

ODL for Ecopreneurship: Promotion of Multiple Livelihoods among the Women SHGs in Tamil Nadu, India

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Introduction

The non-availability of productive employment to the increasing population results in wide spread prevalence of poverty and under nutrition. The rural employment opportunities are declining due to a general decline in the rural economy. In India between 1992-2001, there was a sharp decline in the employment growth rate from 3.8% to 2% while there was an increase in the growth in overall development in terms of GDP from 5.4 to 5.9%. The recent World Bank estimates indicates that nearly 30 percent of the Indian population is living on less than \$1 a day, and the percentage of rural poverty is likely to be much higher. Among the several causes of poverty, declining rural employment is the most important contributing factor for the rural poverty. While there have been many attempts to combat poverty, their limited success implies that it need a new and innovative strategy. Responding to this the Government of India has recently passed an act on National Rural Employment Guarantee Act, which guarantees 100 days of employment to every household.

Over 65 % of the population depending on agriculture, 1.8 % i.e the present rate of agricultural growth decelerated from 3.8% during 1990's. The number of people supported by each ha of cropland was 4.6 in 1950 and now it is 9.6 and expected to continue increasing. But the National Sample Survey indicate an overall decline in growth rate of employment especially in the sector of agriculture, which is the primary sector contributing to a significant proportion of the total employment in India. The dwindling employment opportunities for the agricultural labour communities in rural areas are an important concern for the livelihoods of the labour families and the rural economy. Hence, there is an increasing push to diversifying their livelihoods from primary agricultural sector in to farm and non-farm based small and medium enterprises which is the next important sector in providing rural employment especially among rural women. In India, small scale enterprises are the second largest employment provider to the Indian workforce after agriculture. Though it provides considerable size of employment, only 13 % of them are located in rural areas and serving rural communities. Hence it is essential to promote employment generation opportunities in the rural sector especially among the socially and economically disadvantaged groups. The organized sector is not employment intensive and organized self employment is the only opportunity in the future. Thus, there is an urgent need to refocus and develop a 'New deal for the Self Employed' especially for the rural women, landless and the tribals.

Harnessing the benefits of science and technology is crucial to realize Sustainable Development in improving the rural living standards as envisaged in the UN millennium development goals. Though the developments in biotechnological sector are tremendous, access to the cost effective biotechnological innovations for small holders is still very limited. Large and medium scale industries are gaining advantage from such technological innovation. Apart from limited access

and availability of suitable technologies to suit the scale and capacity of rural women and men producers, imperfect skill and capacity building efforts based on their learning ability and pace, methodologies adopted, extending hand holding support throughout the process of enterprise development etc are few constraints which limits the entrepreneurship among rural women and men.

With regard to the institutional support services, state sponsored agricultural extension services provide support services to the farmers whereas the institutions which facilities rural entrepreneurship is very limited. But attempt has been taken through state sponsored women development schemes in which efforts to evolve or promote science and technology based interventions are limited. In this back drop it is hypothesized that science and technology based microenterprises promotion coupled with microcredit and microfinance has the potential to develop rural entrepreneurship, diversify livelihood strategies, create employment opportunities and enhance the annual income of the poor households.

The paper discusses in detail on how the demystification of technologies available in the shelves of research institutions can help to take the benefits of science and technology to the rural societies using a field experience in establishing ecoenterprises managed by rural women Self Help Groups. Special focus is given on the process involved in facilitating learning through learner centered learning material preparation (like entrepreneurship qualities, successful case studies, market linkages, diversifying products etc), the interactive nature of the training programmes as well as learning materials developed in their local language by understanding their educational and social background, existing knowledge level, learning needs and their learning styles, attitudes, and their cultural background.

Study area

The study area, Reddiarchatram block, Dindigul district located in the central part of Tamil Nadu in India. Agriculture is the main economic activity in the region supplemented by animal husbandry. The total area under cultivation in the block is 24,624 ha which includes both dry and irrigated lands. The area receives an annual average rainfall of 845mm. Nearly 52% of the households are engaged in agriculture labour and among the farm households two third (20,922) are small and marginal land holders. Nearly 29 percent of the households are enumerated as living below the poverty line in the block. The literacy rate among the male population is 51.9% and among the females 40.1%. Of the total workers (9,73,332), 32 % are agricultural labourers and only less than 5 % are engaged in household based industries. The opportunities for the small and marginal enterprises are very limited.

The cropping pattern includes the irrigated paddy, horticultural, fiber crops, dry land pulses, grains and oil seeds. The cropping pattern has undergone substantial change during the last one decade. Change in the cropping pattern, increase of coconut and banana cultivation in the region diminished the labour opportunities in the agricultural fields. Agriculture labour is the main livelihood for the landless households and the employment opportunity for the agricultural labour is seasonal. The wage structure remains the same throughout the year in the area i.e. Rs.100 (\$2.5) as per day for men (eight hours) and Rs.50/ (\$ 1.2) per day for women. Employment opportunity in other sectors is very scanty in the region especially for the women. Due to lack of employment opportunities a substantial amount of population migrates to other parts of the state during lean season. The block is culturally heterogeneous, several communities with different occupations reside in the area, of which 20 % are represented by different Schedule Caste and Scheduled Tribe communities, the poor and marginalized sections occupy the lowest rungs of the social ladder. Generally these vulnerable sections find it hard to enter in to general labour market due to



some sort of discrimination and lack new skills to perform apart from the traditional agricultural labour.

Participatory situation analysis on local livelihoods: Agriculture is the traditional primary mode of livelihood of the population in the region, but the current trend reveals a negative correlation between the decrease in the labour absorption potential and increase of non agricultural work force. Small scale agriculture and agriculture labour is the main livelihood for the people and the 'seasonality calendar' prepared by the men and women of the selected villages in the block shows that the men have average 107 labour days and women 157 labour days and rest of the year both men and women remain unoccupied. The employment opportunities are not evenly distributed through out the year, they got engaged more number of days during the peak seasons and jobless for a longer duration during the summer months. Seasonal migration is a common practice especially by men. The landless families look for credit support during the agricultural lean season. It has been reported that three or four person share one person's job and share the wage.

Especially, women's participation in non agriculture labour force is very low, hence it is essential to facilitate the diversification of rural economy and encourage women's participation. Women contribute equally or in some cases they are sole breadwinner of the households. Gender analysis done with the support of the women in the region confirms that they have no ownership and control over any of the permanent asset owned by the family and the means of production including their own labour. This situation prevents the women to have the credit access from the local commercial banks and generate capital and plan for income generation independently.

Social mobilization and community based organizations

Mobilization is one of the essential components for extension and model building in rural development initiatives. Group formation at village level is being used as a strategy to mobilize the village communities especially the poor and marginal sections. Initial discussion with the women and men farmers and labourers resulted in the formation 25 Self Help Groups during 1999-2000 and slowly through horizontal replication it is increased over the years and during 2007-08 it is 154 groups, of which more than 70 % of the groups are labour based. The individual SHGs are formally linked up with the local service banks in the region. Later during 200-03 the groups got federated at the block level as *Kulumai*, locally the word *Kulumai* means the traditional grain storage bin, the networking of SHGs increased the density of interaction among the groups and the chances of mutual learning. Need based capacity building programmes were conducted through periodical interactive workshops and trainings to strengthen the groups. Focus Group Discussions with the men and women groups helped to identify small-scale income generation programmes, which could be managed by the group members and individual members of the groups. The activities were identified were based on the following criteria, a) sustainable resource management b) environment friendly c) employment generation d) maximum scope to use locally available raw materials, e) utilization tradition skill and knowledge available etc. The SHGs has been facilitated to partnership with the state departments and access state funded revolving funds and subsidized financial support to initiate entrepreneurial activities. Federation play an important part in capacity building, conflict resolution, provide a sense of solidarity and modest financial support among members of different SHGs in an area and promotes need based external linkages and multiple livelihoods.

Technology demystification and Ecoenterprises

Mobilization of women and men, group formation and organization, identification of enterprises with appropriate forward and backward linkages, capacity building to manage the enterprises as a successful business venture is the crucial aspects involved in promoting ecopreneurship among the rural men and women. Efforts from grassroot experience with women SHGs on promoting ecoenterprises for the production of biological products (biofertilizers and biopesticides) used in agriculture and group based dairy management in the region have shown that technological

innovations could be effectively harnessed in developing into microenterprises with appropriate skill and capacity building strategies.

It is being done in partnership with the SHG members with participatory research and development approach. Three biofungicides, two biopesticides and two biofertilizers production (these are biological products used to promote ecofriendly agriculture) has been facilitated through this process (Box 1 example is given for one biofungicide). Tamil Nadu Agricultural University is the technical support provider in the process. In the process women group members are selected from socially and economically weaker sections who are deprived of assets, livelihood options and employment opportunities. The technical aspects of the production, local demand and scope for employment generation etc have been discussed in the SHG leaders group meetings. The groups which are three years old, had hands-on experience in some of the small-scale economic activities, have a drive to take up multiple livelihood activities are being taken as a criteria while selecting group in the preparatory phase. This provides confidence and feels on the process among them to take up any of the larger initiatives. The first step in the process is providing entrepreneurship training; group it is being organized through interactions and brainstorming supported by simple handouts helps to understand the required qualities of entrepreneurship. Following this rural entrepreneurship orientation through group interaction and exposure visit to the successful enterprises and group interaction with entrepreneurs is organized.

Box 1. Decentralized production of *Trichoderma viride*

It is a green coloured, fast growing beneficial fungal species has multiple uses in crop production as a bio control agent to suppress the soil borne pathogenic fungus and as a decomposing agent in composting the organic materials to build the soil health. It enhances the plant growth and vigour by producing growth promoting hormones and reduce the use of chemical fungicides thus protects the agro-ecosystem. The leaders of Ilayathendral women's Self Help Group of Shokalingampudur were trained in the production and marketing of *Trichoderma viride* by the Centre for Plant Protection, Tamil Nadu Agricultural University (TNAU), Coimbatore. As an outcome, the group has set up a production unit with the technical support of TNAU with a capacity of 10 t per year.

Subsequently hands-on intensive training is organized at the laboratory of the technology providing insitutions on the production process; it helps the learner to have a face-to-face interaction with the tutor. It helped the members to develop the skills on the production process and understand the nuances of the enterprises in a much more intensive manner. Subsequently the members sit as a group and prepare a business plan and get the input from the facilitator and local service bank for the financial support. With this members plan and initiate the establishment of the unit and fine-tune the production process with the support of the facilitator. Later the group members are facilitated to link to the market dealers and local farmers. In the unit establishment process both the production process and the raw materials used for the production are simplified to suit the skills and capacity of the women group members. It supported them to understand the process and also the sharing among the group members helped them to learn quickly.

The other major activity initiated by the federation is group based scientific dairy management. The approach adopted is value addition to the traditional skill and knowledge. Intensive training programmes were carried out on management practices such as nutritional and disease management, fodder cultivation. Kulumai supported the groups to access the loans from nationalized banks, technical support from research and extension departments and market from three with an agreement. On each phase need based training was provided which was supported by the simple learning materials

Group discussion with experts helps them to identify locally relevant enterprises and suitable forward and backward linkages. Facilitating the 'peer learning' helps to enhance the flow of knowledge and understanding on the complexities of technology and the production process. It is being carried out through organizing an exposure visit to the successfully running units in the region.

Community Learning Centres for learning, training and capacity building

The increasing understanding on development process recognizes that the social setting and people's capabilities are crucial factors both for model building and extension as well. The most fundamental resource in the present day modern economy is knowledge; the most important process of development is learning and learning through interactive mode. The ability to cope up to the fast changing environment is possible only through constant updating of knowledge. The modern Information and Communication Technology based facilities and backward and forward linkages would help them to continuously adopt changes. The Community Learning Centers (Box 2) at villages is working as a decentralized learning and extension center and support the members to access services.

Box 2. The computer based 'Community Learning Centers' with Internet connection provides need based both dynamic and static information. A set of CLCs are operating in the region connected with a 'hub' in the center which is the nodal point, receives the generic information and adds value by converting it to local specific information. The local community manages the center, access is ensured to all irrespective of caste, class, gender and age. Need based content creation is being regularly done on the basis of the feed back from the local women and men.

Interactive learning mode is an essential component of this process where the 'trainer' and 'trainee' learn from each other. The role of 'trainer' and 'trainee' becomes fluid in this process where a 'trainee' at one point of time becomes 'trainer' at another point of time becomes the 'trainee'. Further intensive hands-on training provides them an opportunity to learning by doing. It is supported by, simple learning materials in local language which help them to understand the principles behind each process of production. The hands-on training sessions are very simple, organized according to their learning pace and style. It helps the learners to understand the concepts and mentally prepare themselves to structure their learning in a way that is easier to relate and understand to them.

Literacy skill is very basic to take part in the present day knowledge based economy and the individuals to gain entrepreneurial capacity. While doing the need assessment for literacy it came out very clearly that lack of literacy skill is one of the major hurdles to take part in the entrepreneurial activity and ensure quality performance. Since majority of the adult members from the poor families especially the women members are illiterates a programme was designed to qualify them as functional literates to ensure active participation in the enterprises. It is important to develop a demand for learning among the individuals; such process takes place at the family level and at the community level; Family helps to set the personal learning goals with learning inside and outside the classrooms. Learners' previous knowledge and his/her environment are vital for developing materials for learning. Technology facilitates access and meets the challenges of the learner-centered curriculum. Learner specific curriculum developed by the learner him/herself with the help of family ensures the relevance of learning to the learners. The computer based self-produced, self instructional materials (in CDs eliminates the gap and strengthen the link between the learner and learning materials. The language used in the learning material is simple, clear in language and more suitable in the style. Use of advanced technologies like digital cameras and computers with touch screens, electronic tablets for writing accelerate the processing of individual based curriculum development and covers more number of people in the programme.

The flexibility of time at the village knowledge center for attending the structured class and the open access for the whole day to use the computer and discuss with the animators and the adjustment and support of the family by allowing and accepting the change in the daily routine of the participants ensures stability in the participation of the learner.

Capacity building is a continuous process; in the context of enterprise management the members of the groups should undergo training programmes regularly to meet the emerging needs. Decentralized Open and Distance Learning system is suitable to address the needs. ODL material on cattle disease management and fodder management was prepared on the basis of information collected from the field were converted in locally relevant in both CD and print forms and made available in the community learning centres to facilitate the learning process of the dairy farmers. In the process the information gathered was processed and converted in to multimedia folders. The photographs taken in the farmers' fields using digital camera were used in these folders. The content was further refined based on the inputs derived from the experts from veterinary department of Tamil Nadu. The format of the folder was designed in collaboration with the farmers. These farmers friendly, location specific folders were used as training materials. It has been designed in such a way with more visuals and simple language to use it as a self learning material in the centres. Also based on the feedback from the local farmers the content is changed and made it as a dynamic learning material. The ODL system helps to convert the tacit community knowledge (operating within the boundaries of class, caste and gender) in to explicit knowledge with very easy open access crossing the economic and social barriers.

Concluding Remarks

The socially and economically weaker sections of the communities have limited livelihood options in the region which makes them more vulnerable to the changing economic situations. The educational background of the members is mostly semi-literate and illiterate. The important strategies like demystification of technology; need based capacity building and linkages mediated through various learning methods helped them to diversify their livelihood options with environment friendly technologies.

CLCs play active role in promoting functional literacy programme among the poor and marginal groups. Lack of literacy skill among these groups prevents from taking part in the entrepreneurial activity, technology supported learner centered learning programs helps to equip them to actively participate in the activities and the ODL system in training and capacity building programmes.

The initiative accommodated both physical and educational flexibility, which enabled the participation of women especially from the agricultural labour households. The hands on approach and gender sensitive pedagogy adopted, the group based participatory business plan preparation ensured market linkages with companies and support taken from the farmers group etc. The appropriate capacity building process involving different learning approaches with high proportion for hands-on intensive training in the initial phase followed by more use of ODL approach in strengthening the business and continuous quality control.

It needs technology demystification approach rather than generic rural technology transfer approach, the former one is participatory and process based, context specific and sensitive to local conditions, whereas the later one is very generic and does not suitable to different sections of the targeted community. It is learnt that sensitivity in developing the curriculum based on the learners capacity, flexibility in time, space and pace by the concerned institutions both for face-to-face participatory sessions as well as ODL. The access to CLC and community friendly ODL system removes the knowledge fragmentation because of the prevailing social divisions and cleavages in the rural communities.