

Magazine on Low External Input Sustainable Agriculture



LEIS INDIA



Women forging change



December 2015 Volume 17 no. 4

LEISA India is published quarterly by AME Foundation in collaboration with ILEIA

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COVER PHOTO

Women in Kolar integrate livestock and crop cultivation

(Photo: S Jayaraj for AME Foundation)

The AgriCultures Network

LEISA India is a member of the global Agriculures Network. Seven organisations that provide information on small-scale, sustainable agriculture worldwide, and that publish:

Farming Matters (*in English*)

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The editors encourage readers to photocopy and circulate magazine articles.

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Dear Readers

"If women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent", says FAO. In spite of access to resources, women are still the major force for farming to continue. Women are the defacto custodians of local culture and bio diversity. They are the ones pioneering family farming which is primarily responsive to household needs - be it food, nutrition and income.

Empowering women by building capacities and confidence, utilizing existing skills and providing support where necessary and integrating all the farm based activities through recycling, are some of the factors which can bring the poor women out of poverty. The experiences in this issue show that when women farmers are meaningfully included in agricultural development opportunities, not only do farms become more productive but overall family health improves too. It is repeatedly proven that what they rightfully need is an 'opportunity', enabling conditions, a little bit of encouragement and guidance, where necessary.

We thank all those readers who have been contributing voluntarily for the magazine. We request you to continue supporting us. To enable us to share a printed copy with you, kindly send your contributions along with the enclosed form.

The Editors

LEISA is about Low-External-Input and Sustainable Agriculture. It is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of male and female farmers and the communities who seek to build their future on the bases of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors, to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge and to influence policy formulation to create a conducive environment for its further development. LEISA is a concept, an approach and a political message.

ILEIA – the centre for learning on sustainable agriculture is a member of AgriCultures Network which shares knowledge and provides information on small-scale family farming and agroecology. (www.theagriculturesnetwork.org). The network, with members from all over the world - Brazil, China, India, the Netherlands, Peru and Senegal, produces six regional magazines and one global magazine. In addition, is involved in various processes to promote family farming and agroecology. The ILEIA office in The Netherlands functions as the secretariat of the network.

MISEREOR founded in 1958 is the German Catholic Bishops' Organisation for Development Cooperation. For over 50 years MISEREOR has been committed to fighting poverty in Africa, Asia and Latin America. MISEREOR's support is available to any human being in need – regardless of their religion, ethnicity or gender. MISEREOR believes in supporting initiatives driven and owned by the poor and the disadvantaged. It prefers to work in partnership with its local partners. Together with the beneficiaries, the partners involved help shape local development processes and implement the projects. This is how MISEREOR, together with its partners, responds to constantly changing challenges. (www.misereor.de; www.misereor.org)

AME Foundation promotes sustainable livelihoods through combining indigenous knowledge and innovative technologies for Low-External-Input natural resource management. Towards this objective, AME Foundation works with small and marginal farmers in the Deccan Plateau region by generating farming alternatives, enriching the knowledge base, training, linking development agencies and sharing experience.

AMEF is working closely with interested groups of farmers in clusters of villages, to enable them to generate and adopt alternative farming practices. These locations with enhanced visibility are utilised as learning situations for practitioners and promoters of eco-farming systems, which includes NGOs and NGO networks. www.amefound.org

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6 Gaining identity as farmers

A case of women collectives in Kerala

Geethakutty P S

The Kerala State provides a different picture of the success of women in farming. Collective power of women groups, integration of local self governments and proactive credit schemes have enabled landless women to emerge as commercial organic farmers in Kerala. Women are now visible as major farmers in the State, cultivating large areas of paddy, vegetables, banana and tuber crops, on a group basis. A large number of women are gaining identity as “farmers” under these women collectives.



11 Leading from front

Case of Allu Narayanamma

Ranchitha Kumaran and Siva Krishna Babu

When women are economically and socially empowered, they become a potent force for a positive change. Here is the story of Allu Narayanamma which takes us through a journey of her interest for sustainable agriculture which made her a renowned farmer in the region.

23 Adding value to lives

Anithakumari P and V Krishnakumar

Homestead farming system offers tremendous opportunities to adopt and adapt family farming in Kerala. The farming system which was being neglected, got an impetus by the mainstream institutions which supported the farm level value addition. Members of Edava Women's Association are reaping the fruits of their labour while engaging in productive farm based activities.



29 Sustainable and resilient farming

Women Collective's efforts

Sheelu Francis and Sara Calmius

Women farmers always had strong farming abilities, but have been marginalised. The Tamil Nadu Women's Collective with its one lakh members, is determined to work till women farmers' efforts are recognized, agroecology becomes the dominant practice and farm environment is saved from harmful chemicals.



CONTENTS

Vol. 17 no. 4, December 2015

Including Selections from International Edition

- 4 Editorial
- 6 Gaining identity as farmers
A case of women collectives in Kerala
Geethakutty P S
- 9 Birbhum's tribal women show the way
Saroj Kumar Pattnaik
- 11 Leading from front
Case of Allu Narayanamma
Ranchitha Kumaran and Siva Krishna Babu
- 13 Beating malnutrition through vegetable production
Nirmala Adhikari
- 14 Back to farming
Usha S, Deepak R and Manju Nair
- 16 From poverty to prosperity
Shaikh Tanveer Hossain
- 18 SRI: A practice that transforms the lives of women
Sabarmatee Tiki
- 21 Gaining from collective efforts
Pradeep Kumar Panda
- 23 Adding value to lives
Anithakumari P and V Krishnakumar
- 25 Organic vegetable farming by women
Hirdesh Kumar Chunera
- 26 Cultivating prosperity
Ganga Ankad
- 29 Sustainable and resilient farming
Women Collective's efforts
Sheelu Francis and Sara Calmius
- 31 Farmers Diary: Agro ecology - key to prosperity
K Revathi
- 32 New Books
- 33 Sources
- 34 Challenging food insecurity through community action
T K Omana



Women forging change

We have been talking about women in agriculture – that they are important to farming, that they perform around 50% of the farming activities, despite having less access to resources and technical inputs. And we have been discussing this for more than three decades...with very little being done for them.

But experiences in this issue show that women, despite the challenges and limitations are still doing a lot. They are the ones who are making the farming move. They are the defacto custodians of local culture, diversity and cuisine. They are the ones pioneering family farming which is primarily responsive to household needs - be it food, nutrition and income. They have shown immense credibility in managing finances through Self Help Group movements and collectives displaying extraordinary wisdom, discretion, accountability and enterprise management. They have dispelled the myths regarding their ability to handle technical aspects of farming, marketing, shared leadership and lastly even scale of operations. All this inspite of lack of support and supportive policies. It is repeatedly proven that what they rightfully need is an 'opportunity', enabling conditions, a little bit of encouragement and guidance, where necessary. Even with limited and skewed access to resources like land and finances, they show they can achieve.

Food and nutrition first

Women are more concerned about the food for the household and its nutrition aspect. This makes them go in for cultivating food crops. Their choice is always the local crops, for instance millets, which can grow with very few inputs and on degraded resources. Women generally start with what they have and improve upon that. Concerns on nutrition pushes them to grow multiple crops and vegetables which not only provides balanced nutrition to the family but also helps in maintaining biodiversity. Narayanamma, a farmer from Srikakulam in Andhra Pradesh says *"Earlier we used to eat only brinjal and beans available in the village. But now, we consume 10 types of vegetables thus reducing the cost incurred for vegetables"*. (Kumaran and Babu, p.11)

Women do understand the benefits of mixed cropping and are the first to switch over from monocropping, given an

opportunity. For instance, women in Wayanad district shifted from monocultures of Coconut to diverse vegetable gardens with training support from Thanal, an NGO (Usha S et.al., p.14). They managed vegetable cultivation without external inputs and were able to convert a degraded land to a fertile one.

Preference is for organic ways of cultivation for two reasons – first to grow healthy food and the second, is that organic inputs are more accessible, as they can be prepared by the women themselves. When women take up farming, the dependence on external inputs is reduced to a great extent. Naturally, the response to programmes which promote ecological ways of cultivation has always been very good from women. Invariably, they are involved in learning and using locally available materials for preparing manures and biologicals for plant protection. There is a natural interest and inclination to practise safe farming.

Nurturing diversity for multiple benefits

Women being the major providers for the family well being, they are not satisfied by growing just one crop or engaging in just one enterprise. However small the land may be, they look for opportunities to produce multiple outcomes – food for the family, fodder for the cattle, trees for better environment. Many times it also includes some enterprises like chicken or mushroom cultivation for income. Thus, it is a holistic approach for the wellbeing of the family.

Again, they are also very particular when it comes to choice of species. They look for local, traditional ones which are available, nutritious and tasty too. This automatically results in building the biodiversity, which otherwise is being lost. Farm diversity also minimises the risk involved. Benefits are not only in terms of increased incomes but also in terms of reduced costs of cultivation, as they depend largely on available farm and organic resources. These resources are meticulously recycled from one crop or enterprise to the other.

Closing the gender gap in agricultural inputs alone could lift 100-150 million people out of hunger.

FAO, The State of Food and Agriculture, 2010-2011

For example, the farm waste serves as fodder and the cattle dung is recycled back to the farm as manure. For instance, around 530 women farmers in Wayanad in Kerala started dairy accessing soft loan from the group. For the first time, there was milk available in these families. The other by-products such as cow dung was used as manure and also for producing biogas.(T K Omana, p.34)

Get together to benefit

In the absence of adequate support and access to resources, women willingly come together to pursue their goals of family well being. They are keen to learn as a group. They manage to save whatever is possible in the group. Trust plays a major role. The small savings that they do is used for buying quality inputs for farming.

Sharing and exchange is a natural trait of women. When they come together, there is always sharing of knowledge, seeds and even cuisine, thus resulting in organic outreach. For instance, 30 women groups in Kerala participated in the seed exchange mela where each one had a seed variety to share. Women later produced the seeds and shared, thus conserving and increasing the availability of local seeds.(T K Omana, p.34)

As they go along, women groups federate to gain additional strength of collectivisation. The groups or sanghams come together, federate, form collectives so that they gain as a larger group, be it for production, value addition or marketing. In Kerala, for instance, women groups federated into Edava Women's Association (EWA) in 2010, has been successfully marketing their products through value addition (Anitha Kumari and Krishnakumar, p. 23). With adequate support, these federations often take the form of an institutional arrangement, like producer association.

With a little support women can succeed

“If women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent”, says FAO. This has been said in various ways in different platforms, meetings and conferences and over years across the world. If we truly believe in the statement then why are we not able to make any dent in closing the gender gap?

On the other hand, women are not waiting for something to happen, but are constantly exploring opportunities to move ahead. Time and again they have proved that what they need is a little support to make a big difference. And there are few examples too which are worth emulating. For instance, the Kerala State government has enabled landless women to emerge as commercial organic farmers by integrating local self governments with the women's collectives through

Kudumbashree, the State Poverty Eradication Mission of Kerala (Geethakutty PS, p.6). In another instance, a women's federation with the support of ICAR and several government departments could add value to their homestead production. (Anitha Kumari and Krishnakumar, p. 23).

Empowering women by building capacities and confidence, utilizing existing skills and providing support where necessary and integrating all the farm based activities through recycling, are some of the factors which can bring the poor women out of poverty. Along with gaining necessary skills on agriculture, these women also gain leadership qualities, discovering themselves as decision makers in their families as well as in their villages. The experiences in this issue show that when women farmers are meaningfully included in agricultural development opportunities, not only do farms become more productive but overall family health improves too. Let's give these brave women, the space, the support and the recognition they deserve.



Key facts

- In developing countries for which data are available, between 10 percent and 20 percent of all land holders are women.
- If women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent.
- Female farmers are just as efficient as male farmers but they produce less because they control less land, use fewer inputs and have less access to important services such as extension advice.
- When women control additional income, they spend more of it than men do on food, health, clothing and education for their children. This has positive implications for immediate well-being, long-run human capital formation and economic growth through improved health, nutrition and education outcomes.
- An estimated two-thirds of poor livestock keepers, totalling approximately 400 million people, are women.
- Women comprise, on average, 43 percent of the agricultural labour force in developing countries, ranging from 20 percent in Latin America to 50 percent in Eastern Asia and sub-Saharan Africa.
- Women are much less likely to use purchased inputs such as fertilizers and improved seeds or to make use of mechanical tools and equipment.
- According to a 1988–89 FAO survey of extension organizations covering 97 countries, only 5 percent of all extension resources were directed at women. Moreover, only 15 percent of the extension personnel were female.
- Increasing female participation in the labour force has demonstrated positive impacts on economic growth.

(Source: FAO, *The State of Food and Agriculture, 2010-11*)



Women working in the rice fields

Gaining identity as farmers

A case of women collectives in Kerala

Geethakutty P S

The Kerala State provides a different picture of the success of women in farming. Collective power of women groups, integration of local self governments and proactive credit schemes have enabled landless women to emerge as commercial organic farmers in Kerala. Women are now visible as major farmers in the State, cultivating large areas of paddy, vegetables, banana and tuber crops, on a group basis. A large number of women are gaining identity as “farmers” under these women collectives.

The socio economic transformation during the last three decades has resulted in large scale conversion of paddy fields for non farming uses in Kerala. Factors like increasing labour cost, lack of effective market support and resulting low returns and frequent vagaries of climate had created a disinterest among land owning farmers to continue farming.

The collective strength earned by the women under Kudumbashree and the availability of credit at low interest for taking up farming, have played a crucial role in transforming the landless women as farmers.

Large patches of paddy lands have been left fallow. This has resulted in reduction of employment opportunities in the farming sector, which has affected the women farm workers and their families severely. Traditionally, women have been the major partners of the Kerala's farming system. Most of them are either engaged as unpaid family workers in their family farms or engaged as paid workers in other farms.

One of the major constraints in general the women groups across the State face is, the non-availability of land for farming. Most of the land owners are afraid of losing their right on land by leasing it out. In Kerala, there is a total ban on leasing of land for cultivation as part of the Land Reforms Act. But various types of informal leasing and hiring out do exist in practice. Even in such informal leasing arrangements, most of the owners are not ready to allow the women groups to use the land for farming. This is a constraint which seriously affects the sustainability of women's participation in farming.

Farming livelihoods that excluded women, in fact served as an ideal opportunity for the Government of Kerala. Women, as groups, were motivated to take up farming, utilizing micro credit and hired fallow lands in their localities, through the Kudumbashree programme of the government.

Kudumbashree programme

Kudumbashree, the State Poverty Eradication Mission of Kerala, started in 1998, has established State-wide base of community organizations of women to work in tandem with local self governments for poverty eradication through socio-economic development and women empowerment. In each Local Self Government (LSG) Unit - Gram Panchayath or Urban Local Body, the Kudumbashree has a federated structure of three tiers - Neighborhood Group(NHG), Area Development Society (ADS) and Community Development Society (CDS).

Ten to 20 women from economically weaker families residing in an area of physical proximity, register as NHG at the grassroots. In each ward of the LSG, there is one ADS in which five members from each NHG within the ADS area constitute the General Body. The apex tier of Kudumbashree i.e. the CDS is anchored in the corresponding level LSG unit.

Community Development Society (CDS), the gram panchayath level co-ordination unit of the Kudumbashree Mission, has a great role in the implementation of the system. The unit mobilizes women members of Kudumbashree in the Gram Panchayath to form JLGs, do all the paper work for women groups' loan application, keep close watch on all JLG groups (which range from 250 to 300), provide guidance

for their activities, do liaison work with the Gram Panchayath and Department of Agriculture, for converging development programmes, facilitate technical trainings on crop management and monitor timely repayment of credit by the groups.

The interface of the CDS and LSG enables participatory governance, bottom up consolidation of development demands in the community and acts as a tool for the LSG to converge resources for local development and poverty alleviation from various sources. Credit support is made available for group farming with almost zero interest through the Joint Liability Group (JLG) Scheme of the NABARD. Four to five women take up group farming activities and raise credit on group basis under the JLG Scheme. The credit subsidy support Kudumbashree received from the Mahila Kissan Sasaktheekaran Pariyojana (MKSP) under the National Rural Livelihood Mission (NRLM) has also played pivotal role in making low interest credit a reality for the women groups, helping them to take up farming.

More than 2.8 lakh women members of low income families organized into 61836 JLGs are now farming in fallow lands. During the current year, the area covered under JLG farming in the State is 38706 hectares. This also means that these women have brought back farming in around 39000 hectares of land, most of which is organic too! The major crops grown are paddy (10934 ha), banana (10648 ha), tubers (8686 ha), vegetables (8476 ha) and other crops (14433 ha).

Eco friendly group farming

Most of the members of the women groups are following eco-friendly farming with low chemical inputs, while a considerably large number among them are able to follow organic farming as well. For organic manure, some of them have their own manure production using cow dung, poultry manure, vermi compost, wild plant manure, coir pith compost etc. For pest management, the women groups largely depend on bio inputs produced. The women do feel that eco friendly farming is both cost and labour intensive, without fetching a premium price for their produce. But some of the women groups expressed their satisfaction for getting opportunity to provide safe food available at cheaper rate to their local communities.

Some women groups got motivated to take up processing of their produce and to sell value added products. The Alamkode and Thennala panchayaths have demonstrated their innovative leadership by collecting the paddy produced by the women groups, getting it milled at local rice mills, and selling under their own brand names- Thennala rice and Puthari Organic Rice of Alamkode. Various rice based



Members packing rice for markets

a definite period like three years, were the enabling factors for the landowners to feel safe about leasing out their land to women farmers. Most interestingly, in Alamkode and Thennala Panchayaths, the women leaders also function as the Conveners of the Padashekhara Committees (the local paddy farmer's committee constituted by the Agricultural Department) as well!

The banking agencies, who were reluctant to provide any loan support to women in the past, are now rating these women groups as most credit worthy! It will not be incorrect to say that the proactive credit support rendered through JLG Scheme and its rigorous management by women collectives are cornerstones in transforming the women as commercial farmers in Kerala.

products like flakes, rice powder, broken rice etc., are also introduced into market from these two women farmer groups. These initiatives are being supported by NABARD to help them establish as Producer Companies of women farmers.

Impact

“Now we are farmers and not workers”, “I could provide professional education to my children”, “I could buy gold for my daughters’ marriage”, “I own a two wheeler”, “I could buy land in my name and build a new house”, “I could buy a vehicle for my husband and support him to expand his business”, “I am able to store paddy I produce, which serves for an entire year of rice requirement to my family”, “I am respected as an earning member and included in all decision making matters in my family”, “I am approached by my husband to get credit and by neighbours to get development information from the Panchayath office”. These are some of the voices of the women which reflect the impact of the programme on their lives.

In selected Grama Panchayaths, such as, Annamanada (Thrissur), Alathoor (Palakkad), Alamkode and Thennala (Malappuram), the Panchayath level Kudumbashree Units were able to mobilize the support of the local Panchayath and Agriculture Office to set up the preliminary forms of ‘land banks’ as well to ensure availability of land on lease to the women groups from the land owners who are not ready to cultivate. Awareness meetings with land owners to explain the need for putting land under cultivation, the readiness of the women groups to take up leased farming and the procedure of leasing out land through Agriculture office for

Saviours of the wetland ecosystem

Assured access to inputs and resources can catalyze the poor women to take up farming and transform them as earning and respected members in their families and society. In addition to the collective strength earned by the women under Kudumbashree, the availability of credit at low interest for taking up farming, has played a crucial role in transforming the landless women as farmers.

The women groups have in fact emerged as the “saviours of the wetland ecosystem” of Kerala by sustaining paddy cultivation in paddy fields which were kept fallow for a long period. The women farmers of Kerala are proudly showcasing that they can provide safe and good quality food produce to local people while earning decent income and leading a good quality life.

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Birbhum's tribal women show the way

Saroj Kumar Pattnaik

Organised into a collective, 30-odd women farmers in a remote tribal hamlet in West Bengal have not only gained necessary skills on agriculture, but have also learned leadership qualities. Gradually, these women are discovering themselves as decision makers not only in their respective families, but also in their villages.

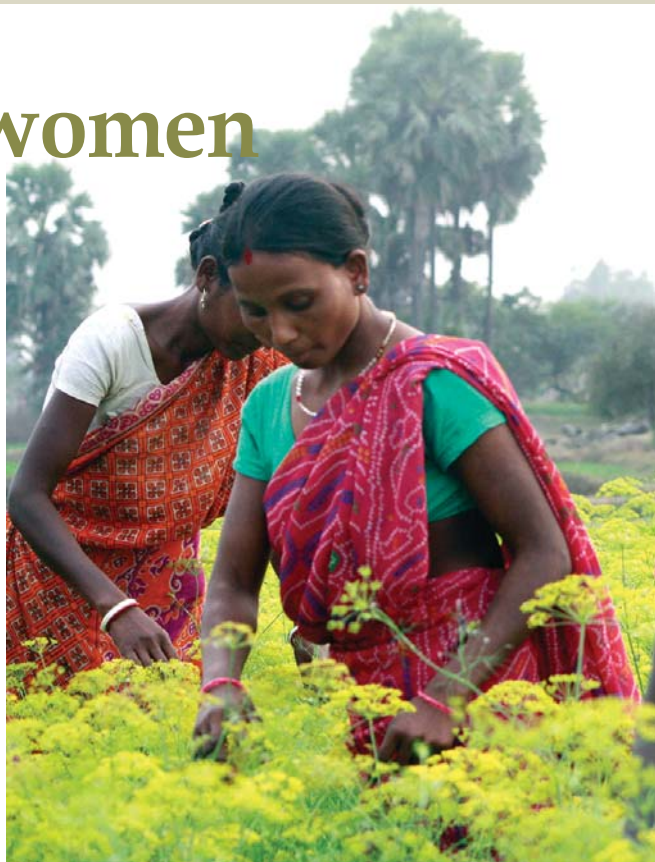
Sounds of explosions at nearby stone quarries occasionally puncture an otherwise calm hilly landscape. The sun is slowly setting down and hot, dry winds still making you feel uneasy. But for a group of tribal women, it was the routine time to tend their vegetable garden they have grown collectively.

"The vegetable plants need to be watered every day as the land is very dry. It was actually a barren land that had never been cultivated before," says Maklu Hembram, 55, a member of the Women's Collective in Tetulbandhi, a remote tribal hamlet in West Bengal's Birbhum district.

"These plants need little extra care. They need to be staked. Otherwise, the stems will break and cause the fruits to touch the ground and rot before ripening," she adds while removing grime off a tiny plant, full of tomatoes, grown using organic methods.

Churamani, another member of the collective, pitches in and says, *"We started farming on this land in 2013 and so far we have been able to grow a variety of vegetables. We are very happy because our hard work has paid us well. We have been able to sell our crop in the market after meeting our own family needs."*

The 12-member collective was set up as part of Action Aid India's intervention in the area, where the majority of the population are from the Santhal community, an indigenous tribal group, that falls at the lowest rung of the socio-economic hierarchy. Typically, they are landless agricultural labourers. But they often don't get much work as the area is



Women tending the plants on the collective farm

drought prone and farming relies greatly on the monsoon rains. Even those who own land, cannot cultivate, as those are very small in size and require heavy input cost. These challenges often force these people to work in dangerous working conditions in stone quarries and crusher units that have mushroomed over the years.

Genesis of collective farming

During consultations with the villagers, Action Aid India and its local partner Sural Centre for Services in Rural Area (CSRA) found that "collective farming" could help restore their deteriorating livelihood situation to some extent. The locals also realized that their unused individual small patches of land can actually come to use if they combine those into one big collective resource and start cultivating.

"It was not very difficult to convince the community that collective farming can give them something from their unused and barren land. We also motivated them to take up organic farming and facilitated women to take lead in this," says Bratin Biswas, Manager of CSRA.

Twelve women came forward and set up a collective in the village. Like in Tetulbandhi, two more women collectives were formed in different villages through similar community

consultations. After the collectives were formed, CSRA and Action Aid organized training programmes for the groups on participatory planning, decision making, crop choice and preparing organic manure and other bio inputs.

At the beginning of the initiative, the groups spent about Rs 16,000 as input cost that included purchase of seeds and a pump set to water the field. Using traditional tools and organic manure, they cultivated the land for the first time. As part of their contribution, the male members of the families ploughed and cross ploughed the land several times. Then, several types of vegetable seeds were sown.

They began with growing seasonal vegetables and leafy vegetables. By the end of the year, the group headed by *Maklu*, was able to earn about Rs 25,000 by selling their produce besides meeting their family food needs - which was the primary focus of the collectives. The following year, they added few more vegetables along with paddy. And the results were even better. Their income increased to almost Rs.50,000 which they equally distributed among the members. Similar results were seen in other collectives as well. This year, the groups believe that both their yield and income would double than that of the previous year.

“For us, it was like a new beginning. We never thought of having our own farmland and working for ourselves. The day when we first saw the plants bearing fruits, we could not control our emotions. It was really a memorable day for all of us,” Maklu recalls.

“I feel so proud of myself that for the first time, I am engaged in a work which is in my own control. We all did hard work and took care of the crops. Now, our children are getting nutritious food as they get to eat a variety of vegetables daily,” adds Churamani.

The most important outcome of this intervention was developing a pool of 30-odd women farmers in the region. With continuous support and guidance from the project team, the collectives have not only gained necessary skills on agriculture, they also learned leadership qualities. Gradually, these women have discovered themselves as decision makers not only in their respective families, but also in their villages.

According to the UN Food and Agriculture Organization (FAO), if women had the same access to the resources as men have, they could increase agricultural yields by 20-30%, which would be enough to lift about 150 million people out of hunger across the world.



Men help women in growing vegetables on collective farm

Future action

Following the success of their experiment, the organization is now aiming at expanding this initiative to their other operational areas. Setting up of seed banks, digging trenches around the field for rain water harvesting and protecting crops from wild animals are among some of the new initiatives being taken up recently.

According to a recent survey, more than 14,854 hectares of area in Birbhum is under various categories of wasteland. These lands are mostly lying unutilized, and CSRA wants to make those unused and barren land productive by promoting collective and sustainable farming. *“We are also thinking of making this farming practice a family-based approach, which could help address the migration problem of the region,”* adds Bratin.

“Women contribute significantly to agricultural production of our country, but they are not formally recognized as farmers. We want this perception to go,” says P. Raghu, who heads the *Land and Livelihood Knowledge Hub* of Action Aid India. According to the UN Food and Agriculture Organization (FAO), if women had the same access to the resources as men have, they could increase agricultural yields by 20-30%, which would be enough to lift about 150 million people out of hunger across the world.

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Leading from front

Case of Allu Narayanamma

Ranchitha Kumaran and Siva Krishna Babu

When women are economically and socially empowered, they become a potent force for a positive change. Here is the story of Allu Narayanamma which takes us through a journey of her interest in sustainable agriculture.

A parched land of 3 acres is the only asset Allu Narayanamma owns. Of this, paddy is being grown on half of the land under rainfed conditions. On the remaining land there is a mango orchard, which has very low productivity. While the income from farm is quite negligible, wage work, especially under MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Programme) is the major source of income for the family. Her husband used to migrate to Gujarat to work in dredging activity along with other villagers. She had the entire responsibility of taking care of the household. This was the situation of Allu Narayanamma and her family in GC Palli village of Rajam Mandal in Srikakulam District of Andhra Pradesh.

Helping hand through VFA

RF BIJ (Reliance Foundation – Bharat India Judo), Rural Transformation programme started the intervention in GC Palli village with a vision of developing a holistic, self-reliant and sustainable model of rural transformation. Starting in the year 2010, RF focussed in supporting farming households to bring them out of poverty and make farming as an assured livelihood option.

The farmers in GC Palli village were organised into an association called Yugandhar Village Farmers Association (VFA) in 2009-10. Each household represented by man and woman (i.e. husband & wife) is a member of the association. The household membership ensures dual membership which not only helps break the gender barrier, but also enables women to take up development initiatives and leadership positions. After getting to know about fellow farmers joining VFA, Narayanamma volunteered to become the member of



Narayanamma switches to line sowing in paddy

VFA. Despite less interest in first year of intervention, she attended the VFA meetings regularly. To enhance women's active participation, Yugandhar VFA organized Women Empowerment training program. The training brought positivity in women members who volunteered to have women meetings at least once in a month to share and play a key role in VFA activities.

Eco-friendly farming – Moving from an idea to practice

With improved motivation, Narayanamma approached the VFA requesting for support in developing her waste land into cultivable land and make farming a sustainable profession. She actively participated in training programs conducted by VFA on Sustainable Agriculture Practices (SAP). She strongly believes that improving soil health is the most important aspect of farming and its sustenance.

Narayanamma, with her keenness, got trained in SAP. She got trained in soil sample collection, analysis of soil test reports, seed germination test, seed treatment, preparation of organic extracts such as panchagavya, neem leaf extract, jeevamrutham etc.

Her meticulous efforts in preparation of organic formulations, when applied to her paddy nursery, gave good results. Her nursery survived even during the dry spell. This motivated her towards reducing the input costs. She reduced the usage of chemical pesticides and fertilizers on her farm and progressed towards sustainable and eco-friendly farming techniques. With her influence, group of women members came together to prepare organic formulations and used as per the crop requirements. This initiative also helped the women to develop good relationship in building VFA as a strong and sustainable institution.



Narayanamma adept in seed production

A never ending learning desire made her to attend all the possible trainings on SAP. She learnt about sustainable practices in paddy crop and incorporated the usage of botanical formulations. She practised line sowing and utilized certified seeds which impacted her paddy production. She stood as an example for other farmers within the VFA and other neighbouring VFAs in promoting chemical free eco-friendly farming.

She strongly believed that working with the ecology will benefit her own family, village and environment. Her constant efforts yielded her with bumper production of 24 quintals per hectare, which earlier was only 16-18 qtls per hectare. Her net income has increased from Rs.850 to Rs.16450 which motivated her family members also to join the venture. The waste land was developed into a cultivable land for production of pulses and other food grains for family consumption.

Beyond crop production

Producing own seeds to reduce the market dependency is one of the core activities that the VFA supported. She was one among the seed producers who was trained in technical aspects of seed propagation. She established a seed production plot in one acre of land which yielded 27 quintals of seed. The seeds were sold to 68 members in VFA which could suffice to cultivate 90 acres of paddy seed (MTU-1001 variety). This is equivalent to 50% of the seed requirement of the village.

“Earlier we used to eat only brinjal and beans available in the village. But now, we consume 10 types of vegetables cultivated in my roof garden thus reducing the cost incurred for vegetables” says Narayanamma.

Her interest enabled her to get elected as Executive Committee(EC) member in the second year of VFA. She took up the lead role in sensitising and influencing fellow farmers about the usage of organic formulation. She started training others by sharing her knowledge with fellow farmers. Recognising her interest, she was provided opportunities to share her knowledge on various eco-friendly aspects in district level meetings and during the technical sessions organised by Krishi Vigyan Kendra (KVK), ATMA and farmer training centres.

Being an active woman leader in the VFA, she took major responsibility in organizing theme based meetings i.e. food security and nutrition security, with members of association.

She further developed her expertise in roof top gardening which sufficed the requirement of vegetables for her family. She took lead in ensuring sufficient nutrition for the households by promoting kitchen gardens. Around 7 -12 types of vegetables were grown and consumed daily by the members.

Her knowledge and hard work graduated her from being a member to become the Vice President of VFA. She ably developed a routine of organising EC (Executive Committee) meetings to understand the problems and have a broader perspective on the progress of the VFA and its way forward. One of the major social changes that she brought along with her fellow VFA members is banning of alcohol in GC Palli village.

Beacon of hope

Allu Narayanamma is now a renowned person in the region where all villagers and women admire her for relentless efforts. She became a resource person not only for her village but nearby villages as well. Her husband also stopped migrating and started working on his farm.

Allu Narayanamma is an asset to the Village Association and an inspiration to other women. Presently, there are 160 members in VFA organised into 10 subgroups, each having 15 members. The sub groups in the VFA are now aspiring for holistic development and have started seeking out convergence with government schemes for improving their lives.

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Beating malnutrition through vegetable production

Nirmala Adhikari

Growing vegetables in the off-season through agro ecological methods, the women's group in Humla district has not only improved access to vegetables but also established sustainable livelihoods.

Traditionally, in Humla district, a remote Himalayan region of Nepal, vegetables are produced and consumed for only three months of the year. In the absence of access to agricultural services and necessary infrastructure, Humla farmers rely on natural seasonal patterns for cultivating vegetables. Women play a crucial role in agriculture, in general and in vegetable production, in particular. However, their contribution is hardly recognized. Also, women suffer from malnutrition. Against this backdrop, Common Forum for Development (CFD) with the financial support from Foundation Nepal, implemented a pilot project in Humla district.

The *Women's Off-Season Vegetable Production Group* is a collective, owned and managed by a group of women farmers from Thehe VDC (Village Development Committee) in the Humla district. The main purpose of the enterprise is to produce and market vegetables throughout the year, which can improve food security and nutrition of the local communities. Traditionally, in Humla district, vegetables are produced during 3 months in an year. The enterprise saw the demand, and the need for vegetable production during the agricultural off-season, especially owing to the rise in the tourism industry.

The women were trained on the technical aspects of off-season vegetable production, compost and organic pesticides production, green house / poly-tunnel construction, transport logistics, business plan development and management.

Women select the type of vegetables to be grown based on market demand - catching up with off-season as well as niche markets such as Dashain, a major Nepali festival in October every year. They apply compost and organic pesticides to

vegetable crops, all prepared by them. Compost is produced using animal waste and organic household waste. Organic pesticides are produced from locally available herbal plants.

Impacts

The women farmers have seen their incomes increase since beginning of this enterprise. The average income in 2012 was NPR 27,000 which increased to NPR 39,000 in 2013, primarily through sale of onion, tomatoes, cauliflower, carrot, and cabbage. The economic empowerment provided them a greater voice in their community and at home. The sale of the vegetables during the off-season has already reduced the community's dependence on foods from Nepalgunj and Surkhet to the district head quarters in Simikot.

Since October 2012, when it all began, there has been improvement in terms of food security and nutrition in Thehe VDC. The health post in Thehe VDC reported a decrease in the number of children reporting to the health post with malnutrition. Also, the food security has increased by several months for majority of households involved in the group.

With use of compost and organic pesticides, there has been a positive impact on the environment too. Soil quality has improved and communities have found a better way of waste management.

What Next?

Looking at the success of this enterprise, more than 150 local women have shown their interest to join the group in the coming year. The women's group hopes to expand its membership to include the interested women. The women's group plans to meet their financing requirements by both internal and external sources of funds. With upscaling, 30% of the vegetable farming in Thehe village is expected to be organic, resulting in increase of 25-30% in the income in the next three years.

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With upscaling, 30% of the vegetable farming in Thehe village is expected to be organic.

Back to farming

Usha S, Deepak R and Manju Nair

Women who lost control over food production in Kerala are now coming back to farming, using simple organic, locally adapted methods. Getting interested in this ecosystem approach, many farmer groups and organizations are learning how to enrich agricultural biodiversity.

Kerala lost its culture of diversity based farming, including homestead farming, owing to proliferation of plantations of coconut, rubber, cocoa, coffee etc. One of the major impacts of this was on women who lost control over their food system as well as natural practices of health care. Women, despite owning lands, started to depend on markets for their food. This trend actually led the State and the families to food insecurity, in terms of quality and diversity.

People in Vizhinjam and Venganoor panchayaths in Trivandrum district in Kerala, apart from tourism industry, depend mostly on agriculture and fisheries for their livelihoods. Most of the conventional farmers in these two panchayaths are men and depend on chemical inputs for producing vegetables, banana and tapioca which are the main crops cultivated. Majority of the farmers are not sensitive to the issues of chemicals, soil health or long term sustainability of agriculture. It was in the year 2002 that Thanal, a voluntary organization working on environmental issues, human health and livelihoods, based in Thiruvananthapuram, started to work with women farmers in these two village panchayaths.

Thanal as part of its work in Kovalam, got involved with local women groups to understand their lives and livelihoods. They found that women were organized as self help groups by the panchayath, but were not doing any productive

A study done in Thirunelly panchayath in Waynad district recently showed that local women have a knowledge about 100 uncultivated edible plants which are naturally grown in the agriculture land, especially organic paddy lands.



Sasikala, a natural farmer

economic activity. Apart from earning through daily wage work, women were not at all thinking about sustainable livelihood options. After discussions with the panchayath, Thanal started several training programmes. This included training on coconut shell products, paper products, products from cloth discards, jute etc. However, two groups were interested in farming, especially vegetable production. But many of the women in these groups did not own land.

To help these women, some leaders in the village met some land owners who had vacant land to spare and got formal agreements done to start vegetable cultivation. These lands were coconut gardens, basically monocultures with lots of space in between. The soil was not good, water availability was low and the green manures or organic manures were not available.

The women were given training on biodiversity, organic management of soil and crops. In an year's time, the coconut garden became a biodiverse garden with different vegetables, tubers and bananas. Women took care of the garden so well that even coconut production started increasing and the land owner was very happy to see this change. It was a great beginning and many other farmers and land owners started visiting these gardens to see the result.

Initially, the women farmers started to share their produce with their neighbours. Slowly, the production increased and some of them started selling the produce in the local market. However, the local markets were really de-motivating for women. They wanted a separate market for their produce, wanted consumers to appreciate their produce and buy them. Thus began organic bazaar, one of the first organic outlets in Thiruvananthapuram.

Sasikala living in veganoor panchayat has been interested in farming from a young age. After her marriage, she started helping her husband in the farming activities. It was conventional farming then, where fertilizer use was common. She started to learn more about organic farming by attending training programmes conducted by organizations like Thanal, Gandhi Smaraka Nidhi etc. She started cultivating ornamental plants like orchids and anthurium organically with the subsidy support provided by Krishi Bhavan. She was successful in cultivating ornamental plants and spread this among her neighbours.

In 2005-06, one of her friends who visited her gave some brinjal seeds. Sasikala cultivated brinjal using those seeds, organically, and got a very good yield. She realized the taste of organically grown vegetables and this satisfaction motivated her to take up organic vegetable cultivation seriously. She started collecting traditional vegetable seeds from friends and from different places. She started spending more time in farming and her family members also supported her. She is also one of the main suppliers to Trivandrum Organic Bazaar. With her success, she was selected as the best natural farmer by the Veganoor panchayath and Gandhi Smaraka Nidhi.

She tells that she started organic farming not only for an income, but to provide safe food for her family. Sasikala produces organic vegetables on 30 cents of land and also on the terrace. Almost all the vegetables are grown - lady's finger, brinjal, tomato, chilly, ivy gourd, colocasia, winged beans, moringa, curry leaves, papaya, cabbage, cauliflower, ginger, turmeric, amaranthus etc. She uses water very carefully. She uses open well water for irrigation purpose and also does soil mulching so that it can retain moisture content. She follows the method of mixed cropping and crop rotation. She also says that there are many beneficial insects now in the farm and she need not spray organic pest repellants too. It is a self sustaining farm and her 30 cents is a beautiful diverse garden.

When Sasikala started organic vegetable cultivation, she was earning Rs.1000 per month. Now, she earns Rs 4000 per month by selling organic vegetables after the house hold consumption. She shares her experience of farming and healthy food with other farmers, friends and relatives. Also she shares traditional seeds. She also trains many in organic vegetable cultivation. In her opinion, *"if we love and take care of plants, they will never cheat us and show their happiness in the form of fruits"*.

Model for adoption

Women in Kerala are now coming back to farming and food production. Most of them follow a low external input agriculture or simple locally adapted organic farming. They find a lot of advantages by doing this. They get poison-free food for home consumption. They can manage the cultivation without any external dependence, develop knowledge and share it. Also, they bring additional income without disrupting their household responsibilities. Women take pride in their new found knowledge and capacities. Some of them have become trainers too.

The organic farming trials with diverse crops and low external input in these two panchayaths have become models, adopted

in different parts of the State. Many panchayaths and agriculture departments now support such projects, especially with landless farmers and small and marginal farmers. Many farmer groups and organizations are getting interested in this ecosystem approach and have learnt how to enrich the agricultural biodiversity responsive to their food and nutrition needs.

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Call for Articles

Co-creating knowledge in agroecology

Vol. 18 No.1, March 2016

Knowledge building and sharing are central to agroecology and family farming. It is a dynamic process and knowledge increases by sharing and learning; both practice and theory are important. Each farm and each community is unique. Given the great diversity of agroecosystems the world over, there is a need to continuously build situation-specific knowledge that, moreover, allows farmers to develop under unpredictable and changing circumstances.

Knowledge co-creation between farmers, scientists and others is key in agroecology. This type of knowledge co-creation, based on practical experience in agriculture and the latest scientific insights, is fundamentally different from mainstream 'lab to land' agricultural science. The latter produces standardised prescriptions, while the former supports farmers to take their own decisions, connects the local situation with the global context (e.g. mitigating and adapting to climate change), and draws from the many different ways of knowing.

The March 2016 issue of LEISA India will explore how knowledge is co-created and shared by and between farmers, scientists, educators, communicators, input suppliers, citizens, politicians, and others; especially women and youth. And how this helps to spread and scale up agroecological approaches. We invite you to share your experiences with co-creation and sharing of agroecological knowledge. The possibilities are infinite: farmer to farmer knowledge exchange continues developing itself, joint learning processes between farmers and scientists become more common, and online communication technology provides new possibilities for knowledge co-creation. What 'new' knowledge was created and shared? How effective was this? How did it influence the lives of the people involved? What is the greater socio-political relevance of your experience?

Articles for the March 2016 issue of LEISA India should be sent to the editors before 31 January 2016.

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From poverty to prosperity

Alecha Begum spraying botanical pesticides to her plants

Shaikh Tanveer Hossain

This is an inspiring case of a woman in Bangladesh, who transformed her life through sheer hard work and a little support. By growing vegetables using organic methods and adding on enterprises that she could manage, Alecha grew from poverty to prosperity.

Alecha Begum in Uttar Ghatir Choti village in the North east of Bangladesh, makes a living on her homestead land alone. She has no cultivable land to grow crops.

The little amount of vegetables she grows in winter season is not sufficient to meet the family needs. She could not afford three times meal a day. Even though she had leased in land, she could not get good yields as the soil was sandy in nature. Gradually she lost interest in cultivating crops. Providing three meals a day for the family became a difficult task for her.

In 2010, she came in contact with the Community Learning Center (CLC) of Friends In Village Development Bangladesh (FIVDB). She got trained for two days on homestead vegetable gardening. The training provided her insights into organic way of cultivation and the importance of producing organically. She learned to prepare organic manure and organic pesticides. After the training, she started to grow vegetables in the homestead systematically and organically. She successfully raised vegetable crops that met the family needs.

With this success, Alecha was motivated to expand the vegetable growing to a commercial scale. She got trained in commercial vegetable cultivation for 5 days from FIVDB. Her self confidence increased. She started to believe that

By growing organically, Alecha produced vegetables that were tasty, looked beautiful and fetched a premium price.

she can be economically better only through agriculture. Then she leased in 3 bigha land (7.47 bigha = 1 hectare), where she grew vegetables commercially through organic methods. She started to make compost with the help of cowdung, water hyacinth, banana plants and with almost anything biodegradable which she could collect. She cultivated vegetables with the compost she prepared.

Alecha grew different vegetables in small pieces of land. The yield was good and she was surprised with the amount of money she made by selling the surplus. In 6 decimal land she had grown snake gourd and sold the crop for Tk.7500 (US\$1 = 78 Taka); in 15 decimal land she cultivated Arum and sold the crop for Tk 24000; in 4 decimal land she grew bottle gourd and sold the crop for Tk. 4000; in 6 decimal land she raised red amaranth and sold the crop for Tk. 3500. Along with these she had also raised different vegetables seedlings (brinjal, tomato, turnip and chilli) and sold them.

Alecha had not used chemical fertilizers and insecticides to produce vegetables. The produce was therefore tasty, looked beautiful and was liked by the local people. The vegetable traders also collected the produce from her door step offering a better price. Alecha became self reliant. Alecha now grows vegetables all round the year.

Alecha bought four cows from the income she made by selling vegetables. Now, she does not go to the field to collect cowdung. She makes compost, vermi compost, pile compost, ditch compost in her field itself. She uses the vermi compost mostly for her vegetable crops and also earns some cash by selling earthworms to the neighboring farmers.

Presently, she grows vegetables in 3 bigha land and paddy in 8 bigha land, totally organic. She has integrated duck rearing along with paddy cultivation. Due to the integration there is no need for application of fertilizers and herbicides for paddy crop. The yield of paddy is also much better than before.

Alecha, with the support of FIVDB set up a hatchery. In 8 months she could earn around 120000 Tk from the hatchery.

Alecha has the support of her family in all her activities. The members of her family now have greater access to vegetables, providing good nutrition to the family members. Medical problems seem to have reduced than before.



Alecha earns additional income through chicken rearing

Now many farmers come to her for suggestions with respect to organic method of growing paddy and vegetables. They have also started growing vegetables in their homestead lands using organic ways of cultivation. She also encourages the unemployed youth to work in the land. Alecha is now a role model in her village.

This article is an edited version of the original article which can be accessed at http://www.fao.org/fsnforum/sites/default/files/resources/Case_NE%20Bangladesh-Alecha.pdf

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SRI: A practice that transforms the lives of women

Sabarmatee Tiki

Globally, around a billion people are engaged in rice farming and around half of them are women. They continue to carry out their work mostly barefoot, with their primary tools being their hands. An agro-ecological approach like SRI has reduced the overall burden on the bodies of these women.

I grew up eating rice and experiencing culture and agriculture of rice from my childhood. I observed how farmers/labourers, mostly women, perform backbreaking work in hot, humid, wet or cold conditions for many days in bent posture besides doing lot of other work. 'Rice grows on women's backs' as women provide 27 to 84% of labour to grow rice, often unpaid and unacknowledged.

Labourers are the actual catalysts who invest their bodies to make other inputs work. Unfortunately, that capital is diminished over time instead of getting enriched. Globally, around a billion people are engaged in rice farming and around half of them are women who use their bodies to feed us! Half a billion and more women is a tremendous population to be engaged with and to be impacted by any technology. Yet, for centuries, the nature of women's labour in rice farming has remained essentially inelastic. They still carry out their work mostly barefoot, with their primary tools being their hands, supplemented by hand hoes or sickles. Further, disease, malnourishment, household and other work go hand in hand. In this context, can we afford to ignore the critical issues of gender and body while understanding a rice production system like SRI?

Experience of work in a changed working condition

SRI is an agroecologically-based method for growing rice that enables farmers to achieve higher yields with less water, seed and agrochemicals, and generally less labour. Its major recommendations include planting of younger seedlings at



Women carry loads of seedlings from nursery to the main field

wider spacing, frequent weeding, preferably mechanically, maintaining a non-flooded moist field condition and managing soil health organically which largely contrasts farmers' practices and beliefs. These contrasting practices and associated work conditions create differential bodily experiences. How exactly the activities are done will show why the differential implications emerge which are explained below and the quantitative details are given in Table 1.

To comprehend the experience of work in a changed working condition, focus was on several parameters - work environment, and time spent in that environment; postures, and time spent in these postures; volume and weight of materials handled; area of work (e.g., size of nursery); distance that labourers walk and gendered work participation.

In SRI, wider spacing is used reducing the plant population drastically. This implies reduced use of seeds (2-3 kgs/acre) and a smaller nursery to raise the seedlings. A smaller nursery also means reduced total workload. Moreover, as younger seedlings are transplanted (8-15 days) which need to be removed carefully and planted as soon as possible, nurseries

It takes women around 130-160 hours/acre to weed in bending position while using a mechanical weeder takes 16-25 hours/acre.

are prepared very close to the main field. This reduces the distance in walking from nursery to main field carrying the seedlings. Also, weight of seedlings become lighter with reduction in age of seedlings and number of seedlings. Since lesser number of seedlings are transplanted per hill (1-2), the labourers do not have to remain inside the mud for longer hours.

Use of weeder is quite common in SRI paddy, as the wider spacing results in more weed growth, difficult to control manually as that takes longer hours. Use of a weeder besides controlling weeds also actively aerates the soil contributing to promotion of root growth and beneficial soil organisms. Use of the weeder enables women to move from a permanently bent position to erect posture. The overall burden on their bodies was reduced because of adjustments to work-rest rhythms, reduced work hours, changing from bending to erect posture, remaining in the flooded condition for lesser hours and increased participation of men in mechanical weeding.

Benefits of SRI depend upon the extent to which the recommended practices are followed. In farmers' situation, it is not always possible to follow all the recommendations every year. For instance, most elderly women continued to do manual weeding instead of using weeders, hence they experienced no reduction in pain when weeding. But, they

reported less pain with removing and transporting SRI seedlings, fewer and lighter, from the nursery. And while farmers were generally happier about SRI methods producing more rice, labourers reported that the harvested bundles of (SRI) rice were heavier to handle.

As Table 1 shows, SRI fundamentally changes the conditions under which women have to work. With SRI practices, rice fields are no longer kept continuously flooded, which reduces or eliminates women's prolonged exposure to water-borne disease vectors. In conventional cultivation of flooded rice, women normally spend about 400-500 hours/acre in bent postures in flooded fields on uprooting and transporting of seedlings, transplanting and weeding. When fields remain flooded and women work in that wet condition for very long time, vulnerability to diseases increases tremendously which has its toll on their health, working ability and income, drains out their money on health care, sometimes making them indebted.

Women also reported about reduction in infections in hands and legs and severity of body pain, getting more time to cook, eat and rest well on the days when they work in SRI fields. Major reasons pointed out were that they do not have to put their hands and legs in the flooded fields for long hours, reduction in workload due to men's participation in

Paddy transplanting is exclusively done by women



Table 1: Comparison of tasks carried out women

Tasks	SRI	Conventional
Nursery Management	3-5 kg seeds for 1 acre. Much smaller nursery size to sow and manage. Nurseries are not necessarily flooded.	30-40 kg seeds for 1 acre. Bigger nursery to till, apply manure, sow and manage. Nurseries often have several inches of water.
Uprooting	Seedlings uprooted 8-15 days after sowing (thus much less time needed to manage the nursery). Seedlings removed carefully with soil, then carried to the field for immediate transplanting.	Seedlings uprooted 30+ days after sowing. Women pull up seedlings in bending postures, or sitting in the flooded nurseries, cleaning the soil from the roots, then bundle the seedlings. Larger numbers of older, heavier seedlings require a lot more energy and time to pull up.
Seedling Transport	Containers of seedlings weigh around 5-6 kg or at most 13-15 kg, if older. Total weight transported is 80-145 kg, per acre, and up to 200-250 kg if the seedlings are slightly older due to various reasons. It takes 7-25 hours to uproot and transport seedlings. SRI farmers often raise nurseries inside or near the main field, so they make fewer trips and walk less distance.	Bundles are transported to main fields to be transplanted. Men carry bundles weighing between 8-100 kg; women carry 7-30 kg depending on the transport method. Total weight transported is 400 to 1,200 kg of seedlings per acre, often at some distance, on people's heads, shoulders, slings, and bicycles and spread over the field. It takes 80-150 hours to uproot and transport seedlings to the main fields.
Transplanting	Seedlings women hold in their hand while transplanting, weigh 150-300 grams. They insert the young seedlings into the mud at wide spacing, at an average rate of 6-10 nos. /minute. It takes 70-90 hours per acre to transplant the seedlings.	Women hold more and older seedlings weighing 1-1.5 kg. Women plunge their hands and wrists deep into the mud 40-50 times/minute inserting seedlings at random and close spacing. It takes 120-150 hours per acre to transplant the seedlings.
Weeding	Weeding with a mechanical weeder takes 16-25 hours/acre. Farmers normally do weeding 2-3 times. A one-time supplementary manual weeding may take another 5-9 hours depending upon weed growth.	It takes women around 130-160 hours/ acre to weed in bending position.

some of the activities like mechanical weeding, reduction in work hour, volume of work and changes in postures.

Need for attention

An agro-ecological approach like SRI does not push the already disadvantageous segment of the population further to poverty and illness. There is very little discussion and literature on this particular aspect of rice production, and further research is essential. Similarly, it draws attention of extension agencies should involve both men and women in the design and development and application of technologies/tools considering the impact on the bodies of the labourers. If they thrive, our agriculture thrives and vice versa. Eco logic of SRI has a body logic too, which needs to be paid attention to, if we are seriously concerned about our toiling women.

Acknowledgement

Olivia Vent and Dr. Norman Uphoff for their encouragement and feedback, Wageningen University – NWO-WOTRO, Netherlands for supporting my research, all the persons who shared their knowledge and my colleagues at Sambhav, Odisha, India.



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Gaining from collective efforts

Pradeep Kumar Panda

Women in Udaipur have switched over to organic ways of cultivating tomato, thereby increasing their yields and income. Gaining strength as a collective, these women are now able to handle the whole chain of activities starting from production to marketing.

Women play a pivotal role in agriculture all over the world. Data reveals that there are 500 million small scale farm families around the world, and 70% of the agricultural work on these farms is done by women. It is recognized that farm productivity goes up by 30% if women have the same access as men to productive resources (FAO). While men focus more on economic gains, women's concerns are primarily about access to food and nutrition based on diversity.

Udyogini, aptly meaning 'woman in enterprise' has been working in the field of women entrepreneurship, since 1992. Udyogini initiatives have impacted lives of 25,000 farm families as producers in differentiated value chains (sal leaves, lac, silk, honey, bamboo, mahua, tulsi, tomato, mustard, pulses, embroidery, incense sticks, dairy, spices, goat rearing, imitation jewellery and poultry) showing potential for scale in difficult market conditions. Currently, Udyogini is working in four low income states viz. Jharkhand, Madhya Pradesh, Rajasthan, Uttarakhand.

Tryst with tomato cultivation

In the villages of Salumber and Sarada blocks in Udaipur in Rajasthan, about 70% farmers were cultivating tomato through irrigation by wells. This led to an acute water shortage in the region and farmers struggled with rainfall aberrations as well as market fluctuations. Also, farmers were following inappropriate techniques like narrow spacing between plants, high usage of chemicals and storage in gunny bags leading to post harvest losses. Under these circumstances, Udyogini decided to intervene in these villages through training women farmers towards better production methods as well as effective supply chain management. Udyogini's tryst with tomato cultivation



Learning on the field

involving women farmers began in the year 2009, in the villages Salumber and Sarada blocks - collectively known as the tomato cluster of Udaipur. This initiative under Rural Business Hub project was funded by the Ministry of Panchayati Raj, Government of India.

Initially, women were organized into groups. To improve their tomato cultivation, they were trained on better planting, storage techniques and use of bio fertilisers and neem based plant protection measures. Farmers were educated on line planting with 2.5 ft-3 ft distance between two rows and at least 1.5 ft distance between each plant. They were also trained on using crates instead of gunny bags which were given free of cost to the farmers.

Women were provided with good quality seed as well as biofertilisers. Having got trained, farmers shifted to organic methods of cultivation. By using organic fertilizer and pest management, the external dependency on chemicals reduced and they were able to double the income. By storing the produce in crates, the wastage was reduced. Earlier the wastage was to the extent of 15%. This also enabled them to

Jaisamand Agro Producer Company, set up in 2014 has 1,436 producers, associated with it. The company is managed by 15 board members, all women.

Sustainable farming of tomatoes has helped Ms. Phool Bai gain new confidence, stay back in the village, while the family manages other enterprises. Phool Bai is a native of Limbawli village of Udaipur District, Rajasthan. She has 4 children and lives in a joint family. She has been practicing vegetable cultivation since 10 years, with low production levels and high wastages. She was spraying chemicals extensively to control pest attacks. Phool Bai says that the wastage used to be as high as 20%. Thus, her family preferred rearing buffaloes.

Around 5 years ago, Phool Bai joined the vegetable cultivation program, organized by Udyogini. She was part of the training programme in 2009, adopted organic farming practices. She invested

in compost unit and took up vermi composting, increasing the availability of organic manure for her crop. By this she could reduce the use of chemical fertilisers. She sprayed neem based pesticides thrice a week to control pests and diseases.

Over a period of 2 years, the tomato production increased by around 20% and income by 40%. The produce was marketed through Jaisamand Agro Producer Company. Her husband joins her in vegetable cultivation, sharing the work load. Her youngest daughter could join a private school. All these improvements were possible through enhanced incomes, shared family responsibilities and the support provided by the Jaisamand Agro Producer Company.

get better price. Farmers used to get Rs 8 per kg when they carried in crates, where as they were paid Rs 6 in the market, if they carried in gunny bags.

Organising into a Producer Company

With a capital of Rs 1 lakh, Jaisamand Agro Producer Company (farmers' owned and managed), was set up in March 2014. Soon, it had 1436 producers, associated with it. The company is managed by 15 board members, all women. The company got an assistance of Rs 8.4 lakh from NABARD to manage for three years. Once the company was formed, different clusters were formed and the produce was picked up from specific location for sales in the larger market.

The women managed company is able to impart training, manage accurate weighing of the produce, organize seeds and equipment. The company also helps women farmers in marketing pulses and grains besides vegetables, in a limited way.

Phool Bai growing vegetables organically



In future, the company is planning to provide marketing support for all vegetables on a large scale - with regard to value addition, for eg., preparing chutneys and ketchup. Also, it realized that selling the produce in other markets is not easy as it is based on exchange of the produce by mandis with each other and also involves high transportation costs. The producer company plans to take the processing business forward by finding institutional buyers for their products. Initial attempts were however, not successful.

Impact

This women exclusive intervention has resulted in multiple benefits to the communities. Women are now able to handle the whole chain of activities - production to marketing management. In the process, women got better recognition in their family and community; especially after gaining 'technical knowledge' and improved incomes. Also, some men opine that 'their sources of income have increased as they have been freed from agriculture, thus being able to handle other activities'. In a study conducted during 5th to 13th February 2015, women reflected on their enhanced ability to communicate, express their point of view strongly, with outsiders. However, there are still challenges to overcome – the crop's vulnerability to pest and diseases and adverse climate changes. Women recognize these challenges and are preparing themselves to face them boldly.

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Adding value to lives

Anithakumari P and V Krishnakumar

Homestead farming system offers tremendous opportunities to adopt and adapt family farming in Kerala. The farming system which was being neglected, got an impetus by the mainstream institutions which supported the farm level value addition. Members of Edava Women's Association are reaping the fruits of their labour, while engaging in productive farm based activities.

The typical homesteads of Kerala are featured with fertile soils, congenial climate, evenly distributed rainfall patterns and small marginal holding size. Coconut palms form the perennial base crop, offering space for growing many companion crops along with it. Women play a significant role in selection of intercrops and the decisions in using the produce, to meet the family needs, small scale processing and marketing surplus production. Generally, vegetables (nutrition or kitchen garden throughout the year), tuber crops (amorphophallus, colocasia, yams etc. for storage up to one year for family use) and banana (use of various parts as vegetables and fruit) are grown as intercrops and the choice of crops is decided by women in the household. Perennial shrubs like moringa, curry leaves, leafy vegetables are also interspersed in coconut gardens.

Women usually preferred multipurpose crops in terms of utility and income. For convenience of multitasking as well as for meeting safe food needs of family members, they integrate compatible, feasible and interdependent components as well. It was found that, around 30% of households maintained poultry or duck units (10-20 birds), livestock, goats, wherein women did more than 90% of the activities.

Adding value at the farm level

ICAR-Central Plantation Crops Research Institute had attempted women oriented participatory programmes during 2010 to 2104 for improving the field level value addition. The objective was to optimally use the available farm resources for enhancing farm family income and women's involvement in farming.



Members exhibit value added products

A field based survey was taken up in Edava Gram Panchayath in Thiruvananthapuram district, to understand the current situation. The study indicated that more than 70% of the women could spare about 1.5 to 2 hours per day for productive activities. Majority of them were members or office bearers of groups, mainly women Self Help Groups (SHG). For women, the objective of farming was production of safe and nutritious food for family and income from micro enterprises. Taking into consideration these factors, a programme was devised to integrate farm level value addition for the produce from homestead gardens. The financial and infrastructural support came from the Department of Agriculture, Industries Department, Agricultural Technology Management Agency and Banks.

Data on the quantity of farm produce available on a seasonal basis was collected for planning and deciding value addition ventures, at the panchayath level. Six sub groups of women farmers were formed for producing various value added products - coconut (10 products), jack fruit (23 products), tuber crops (4 products), mushrooms (fresh & 2 products), farm level multiplication units of Green Muscardine Fungus (GMF) (bio agent for treating breeding sites of Rhinoceros beetles, one of the major pests of coconut), vermicompost

For women, the objective of farming was production of safe and nutritious food for family and income from micro enterprises.



Women process jack fruits for better markets

(packed), cowdung (dried & packed). These groups were federated into Edava Women's Association (EWA) in 2010, which was registered. Building linkages with different stakeholders for sourcing information on farming and related activities and centralized marketing of produce are some of the activities taken up by EWA.

Building capacities

The members of EWA initiated an innovative Rural Training Centre (RTC) in the village to offer practical training on value addition of farm produce. In the beginning, several trainings were organized by ICAR-CPCRI and Department of Agriculture. Experts from various institutions, innovators in processing were utilized as information sources.

Around 200 women farmers were thoroughly trained in various skills of value addition of farm produce. From among them, based on the quality of products produced, persistence, co-operation, involvement and interest, 100 farmers were selected specializing in six areas of value addition. Among them, six women were selected as master trainers and provided special training in communication, organization and marketing skills. They, as master trainers, offered trainings in seven districts of Kerala to more than 6000 farmers (in the center as well as off campus).

Being master trainers, their mobility and social status improved along with information seeking behavior. "We never thought that we could communicate and teach so many farmers in value addition. We are really proud of our EWA", says a master trainer.

Outcomes

The success of the programme enabled all family members and neighbors to become part of these vocations. The unit

members could get part time employment throughout the year (Rs. 600-3500/- per month for each) and social recognition. The value addition obtained ranged from Rs. 2-20/- for coconut, Rs. 80-300/- for jack fruit, and Rs. 10-30/- for mushroom. The organic waste from all these units is being converted into vermicompost and being sold @ Rs. 12/kg. The overall improvement in income was 30-40 percent. The local self government supported in developing marketing infrastructure for ensuring sustainability. The women group members were also able to refine the farm level multiplication procedure of GMF to reduce cost by 45% and production time by 30%.

Mrs. Sulekha, the president of EWA says "this model is woman friendly. Small and marginal homesteads will not have big market surplus, but the small quantities could be collected for a feasible level of value addition unit in rural locality. Women farmers easily shouldered the responsibility of collection of produce". The success of EWA was widely disseminated by All India Radio, Doordarshan, other television channels and the print media.

Safe food production was attained by using organic resources and recycling wastes from the farm – crops and animals. Women preferred using green leaf manures, compost and farm yard manure along with ash, which is readily available from the kitchen. Integrating different components in homesteads reduced waste, resulting in cleaner surroundings. For women, this type of intensive farming planned around the home, offered opportunities for most effective time management, attending crops, animals, birds while doing household activities and preparations of safe food from farm fresh produce with zero food miles.



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Organic vegetable farming by women

Hirdesh Kumar Chunera

Farmers in Adbhora village were migrating to towns and cities as farming was not viable. Women in the village organised themselves into a group with the support of an NGO and are now reaping rich harvests adapting sustainable agriculture practices.

Hill farming has its own challenges - undulating topography, fragmented and scattered land holdings, poor and shallow soils prone to erosion, leading to soil degradation and more. With male members of the family migrating, women are getting engaged in agriculture.

Sanjeevani, a non-profit organization in the field of rural development, chose Adbhora village in Bhikhyasen block, Uttarakhand to promote sustainable organic agricultural practices. Sanjeevani, as part of its project, engaged 51 women farmers, with marginal and fragmented land holdings, and organised them into two groups.

Women were trained on how to grow crops, organically. They were trained on preparing vermi compost, biodynamic compost and liquid compost (Jeevamrut) using farm wastes and cow dung. Women were also trained on biological pest and disease management.

The women groups cultivated a variety of vegetables like brinjal, cauliflower, cabbage, tomato and chilli. The seeds were treated with PSB, Trichoderma to reduce impact of fungal and bacterial diseases. Nurseries were raised and monitored and land preparation supervised. Seedlings were treated with Panchagavya before transplanting them into main field. They got improved yields of vegetables, when

Table 1: Production of vegetables

Vegetable	2013-14 qtl/ha	2014-15 qtl/ha
Brinjal	1	1.5
Cauliflower	1.5-2	1.5-2
Cabbage	1.5-2	2-2.5
Tomato	1-1.5	0.5-1.75
Chilli	40-45	45-50



Tara Devi in her vegetable farm

compared to the previous year. Their average earnings rose from Rs 47,000 per season to Rs. 86000. Also, dairy farming was promoted to enable them to get regular income.

Presently, the daily production of milk from the village is 50 litres. And, 8-10 lakhs worth of chilli is sold every year from the village. Sanjeevani, along with the Uttarakhand Organic Commodity Board, is providing market linkages to the farmers so that the farm produce could be sold to the consumers without the involvement of middlemen.

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Story of Tara Devi

Tara Devi aged 51 years of Adbhora village, was bold and entrepreneurial. She joined the "Jaivik Utpadak Upsamuh Adbhora", an organic farmer group consisting of 20 members. In spite of her hectic household work and criticism from people around, boldly participated in the trainings. In 3.54 hectares of land, besides chilli farming, she developed a poly house of 20x5 meters under which she produced vegetables like peas, cabbage, okra, capsicum and brinjal. She also planted 200 fruit trees of peach, plum, apricot and guava. She setup a pond of size 6x5x1.5 mts, started fisheries in the same pond. From the profits of selling fish, invested on a structure to take up poultry. She now earns Rs. 6000 – 7000 per month from dairy and Rs 20,000–25,000 from chilli farming for the entire season, a gain of Rs 10,000-15,000, from earlier levels. She has inspired several other women including 14 more members in her group.

Cultivating prosperity

Ganga Ankad

With determination and hardwork, Shivakka transformed her degraded land into a land that gives rich harvests. Green farming, integrating enterprises and sustainable agriculture practices have led to this wonderful transformation. Today, Shivakka's wadi model is an inspiration to many.

The story of Mrs. Shivakka Kurubar, a resident of Bogenagarakoppa village, illustrates the empowerment process. During late 90s, Kurubar's family was experiencing severe poverty. They had four kids

to be looked after. Their 7.16 acre agriculture land was located on a hillock, heavily degraded, infested with lots of pebbles. Mr. Basappa, Shivakka's husband was working as a porter in Hubli town. Every day he used to leave the village at 7 am and return late night. He earned Rs. 200-400/- per day. With poor transport facilities, had to go walking 5kms every day.

When the family had abandoned the degraded land, Shivakka saw a hope when BAIF interacted with her. Infact her husband had made a deal to sell off the land. But determined to practice

Women visit Shivakka's farm





Shivakka

farming with BAIF's support, Shivakka managed to stop the land from being sold. Later, Shivakka joined the SHG group, was a quick learner, participated actively in meetings, training events and discussions. Initially, the members used to put thumb impression. They learnt to sign when the field officers smartly motivated them, by telling them that they would get loans with a signature only. This was the beginning of Shivakka's journey in becoming literate. Soon she handled SHG books of accounts along with her friend Mrs. Halavva.

Greening the farm

Shivakka was involved in micro-planning for her farm along with her husband. They choose to grow 20 saplings of Alfonso mango, 20 sapota and planted 1200 forestry seedlings which included teak, acacia, eucalyptus, and glyricidia. They were planted all along the border and in a block of 1.5 acre land. They also cultivated Stylohamata fodder, constructed trench cum bunds and a farm pond, for soil and water conservation. They erected a fence to protect the farm from stray cattle. Even, one borewell was dug to support irrigation.

Women learnt to sign when they were told to do so for getting loans, thus marking the beginning of the journey in becoming literate.

BAIF's intervention between 1997 to 2004 in Dharwad impacted the farming families positively. Initially the project area in Dharwad cluster was 10 villages, which later got extended to 22 villages. To begin with, baseline surveys and PRAs were conducted followed by maintaining a Family Information Register (FIR). The register helped in short listing the farmers, based on their poverty status, willingness, suitability of their farms for initiating tree based farming. BAIF field staff were interacted regularly as well as intensively with farming families to prepare micro planning based on each family's needs. Both husband and wife of the farm family were involved in planning. The plans included, deciding on where to construct bunds, farm ponds, which horticulture and forestry species to be planted, etc.

Farmers were organised into self help groups, met weekly, contributed Rs.5-10 per member per week. Besides maintaining the book of accounts, the groups were also responsible for disbursing loans to members and organising inputs. Guided by field guides, the groups could build a common fund, and a strong value system. Besides savings and credit and farming operations, the groups were also trained on aspects which impact their quality of life – like use of bio-gas plants, smokeless chullas, health, nutrition and gender aspects.

Tree farming

Shivakka and her husband took care of the horticultural plants. While Basappa made basin preparation, Shivakka shaped the basin, applied compost and mulch and did the watering. Pot irrigation was practiced. About 15kgs of compost and 1 kg of salt was applied during each monsoon, for each plant. Gradually, the increased work load was shared by the members of the family. Basappa took 2 days off from his porter work for sharing the work load initially, but, gradually got fully involved in agriculture operations. After three years, mango flowers appeared and 4th year onwards fruiting started. First fruiting season was very exciting for the family. The fruits were distributed among field staff, relatives and friends. Subsequent year, they started selling the mango produce. On an average every year, 20 trees yielded Rs. 8000/- worth harvest. During sapota season, if the local Hubli market is down, Shivakka and her husband take the harvest to Kundapur market. Sapota yields twice a year. Once it starts, it bears fruits for three months. Every day, two baskets of fruits are taken in the bus, each basket weighing 15 kg and fetching Rs. 500 to 800/-. The total earnings from Sapota are around 10,000/- per annum while mango fetches Rs.8000/per annum. Shivakka never uses any artificial ripening agents.

Harvesting from intercrops

During the gestation period of tree growing, the family cultivated vegetables and seasonal crops as intercrops. Black eyed bean, jowar, tomato, chilly, brinjal are grown as intercrops. The surpluses are sold after keeping for home consumption, except cluster beans, ridge gourd and bitter

gourd, which are grown for home consumption only. Shivakka herself goes to nearby markets like Hubli, Mishrikoti, Kalaghatagi for selling vegetables and fruits.

In one acre of low lying land beneath the hillock, local variety of paddy is being grown. Six to eight bags of paddy worth Rs. 800/- per bag i.e, Rs. 5600/- is harvested. However, since 3 years, the land is being used for cultivating maize. Shivakka handles sowing, planting, weeding and harvesting. The details of yields and incomes from various crops is given in Table 1.

Integrating livestock

The family had one local cow, which yielded 2 litres of milk per day. While 250 ml was retained for home consumption, the remaining was sold. During 2010, one pair of bullock worth Rs. 15,000/- and buffalo worth Rs. 11,000/- were purchased. Now the family is able to sell around 3 litres of milk every day, at Rs. 30/- per litre, fetching around, Rs.11250/- per annum. Farm waste, paddy husk, cotton seed, soyabean, waste flour from mill etc., serve as fodder source. The cattle shed waste is being recycled as compost for fertilising their land.

Table 1: Yields and incomes from intercrops

Sl. No.	Crops	Yield (kg)	Income (Rs.)
1	Black eyed bean	50	1250
2	Jowar	300-400	4200
3	Brinjal	300	3000
4	Tomato	400	2800
5	Other vegetables	-	3000
6	Maize	2000	50000
7	Soyabean	7000	15400
	Total		79650

Table 2: Income from enterprises

Enterprise	Income per year (Rs.)
Intercrops	79650
Horticulture	18000
Forestry	3000
Livestock	11500
Total	100650

Conclusion

Shivakka's wadi model is attracting hundreds of farmers. Today she earns more than a lakh rupees from her land. She also serves as community resource person for BAIF's Grama Chetana Training Centre, guiding patiently several farmers. She still actively attends SHG meetings, though her newly constructed house is away from the village. She utilised the savings for the marriage of two daughters and for constructing a farm house. She vividly remembers her past and is deeply grateful to the field staff, Mr. Deepak Ksheerasagar from BAIF who guided her empowerment process.

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Sustainable and resilient farming

Women Collective's efforts

Sheelu Francis and Sara Calmius

Women farmers always had strong farming abilities, but have been marginalised. The Tamil Nadu Women's Collective with its one lakh members, is determined to work till women farmers' efforts are recognized, agroecology becomes the dominant practice and farm environment is saved from harmful chemicals.

Although most women in the rural areas work full-time on farm, they aren't recognized as farmers. In Tamil Nadu, women still don't have the same access as men to land ownership, which limits them from accessing inputs and finance and affecting their independence and social status in their communities.

Under such situations, Women's Collective started working since 1994, with dalit farm women. Beginning with issues

One of the members working on the collective farm

of health, soon expanded its goals to find sustainable solutions to food security and family health as both were closely related. For the collective, agroecology means traditional sustainable and resilient farming practices suitable to the local context.

Women's Collective organised various trainings and workshops on healthy foods and healthy soils. Farmers are trained on production of biologicals for plant protection and organic fertilisers. They learn to use locally available ingredients like cow dung, urine, milk – thus reducing their dependence on external inputs and farming expenses. While work load may not be lesser, agroecological practices certainly result in lesser expenses, healthier families and household food security.

Members are encouraged to adopt mixed cropping systems than mono cropping as they create a natural ecosystem rich in biodiversity which is better for the soil and better harvests. Women farmers adopt agroecological practices, primarily



Kalpanja

for household food security, and produce on a small scale. Although not all members of the collective are able to access or lease land, they are encouraged to have an organic kitchen garden. (See Box 1)

Farmers are encouraged to grow millets which are rich in nutrients and suitable to local context and culture. Millets are the traditional foods in the region. But, green revolution agriculture had promoted conversion of traditional mixed farming to paddy cultivation. Importantly, in most districts of Tamil Nadu cultivating rice is difficult due to water scarcity. The Women's Collective therefore promoted cultivation of millets, as the women farmers would have fewer problems with water scarcity and malnutrition.

Box 1

Kalpanja is a housewife living in a village outside of Nagercoil. With her ailing health, she is not able to go for work. After attending the workshops on importance of healthy foods, she got inspired to start her own kitchen garden. She started growing vegetables organically, six months ago. She uses kitchen wastes and cow dung as natural fertilizers. She says having a kitchen garden isn't much work and is cheap since most of the things she uses are for free. Kalpanja's children have also been inspired by her kitchen garden. Her sons often look for new plants on the way to his house or school. Motivated by her, many women are seeking Women's Collective support in procuring seeds.

Collective farming

During one of the workshops, Philomina coordinator in Kanyakumari district, came in contact with Jamila, a woman who owned three acres of land in Kanyakumari district. Jamila offered the members of the collective to start a collective farm on her land for free with the condition that she be allowed to join the group.

Six women formed a group and agreed to do collective farming. The expenditure of the collective farm has been shared by the six members and the idea is that all crops will be equally shared and whatever is left will be sold to members of Women's Collective. Jamila signed a contract where the other members will use her farmland up to five years.

The idea is to plant banana trees, tapioca and vegetables. Women's Collective provided Rs. 4000 rupees as initial investment. Philomina and the members believe that their initiative to start a collective farm will inspire other members to do the same in the future.

The network deals with issues of lack of formal credit and ownership of land. They hardly have access to conventional banking system. Each member of the sangams saves at least 100 rupees per month, which is spent on seeds, health and educational expenses. As is the case in the state of Tamil Nadu, women's access to land is minimal and approximately, only one percent of the one lakh strong Collective owns land.

As a network, they find strength in working with each other and are encouraged to express themselves and become leaders. The social network helps women to maintain a certain level of food security through collective farming and sangams- lowering the risk of absolute poverty with improved yields and financial/social support. The children of these communities are able to see their mothers, sisters taking charge and raise their voices. Having women role models working with agroecology sustains farming traditions and inspires younger women.

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Only one percent of the one lakh women of
the Women Collective owns land.

Agro ecology - key to prosperity

Mrs. Revathi is a young farmer living in Nallampatty village of Pennagaram block of Dharmapuri district. Though farming is the primary occupation of the household, her husband prefers working as a driver in the nearby town, as the returns from the one acre of dryland farm is not sufficient enough to run the family. Not willing to leave the field fallow, Revathi took up farming on the one acre of dry land. She practiced conventional farming, often facing hardships in getting one successful crop. Production costs were high owing to dependence on external inputs. Also the soil health deteriorated over time, affecting productivity.

In the year 2011, Revathi got an opportunity to participate in a Farmer Field School (FFS) program, organized by AME Foundation. To start with a group consisting of 20 young women was organized. These women were already member of SHGs involved in savings and credit activity. The women were initially trained on sustainable agriculture and were further trained to become farmer facilitators.

While learning during FFS, she implemented many ecological practices on her field. She focused on harvesting rainwater by ploughing across the slope and on increasing soil fertility by incorporating green manure. For this, she

Revathi with her fodder crops grown in the back yard



raised sun hemp prior to main crop to produce enough biomass. She also applied biologically enriched Farm Yard Manure by adding of Rhizobium, Phospobacteria, anti fungal like Trichoderma viride etc.. For controlling pests in groundnut crop, she innovated low cost yellow sticky traps and installed in groundnut field to attract aphids, which was a major sucking pest. She raised sorghum as border crop to prevent sucking pests, and raised castor to trap lots of worms which otherwise would have attacked groundnut crops. Thus she avoided spraying pesticides. By including red gram and cow pea as intercrops in groundnut, she also diversified her cropping, also reducing risks. The diversity on the farm not only increased resilience to her farm and livelihoods, it also yielded a good income. Revathi could earn Rs. 85000 from her dryland, which seems unbelievable. The cost of production was also lesser by about Rs. 3450.

Revathi has several other complementary activities on her farm. She raises 13 kinds of vegetables - the produce of worth Rs. 1000 is harvested every week. Fodder bank and azolla cultivation provide continuous supply of feed to the cattle. She earns around Rs.1000 per month by selling milk. Revathi also started mushroom production on a small scale with 2 beds. She harvests around 250 grams, every alternate day. The vegetables, the milk and the mushrooms are providing a healthy nutritious food for the family. The surplus provides regular income too.

Revathi is really proud of her achievements. She feels she has succeeded in making her farm sustainable, providing healthy and nutritious food for the family, fodder for the livestock and income for the household. With her increased capacities and awareness, she now serves as the resource person on ecological agriculture.

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State of India's Livelihoods Report 2015

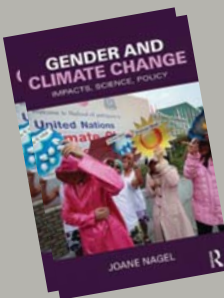
Girija Srinivasan, Narasimhan Srinivasan, *November 2015, SAGE India, 204 pages, Rs. 1,195, Paperback ISBN: 9789351508656*

This volume of **State of India's Livelihoods Report (SOIL Report)** provides an overview and analyses the policies and funding framework through an examination of budget allocations, new policy pronouncements, large programmes initiated and reviews how legislative efforts have a bearing on livelihoods. Four flagship programmes have been taken up for an assessment of performance, among which the dairy sector has been examined in some depth as it provides substantial livelihood opportunities to vulnerable households. This sector covers the topical theme of skill development in the country. Non-farm sector livelihoods, especially in handloom, handicrafts and village industries have also been reviewed. The aftermath of the introduction of corporate social responsibility (CSR) obligations and private-sector engagements with livelihoods has also been examined in this report. As its regular feature, this report takes stock of the ongoing and emerging policy initiatives of the Government of India that are in various stages of formulation and adoption.

Gender and Climate Change Impacts, Science, Policy

Joane Nagel, © 2016, *Routledge, 250 pages, Paperback: 9781612057675*

Does gender matter in global climate change? This timely and provocative book takes readers on a guided tour of basic climate science, then holds up a gender lens to find out what has been overlooked in popular discussion, research, and policy debates. We see that, around the world, more women than men die in climate-related natural disasters; the history of science and war are intimately interwoven masculine occupations and preoccupations; and conservative men and their interests drive the climate change denial machine. We also see that climate policymakers who embrace big science approaches and solutions to climate change are predominantly male with an ideology of perpetual economic growth, and an agenda that marginalizes the interests of women and developing economies. The book uses vivid case studies to highlight the sometimes surprising differential, gendered impacts of climate changes.



Food Security, Gender and Resilience Improving Smallholder and Subsistence Farming

Leigh Brownhill, Esther Njuguna, Kimberly L. Bothi, Bernard Pelletier, Lutta Muhammad, Gordon M. Hickey (Eds.), *2016, Routledge, Earthscan Food and Agriculture, 182 pages, ISBN: 9781138816947*

Through the integration of gender analysis into resilience thinking, this book shares field-based research insights from a collaborative, integrated project aimed at improving food security in subsistence and smallholder agricultural systems. The scope of the book is both local and multi-scalar. The gendered resilience framework, illustrated here with detailed case studies from semi-arid Kenya, is shown to be suitable for use in analysis in other geographic regions and across disciplines. The book examines the importance of gender equity to the strengthening of socio-ecological resilience. Case studies reflect multidisciplinary perspectives and focus on a range of issues, from microfinance to informal seed systems. The book's gender perspective also incorporates consideration of age or generational relations and cultural dimensions in order to embrace the complexity of existing socio-economic realities in rural farming communities.





Gender in Agriculture

Closing the Knowledge Gap

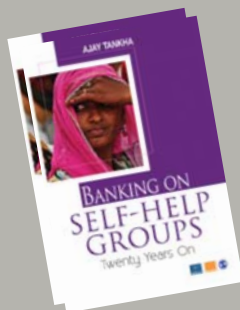
Quisumbing, A.R., Meinzen-Dick, R., Raney, T.L., Croppenstedt, A., Behrman, J.A., Peterman, A. (Eds.), 2014, *Food and Agriculture Organization of the United Nations*, 444p, 978-94-017-8615-7

Women play important and varied roles in agriculture, but they have unequal access, relative to men, to productive resources and opportunities. Closing these gender gaps would be good both for women and for agriculture. This was the message given by The State of Food and Agriculture 2010–11, a report of the Food and Agriculture Organization of the United Nations (FAO). As it prepared the report, the FAO drew together a wealth of background information based on a growing body of research and statistics on women in agriculture, and it commissioned the International Food Policy Research Institute to edit a book based on these background studies. The resulting book, *Gender in Agriculture: Closing the Knowledge Gap*, is a compendium of what we now know about gender gaps in agriculture and why such gaps matter.

Banking on Self-help Groups

Twenty Years On

Ajay Tankha, 2012, *ACCESS Development Services and Sage Publications India Pvt Ltd.*



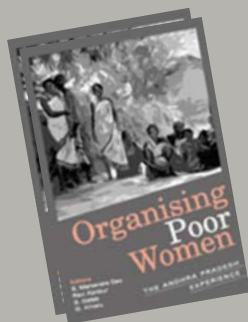
Development interventions are of many types and are implemented through many different institutions and agencies. This book is about a special institutional intervention that has touched the lives of hundreds of millions of people in India and created an unmatched resource built upon the social mobilization and empowerment of women.

This book undertakes a critical assessment of the growth of the SHG movement in the country over the last two decades, the role and experiences of different actors and the various challenges faced by them, along with a study of the enabling factors and constraints to SHG development in the country. It reviews the outstanding issues and examines the promise of new government initiatives on rural livelihoods based on SHGs. The learning from this exercise will serve to contribute to new thinking in microfinance policy and necessary initiatives for the effective functioning of SHGs and their institutions.

Organising Poor Women

The Andhra Pradesh Experience

S. Mahendra Dev, Ravi Kanbur, S. Galab, G. Alivelu (Eds.), 2012, Pages : 297, Rs. 1095.00 / USD 55.95, ISBN - 978-81-7188-938-9



Why does poverty, particularly poverty among women, persist? One reason might be that we do not have the appropriate knowledge on which to base policies and interventions. But even if there was technical consensus on how to reduce poverty, the real issue is whether the power structures in society will allow interventions that reduce the advantages of the wealthy. Without power, the poor in general and poor women in particular, will not be able to argue for and to force the introduction of policies and interventions that improve their well-being. Hence, the need for empowerment. Organisations of the poor are central to inclusive growth. Andhra Pradesh has been in the forefront of promoting these organisations, especially for poor women. This volume assesses and analyses the Andhra Pradesh experience. The papers in the volume will be useful to researchers and policymakers alike since they chart a specific and concrete experience in enhancing organisations of poor women.



Members collectively cultivating vegetables

Challenging food insecurity through community action

T K Omana

Empowering women by building capacities and confidence, utilizing existing skills and providing support where necessary and integrating all the farm based activities through recycling, are some of the factors which have brought these poor women in Kerala out of poverty.

In Kerala, women farmers are intensively involved in the cultivation of food crops such as rice, tubers and vegetables. There was a major shift during the 1970s from subsistence crops, such as rice and yams, to cash crops such as black pepper, coffee, ginger and rubber. Intensive agriculture, coupled with poor soil and water conservation practices, has led to falling agricultural productivity. During the past decade, the growing cost of production together with increased incidence of pest attacks, diseases and falling prices has resulted in a local agricultural crisis leading farmers and allied workers into perpetual penury.

A study conducted by RASTA in two panchayaths (local administrative area) in Wayanad district in 2004 showed that women contribute 90% of the labour in food crops. But, the shift in cultivation from food crops (rice) to cash crops (banana) has resulted in the displacement of women labour. A recent estimate by RASTA shows that, in Wayanad district, women lost nearly 1,500,000 working days per season when the paddy cultivation shrunk to 12,000 ha from 40,000 ha.

The gradual displacement of women from agricultural tasks resulted in increased dependency of women on their spouses for basic economic needs. It also created food insecurity at the household level. In recent years, increased farmer suicides have also resulted in women shouldering responsibilities of managing the house, children's education and other family needs.

Empowering women

RASTA has been working in Wayanad district since 1987 addressing the problems of rural people, especially women, indigenous communities and marginal farmers. Empowering

women has been one of the main thrusts of the organization since its inception. It began with mobilizing rural and tribal women to start “Thrift and Credit Groups” as early as in 1990 with the help of RASTA and later on as “Self Help Groups” spread across 12000 poor families in the district. The self-help groups are collective associations of 10-15 women in neighbourhoods, often like-minded, and having similar economic backgrounds etc. They meet once in a week to mobilize savings, discuss and learn about their rights and plan for the future. A strong leadership and collective action evolves among the group members within 2-3 years and this collective strength is often guided towards starting new or alternative livelihood activities for the members.

Over the years we found that the self-help group approach was highly effective for empowering women and addressing the growing problem of food insecurity in villages. Since the primary livelihood sector, agriculture, was facing crisis, RASTA put great emphasis on resolving the situation, by training women farmers in sustainable agriculture production systems, knowledge sharing, field extension services and diversification of crops.

To address the issues of food insecurity and unemployment, a meeting of women farmers was organized. Most of the members suggested starting up something unique in order to tide them over the crisis. Five hundred poor families of tribal and other marginalized sections belonging to the self help groups came forward to be a part of the programme.

Seed exchange-mela

Vegetables contribute a major part of the household food basket. Vegetable farming had ceased several years ago during the shift to cash crops. To revive the activity, a seed exchange *mela* was organised. A seed exchange *mela* (festival) is a meeting of women farmers in the village who bring seeds they have and exchange it with other farmers. Only those who have at least one seed with them are allowed to participate.

Thirty groups (300 women farmers) were initially involved in the seed exchange melas. The seed exchange *mela* (festival) is conducted immediately after the rice harvest in December. After the *mela*, groups of women (5-10 members) cultivate vegetables collectively. They use organic manures, compost and manually control pests. Only in extreme situations do they use a soap and tobacco mixture - an eco-friendly pest control method. Within one month they start

For the first time, there was milk available in these families and this changed the health profile of the members.



Women participating in seed mela

getting yields, first from leafy vegetables and later from other crops.

Surplus vegetables are sold directly to the community. This cuts out the middlemen, ensuring higher prices for the women’s group and high quality organic vegetables, free from chemical pesticides, for the village communities. The activity has enhanced the household food availability and reduced dependency on buying food.

During the harvest, the best quality produce is collected for seed material and preserved using traditional methods and shared at the next seed *mela*. Thus, a tradition is being created to protect and propagate indigenous varieties.

Tending livestock

Around 530 members accessed soft loans of Rs.20,000 each for purchasing cattle. The women were able to obtain loans without any collateral security, as they had approached the bank as a group. Here the group has the liability and the group is the security. This was a great boost to the local economy and for the poor families.

The women were provided hands on training for managing high yielding cows. Since the region is rich in natural resources, there is little dependency on imported feed. Also the farm wastes serve as fodder, thus integrating livestock into crop production.

On an average, a cow produces 15-20 liters of milk per day. The milk is collected by the Milk Cooperative Society, established by MILMA, a public sector milk distribution company. Women get an income of Rs.600 a day. This is sufficient for meeting the expenses of rearing the cattle as well as for loan repayments. Cattle rearing became a viable income generation programme for these women.

Cattle rearing contributed in many other ways to the families. The dung is used to improve vegetable and paddy cultivation.

As only a small volume of dung was used for composting, the rest was used for biogas production. The farm households got a grant of Rs. 5000 per biogas tank (around 50%) and the remaining amount was raised in terms of labour or by taking a loan from the self help groups. The installation of biogas plants helped to reduce the use of fire wood as well as the dependency on external energy supplies. The biogas slurry was recycled as manure for crops.

Reviving the rice production through SRI

Around 40 groups of 5 women have cultivated rice using the system of rice intensification (SRI) method in over 200 acres. This method uses 50% less seeds than conventional methods and 40-50% less water to produce higher yields than conventional systems. Thankamma, a traditional women farmer from Kaniyambetta Panchayath has produced 3500 kg of rice from one acre of land, inspiring many other farmers. The production process is fully organic, since cow dung, compost and the biogas slurry are available. As in the case of vegetables, women were able to sell the surplus rice to other local consumers for a good price.

Rice cultivation has brought back the traditional cropping systems of the past. There is more food available in the house and members sell the surpluses. It has also brought employment opportunities for women especially in the tribal communities. A total of 5800 labour days have been generated through this initiative. Additionally, rice paddy straw was used in mushroom cultivation.

Mushroom cultivation

Since the paddy straw was available as an offshoot of rice cultivation, mushroom cultivation was promoted among the marginal farmers. Around 120 women were trained in mushroom cultivation and were provided with credit assistance from banks for the construction of sheds. Mushroom spawn was distributed from the regional agricultural research station. In two weeks, they were able to sell mushrooms in local markets for Rs300/kg - another successful income generation programme for women.

Conclusion

The success of the programme can be attributed to certain factors like - empowering women by building capacities and confidence, utilizing existing skills and providing support where necessary and integrating all the activities, wherein the wastes or output of one activity becomes the input for the other. The resource recycling has definitely reduced the costs of production and reduced dependency on the external resources.

One of the greatest impacts of this programme has been a tremendous change in the nutritional security and status of the children as well as women of these families. For the first time, there was milk available in these families and this changed the health profile of the members. There were also other by-products such as cow dung for manure and value added products such as biogas, which have changed the way the farmers look at agriculture inputs.

Most importantly, there is an increase in the self confidence and status of women within the community. Now, local government Panchayat Raj Institution has also adopted this program, across the State.

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*Wishing you
a very
Happy New Year
2016*

