Opening ridges and furrows



Mixed Cropping



Training on Seed Treatment



Seed Treatment



Training on FYM preparation



Preparation of Jeevamrut



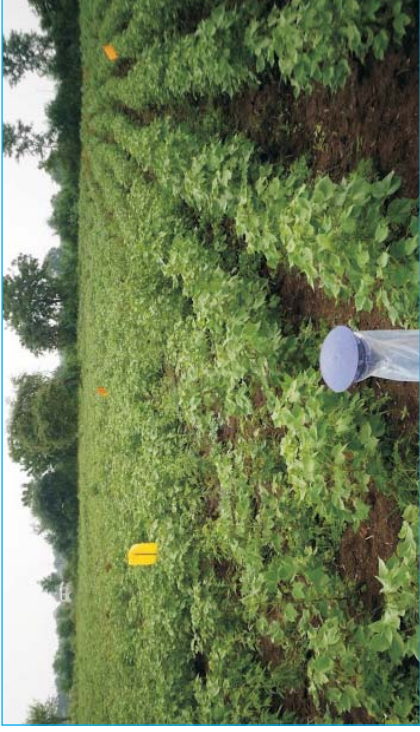
Preparation of Vermicompost



Preparation of Neemastra



Yellow Sticky Trap



Use of Pheromone Traps and YST



Post-harvest processing



Prof. M. S. Swaminathan inaugurating CFC



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