Family farmers breaking out of poverty
Dear Readers

The productivity of smallholder agriculture depends on the services provided by well-functioning ecosystems. Current farming practices through overuse and abuse of natural resources have reduced the ecosystem's capacity to generate sustainable yields. In addition to declining yields and degraded resources, small farmers face additional challenges of rising prices and climate change making them more vulnerable and less capable to escape poverty.

While agriculture is key to economic growth, poverty reduction and environmental protection, it is time to renew our focus on small holder agriculture for sustainable development. In this issue, we have included a few initiatives which show that small farmers, given an opportunity and support, can not only improve their livelihoods and break the cycle of poverty but can also become critical agents of transformation in the society. Lets hope that during this year of International Year of Family Farming, many such initiatives are supported.

While 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 during the year 2014, 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, Kenya, 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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5 Eco-farming addresses hunger, poverty and climate change

Olivier De Schutter

Agriculture must be redirected to environmentally sound, socially just production methods to address the food and energy crises, hunger, poverty and climate change, reports Olivier De Schutter, Special Rapporteur to the UN on the right to food. Agroecology, which mimics natural processes, has had remarkable successes in the past decade, improving incomes and livelihoods for many millions of the world’s poorest, small-scale farmers and has improved the resilience of food systems. Supporting small-scale farmers to make the transition to agroecology worldwide is vital to avoid more food and climate disasters in the 21st century. This article is abridged from the report, ‘Agroecology and the right to food’.

15 Collective action, multiple benefits

A case of a social enterprise model

Pramel Gupta

Farmers in Madhya Pradesh are improving crop productivity and increasing their incomes by creating social enterprises using ecologically sound and sustainable practices. The social enterprise model has not only helped farmers earn better incomes with very low investments, but has also resulted in building biological diversity.

20 Bio-diverse integrated farms

Means for reducing rural poverty

Purnabha Dasgupta, Rupak Goswami, Md Nasim Ali, Sudarsan Biswas and Subhrajit K Saha

Farmers of fragile agro-ecosystems have developed some unique integrated farming systems, to make their farms more resilient to factors like changing climatic conditions, declining soil fertility levels and decreasing farm income. While many NGOs have promoted such improved systems, it is time to reckon these systems as units of planning for large scale adoption.

35 Breaking barriers

Annie Bergman

Women in northwest India are coming together to help each other and to pave the way out of poverty for themselves and their daughters. With increased confidence these women are now prepared to help other women come out of their cocooned lives.
A populous nation like India, by far, predominantly rural and farm based, is confronted by dual realities – prosperity and poverty. On one hand, according to the Business Today, India is ranked 15th among the nations with 175 millionaires and on the other it is ranked 63rd in the Global Hunger Index-2013 and 136 in the Human Development Index-2013, way off from achieving the Millenium Development Goals. The growing inequities are, however, not limited to developing economies like India. Serious inequities are threatening developed nations too as pointed out by Prof. Joseph Stiglitz, Nobel Laureate in his path breaking publication – *The Price of Inequality: How Today’s Divided Society endangers our Future.*

Small farmers are becoming increasingly vulnerable owing to several factors, many of which are not under their control. On the farm front, stagnation and declining yields, rapid ecological degradation and impacts of climate changes are felt both in rainfed as well as in irrigated areas. IPCC (Intergovernmental Panel on Climate Change) is also sending caution signals of extreme climate events threatening the South Asian rural livelihoods, the economies and the ecologies.

On the brighter side, with the declaration of 2014 as International Year of Family Farming, there is global attention on the viability and contribution of family farms for a better and equitable society. Serious efforts are being made by international institutions and Governments to ‘zoom in’ on how Family Farms can be strengthened. (KVS Prasad, p.30). There are efforts being made to relook at IASSTD study (2008), FAO, IFAD, and IFOAM studies (2009-12), UNCTAD’s (2013) reports, prepared by a large cross section of renowned experts. They point out that ‘more of the same’ doesn’t work.

Another new emerging dimension is explicit recognition of the multifunctional benefits of agroecological approaches. There is an increasing recognition that ‘diversity’ and ‘context specificity’ is the key feature of small holder ecological farms offering a range of benefits – accessible and affordable quality food; diverse incomes; their potential to minimise harmful global emissions. Benefits such as reduced dependence on subsidies, better nutritional access, and healthier life styles are also being foreseen.

We are extremely happy to include perspectives of Olivier De Schutter, special rapporteur to the UN saying “small-scale farmers can double food production within ten years using ecological methods...”. He also reiterates, ‘Industrial farming on large plantations will not solve hunger or stop climate change. The solution lies in supporting small-scale farmers’ knowledge and in raising their incomes so as to contribute to rural development. To feed 9 billion people in 2050, we urgently need to adopt the most efficient farming techniques available,’ (p.5).

Articles in this issue highlight that poverty and vulnerability could be addressed in several ways – by making farming resilient through adoption of biodiverse integrated farming systems (Purnabha Dasgupta et.al., p.20); improving control and reducing dependency on external sources for basic resources like seed (Biswamohan Mohanty, p.28), organising village communities for enhancing access to resources like seed and credit (Pradan, p.31 and Annie Bergman, p.35), collective farming and collective access to land by women (Landesa, p.12), institutionalisation and networking for improved access to services (K Subramanian, et.al., p.9) and promotion of local social enterprises (Pramel Gupta, p.15).

However, the challenges still remain. Can Family Farms be understood, better and deeper? Can the differential needs and abilities of farming communities (eg. small holders in developing countries, women and youth etc.) be recognised and suitable strategies devised?. As Dr. R. Dwarakinath, Chairman, AME Foundation, puts it “It is high time that the distinction between the necessary conditions (prerequisites for development) and the sufficient conditions (farmers’ abilities to avail the opportunities) in development, be recognised.”

IYFF is just a window, which opens up possibilities for focussed attention for a sustainable future and healthy living.
Eco-farming addresses hunger, poverty and climate change

Olivier De Schutter

Agriculture must be redirected to environmentally sound, socially just production methods to address the food and energy crises, hunger, poverty and climate change, reports Olivier De Schutter, Special Rapporteur to the UN on the right to food. Agroecology, which mimics natural processes, has had remarkable successes in the past decade, improving incomes and livelihoods for many millions of the world’s poorest, small-scale farmers and has improved the resilience of food systems. Supporting small-scale farmers to make the transition to agroecology worldwide is vital to avoid more food and climate disasters in the 21st century. This article is abridged from the report, ‘Agroecology and the right to food’.

Small-scale farmers can double food production within 10 years using ecological methods, a UN report shows. In a comprehensive review of recent scientific literature, the study calls for a fundamental shift to agroecology to boost food production and improve millions of the poorest people’s livelihoods. ‘Industrial farming on large plantations will not solve hunger or stop climate change. The solution lies in supporting small-scale farmers’ knowledge and in raising their incomes so as to contribute to rural development. To feed 9 billion people in 2050, we urgently need to adopt the most efficient farming techniques available,’ says Olivier De Schutter, UN Special Rapporteur on the right to food and author of the report presented to the Human Rights Council of the UN in January 2011.
The report shows that agroecological methods out-perform chemical fertilizers, boosting food production in difficult environments. Hunger today is caused by poverty rather than lack of global food supplies. After the food price crisis of 2008, it’s necessary to reorient agriculture to highly productive methods that preserve ecosystems and invest in those who need it most, poor, small-scale farmers. Higher incomes for smallholders increase demand for goods and services from local traders, whereas large estates spend more on imported inputs and machinery. Support for small producers, breaks the vicious cycle of rural poverty and expanded urban slums where poverty breeds poverty.

It is widely cited that agricultural production must increase by 70% by 2050 if present consumption patterns persist. Already nearly half the world’s cereal production is used for animal feed, and meat consumption is predicted to increase from 37.4 kg/person/year in 2000 to over 52 kg/person/year by 2050. The United Nations Environmental Programme (UNEP) estimates that the calories lost by using cereals for meat production instead of directly for human food could meet the annual calorie needs of more than 3.5 billion people. Reallocating cereals to human consumption, is desirable in developed countries where excess animal protein consumption contributes to ill health. Agrofuel production also diverts crops from food needs to energy needs, bringing more pressure on agricultural supplies. Policies to reduce these diversions could greatly contribute to meeting the growing need for food. Climate change with more frequent and extreme drought and floods and less predictable rainfall is already affecting the capacity of some communities to feed themselves, and is destabilising markets. Agricultural production is threatened in entire regions, particularly those dependent on rain-fed agriculture. By 2080, 600 million additional people could be at risk of hunger, as a direct result of climate change. In Sub-Saharan Africa, arid and semi-arid areas are projected to increase by 60 million to 90 million hectares, and in Southern Africa, it’s estimated that yields from rain-fed agriculture could be halved between 2000 and 2020.

Agroecology applies ecological science to agricultural systems, mimicking natural processes. It enhances soil productivity, diversifies crops, and protects crops against pests, using natural methods, beneficial trees, plants, animals and insects. It increases farm productivity and food security, improves incomes and rural livelihoods, and reverses the trend towards species loss and genetic erosion.

**Agroecology raises yields**

A wide range of agroecological techniques have been developed and proven in various regions. *Integrated nutrient management* fixes nutrients from inorganic and organic sources within the farm system and reduces nutrient loss by controlling erosion. *Agroforestry* incorporates multifunctional trees in agricultural systems. Large-scale agroforestry projects have successfully rehabilitated land in several countries including Tanzania, Malawi, Mozambique and Zambia.

*Water harvesting* in dryland areas allows abandoned and degraded lands to be cultivated. In West Africa, stone barriers built beside fields reduce runoff during the rainy season, improving soil moisture, replenishing water tables, and reducing soil erosion. The water retention capacity is multiplied five to ten-fold and biomass production 10 to 15 times. Livestock can feed on the grass that grows along the stone barriers after the rains. *Integration of livestock into farming systems* provides a protein source for the family and nutrients are returned to the soil by dairy cattle, pigs and poultry and by fish or shrimps raised in irrigated rice fields or ponds.

Such resource-conserving, low-external-input techniques have significantly improved yields. A systematic study of these techniques used in 286 recent sustainable agriculture projects in 57 poor countries on 37 million hectares, found average crop yield increases of 79% and improved supply of critical environmental services. Reanalysis of the same data by UNEP and UNCTAD found that in Africa the increase was even higher than this global average; a 116% increase for all African projects and a 128% increase for projects in East Africa.

Research commissioned by the UK’s Foresight Global Food and Farming Futures project came to the same conclusions. It reviewed 40 projects in 20 African countries where sustainable intensification was developed during the 2000s. They included crop improvement, particularly breeding of neglected plants and cultivars, integrated pest management, soil conservation and agro-forestry. By early 2010, these projects had improved around 12.75 million hectares of land with documented benefits for 10.39 million farmers and their families. Average crop yields more than doubled over a period of 3-10 years, bringing an increase in food production equivalent to 557 kg per farming household.
Even seemingly minor innovations can bring high returns. In Kenya, researchers and farmers developed the ‘push-pull’ strategy to control weeds and insect pests. This ‘pushes’ pests away by inter-planting the corn crop with insect-repellent plants like Desmodium, while ‘pulling’ them towards small plots of Napier grass, a plant that excretes a sticky gum which both attracts and traps pests. The system has other benefits: Desmodium can be used as fodder. The strategy doubles maize yields and milk production while improving the soil and has been widely adopted in East Africa, taught through town meetings, national radio broadcasts and farmer field schools. In Japan, farmers found that ducks and fish were as effective as pesticides in controlling insects in rice paddies, also providing additional protein for their families. The ducks eat weeds, weed seeds, insects, and other pests, reducing hand-weeding labour, while duck droppings provide plant nutrients. The system has been adopted in China, India, the Philippines and in Bangladesh where the International Rice Research Institute reports 20% higher yields and 60% increase in net incomes.

**Reduces rural poverty**

Agroecology helps increase incomes in rural areas by promoting on-farm fertility generation, which reduces farmers’ reliance on external inputs and state subsidies, making vulnerable smallholders less dependent on moneylenders. Livestock manure and growing green manures can supply nutrients to the soil and farmers can also establish a ‘fertilizer factory in the fields,’ planting trees that take nitrogen out of the air to ‘fix’ it in their leaves which later fertilise the soil. Faidherbia albida, a nitrogen-fixing acacia species indigenous to Africa and widespread over the continent, sheds its foliage during the early rainy season when field crops are being established, so does not compete much for light, nutrients or water in the growing season. It markedly increases maize yields especially in conditions of low soil fertility and avoids dependence on synthetic fertilizers, their costs being increasingly high in recent years. In Zambia, unfertilised maize yields near Faidherbia trees averaged 4.1 t/ha, compared to 1.3 t/ha just beyond the canopy. Comparable techniques, like use of leguminous cover-crops to fix nitrogen also have huge potential, particularly for the poorest farmers, least able to afford fertilizers. Costs of importing and distributing fertilizers are the main reason for very low fertilizer use in low-income sub-Saharan African countries.

Following the dramatic food crisis due to drought in 2004-2005, Malawi launched a fertilizer subsidy programme in 2005-2006 but is now introducing agroforestry and nitrogen-fixing trees to prepare for the time when fertilizer subsidies will be scaled back or withdrawn. By mid 2009, over 120,000 Malawian farmers had received training and tree materials from the programme, and support from Ireland has now enabled extension to 40% of the country benefiting 1.3 million of the poorest people. Agroforestry has been able to increase maize yields from 1 t/ha to 2-3 t/ha, even if farmers cannot afford commercial nitrogen fertilizers and to more than 4t/ha with a quarter-dose of mineral fertilizer. This offers a strategy to exit synthetic fertilizer subsidy schemes, linking subsidies directly to agroforestry investments on the farm, thus improving the efficiency of fertilizer use, providing long-term sustainability in nutrient supply and building soil health to sustain crop yields. Malawi is exploring this ‘subsidy to sustainability’ approach.

Agroecological approaches can be labour-intensive initially due to the complexity of managing different plants and animals on the farm, and recycling the waste produced. Yet creating employment may be an advantage in rural areas of developing countries, where under-employment and population growth is high. It would slow urbanisation which is overloading public services in these countries, contribute to rural development and preserve the ability of following generations to meet their needs. The cost of creating jobs in agriculture is often significantly lower than in other sectors. Peasant organizations report that agroecology is also more attractive to farmers working on the land for long hours, with shade from trees and absence of smell and toxic chemicals.

In Burkina Faso, instead of migrating, work groups of young men specialised in land rehabilitation techniques, go from village to village to help farmers improve the land. Farmers are now buying degraded land to improve and paying labourers to build structures such as ‘zai pits’ that can retain water and transform yields. Over 3 million hectares of land in Burkina Faso is now rehabilitated and productive.

Agroecological approaches are compatible with gradual mechanization of farming. Machinery required for techniques such as no-till and direct seeding, bring more jobs, particularly in Africa which increasingly manufactures simple equipment. Employment can also come from agroforestry expansion when tree nurseries are run as a business. Funded by the World Agroforestry Centre, the Malawi Agroforestry Food Security Programme set up 17 nurseries that raised 2,180,000 seedlings in its first year.

**Improves nutrition**

The Green Revolution focused primarily on boosting cereal crops. While over 80,000 plant species are available to humans, rice, wheat and maize now supply the bulk of our food needs. But, they are mainly carbohydrate sources, with relatively little protein, and few other nutrients essential for adequate diets. The shift from diversified cropping systems to simplified cereal-based systems has contributed to micronutrient malnutrition in many developing countries. Nutritionists increasingly insist on the need for more diverse agricultural production to ensure a more diversified nutrient supply. The diversity of species on farms following agroecological principles, and in urban or peri-urban agriculture, is an important source of vitamins and other micronutrients. Indigenous fruits contribute around 40% of the natural food-basket that rural households rely on in southern Africa.

**Mitigates climate change**

Agroecology improves resilience to climate change, and more extreme weather events. After Hurricane Mitch in 1998, a study of 180 communities of smallholders in Nicaragua demonstrated that farming plots cropped with simple agroecological methods - rock bunds and terracing, green manure, crop rotation, mulch, legumes, trees, plowing parallel to the slope, no-burn, live fences,
States need long-term policies to adopt agroecological practices and should refer to agroecology and sustainable agriculture in national strategies to realise the right to food and national plans to mitigate climate change.

and zero-tillage - had on average 40% more topsoil, higher field moisture, less erosion and lower economic losses than conventional farms. On average, agroecological plots lost 18% less arable land to landslides and had 69% less gully erosion than conventional farms.

More frequent and severe droughts can be expected in the future. The agroforestry programme developed in Malawi has protected farmers from crop failure after droughts. On-farm experiments in Ethiopia, India, and the Netherlands have demonstrated that soils on organic farms improve the drought resistance of crops. Diversity of species and farm activities involved in agroecology also helps mitigate risks from new pests, weeds and diseases. The agroecological practice of cultivar mixture bets on genetic diversity in fields to improve disease resistance. In Yunnan Province in China, after disease-susceptible rice varieties were planted mixed with resistant varieties, yields improved by 89% and rice blast disease was 94% less severe than when they were grown in monocultures.

Agroecology puts agriculture on the sustainable path, freeing food production from reliance on fossil energy. It mitigates climate change by increasing carbon sinks of soil organic matter and above-ground biomass, and avoids carbon dioxide emissions by reducing direct and indirect energy use on farms. The Intergovernmental Panel on Climate Change (IPCC) has estimated the global mitigation potential for agriculture at 5.5 to 6 Gt of CO₂-equivalent yearly by 2030. Most of this (89%), is from increased carbon sequestration in soil organic matter (humus), as occurs with agroecology.

Disseminating practices

Agroecology is knowledge-intensive, requiring development of both ecological literacy and decision-making skills in farmer communities. Modern science combines with local knowledge in agroecological research. Farmer participation is crucial for agroecological practices to succeed. So far, agroecology has been developed by grassroots organizations and NGOs, and has spread through farmer field schools and farmers’ movements, such as the Campesino movement in Central America. Experience with agroecological techniques is growing every day in peasant networks such as La Via Campesina and the AgriCultures Network, Réseau des Organisations Paysannes et des Producteurs Agricoles de l’Afrique de l’Ouest (ROPPA), Eastern & Southern Africa Farmers’ Forum (ESAFF), and PELUM(Participatory Ecological Land Use Management) network in Africa, MASIPAG network in the Philippines (Magsasaka at Siyentista Tungsa Pag-unladng Agrikultura), or Assessoria e Serviços a Projetos em Agricultura Alternativa (AS-PTA) and Movimento dos Trabalhadores Sem Terra (MST) in Brazil. These organisations are already functioning as learning organizations and must now be supported with investments in this role to disseminate their knowledge widely.

Participation empowers the poor, a vital step in poverty alleviation. Specific schemes for women can balance the greater access men have to formal agricultural knowledge. Co-operatives can help achieve economies of scale, and connecting sustainable farms to fair markets is important. But agroecology will fail to achieve the desired results unless markets are managed to protect farmers from volatile prices and local markets from the dumping of subsidised products. Fiscal incentives, market structures and credit and land tenure policies must be aligned with the need to move to agroecological methods.

Investing maximum available resources in sustainable agriculture is essential for future food security and to achieve responsibilities taken on by States on the right to food. Investments in agroecological research should be prioritized, because of the considerable potential of such practices. States need long-term policies to adopt agroecological practices and should refer to agroecology and sustainable agriculture in national strategies to realise the right to food and national plans to mitigate climate change. Public spending in agriculture needs to be redirected from private goods to providing public goods such as extension services, rural infrastructure and research on agroecological methods. It’s urgent to facilitate the transition to agroecology, a low-carbon, resource preserving, resilient agriculture that can combat hunger, malnutrition and climate change and benefit many millions of the world’s poorest farmers.

Dr Olivier De Schutter was appointed the Special Rapporteur on the right to food in May 2008 by the United Nations Human Rights Council. He is independent from any government or organization. The above article was abridged for Pacific Ecologist (KW) from the report Agro-ecology and the right to food, by Olivier De Schutter. The report is available in full at: http://www2.ohchr.org/english/issues/food/annual.htm For more information on the mandate and work of the Special Rapporteur, visit: http://www2.ohchr.org/english/issues/food/index.htm or www.srfood.org

Source: Solutions to the food crisis: ecological agriculture, Pacific Ecologist, Winter 2012
Poverty reduction through sustainable agriculture

Large proportion of population in three districts of Tamil Nadu - Nagapattinam, Tiruvannamalai and Kancheepuram are dependent on agriculture and are largely poor. Agriculture is increasingly becoming non remunerative for them due to various reasons including low productivity, increased cost of cultivation, poor access to services and market fluctuations. A baseline study findings revealed that the productivity of major crops like groundnut and black gram is low, cost of cultivation high, access to agricultural services and credit, poor.

Under such conditions, CIKS in collaboration with Vrutti Livelihoods Resource Centre, Bengaluru started working with the communities through a project, to enhance the incomes of smallholder agriculture households. The project is supported under the DFID Global Poverty Action Fund (GPAF) Impact Window and co-funded by HIVOS, Netherlands. The project approach is to build a farmer led social enterprise model with the potential to sustain itself and to upscale for larger impact. The project is currently working with 9218 farming households in the three districts spread in 79 Gram Panchayats (GPs).

The model

The delivery model for carrying out various interventions has the farmers group at the village level and a farmers federation, called Agriculture Producer Company at the district level. Agriculture services will be provided by a group of progressive farmers called the Village Agricultural Business Development Service Providers.

K Subramanian, S Justin, T Johnson and K Vijayalakshmi

The three tier institutional model of working with smallholders has delivered better services to the farmers in Tamil Nadu. The role clarity of organizations at each level and the organic linkage between them has helped in addressing both social and economic issues related to agriculture. Farmers with increased access to resources and services have been able to move towards prosperity.

Farmers now have access to more than 100 indigenous rice varieties

Photo: S U Saravanakumar, Evanscence Studios
Every Panchayat has one VABDSP, selected by farmers groups. They facilitate delivery of various services for the farmers, facilitate entitlements and schemes for farmer groups and serve as a link between the farmer and the project / producer company.

The village level farmers groups like women’s self help group, men’s self help groups, mixed groups, joint liability groups, farmers clubs etc., are the basic units. These groups called as Sustainable Agriculture Self Help Groups (SASHGs), have a membership of 20-25 men and women.

Panchayat Agriculture Development Committee (PADC) is the apex body of farmers groups which constitutes 12 - 20 representatives from various farmers groups belonging to the Panchayat. It is also represented by certain members at the panchayat level. The main role of PADC is to coordinate and monitor the activities of the farmers groups.

Cluster Agriculture Development Committees (CADC) is the apex body of PADCs and constitutes 20 - 30 representatives from PADC office bearers and operates at the block level. About 15 - 20 PADCs come under every CADC. The CADC coordinates and monitors activities of PADCs.

At the district level the Agriculture Producer Company (APC) is formed. The role of a producer company is to provide a variety of services for the farmers like insurance, organic certification, courses for farmers etc. besides providing good quality foundation seeds, inputs like neem seed powder, vermicompost, biofertilizers, biopesticides, gunny bags, cattle feed etc. to the members.

Presently there are 552 SASHGs, 71 PADCs, 5 CADCs and 2 Producer Companies in place. Presently, the membership of the two producer companies is around 4000. By the end of the project period, we hope to have all the 9000 beneficiaries of the project as shareholders in these producer companies.

Key results

**Adoption of eco-friendly agriculture practices**

There has been a significant progress in terms of farmers moving from inorganic farming practices to sustainable organic methods. Of the total farmer households, 15% have shifted from inorganic farming to Non Pesticide Management (NPM) farming practices and another 10% have shifted to complete organic farming practices. About 55% of farmer households have adopted at least one of the sustainable agriculture techniques/practices promoted by the project. There is an increase in productivity of all major crops and across varieties from the baseline.

**Reduced costs and increased incomes**

A 7% reduction in cost of cultivation in comparison with the control group is observed. Nearly 4500 households reported an increased net income of at least 15%. Around 107 farmers practiced SRI method of cultivation in 143 acres. There was a reduction of Rs. 1250/- per acre in the cost of cultivation by following this method which amounts to a saving of Rs. 1,78,750/- in the entire district. In Nagapattinam district, 45 farmers adopted SRI method and Rs. 1,200/- per acre was reduced in the cost of cultivation. A total of Rs. 54,000/- was saved by adopting SRI in this district.

More than 2000 kitchen garden units have been set up and managed by women with the households getting an average income of Rs. 300/- per month. A total of 305 beneficiaries are involved in value addition in various commodities.

**Community Units**

Community level initiatives are catching up in the project area. Thirteen community owned and operated vermicompost units, 7 community biopesticide units, 7 community value added production units are functioning in the three districts. A number of these units, especially, the vermicompost units and the value added products units, are owned by women. These enterprises provide good quality and timely inputs within the village for the farmers at a reasonable cost throughout the year. The women and others who work on these units get an additional income every month other than what they are getting from their regular farm work.

**Improved access to farm machinery**

Agriculture Machineries Facilitation Centres (AMFCs) have been established in 14 panchayats to improve access to farm machineries. The types of machines available in AMFC are power tiller, mini tractors, oil engines, transplanters, power operated conoweeder and winnower. Most of these AMFCs are making profits and have become commercially viable as it’s services are paid for by the farmer. For instance, in Peramamallur panchayat, 1800 bags (144 tonnes) of paddy grains were cleaned by using the winnower.

**States need long-term policies to adopt agroecological practices. They should refer to agroecology and sustainable agriculture in national strategies to realise the right to food and in national plans to mitigate climate change.**
Cleaned grains fetch an additional income of Rs. 50 – 100 per bag, since the quality of the produce is better. AMFCs services are provided to the non project beneficiaries also.

**Conclusion**

The model of working with smallholders through a village based service provider and facilitating demand based services, has delivered better services for the farmers. The three tier institutional model (Panchayat-Cluster-District) ensured timely aggregation of agricultural inputs and outputs at various levels, facilitated through APC. The role clarity of PADC, CADC (coordination, knowledge dissemination, monitoring the services of VABDSPs, resolving group conflicts etc.) and APC (business targets) and the organic linkage between these organizations has helped this institutional model to address both social and economic issues related to agriculture.

Local progressive farmers as village based service providers helped in efficient facilitation of various services to target communities. This was possible as they knew the local context, needs and priorities of fellow farmers in a better way. Farmers having realized the value of the services provided by the VABDSPs, have started paying for the services. Farmers are also willing to pay for specialized services like facilitation of Government entitlements, access to credit and insurance.

Representation in the governing board of APCs, enterprise promotion for women groups, selection of women as VABDSPs have significantly contributed to the empowerment of women by way of socio-economic development, participation in decision making forums etc. There is an increased sense of social recognition and equality as expressed by these women VABDSPs. The inclusive approach in formation of groups (mixed group of landless and land owning farmers) and their apex bodies, focused economic upliftment activities for landless have also significantly contributed to equitable share of benefits.

Overall, the achievements of the project are significant. We have seen increased income levels for farmers across categories, increase in productivity, reduction in cost of production and increased net income for the producer company. There is a significant improvement in the capacities of leaders of the producer companies in identifying and systematically screening business opportunities. Transparency in discussions and ability to take informed decisions have considerably increased. We see a vast improvement with respect to regular functioning, record maintenance, leadership qualities and quality of interactions with the outside world. The focus of women SHGs has broadened from savings and credit to addressing issues relating to sustainable agriculture practices. On the whole, the project has helped family farmers break out of the poverty and move towards prosperity.

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Ever since the self-help group (SHG) mechanism became established as one replicable pathway of the women’s social and economic empowerment in India, several state and non-state programmes based on women’s self-help group mechanism have been and continue to be implemented with significant successes. Kudumbashree (KDS) programme of Kerala and Indira Kranthi Patham (IKP) programme of Andhra Pradesh are the two best known programmes. These two programmes have been able to mobilize very large numbers of rural women into multi-tiered collectives that have provided the backbone for implementing several thematic initiatives spanning from agricultural development, micro enterprise, product marketing, health & education, gender equality, and others. Of particular interest are two sub programmes called Community Managed Sustainable Agriculture (CMSA) within IKP and Collective Leasing within KDS where women’s economic empowerment is designed and executed in the context of women in agriculture. Both these ‘women in agriculture’ programmes have brought in lakhs of women as main actors in changing existing patterns in Indian agriculture and have informed the formulation of a national women farmer’s empowerment programme called Mahila Kisan Sashaktikaran Pariyojona currently being implemented in 12 states reaching at least 2 million women.

Following are two cases, one from each programme which have resulted in women to take the lead in cultivation, technology transfer and adoption, resource pooling, bringing back large tracts of fallow land into cultivation and marketing, and in the process transforming them from a housewife cum wage labourer to change agents in agriculture. Both programmes are successful in achieving multiple convergences with state, civil society and market actors in marketing, training, new initiatives, and the like.

CMSA: Leading the way to household food security

CMSA aims at changing crop management practices from an energy intensive, capital intensive, and chemical fertilizer & chemical pesticide driven production techniques to more ecologically and financially sustainable techniques. CMSA has very cleverly weaved this intervention with women’s economic empowerment by making the woman the primary vehicle and owner of this intervention.

According to Indian classification of farmers, Lakshmi would belong to the category of small farmers. Her family has one acre of crop land in Korada village in Padmanabham Mandal in the Vishakhapatnam district of Andhra Pradesh. The land is rainfed, where crops like paddy, vegetables, legumes, millets and papaya are grown in two seasons, depending on the availability of water. Like many small farmer households of Andhra Pradesh, most of Lakshmi’s family’s agricultural income is spent towards purchasing food for consumption and paying the interest on the loans taken to purchase agricultural inputs like chemical pesticides and fertilizers. Despite an acre of land, her family is not income or food secure. By any standard, she is regarded as one of the very poor, if not the poorest.

Using ecological practices like use of bio-fertilizers, bio pesticides, mulching and SRI methods, Lakshmi’s family indeed improved their production and the variety of produce in a very significant way. Her household has begun harvesting multiple crops every year with the cost of cultivation reduced to nearly one fourth of what it was earlier. They could achieve better and improved yields, and they also got more variety. The amount of vegetables, legumes and grains they used to buy from the market has been significantly reduced. Due to the improvement in their economic situation, they have been able to take on an additional 0.5 acre land on lease and used it partly for SRI paddy cultivation and partly for doing a 36ft. x 36 ft. seven tier model to grow vegetables, fruits and tubers. They have also invested in other livelihood assets such as a setting up a local NPM (Non Pesticide Management) shop to sell biopesticides and bio-fertilizers.

Compared to about 900 women groups that are engaged in micro enterprise, 2.15 lakh women’s groups are doing collective farming on leased-in land depicting the enormous popularity of collective leasing among women members.
Lakshmi speaks more about her multi-tier vegetable garden, that gave them substantial quantity and variety of vegetables, grains, roots and fruits. Under the 36ft.x36ft. model, crops are arranged in seven tiers. The first tier includes plants which require minimal sunlight such as root or tuber crops like carrot, beetroot, and ginger. The second tier includes creepers that cover the soil such as bottle gourd and cucumber, and act as live mulch. The third tier includes leafy vegetables such as sorrel leaves, spinach, coriander and amaranthus. The fourth tier includes vegetables such as brinjal, tomato and chillies. The fifth tier includes perennial crops such as castor and red gram. Sixth tier has fruit trees such as papaya, drumstick, custard apple and guava. The seventh tier also has fruit crops such as mango; these are plants which require maximum sunlight. The harvesting of multiple crops round the year provides food throughout the year, promotes nutritional security and ensures regular income to the family in the small plot of land. On a plot of 0.25 acre, this seven tier production system produces enough for a four member family of Lakshmi. In fact they now have marketable surplus.

Using SRI method in rice cultivation and applying bio-fertilizers and bio-pesticides, Lakshmi’s fields could produce much more than before. And using rainwater effectively, Lakshmi could grow paddy and cereals in two seasons instead of one, while improving soil nutrition, outputs, and again, creating a marketable surplus. Lakshmi’s another effort is to create and manage a seed bank, preserving seeds of paddy, vegetables, and fruits in a group. Initially this was started as a CMSA farmers led effort, with the seeds obtained from the vegetables, tubers, fruits and creepers of the 36 ft. x 36 ft. model. Soon it grew into a fairly large programme within CMSA, in which, seed varieties developed by research institutes like ICRISAT were added to the seed kitty of the SHG. The variety in the seed bank grew from five to 18 different types of seeds. The members could borrow from the seed bank, with the condition that she will have to return to the bank the same amount plus an additional 50%, so that the kitty grows for others. Moreover, seed exchanges started happening across the village organizations (VOs) and Mandal Samakhyas, thus spreading across the district and beyond.

Running a seed bank requires technical knowledge of seed preservation, as well as knowledge of accounting. Lakshmi took on the responsibility, learnt the techniques, arranged the space at her home, and is managing the seed bank on her group’s behalf. What does all this mean for her life? She claims that her family’s net income is now over 50,000/- in a year, a significant jump from before. Her family’s food basket is now vastly improved, thanks to the variety of vegetables, fruits and tuber that get included in their daily diet. She also claims that their debt burden is now less than before. This success, she says, has made her more confident and has facilitated her inclusion in household decision making. Even though her decisions still need consent from the male members of her household, she is finding pockets of autonomy. While she had to work hard initially to convince her family to accept her CMSA experiments, she is now a better negotiator and exercises her choice on what crops and vegetables to grow on their land, how much to sell and purchase, and also on spending decisions. She travels to the market in Vijaynagaram town to sell the produce and purchases materials to prepare natural pesticides.

Clearly, Lakshmi is the change agent for her family towards achieving household food security through adoption of sustainable agriculture techniques. Lakshmi’s case establishes that rain fed areas and the families dependent on it can be made food secure if appropriate technologies are used. In Lakshmi’s words, as long as they only knew of usual ways of cultivation they were certainly poorer, CMSA techniques have helped her family break the cycle of poverty.

Collective Leasing: Transformation of women as cultivators (Kerala)

Kudumbashree (KDS) is the name of the state poverty eradication mission of government of Kerala. In Kerala, the women at the village level are grouped into what are called neighbourhood groups (NHGs). KDS too built a three tier structure of women groups at the village level. Area Development Societies (ADS) at the ward level, and Community Development Societies (CDS) at the Gram Panchayat level, comprising of elected women representatives at each level. The entire collective farming programme at the CDS-ADS and NHG levels is operated and managed by women.

If you ask any NHG member “what would you like to do to improve your economic situation?” almost 98% will most likely say, “We want to do collective farming on leased land,” says a Kudumbashree official at Thriruvananthapuram. Compared to about 900 women groups that are engaged in micro enterprise, 2.15 lakh women’s groups are doing collective farming on leased-in land. While this depicts the enormous popularity of collective leasing among women members, the story below will indicate why this is so.

Ramani Sreenivasan, Sheeba Balakrishnan, Sreeja Daran and Bindu Sathyam are members of Gramashree Joint Liability Group in Mullasherry Gram Panchayat of Thrissur District. The group has been formed out of a NHG to take up collective leasing way back in 2006 when KDS took up farming as an economic activity. KDS named these groups as “activity groups” (AG) within an NHG. If an activity group took up farming, they were eligible for a few back-end subsidies. Ramani et al. were all landless agricultural labourers that worked on local land owner’s land for a living. Together they worked for three landowners, whose lands were all in one adjacent single stretch of 13.5 acre. When the landowners stopped their cultivation around 1998, for being unable to pay high wages (around Rs. 125/- a day in 1998), the land lay fallow for years.

Ramani and others recall that they came to know of collective leasing programme from the Gram Panchayat. They decided to give it a try and started farming as part of Kudumbashree from 1998. These women knew each other and worked for the same landowners before, so they thought they could take the land on lease from the landowners, and revive cultivation of rain fed paddy for four months, which they knew how to grow. With the help of the Panchayat’s ward member, and one CDS member, they were
able to successfully negotiate a lease agreement with the landowners. The landowners agreed on the conditions: for 5.5 acres, the lease rent was Rs. 12,000/- per acre per annum and for the rest 8 acres, the lease rent was 50% of the harvest.

It was a challenge to secure the lease rent in cash because that was payable in advance, whereas the other rent was payable only after the harvest. The women took personal loans from the relatives and also some NHG loans to make the start. The CDS also helped them by discussing with the Gram Panchayat and developed a supplementary scheme under MGNREGA for land preparation and reclamation. MGNREGA wage helped them with some cash which they added to their NHG savings, NHG’s loan and personal loans to pay the rent. Even though these women knew paddy production techniques, they were encouraged to undergo training by the CDS. When asked why, the women answered, the CDS were making sure that they knew scientific crop management so that they do not lose crop by some pest attack, and become indebted.

Collective leasing has two intrinsic risks. A) crop failure or less production can make a person perpetually indebted, and B) if the crops do well for a couple of years, the soil quality vastly improves, and that can be attractive for the landowner to change his mind and take back the land. Ramani has been lucky in both these respects. Their production was reliable year after year thanks to adequate rainfall, and more importantly, their lease did not stop, and it was renewed every year from all the landowners. Although the land was rain fed, the women obtained about 1200 kg per acre yield from their field. These women were able to generate a total production of 15500-16500 Kg from their field. At this level of production, their revenue varies from Rs. 225,000/- to 275,000/- as a group, and their net income is about Rs. 40,000/- per member.

Their journey took a new turn when the group was registered with NABARD as a Joint Liability Group (JLG) in 2009. The category change was done as per official policy of KDS so that these groups can access agricultural credit at a minimal rate of interest from commercial and cooperative banks. Another milestone in their journey was in 2011 when the CDS and the Gram Panchayat under an overall KDS mission diktat, connected them to Supply Co, a public sector marketing cooperative that procures paddy on behalf of the government at the minimum support price of Rs. 17/- kg. while the prevalent market price was then Rs. 13/- per kg.

Ramani’s story is simple. The institutional backbone of CDS and ADS created under KDS provided the enabling support to these women to start a collective endeavour, using the local land lying fallow and the landowners agreeing to a market friendly arrangement of rent. Instead of trying new items, the women did what they already knew – paddy, and thanks to the initial support of NREGA and NHG loan, they took a risk in which they succeeded. They showed that using mostly family labour, these fallow lands can be successfully brought back to cultivation, and in the process help increase family income significantly. The structural linkage with Supply Co helped sustain their effort from vagaries of the market by purchase and sale under a protective price mechanism.

There are important lessons from this experience. Their effort is successful because the women and their families enjoy the trust of the landowners, so that they can continue leasing in year after year. Thousands of such oral or plain paper agreements continue to dominate the leasing environment, as leasing is completely banned in Kerala. Such arrangements favour the landowners; the lessees gain as long as the owner allows them to gain. On the other hand, it’s clear that even after paying lease rent at the market rate, the women have made substantive gains with a simple cultivation like paddy. The engagement of CDS and ADS is limited to providing the enabling environment, and some monitoring so that they can provide the back end subsidy to the group, but the technology transfer component is quite minimal.

What are the changes in the lives of these women? According to them, their own kitty has increased, they have been able to repay all the personal loans, as a group, their savings are now substantial to the extent that they have very recently bought a 0.5 acre land as a group. The women have also invested in jewelleries and household items. In brief, the women’s own assets are on the rise, increasing slowly but steadily. The largest chunk of collective leasing interventions by KDS mission is in such relatively simple cultivation of paddy and banana with some inter-cropping of vegetables, tubers and fruits. The success is in its simplicity, backed up by the strong institutional backbone of women’s collective and Panchayati Raj.

Collective action, multiple benefits

A case of a social enterprise model

Pramel Gupta

Farmers in Madhya Pradesh are improving crop productivity and increasing their incomes by creating social enterprises using ecologically sound and sustainable practices. The social enterprise model has not only helped farmers to earn better incomes with very low investments, but has also resulted in building biological diversity.

Khanpura is a small village of 100 households located in the Budhni Block of Sehore district in the state of Madhya Pradesh, India. The village is surrounded by dense forest with agriculture as a main source of livelihood. Till about a few years back, farmers in this area, having given up traditional agriculture practices, were heavily dependent on chemical fertilisers and pesticides.

Vrutti, Livelihood Resource Centre, an NGO has been working in this area to promote sustainable livelihoods. It was observed that small farmers were using pesticides indiscriminately for which they were spending around Rs 1000-3000/- per acre. Besides increasing costs of cultivation, indiscriminate use of chemicals and pesticides had led to problems such as development of resistance in pests, resurgence of pests, environmental and food safety hazards.

To help farmers reduce their costs of cultivation while adopting environmental sustainable practices, Vrutti started advocating the use of cow urine, neem and castor leaf based bio-pesticides, based on local knowledge. This was initially met with scepticism by farmers, who have been using chemicals since long, on the efficacy of these bio-pesticides. Adopting systematic approach, Vrutti succeeded in educating farmers on the benefits of using biopesticides. Also, Vrutti encouraged farmers to create a viable business model around it.

Vrutti helped village communities organise themselves into farmer clubs and Self Help Groups (SHG). Members of the farmer groups were taken on exposure visits to different farm fields to see and learn good agriculture practices like SRI, SWI, NPM and Organic Farming. Members also visited organisations like Krishi Vigyan Kendra, Agriculture Universities and other institutions and interacted with the staff to understand the working of Farmer Producer Organisations.

The lead farmers – the innovators and early adopters of good farm practices, having a positive attitude and acceptable by the communities, were selected as the Agri Business Development Service (BDS) providers. The role of BDS providers is to provide support to farmers at their door step and also facilitate linkages with government services, market players, extension services and the research and scientific institutions.

Insects like lady bird beetles are back with the use of biopesticides
The Agri BDS providers were trained as Master trainers. They were also trained in motivating registered farmers in collecting cow urine and supplying to BDS for bio-pesticide preparations; assessing the utility of cow urine and neem leaf based bio-pesticides.

**Process**

The entire process of biopesticide production takes place at three levels.

Cow urine is collected at SHG/Farmer Club level. More than 400 households are involved in the collection of cow urine. The agri BDS providers collect the cow urine from the SHG/farmer groups and take it to the processing centers. Every day around 500 litres of cow urine is collected from all the households. Farmers are paid Rs.5 per litre of cow urine.

Processing is done at three units located in Khandawar, Khanpura and Ondia Village. The cow urine collected is put in 200 litres plastic drum. To this, around 20 kg of neem and custard apple leaves are added. The drum is kept closed for 21 days for fermentation. After filtering the leaf, the solution is used as bio-pesticide. Each unit has a capacity to produce around 3000 lts. of biopesticide. Now, some SHGs are showing interest to prepare biopesticide at the village level and market it within the village.

Marketing is done by Narmadanchal Farmer Producer Company (formed by 1000 no of farmers) which purchases the bio pesticide. Narmadanchal is a community organization registered under the companies act as Producer Company. The biopesticide is sold under the brand name Brand Ejecta.

**Case of an early adopter**

One of the early adopters was Shri Ram Kailash Yadav, a farmer of Khanpura village and Agri BDS. He is 35 years, educated farmer having 5 acre land. He is curious, hardworking and has leadership qualities along with good entrepreneur skills. He has four cows.

With Vrutti’s association, Ram Kailash decided to try out production of biopesticide using cow urine. To start the enterprise, he first secured 18 drums of 200 litres capacity with NABARD’s support.

He took 15 litres of cow urine and added 5 kg of neem leaves, 0.5 kg of custard apple leaves, and 0.5 kg of Calatropis gigantea leaves. He left the mixture undisturbed for 21 days. The mixture undergoes anaerobic fermentation. After 21 days, 0.5 kg of the bio pesticide was mixed with 15 litres of water and sprayed on soyabean crop. The spraying was repeated at an interval of 15 days.

Ram Kailash noticed a marked difference in the crop. The growth of the plants had increased tremendously. The roots were strong and started spreading, a sign of a healthy plant. The disease attack was reduced. Plant became more resistant towards diseases and pests. The plant quality increased. The land became fertile due to the application of cow urine. There was an increase in yield. The seeds produced were much healthier compared to those produced without using biopesticides.

After noticing these positive changes he decided to produce the biopesticide on a commercial basis. He prepared around 2200 litre of biopesticide in the first year making a profit of around Rs. 17600/-. The profit earned by Ram Kailash is shown below:

<table>
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<th>Year</th>
<th>Input Cost (in litres)</th>
<th>Production Rate</th>
<th>Amount</th>
<th>Profit</th>
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</thead>
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<td>2013</td>
<td>Rs. 4</td>
<td>5700</td>
<td>Rs 12</td>
<td>Rs 68400</td>
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<td>2012</td>
<td>Rs. 4</td>
<td>2200</td>
<td>Rs 12</td>
<td>Rs 26400</td>
</tr>
</tbody>
</table>

Preparation of biopesticide does not require labour and can be prepared easily. The input cost for making the biopesticide is negligible as he collects the leaves of neem, custard apple, and Calatropis gigantea from the forest and cow urine is collected from the cows he owns. Infact, Ram Kailash started his business with Rs 200 only.

**Benefits**

Biopesticides are being used by around 500 farmers in different crops like paddy, wheat, soybean etc. They perceive a lot of benefits by using biopesticides. There is 20 to 25% crop growth appreciated by the farmers - the number of tillers has increased, there is no yellowing of leaves and fungal disease infections, plants are healthy, the ear length has increased with increased grain weight. The seeds are bold having good colour and appearance.

Farmers have reduced using chemical pesticides. Of the total, around 25% of the farmers have totally stopped using pesticides, 50% have reduced the usage by half and 25% have used biopesticide at least one time during the crop growth. This has considerably reduced costs of production. While cost of using chemical pesticide is around Rs. 1800/acre, cost of producing biopesticide is about Rs.1000, thus saving around Rs. 800/acre. Overall, with reduced costs of production and increased yields,
Scaling up the initiative

At present about 500 farmers are using cow urine based biopesticides in their farms in different crops like Paddy, Wheat, Soybean etc. The positive results has encouraged Vrutti in scaling up the enterprise with the support of National Bank for Agriculture and Rural Development (NABARD).

NABARD under the Environment Promotional Assistance Programme supported Vrutti in setting up two bio pesticide units in the tribal areas of Yardnagar and Kannadawar villages in Budani block of Sehore district in Madhya Pradesh. This is being jointly run by farmer groups/federations and Vrutti.

The social enterprise model has not only helped farmers earn better incomes with very low investments, but also resulted in soil fertility enhancement while safeguarding the environment.

Call for Articles

Nutritional Values and Family Farming

Vol. 16 No. 4, December 2014

We are told of the great advances that have been made in ‘modern’ agriculture in the last 60 years. Yet there are more hungry and malnourished people on our planet today than in the whole history of humanity. The solution, according to many large international bodies, is simply to push even harder to further increase and intensify food production using any means at our disposal. However, some are starting to acknowledge that the world already produces more than enough calories to feed everyone, and that there are other hugely important issues at stake. Social inequity, inequality, inefficiency, waste, environmental degradation and biased global economic policies are but a few. Moreover, feeding the world is not just about ensuring that there are enough calories; the quality and variety of food are equally important. It is time to start looking at food and nutrition from a different perspective: the focus should shift from food security to food sovereignty and nutrition security.

The roots of agriculture lie in the need to feed one’s family. And the earliest farmers quickly learnt the relative value of each of the plants that they cultivated and harvested, and the animals they raised or hunted. Family farmers following agroecological ideas tend to grow a wider a diversity of crops, and have retained or adopted systems that favour the nutritional well-being of their families. However, at a global scale, the trend is quite the reverse. Family farmers are being increasingly marginalized, although they produce most of the world’s food. Why? Does it have anything to do with the fact that most of the food they produce is consumed directly or only passes through short value chains that do not enrich any large businesses or corporation? What we do see is that large-scale production, meant to feed the masses, gets concentrated into larger farms and with very few crops. Also, more people get obese than ever before, due to eating an overdose of calories. And let us not forget the ‘hidden hunger’ which is the result of unbalanced diets with deficiencies of micronutrients, such as vitamin A or iron.

The last issue of LEISA India for 2014 will focus on how family farming and agroecology support the nutrition of family members and people in the wider community. How and why does it achieve this? What concrete examples do we have that show the links? Have you come across families or villages that are different in the (positive) sense that they succeed in having a healthy diet whereas others in similar circumstances don’t? What makes them different?

We also want to look at nutritional challenges. Do farming families face (hidden) hunger or malnutrition? Is this problem declining or increasing? What are the deeper causes and how can they be addressed? And what are your observations about changing food patterns due to changing lifestyles, and the nutritional consequences of these? Lastly, we are interested in your stories about efforts to (re)create food cultures, (re)build respect for local food as an intrinsic part of an agroecological lifestyle, and to (re)create more direct linkages between consumers and producers of food.

Articles for the December 2014 issue of LEISA India should be sent to the editors, before 1 September, 2014.
E-mail: leisaindia@yahoo.co.in

Inauguration of bio pesticide Unit by Mr Deepak Kumar, GM

farmers are able to increase their net incomes by about Rs.5000 per acre.

With continous use of biopesticides, farmers have observed lady bird beetles and earthworms, thus enhancing ecological diversity. There is an enormous saving of water too which was earlier used in the application of chemical pesticides.

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Agroecology and the right to food

Interview: Margriet Goris

“Agroecology is really common sense. It means understanding how nature works, to replicate the natural workings of nature on farms in order to reduce dependency on external inputs. Agroecology preserves the ability for future generations to feed themselves. I believe we should teach more about agroecology and encourage exchanges between farmers. We cannot continue in this impasse of an oil dependent food production system.”

As the United Nations Special Rapporteur on the Right to Food (2008-14), Olivier De Schutter has spoken out many times on the urgent need for changes in global food systems. In March 2014, he published his final report, making strong recommendations in favour of agroecology.

Why do you recommend supporting small scale farmers?

We know that small farms are very productive, and more so than large monocropping farms per unit area of cultivated land. The confusion arises because we calculate output only by looking at the commodities that these large farms deliver. And yes, they are productive, but small farms combine different outputs and are much more efficient in the way they use resources. Taking into account all the different products, yields from a small farm can be very impressive. The key problem is that we have developed a situation with industrial farming systems where we have become addicted to fossil fuels and have accelerated greenhouse gas emissions as a result. Food systems have become highly dependent on petrol, but we’re running out of oil. So, in the future they may not be sustainable. We need alternatives, and there are good arguments from the points of view of resource efficiency and resilience to support food systems that are much more agroecological and make much better use of our natural resources.

How is agroecology linked to the right to food?

First, agroecology is not the same as organic agriculture. It means understanding how nature works, to replicate the complementarities between plants, trees and animals and the natural workings of nature on your farm in order to reduce dependency on external inputs such as chemical fertilizer. This is a sustainable way of producing food as it preserves the ability of future generations to feed themselves. It supports the health of the soil much better, reduces dependency on fossil energies, and is also a low cost way of farming. So for farmers in developing countries who have little access to credit and who are much more vulnerable to risk than farmers in developed countries, agroecology is a very interesting solution for agricultural development.
You say production systems should respond to ‘needs’ and not ‘demands’.

Indeed. The problem is that once food is a commodity that responds to the laws of supply and demand, it will serve only the needs of those who have the greatest purchasing power. In other words, it will not serve the basic needs of the poorest people who have no money or not enough money to spend. Food production will be geared towards satisfying the tastes of the richest segments of the population. Markets for land and water are increasingly global and populations with widely diverging purchasing powers in the North and the South that have to compete for the same resources. This is creating a paradox in which the luxury tastes of some parts of the world’s population are satisfied whereas the basic needs of others are not recognised and cannot be satisfied.

What is the role of consumers in changing food systems?

Consumers have much more power than they generally acknowledge, and I am hopeful that this next generation will make choices that are much more responsible and informed about the social and environmental impacts of their ways of purchasing and consuming food. In fact, 15 years ago, very few people had concerns other than to have a large diversity of cheap food available all year round. Now people are much more attentive to the impacts of their purchasing practices and they ask questions about labour rights, sustainability, food miles, etc. I think it’s a good thing. Does it go far enough? Maybe not. In part because, it still only concerns a relatively small part of the population, the best informed and the most aware. And also because we have to accept that consuming more responsibly, also means consuming less of certain things and less meat in particular. We are coming to realise our overconsumption of meat has a huge impact on natural resources, making land and water more scarce. Our current level of meat consumption in the EU is 75 kg per person per year on an average. This is far too much for the environment and also creates a range of health problems. So a move towards healthier lifestyles and changes in how we consume food is desirable and perhaps on the horizon.

Why is access to land so important?

For many years we thought there was plenty of land available and that there would be no competition for this resource. But the 2008 global food price crisis drew the attention of many governments to the need for securing access to land because global markets were not sufficiently reliable. There was interest for farmland not just from governments but also from private investors. This led to what many call ‘land grabbing’. Huge areas were bought or leased from 2008 to 2011, though the trend is declining slightly now. So land has become a commodity for which there is competition. The problem is that in many regions, those who use and depend on the land for their livelihoods have no secure access to it. They risk being priced out from land markets and being evicted from the land on which they depend because someone with more purchasing power can buy it instead of them. It is becoming a serious problem, including for younger generations in industrialised countries. Access to land for them is becoming problematic, just like for peasants in the global South. Because of the inflation in land prices, it’s becoming very difficult for 25 year-olds to start in farming today unless their parents were farmers. For young farmers in the European Union, it is hard to enter into farming because land and machinery is becoming so expensive. It is therefore necessary to have programmes to improve access to land and to credit, and to ensure that land is used by those who treat it best.

What policies are needed for fairer and more sustainable food systems?

We need policies that are much more coherent from the local to the global. I see many examples of local food systems being rebuilt, with consumers being more active, linking with producers and supported by municipalities. Local resources can be better used to shape food systems that are more sustainable and fair for both consumers and producers. However, very often, such local initiatives are not supported by national policies or by the global framework. Most of the time, national agricultural policies do not pay attention to local dimensions of food systems. And the global framework supports the expansion of export-led agriculture but does not support governments to take into account dimensions of food systems other than those that increase production volumes. We need more coherence across different levels of governance and much more food democracy. People must be able to hold governments accountable for the results of what food systems deliver. There is a need to move agricultural policies into food policies so that these other dimensions are taken into account. That is why issues of governance are key in achieving the transition towards sustainable food systems.

In which international body should trade in food and agriculture be discussed?

There was an attempt in the past four to five years to improve the coherence of different sectoral policies that affect global food security. That led to a reform of the Committee on World Food Security that convenes in Rome under the auspices of the FAO (the Food and Agriculture Organization of the United Nations). It is a widely representative committee, including all governments, all international agencies with a relationship to food and agriculture, the private sector, NGO’s and farmers organisations, who work together to deliver recommendations for governments. It is my hope that in future, this committee, because it is inclusive and transparent, can have greater influence in shaping reforms at global and national levels. Unfortunately, trade is very much off limits, and the committee is not authorised to discuss in any depth the impact of trade policies on food security. This is all under the mandate of the WTO (World Trade Organization). I think that this is a mistake, and this should be seen as part of the problem. It makes no sense to discuss agricultural investment, food security and climate change and not to discuss trade, as it has such a huge impact on the shaping of agricultural and food policies.
Bio-diverse integrated farms

Means for reducing rural poverty

Purnabha Dasgupta, Rupak Goswami, Md Nasim Ali, Sudarsan Biswas and Subhrajit K Saha

Farmers of fragile agro-ecosystems have developed some unique integrated farming systems, to make their farms more resilient to factors like changing climatic conditions, declining soil fertility levels and decreasing farm income. While many NGOs have promoted such improved systems, it is time to reckon these systems as units of planning for large scale adoption.

In developing countries, ensuring food, nutrition and livelihood security through agriculture without causing negative externalities on social, economic and environmental sustainability is a challenge. This assumes greater proportions in the context of ever-increasing pressure on land and other natural resources, globalization and urbanization. In West Bengal, the picture is even bleaker where 85% farmers are small and marginal in nature. The situation becomes harsh in marginal and less integrated environments like the rainfed and the coastal-saline production systems, where most of the poor people live. In such a situation, small holder agriculture assumes great significance.

Future of agriculture and rural poverty alleviation depends on how we ensure food, nutrition and livelihood security through sustainable and integrated family farming, which is resilient to uncertainties of climate and markets. Promotion of sustainable farming systems as a poverty alleviation strategy seems to be an appropriate solution. Though simple, it is still a challenging proposition.

The Integrated Bio-diverse Family Farm

Agriculture in South Paraganas, a coastal district in West Bengal, is characterized by mono-cropping systems. Soil salinity particularly in dry months is a major problem. Farmers migrate to nearby towns and cities in lean agricultural months. Agricultural productivity is low and there is a cyclic productivity-led poverty trap affecting the farmers. Small holdings limit the expansion of conventional farming and the youth are reluctant to pursue farming as an occupation.

To overcome the constraints, several hundreds of farmers in coastal saline area in West Bengal have established Integrated Bio-diverse Family Farms (IBFF) with the support from Development Research Communication and Service Centre (DRCSC), a Kolkata-based NGO. There are also thousands of similar IBFF that have been
developed by the farmers themselves to sustain livelihoods from their small holdings. One could also find IFS in smaller holdings of less than 30 decimal.

Ramakrishna Mission Vivekananda University (RKMVU) aimed at establishing a model village on Integrated Rural Development, conducted an intensive study on IBFF to understand IFS models. The study was made as a part of the academic research programme.

We selected an IFS farm of 1 acre (60 katha) size from Patharpratima Block of South 24 Parganas district for our study. The one acre land was utilized as follows: 30-40 katha (50-66%) for raising crops, 10-12 katha for home and homestead (16-20%), 8-10 katha for water body (13-16%) and 4-6 katha for livestock raising (6-10%). Substantial space was created by raising and broadening the bunds. For every 0.27 ha crop field, around 0.02-0.03 ha of cultivable land was created on the bunds, on which vegetables were grown all through the year. The ponds and trenches around the crop fields were interconnected to facilitate water flow in which fishes were reared. Apart from this, some space was created by using aerial cultivation on bamboo and rope made scaffolds. Since the farm was small in size, intensifications were enhanced by growing crops having less water requirement, more intercropping, agroforestry of fruit trees, use of aerial space, small livestock, backyard poultry etc.

We measured nearly 40 environmental, economic and social parameters of these farms. Primarily, to examine the benefits accrued from the farm, we took up two important poverty-related indicators – food intake (calorie consumption) and farm income. We examined whether the IBFF was enough to feed the family of five persons throughout the year or not.

The study revealed that the model could provide the requisite calories for the family members (2400 and 2200 Kcal per person per day for men and women, respectively). The household had to purchase only a small amount of pulses and onions from the market, which was less than 5% of the total dietary need. The estimated monetary benefit from IBFF model was around Rs.75,000-80,000, of which more than 60% was secured as cash income. Though the estimation did not consider benefits from medicinal plants (saving health expenditure), recycling of nutrients and organic manure (saving cost of fertilizers), materials used for household use etc., the monetary income of the model was enough to bring the households above government specified poverty line (Rs.41062/- per household per annum, assuming Rs.22.50/- per capita per day for rural areas).

**Upscaling the model**

RKMVU discussed with the farmers about their needs and preferences. Also had discussions with the local Community-Based Organization, Ramakrishna Mission Ashrama, Narendrapur (where our University’s Faculty Centre is situated) which has vast experience in promoting such models in the district. This apart, experts were also consulted in arriving at a suitable, powerful intervention point. IFS models of South 24 Parganas was the obvious choice which suited small holdings and resulted in multifunctional benefits to the farm household.

Ramakrishna Mission Vivekananda University initiated scaling up of the model in 2013, with farm-specific refinements in Paruldah village. The model is developed as per the needs and resources of the household and is not a prescriptive recommendation. Besides focus on the principles of ecological farming, these IBFF models further aimed at building social capital and a conducive institutional environment.

Farmers were organized into para (hamlet) committee comprising of around 20 men and women in each project village. Farmers are selected through bi-weekly para committee meeting followed by approval in the monthly village committee meeting.

Farmer Field School was organized to a group of farmers. Farmers received training from experts and scientists on scientific cultivation of crops and their pest management. FFS members are selected through the Para and Village Committee resolutions. An assurance is taken from the host farmer to return 10% of the benefits in monetary and/or non-monetary terms (e.g. - seed, labour) to the village committee. Besides crop data, members of this network also collected meteorological data from the village resource centre.

The IBFF models generated income of Rs.75,000-80,000, of which more than 60% was cash income. This was enough to bring the households above government specified poverty line.
where a Hygrometer and Digital rain gauge are kept and monitored by the village committee. Further, leaders/farmer-trainers of the FFS provide training to other farmers at regular intervals.

All the farmers having IFS model are members of a Seed Sharing Network. Farmers select the germplasms and maintain them through the seed sharing network. All the members, as per their need, take seed at the initial stage of their cultivation and return 20% extra seed material to the seed sharing network after harvest. Members regularly monitor the process and supervise the quality of the germplasms, which are kept in a cool and dry place inside seed bins. Presently, the seeds of vegetables and mustard have been shared and they are stored in the seed bins.

As farm surplus is small, farmers have planned to sell their produce collectively, by forming a Market Linkage Network in each of the hamlet. This is still in the initial stages. In future, the entire model may be linked to farmer producer company or cooperative.

Thus, three institutional entities namely, Farmer Field School, Seed Sharing Network and Marketing Network have been established. A farmer may be a member of all these networks, but, this is not mandatory. Even interested non-farmers of the village have become member of one or more of these institutions.

**Early benefits**

Though it is too early to measure the impacts, there are certain developments that indicate that there are positive results. Farmers are coming together for the first time with regular interaction through Farmer Field Schools. Important farming related information/technologies are being exchanged among farmers. For instance, two progressive farmers are freely sharing their ‘hidden expertise’ with FFS members. Also enthusiastic members make use of Village Resource Centre where extension literature in local language is being maintained.

The seed sharing network has saved the farmers from expending cash for purchasing seed. In the first year, farmers have saved around Rs.400-500 on an average. While it has improved the access to seeds, the seed network has helped in maintaining the local germplasm. Seeds of local varieties of cucumber, bottle gourd, leafy vegetables, chillies etc. are being preserved, as women of the farm households grow these in the homestead areas.

There is a definite increase in the incomes realised from the farm. For example, Ranjan Mondal, one of the farmers, after securing for household consumption earned Rs.8000 from 18 layer birds (Rhode Island), Rs.8000/- from fish, Rs.15000/- from vegetables. Last year, he had not received any income.

The dietary diversity of the households has also increased due to the intervention. Previously, the share of carbohydrate was more than 80%. Now, with the consumption of vegetables, fish and eggs, the protein and vitamin components in the diet have increased. Also farmers are able to consume pesticide free, healthy produce.

More importantly, the solidarity of farmers has enhanced. Earlier, farmers of the nine village settlements hardly sat together for regular discussions.

**Future potential**

Integrated Farming System (IFS) employs a unique resource management strategy to help achieve economic benefit while sustaining agricultural production and environmental quality. These systems which have the potential to address many issues like food security, employment generation and environmental stability are
being promoted sporadically by NGOs. It is time to reckon these systems and implement as a unit of planning on a large scale.

Also, there is a need for various departments to work in tandem. For example, Sundarban Development Board, an autonomous body under the Sundarban Development Department of Govt. of West Bengal has promoted thousands of land shaping/excavation of irrigation tank in the Sundarbans region. A large number of such tanks have also been created under MGNREGA, a rural employment programme of the government. There is an enormous potential of improving socio-economic condition and restoring ecological balance by promoting IFS on these lands. Even with a conservative estimate of 50000 farms in the area, the potential value of primary agriculture produce will be Rs.350 crore a year, of which Rs.125 crore will come to market directly. Not to mention the employment generated by these farms and the associated labour economy. The contribution to ecosystem services is enormous if one can estimate in terms of nutrient balance, water saved, carbon sequestered, energy saved and biodiversity enhanced. These are subjects of great practical importance and, astonishingly, no policy initiatives have been taken up to focus the same. IBFF need to be taken up as units of NRM in regional planning and be merged with the overarching poverty alleviation strategy.

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More than three-fourths of the rural population depend on agriculture, which is largely rainfed. Farmers often face challenges like irregular monsoon, non-availability of quality inputs; lack of resources and poor market linkages. These issues, if systematically addressed, could help farmers improve their livelihoods, breaking the cycle of poverty.

Bhanpura, a small village of Agar district in Madhya Pradesh has a population of 414, predominantly belonging to Gurjar and Sondhiya communities. Owing to degradation of natural resources, these communities who are traditionally herders and agriculturists, have been forced to depend on wage labour for their livelihoods. Lack of alternative employment opportunities has forced a few of them to resort to theft and brewing illicit liquor.

Bhanpura witnessed a large-scale deforestation in the post-independence period. In the absence of appropriate land management, there has been a wide spread erosion of top soil, thus reducing the fertility and productivity of the landscape. The productivity of the 259 hectares of land is severely affected making agriculture a non-viable and not so preferred occupation. Frequent
droughts have reduced the production to such low levels that the farmland can hardly support the food requirement of the families. To sustain life in these adverse conditions, communities have mortgaged their animals, land and jewellery.

In this backdrop, Bhanpura, with the support of Foundation for Ecological Security (FES), formed their first people’s collective, known as Tree Growers Cooperative Society, in 2008, to work on natural resource management. During the two years of engagement, they focused on the construction of water harvesting structures and treatment of upper reaches. This resulted in improved water availability and improved biomass on the village commons.

Reliance Foundation (RF) through its RF-BIJ programme started working in Bhanpura village in the year 2010. RF in the initial period of engagement in Bhanpura, focused on building relationship with the community, understanding their needs and helping them understand the approach of RF. This was essential for grounding the initiative of sustainable development. However, the eagerness of community towards physical implementation on ground posed a great challenge for the team. Another challenge was the overall preference of the farmers for indiscriminate usage of chemical fertilizers and pesticides, which were against the principles of engagement of RF-BIJ. However, this challenge provided an opportunity to the team to demonstrate the sustainable farming model.

Series of meetings were organized to deliberate on this issue. As a consequence, all the households in the village decided to form a Village Farmer Association (VFA), adopt sustainable agriculture values, and convert them into practice. They collectively made their village development plans focusing on the themes of strengthening household and institutional capacities; securing water availability; reclaiming farm productivity; conserving soil and water and improved access to inputs and markets.

Working towards inclusive development, VFA accommodated the concerns and prioritized their activities based on the needs of women, poor and landless. Initiatives like dairy for the landless, skill-training for youth, vegetable garden for women, were planned...
People started diversifying their livelihoods, managing the risks associated with them. Activities such as construction of water harvesting structures, farm land development including land levelling, bunding, application of farm yard manure and tank silt were undertaken by VFA on a large scale.

Theme specific capacity building exercises were planned for each member to build their confidence in negotiating their spaces within the community. The initiative built capacities of people in managing institutions, agricultural practices, building leadership etc. Capacity building efforts while strengthening their core competencies also gave members an opportunity to interact with other stakeholders.

The initiative has helped in ensuring a secure future for the communities while addressing social, economic and ecological issues. The inclusive planning process brought the heterogeneous community together around the common agenda of social and economic development. VFA, thus became a vibrant people’s forum for realizing the dream of becoming self-reliant village. People, who would never sit together, were now planning and deciding together in fortnightly meetings. The association functioned as a single entity and started negotiating for its space with the government and the Panchayat.

**Economic well being**

Restoration of natural resources of water, land and vegetation on farmland as well as commons has contributed towards stabilizing the village ecosystem. Each farmland, treated as a micro-watershed, aimed at in-situ conservation of soil and water, resulting in improved productivity of land. The community has constructed water harvesting structures resulting in revival of water drainage system. This has helped farming with adequate supply of irrigation water while increasing the ground water recharge. The fields are enriched with organic manure that has helped in improving soil fertility and soil texture. The biogas plants reduced the dependence on firewood and kerosene while maintaining the environmental quality.

The economic prosperity brought by the livelihood interventions has deepened a sense of belongingness and developed ownership in VFA. This was not possible without collectives that gave them...
the voices of all, especially of the most marginalized are heard. Representative and actively participating leadership ensured that the strength to cope with internal and external risks and shocks. Equal representation of all caste and class groups ensured representation of various issues. Sondhiya community, earlier tagged as thieves, started to deliberate and diversify their livelihood options to agriculture and animal husbandry. Increased self-esteem and confidence of the members has inspired people to participate in all the processes leading to economic and social independence. Youth who had lost track of living a dignified life, are now taking up social issues like liquor consumption/trade and working on eradicating such evils.

Financial sustainability

A village development fund was revived and strengthened. Each member of VFA contributes to the fund and the members of VFA voluntarily decide the contribution amount. Presently, the size of the fund is Rs. 6,39,900 contributed by the community from their incremental income. The fund is being used to raise the equity of a producer company organized in Agar, to help farmers have better access to the markets.

Conclusion

Since its inception, RF-BIJ has touched the lives of around 50000 farmers across 11 Indian states. This is just one case of the many cases from the lives of the marginal farmers in the rainfed regions of India. The initiative of RF-BIJ is helping the marginalised farmers to make a dignified living out of farming. Farming in due course of time, will not only meet the aspirational goals of the farming citizens, but will also serve to benefit rural life and livelihoods. This could go a long way in attracting innovation, investment and energies in farming, reversing the tide of migration from villages to cities. Slowly but surely, the dream of rural transformation is taking shape.

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MaganBai (58) is a widow in Bhanpura village, trying to make a living out of 5 bighas (1.5 Ha) of waste land. The family once owned 25 bighas (6.25) sold off by her alcoholic husband. Further adding to her drudgery, the piece of land owned by her stands mortgaged with the moneylender. Instead of combating the situation, her sons Nain Singh and Radhe Singh also turned alcoholics.

MaganBai never gave up but continued to cultivate one bigha (0.25 ha) while leasing out 4 bighas (1 Ha) as pastureland. Her sons started working as wage labourers but spent most of their earning on alcohol. She could only produce 2 quintals of soybean, 5 kg of black gram and 5 kg of green gram with her individual efforts.

When RF-BIJ started working in Bhanpura in 2010, motivated by her fellow villagers, Magan Bai joined the Jagruk Kisan Samiti (VFA), in 2012-13. The VFA members helped her draw detailed analysis of her farmland followed by a systematic action plan. Activities such as land clearing, levelling, bunding, deep ploughing, and construction of a shallow well, creating irrigation support including pipelines were planned and implemented in her farm with an investment of Rs.57,250.

Efforts on her farm land, complimented with the land development and water harvesting works done in the village, helped Magan Bai to cultivate two crops on the same piece of land. Harvest in Kharif on 5 bighas (1.25ha) amounted to 700 kg soybean, 15 kg black gram and 15 kg green gram. Around 600 kg wheat and 600 kg gram were produced in Rabi season. She also offered excess water to other farmers and earned 300 kg of gram in kind and Rs.1500 in cash. After saving some for her consumption needs, she could sell the produce for a sum of Rs.58,500. She cleared her debts and could get the land released from mortgage.

A confident Magan Bai now plans to add vegetable cultivation to her livelihood portfolio. She plans to leverage the availability of water, thanks to the shallow well. She also plans to manage more land and develop an orchard. MaganBai says, “Maine kabhi nahi sochath aki ab apne jeevan mein aponi kheti is prakar se kar paongo par swayam ki himmat aur Reliance ke sahyog ne kab kuch badaudiya” (I never thought that I could ever farm this way but my will power and support from Reliance has changed everything).
Malelguda, a small village in Malkangiri district in Odisha, consists of around 78 Adivasi households, majority of whom depend on rainfed agriculture. Adivasi communities are known for their traditional agricultural practices. However, with the advent of green revolution technologies with enhanced access to hybrid seeds and chemicals, they too started to shift over to modern agricultural practices. The increase in yields during the initial years inspired almost everyone to hold on to the new practices. Over the years, farmers realised that the yield increases could not sustain. But by then, the damage was done – to their soils, to their pockets and to their livelihoods.

Organisation for Rural Reconstruction & Integrated Social Service Activities (ORRISSA), with objective of reviving ecological agriculture in this region, started working with the village communities from 2007 onwards. With extensive discussions on the food and livelihood crisis, communities identified the seed as the basic farm input on which they need to have control if they wanted to address the issue of food crisis. First, they decided to revive the traditional seeds and gain access and control on the seed resource. The communities went around in search of traditional seeds. Very limited amount of local seeds was available with the families. The millet and pulses seeds were collected from nearby villages through seed exchange process. The village leaders identified elder farmers who were willing to take up the task of multiplying the local seeds.

Communities resolved to revive the traditional cultivation models of Sabuja Padar, Gharabari to encourage households to nurture biodiversity in farming systems. To facilitate this, adivasi farmer groups worked on the approach of Seed Mapping at the cluster and village level and shared it at the Gram Panchayat Sangathans. This process opened up an opportunity for crop enrichment in the area. Exchange of seeds became a tool to increase food production rather than a personal choice of adopting local seeds at personal will.

Considering the strengths of the traditional mixed cropping practice, farmers in Malelguda decided to adopt the age old practice of mixed cropping on their up lands. Presently, 78 households follow mixed cropping using pulses, millets, cereals. The crops are integrated in such a manner that the communities are able to harvest food throughout the year, soil fertility is enhanced and resilience of the farm to climate change is increased. In 2014, around 10 households raised 1-6 varieties of crops and 7 households raised 7-15 varieties of crops on their land.

The communities grow food during the summer season also. The households choose drought resistant vegetable varieties and
The crops are integrated in such a manner that the communities are able to harvest food throughout the year. Also, soil fertility is enhanced and resilience of the farm to climate change is increased.

creepers, to manage vegetable production within the available soil moisture. Waste water from the household is being used to maintain the plants. Liquid manure is used to grow healthy plants. Besides meeting household needs, Ms. Manguli Pangi, one of the active woman leaders, earned Rs. 4500 out of the vegetables sale during the dry summer in 2012. In 2014, around 39 households are growing vegetables for a period of three months and 27 households are growing for a period of 4-6 months.

**Emerging role models**

Arjun Dura, one of the villagers visited some of the traditional family farm models. He was the first one to take the effort of multiplying the seed for fellow villagers. He also demonstrated that a mere 2 acres of land with mixed cropping systems using traditional seeds, could serve a family of 9 members with enough food. He also tried out the use of ‘Tarala Sara’ (liquid manure prepared by using the cow urine, cow dung and local tree leaves) in the *Til* Crop and realized the strength of local, appropriate methods. By the year 2012, Arjun had earned enough from the aromatic paddy and *til* farming and released his family’s 4 acre land from mortgage. His efforts also convinced fellow farmers of the village like Manguli Pangi, Chandrama Khara, Dukhia Benda, Jaya Madkami to adopt local resource based sustainable farming practices. Together with Arjun Dura these farmers reposed the faith on traditional systems and convinced the villagers to bring in dignity associated with it.

**Bihana Maa**

Adivasi women play a key role in nurturing the local seeds through selection, treatment and conservation. Recognizing this, the village committee of farmers of Malelguda identified Kanchan Pujari as the Seed Mother of the village. To multiply the identified lost varieties of seed the seed mother sourced them from the other villages and gave the seeds to the lead women farmers like Dukhia Benda, Jaya Madkami, Manguli Pangi, Chandrama Khara to multiply the seeds. They initially took up millet and pulses cultivation and shared the yield with fellow farm families. This helped other farm families of the village to exchange seeds while enhancing crop diversity on their family farms.

Kanchan is the contact point for all the farmers in the village. She helps farmers to map their cropping pattern based on the type of land they have. She encourages women to raise seasonal vegetable nursery so that all the families could collect saplings from it and raise in their backyards. Over the years Kanchan has been instrumental in organizing the annual and seasonal seed exchange among the farm families.

**Poverty to prosperity**

Communities which were hardly having food for four to six months in a year during 2009 have now accessibility to staple food for almost 8 months and other foods for 10 months in an year. The cash needs of the families are also being met by selling aromatic paddy at a premium price and vegetables.

Dependence on external inputs has considerably reduced, both for seeds as well as for other inputs. Communities are preparing the compost and liquid manure and are using them in place of fertilisers and pesticides. They have also availed support from the government in setting up compost pits.

The emergence of village leaders like Mr. Arjun Dura, Laxmi Khila and Chandrama Khara who passionately share the resilience nature of the local crops in the dry land conditions, promise a hope that this development will remain sustainable.

Farmers in Malelguda now have better access and control over their seeds, inputs and food. With experience they have learnt how to come out of poverty and lead a dignified life.

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International Encounters on Family Farming and Research

Some reflections

K V S Prasad

In the context of the International Year of Family Farming, the research institutions of Montpellier’s Agropolis International took the initiative to organize a conference, ‘International encounters on Family Farming and Research’ in Montepellier, France during 1-3 June 2014. The event was organised with the support of the French Ministries of Agriculture and Foreign Affairs, the Global Forum on Agricultural Research, CIRAD, CGIAR Consortium and World Rural Forum.

In their own words, the organizing committee said, “The meeting is aimed to i) foster exchanges between representatives of family farming, decision makers from the political and private sectors, representatives of civil society, trainers and researchers throughout the world and ii) to question and enhance research agendas dealing with family farming issues and the challenges of global change (society, economics, food security, urbanization, human mobility and migrations, nutrition and health, climate change etc.).”

The workshop participants included a mix of leaders from farmer organizations and networks, NGOs, researchers and academics, policy makers and private sector.

I was invited by CIRAD, France, CGIAR consortium and GFAR to chair a workshop theme during the conference. The theme identified was ‘In house issues in Family Farming’ which primarily dealt with how research agendas be suitably modified to meet the needs of youth and women while appreciating the various contextual and social dimensions.

On request by the international organizing committee, a discussion note was prepared, under tight timelines. This was approved and circulated prior to the conference to all the participants. The tasks during the conference included, chairing the subtheme workshops, with the help of a facilitator, summarizing the multicontextual, multilingual (Spanish, French, English) perspectives and priorities into a cogent and a ‘representative’ presentation during the plenaries to around 250 participants from all over the World. It was a great opportunity to learn from each other as well as share perspectives with heads of research from prestigious institutions.

The seven sub themes identified on Family Farming (FF) were highly relevant and inclusive. They were: 1) FF in the territories 2) FF and sustainable intensification 3) In-house issues within FF 4) FF facing the challenges of urbanization and employment 5) FF facing the challenges of climate change 6) Contribution of FF to the food systems 7) FF as one of the players in the future of agriculture.

One of the highlights of the conference was the open public meeting on June 1st, with a keynote presentation by 1995 World Food Prize and 2013 Right Livelihood Award winner Dr Hans Rudolf Herren, followed by roundtable debate of the issues that he raised. Other prominent and compelling ‘evidence based presentations were by FAO, GFAR, IFAD, CIRAD etc. Perspectives from heads of farmer organizations, international NGOs and political leaders, added depth and substance to the debate.

The group on ‘In- house issues in Family Farming’ articulated the following priority areas for research/ research methods, especially with small holders and agroecological approaches - recognising the importance of context and constituency specific research; understanding the differential needs and abilities of the communities; recognising complex social issues including resource access, entitlement and knowledge; need for farmer centric participatory research based on mutual respect towards alternative knowledge systems; research ‘validating’ field phenomena (eg. SRI), focusing on cyclical and systemic research rather than linear models alone; and, governance issues where research needs to closely work with farmer organizations and civil societies. There were several other important issues which emerged from other workshop themes which include: land tenures and landscapes, agroecological intensification, multifunctionality, rural urban movements, consumers role and food preferences, climate change – preparedness, resilience and mitigation, democratic governance processes

The meeting was unique in three ways: 1) It was an opportunity when global research organizations ‘heard’ the contextual perspectives and realities 2) Plenaries had presentations by visionaries on the present as well as the future relevance of family farming and small holder ecological agriculture 3) Unlike several other mainstream conferences, the organizers made serious efforts in collating field perspectives through sub theme workshops. However, one limiting factor was, the time available for discussions and debates in plenary presentations.

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From poverty towards hope

Case of successful poultry enterprise by women

PRADAN

Sukrit Bai is one of the many single, deserted, marginalized and oppressed women of Peera village, who lived in persistent poverty. Today, she is a confident woman practicing poultry enterprise. Her strong will and a little external support helped Sukriti transform her life. With enhanced capacities and confidence, she is a role model to many such women in her village.

Sukrit Bai a resident of Peera village of Chattarpur district in Madhya Pradesh has a 12 year old son and lives with her parents and four brothers. Her husband deserted her 12 years ago, following which she moved to her parents’ home. Her parents own approximately eight acres of land on which wheat, gram, mustard, moong (green gram), urad (black gram) and soyabean is grown. The farming is largely for subsistence and a very small portion of the produce is sold in the market. Sukrit bai’s brothers work as agriculture and construction labourers in surrounding villages.

After coming to her parents’ home, Sukrit did not want to be a burden on her family and she initially started making and selling bamboo baskets. She would buy bamboo for Rs. 30-40 and sell one basket for Rs.100, which took her a full day to make. “The earnings made from selling the baskets were hardly enough to take care of my own expenses, what contribution could I make to the family income” informed Sukrit bai.

In 2005, PRADAN working with the Madhya Pradesh District Poverty Initiative Project (MPDPIP), approached the women in the village to discuss various livelihood opportunities. The women were informed of the grants available under different government schemes. Most of the women showed their interest in establishing a poultry rearing enterprise, following which PRADAN facilitated the organization of Common Interest Groups in the village. Sukrit bai became a member of one of these common interest groups in 2006.

Following the formation of Common Interest Groups, Sukrit bai together with four women from other villages in the vicinity, went to Kesla in Hoshangabad district for a two day training on poultry rearing organized by the Kesla Poultry Society. The training introduced them to the basics of running a poultry (broiler) enterprise and various poultry management practices, including the construction of poultry sheds.

On completion of the training, the trained women were linked up with the MPDPIP where they were provided financial assistance of Rs.30,000/- each for constructing a 300 sq ft poultry shed. Soon after, 360 women from 13 villages federated to form a Cooperative called the Rajnagar Grameen Mahila Murgi Utpadak Sahkarita Maryadit, of which Sukrit bai is today a board member. After the formation of the cooperative, the members started poultry farming, each rearing 300 day old chicks.

The Cooperative purchases the day-old chicks, poultry feed medicines and vaccines and provides these to its members, and the cost is deducted from the sale of birds reared by the members. The birds are sold by the cooperative after attaining 1.0-1.2 kg at 25-28 days to the vendor who offers the best price. The Cooperative has also appointed a veterinarian to provide on-call referral and

“Procurement of chicks and sale of broiler birds is best done collectively. This helps us to focus on production.”

Sukrit Bai earns income as well as respect with her poultry enterprise

Photo: PRADAN
technical services to its members. While rearing the first batch of birds, a trainer from Kesla conducted a 30 day on-site training to provide hand holding support to the women poultry rearers. He would regularly visit each poultry shed, and monitor the performance and growth of the birds. In case some poultry rearing practices needed to be discussed in detail, he would gather the women poultry rearers at a common place in the village for on-site training.

“We were happy with the returns and are confident to invest money and expand our activity”, shared Sukrit bai. While the poultry producers meet every week in the village to discuss specific problems related to poultry rearing, the Governing Board of the Cooperative meets on the 8th of every month at the Cooperative office in village Bamitha, four kilometers away from Peera village. The selected representatives of the 13 villages that comprise the Governing Board of the Cooperative discuss the functioning of the Cooperative and poultry production in the respective villages in addition to taking collective decisions on further up-scaling their business.

The birds acquire a weight of approximately 1.0 kg by the end of the 25th day and each rearer manages to sell 3-4 quintals of birds in a cycle. Now the Cooperative procures chicks, feed, medicines, vaccines and other inputs through the state federation-MPWPCL, Bhopal. The producers of each village have appointed a supervisor who visits the poultry farms to ensure that good management practices are being followed. He also checks the weight of the birds every week, and reports to the cooperative. A supervisor is paid Rs 0.50 per bird sold by the poultry rearers.

Sukrit bai shared that after one batch of birds is sold, the shed is kept empty for 10-15 days and cleaned thoroughly with phenyl and lime water etc, and dried well prior to the arrival of the new batch.

“I go to the samiti office after the sale of each batch of birds, cross check the records and collect my payment”, informs Sukrit bai. The other poultry rearers also regularly visit the project office to check and clear their accounts. “The procuring of chicks and selling of broiler birds is best done collectively, this also relieves us from these tasks allowing us to focus on production. When the birds are ready for sale, the Cooperative is informed who arranges the best deal for us by speaking to various vendors. The vendors come to our village to pick up the birds, which are weighed in front of us and in the presence of the village supervisor, who in turn updates the records of each poultry rearer”.

Sukrit bai shared that she cleans the utensils and provides feed and water thrice a day. In the summers, to prevent the direct heat of the sun, she covers the shed with an old saree as a curtain, and in the winter, to maintain warmth for the growing chicks, a fire is lit inside the shed. “We ensure that the smoke thus produced doesn’t affect the birds”. She informed that poultry producers of a village have set up some rules and regulations which are practiced by all the women poultry rearers in and around the villages. This includes prohibiting children, dogs and cats from entering the poultry sheds; and cleaning of hands and feet with disinfectant solution before and after entering the poultry shed. She further informed that one poultry rearer is not allowed to enter another poultry rearer’s shed.

Sukrit bai told us that the mortality rate of the birds was high in the first few batches (20-25 birds in each batch). This reduced over time with better rearing practices, and now only 2-3 birds die in each batch. Sukrit bai’s sister-in-law is also inspired by this business and she has recently taken a bank loan to construct another shed and expand the family’s poultry enterprise.

“It is most convenient to be in this work. Being around my household I can take care of my son as well as the birds while earning a decent income. Earlier I used to make Rs 1200-1500 by rearing and selling a batch of 300 birds and now I rear 500 birds in each batch and manage to earn Rs 2000-2200 every month. I am not a burden on my family and can easily afford my child’s education”, informs Sukrit bai with pride. “Of late my husband has started visiting us and he wants to take me and my son back to his home. He is ready to relocate himself as I have told him that I would like to continue and even expand my present enterprise”, says Sukrit bai proudly.

Source: This is an edited version of the case story “Sukritbai Chautele’s successful poultry enterprise is an inspiration to her family and neighbours” on SAPPLP website, www.sapplpp.org

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Building a new agricultural future
Supporting agro-ecology for people and the planet


Climate change and the injustice of hunger require urgent attention, and investment in a model of agriculture that is truly sustainable. Agro-ecology is the science of applying ecological concepts and principles to the design and management of sustainable agriculture. An agro-ecological approach provides a range of social, economic, and environmental benefits that, with the right policy support and associated investments, can be scaled up to enable smallholder farming communities to achieve food security.

Solutions for Sustainable Agriculture and Food Systems
Technical Report for the post-2015 Development Agenda

Sustainable Development Solutions Network, 18 September 2013, www.unsdsn.org

It is hard to exaggerate the role that agriculture plays in human development. This report shows the multi–faceted contributions of the global food system to all pillars of sustainable development in the post–2015 era. It recognizes the need to eradicate poverty and hunger in our generation, and it also points out the importance of having an integrated agricultural and rural development goal in the sustainable development agenda.

The report aims to outline principles for developing more specific solutions that are adaptable to local realities. Perhaps the only commonality of agricultural systems worldwide is that they provide that most critical resource, food. Beyond this, agricultural systems are incredibly diverse, with crops, livestock, climates, soils, tools, and technology varying from country to country and even farm to farm.

Therefore, we have tried our best to avoid generic prescriptions of any kind. One–size–fits–all solutions are unlikely to work and solutions will need to be tailored to address regional and site–specific barriers to sustainability. This adaptation process will require the engagement of diverse stakeholders and sectors. This report has benefitted from substantial input from many people, including the members of the Thematic Group and hundreds of suggestions received from experts representing all sectors of agriculture and food systems.

The authors have inevitably brought their biases to the document, and perhaps focused primarily on science and technology solutions. To many, entering a sustainable development path for agriculture. And food seems like a daunting challenge. We believe that it is feasible. The overarching motive for this report is to encourage people to act, despite the enormous challenges.

Gandhian Approach to Rural Prosperity

Narayan Hegde, March 2014, BAIF Development Research Foundation, 206 p, Rs.100

Rural development has been the national priority ever since the independence of India. The Government of India has been launching various schemes through the Five Year Plans, over the last five decades. No doubt, these schemes have benefitted millions of rural families to improve their livelihood. Nevertheless, about 270 million people, representing 22% of the total population, were living in poverty in 2013.

Development is an ongoing process where there is scope for improvement in efficiency and outcome. However, sustainability is the key parameter to measure the success, which can be ensured by involving participant families right from the stage of planning and encourage them to assume greater responsibility. This will provide them ownership. Once they realize the opportunities they will not mind working hard and mobilizing all their available resources for the success. This book covers various components of agricultural development, where BAIF has been working over the last five decades.
Ending poverty: Learning from good practices of small and marginal farmers


Since 2009, the Food and Agriculture Organization of the United Nations (FAO) and the Self-Employed Women's Association (SEWA) of India have been collaborating in an interactive and mutual learning process: the Exposure and Dialogue Programme (EDP). The EDP methodology, conceptualized and designed by the Self-Employed Women's Association (SEWA) and Dr Karl Osner in 1991, represents a novel attempt to bridge the gap between the macro level policy-makers and micro level “beneficiaries” of development programmes through a direct and shared living experience of poverty, exclusion and marginalization. Since its establishment, the EDP methodology has been used extensively by various organizations such as the World Bank, the International Fund for Agriculture Development (IFAD), Cornell University and the Grameen Bank

This publication is intended for FAO and SEWA staff and other development practitioners. It has three objectives. First, it shares and records a small subset of experiences gained and good practices identified by participants, and summarizes some of the lessons learned. Second, it aims to serve as a reference for other organizations who may wish to embark on a similar collaboration. Third, drawing on a few of the personal and technical documents prepared by FAO participants following the four EDPs, this publication documents some of the practices, mechanisms, and models that make SEWA an exemplary organization in addressing grassroots issues using a needs-based, capacity-development approach.

Growth and poverty reduction: the role of agriculture

A DFID policy paper, December 2005

Agriculture is a key part of DFID’s efforts to reduce global poverty and achieve the Millennium Development Goals. It extends into many other areas of development policy and complements our work on issues such as fisheries, forestry, food security, social protection, governance and trade. Building on our understanding of livelihoods (DFID, 2002), this paper shows why we believe agriculture should be placed at the heart of efforts to reduce poverty. It proposes principles and priorities to guide our work, and to help decision-makers to weigh up the potential growth and poverty impact of agriculture compared with other competing demands on resources.

Women Transforming Indian Agriculture

A collection of case studies from Indira Kranthi Patham of Andhra Pradesh and Kudumbashree Mission of Kerala

Landesa, December 2013, New Delhi

Ever since the self-help group (SHG) mechanism became established as one replicable pathway of the women’s social and economic empowerment in India, several state and non-state programmes based on women’s self-help group mechanism have been and continue to be implemented with significant successes. Kudumbashree (KDS) programme of Kerala and Indira Kranthi Patham (IKP) programme of Andhra Pradesh are the two best known programmes. These two programmes have been able to mobilize very large numbers of rural women into multi-tiered collectives that have provided the backbone for implementing several thematic initiatives spanning from agricultural development, micro enterprise, product marketing, health & education, gender equality, and others.

This document captures several good practices from these two state initiatives in the domain of women in agriculture. The purpose of this document is three fold: a) To learn from the good practices of women in agriculture from KDS and IKP, b) To disseminate the practices and learning to a wider audience and, in particular, to the implementers of similar projects of women in agriculture, and c) To identify the issues that need to be weaved into such good practices to make them even more effective and relevant to rural women and their lives.
Aamka, is in the district of Alwar in the northwestern Indian state of Rajasthan. Home to nearly 3 million people, much of the district is made up of poor villages. The majority are already struggling with poverty. Life is especially difficult for the women who are already marginalized.

In many places in Alwar, it’s more common than not for girls to be married by age 13. Sons are more highly valued than daughters, and the daughters are rarely given an opportunity to get educated. Having no education and little support or love, it’s no surprise that these girls grow into women with low self-esteem and low status within their families and society.

But now, Heifer International has been helping the women gain confidence. With education, they’re looking inward to learn about themselves so they can look out to face the world.

The “beginning”

Two workers employed with local non-governmental organization and Heifer India partner Ibtada, first encouraged the women in Aamka to form a group.

Ibtada, an Urdu word meaning “beginning,” has a mission similar to Heifer’s in that the primary goal is to strengthen communities. For them, women are the key. When Heifer and Ibtada partner to carry out a project like the one in Aamka village, the requirement is that 10-15 women must form a group and those women, with their family’s approval, must participate in a series of trainings.

The women learn about Heifer’s 12 Cornerstones for Just and Sustainable Development, livestock rearing and gender equity, among other topics. The self-help groups, as they are called, are primarily savings and credit-based groups, as these women rarely have access to banks.

The savings groups give the women a sense of power, and with their own money, the groups become self-sustaining. This increases women’s confidence. Later, after successfully managing the savings and credit groups, the women groups receive livestock as a means to further improve their livelihoods.

Inspirational case of Mehrunnisa

At 29, Mehrunnisa is responsible for taking care of her three children, her husband, her husband’s parents and brother, their one water buffalo and the family’s wheat crop. All other household duties also fall on her. Like many women in rural northwest India, she believed her worth lay solely in the home.

So when an opportunity arose to join a group of women in her small village, who pooled and saved money for future use, Mehrunnisa was wary. It meant asking her husband for money and then handing it over to women she barely knew.

“I was skeptical,” said Mehrunnisa. Perhaps more important was her husband’s skepticism. He “told me we don’t need to save anything,” she said.

Mehrunnisa became a member of the 13-member self-help group in her village. Each member contributed 10 rupees a month. A year later, they increased it to 50 rupees.

Heifer has a long history in India. The first shipment of 20 Jersey cows was sent to the India Ministry of Agriculture in 1955. Since then, Heifer has worked in various capacities in the country, but it wasn’t until 1992 that Heifer established a registered trust for continued programs there. Projects were mostly focused in India’s southern states with a few projects in Rajasthan and Uttar Pradesh.

In 2003, Heifer withdrew its support after finding that projects were deviating from the Heifer model. But two years later just after the Asian tsunami devastated the southern coast, Heifer began supporting projects to help in the area’s rehabilitation. Projects were also started in Rajasthan with local partners. In 2008, Heifer received registration as a representative office and ramped up work once again.

Heifer India now works in four Indian states: Bihar, Orissa, Rajasthan and Tamil Nadu. Its major activities include goat rearing and poultry, as well as fruit plants and seeds for kitchen gardening.
Almost immediately, the group began making loans to the women in the group. Shortly after the group began making loans, Mehrunnisa asked for a loan of 10,000 rupees. Her family had borrowed money previously from a lender who charged them exorbitant interest. The loan from the self-help group helped them to pay off their debts. It was empowering, Mehrunnisa said, and encouraging to see women taking control of at least a small portion of their lives.

The Ganesh Women’s Group, of which Mehrunnisa is a member, received goats in January 2010, and the women were already thinking about how to increase income from working with the goats. “With the ladies at home, they want to support their families with more earnings,” Mehrunnisa said. “That’s why we are happy to have the goats.”

Growing in numbers, growing with confidence

Mehrunnisa and the 22 other women in her Ganesh Women’s Group comprise one of the 16 women’s self-help groups that have formed since Heifer’s work with Ibtada began. These 16 groups have passed on their knowledge and goats to another 22 self-help groups, through ’Pass on the Gift’. Heifer and Ibtada now have reached 491 families and distributed 1,350 goats.

Mehrunnisa’s group has been together for nearly two years. Bonds have formed among the women, and their husbands and families are realizing the group’s potential. As the projects progress, the women have grown in self-confidence and self respect. Mehrunnisa, for example, now knows that she can take what she’s learned through this project and work outside the home. She also thinks about the future for her two daughters.

“I’m thinking a lot and planning a lot. I want to do a lot in my life. I want to educate my children in a good school. I’m trying to work for the betterment of the group,” Mehrunnisa said. “We want to grow the group and create more groups to give more women the opportunity we’ve had.”

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