

# Livelihood with ecological integrity

## EVERGREEN REVOLUTION – A BLUEPRINT FOR SUSTAINABLE RURAL LIVELIHOODS AND FOOD SECURITY, FOCUSES ON ACHIEVING PRODUCTIVITY WITHOUT ECOLOGICAL HARM WHILE HARNESSING APPROPRIATE TECHNOLOGIES

Technological advances and impressive economic growth notwithstanding, India is still home to the largest number of hungry (approx. 300 million) and malnourished people (approx. 750 million) in the world. Most of them live in rural areas. Around 700 million people (nearly 70 percent of India's population) living in 638,365 villages are largely unskilled, illiterate, resource-poor and devoid of the benefits of economic growth and technological advances. Also, unabated environmental degradation and climate change are further worsening their livelihood and food insecurity. Mass exodus of young males from villages to urban areas to eke out a living is proliferating urban slums on one hand and causing feminisation of rural poverty on the other. This is because the young migrants from the villages, referred to as environmental refugees, leave their young women to manage subsistence farming that hardly has marketable surplus. Besides, there are a large numbers of landless labourers. Without the right to land and credit

facilities, these young women get into the poverty and debt trap, resulting in feminisation of poverty. The United Nations Human Development Index assigns 122nd rank to India.

### RURAL INDIA'S BASIC PROBLEMS

In a nutshell, the question is how to link livelihood security of the rural communities with the ecological integrity of their regions. For this, rural areas must harness appropriate technologies to fight the famine of both food and rural livelihood. The Green Revolution of the 1960s built India's food security at the national level, but not at the individual household level.

That is the paradox of mountains of grains on one hand and millions of hungry people on the other. During the late 1960s and early 1970s, Prof. M.S. Swaminathan had not only cautioned against the ecological harm of unscientifically practicing Green Revolution, but also emphasised that famine of rural livelihood was the major reason for hunger in rural India. In his several lectures and articles during late 1960s, he outlined a blueprint of pathways for sustainable rural livelihood and food security. He called his model "evergreen revolution" and defined it as achieving productivity in perpetuity without ecological harm. The productivity refers to both agricultural produce (i.e. cereal grains, pulses, oilseeds, vegetables, fruits, fodder, forage milk, meat, poultry, fish, fibre etc.), as well as on-farm and non-farm products of ecomicroenterprises developed by rural self-help groups (SHGs) in a system of production by masses. According to Swaminathan (1996b, 1999), what nations with small farms and resource-poor farmers need is the enhancement of productivity in perpetuity, without the associated ecological

or social harm. The Green Revolution should become an "evergreen revolution," rooted in principles of ecology, economics and gender and social equity.

### SCIENCE & TECHNOLOGY FOR EVERGREEN REVOLUTION

The "evergreen revolution" requires integration of frontier technologies blended with traditional knowledge and ecological prudence of rural and tribal communities. While setting up the M.S. Swaminathan Research Foundation (MSSRF), Professor M.S. Swaminathan had ensured that appropriate technologies would be used for sustainable rural development and food security. Frontier technologies, blended with traditional knowledge and ecological prudence, acquire a pro-poor, pro-nature and pro-women orientation and are referred to as ecotechnologies. These are harnessed by SHGs for sustainable management of local natural resources and creation of on-farm and non-farm livelihood.

The rural women and men of SHGs are given training through a pedagogic method of learning by doing or techniracy (Swaminathan 1973). Capacity building is an integral part of training. The SHGs are also facilitated to obtain microcredit and market linkages for their products. Several ecoenterprises such as the production of oyster mushroom (*pleurotus ostreatus*) on paddy chaff,



GPRS-enabled electronic display board



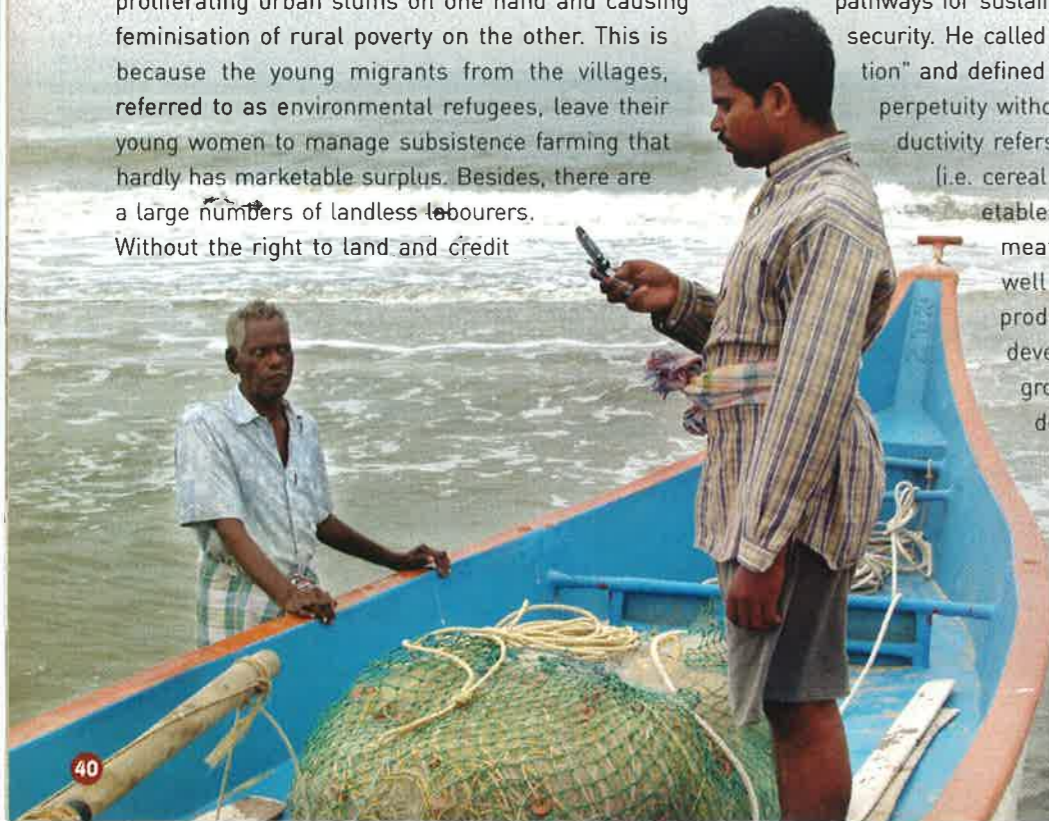
Audio conferencing

biofertilisers (rhizobium, azetobacter, phosphate solubilisers etc.), biopesticide (*trichogramma chilonis*) against lepidopteran pests in cotton, brinjal etc., biofungicide (*trichoderma viride*), paper and board from agricultural waste, fish pickle etc. are pro-nature (no toxic residue in the environment), pro-poor (generating livelihood for the landless and income less labour) and pro-women (many of these ecoenterprises are managed by landless women SHGs).

Knowledge empowerment of rural communities, that is, equipping them with locale-specific, demand-driven information is essential for the success of "evergreen revolution." The knowledge of do-how of ecoagriculture, management of crops and farm animals, overcoming problems in ecomicroenterprises, finding profitable market linkages, improving soil quality, checking for availability of fresh water sources, conservation of biodiversity, reducing the emission and increasing the absorption



Video conferencing





of greenhouse gases in agriculture, transforming subsistence agriculture into dynamic agri-business units, managing the market for products of production by masses in the globalised world and enhancing the resilience of the resource-poor marginal farmers in an era of climate change etc. are of critical value. The question is how to

**The famine of rural livelihoods is the major reason for hunger in rural India. Harnessing appropriate technologies can fight both the famines of food and rural livelihoods**

provide locale-specific (e.g. India has 127 sub-agro-climatic zones and a long coastline of 7,680 km), demand-driven information on a variety of issues to each and every household. With the foresight of the power of the satellite and computer-based information and communication technology, MSSRF established modern ICT-based knowledge centres in a few villages in the union territory of Puducherry in 1998. These villages were called 'Village Knowledge Centres' (VKCs). Young rural women and men who have passed just 7th or 8th standard are given computer training. Within a very short time, they become quite conversant with Internet, powerpoint, video-conferencing, email etc. When the young rural women become adept and manage the VKCs, they not only get remuneration, but their self-esteem also rises in society.

They begin to assert themselves and emerge as equal partners in all decision-making processes at the grass-root level. Many of them also emerge as prime movers, leaders of sustainable rural development, efficient managers of climate change, household food and nutrition security as well as children's education, health care and



family planning. VKCs also play an important role in providing early warning and advance information on sea wave heights in coastal villages. This helps the small and marginal fishermen avoid venturing into rough seas and losing lives. MSSRF's VKCs and Village Resource Centre (VRCs) provide a wide spectrum of ecological, social and economic benefits by using a number of communication tools from traditional notice boards and flash cards to modern CDs, GSM/wired/wireless public address system,

community radios and mobile phones providing text-based menu, icon-based menu, audio and SMS, V-SAT based video-conferencing and fixed wireless audio-conferencing within selected rural communities etc. The collaboration between MSSRF and the Indian Space Research Organ-

isation (ISRO) has established communication linkages between lab to lab, lab to land, land to lab and land to land. These close interactions among rural communities (data seekers) and experts (data providers) accelerate sustainable rural development, food security and abolition of social, gender and economic as well as rural-urban divides.



GSM-based public address system



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