Towards food sovereignty

Millets based bio-diverse farming system

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Millets are highly nutritious food crops which are hardy and are resilient to climate changes. Ironically over years, the area under these crops is declining owing to undue focus on monocropping systems and high input agriculture. Tribal communities in Kandhamal have broken the barrier of monocropping by reversing back to millet based bio diverse cropping systems. They are now practicing farming which is more resilient and eco-friendly, producing more quantities, more diverse and more nutritious food.

Kutia Kondh is the predominant tribal community living in the villages surrounding Tumudibandha Block in Kandhamal district in Odisha. Characterized by persistent and widespread poverty, *Kutia Kondh* communities earn their livelihood through rainfed agriculture and shifting cultivation along hill slopes (locally known as *poduchasa*). They also depend on forest produce and around 15% of their annual income is derived from collection of Non-Timber Forest Produces (NTFP).

Farming as traditional livelihood

Kutia Kondh community has rich experience in mixed farming. They were growing 40-50 varieties and crops in mixed farming.

Women harvesting varieties of millets

Photo: NIRMAN

Photo: NIRMAN

Millets are hardy and survive under water stress conditions

These practices were widespread around 20-25 years back. With government's massive promotion of paddy cultivation through green revolution technologies, the crop diversity on the farm, which included millets and legumes, started eroding. Also, as the Public Distribution System too became predominantly rice oriented, farmers increasingly shifted to paddy cultivation at the cost of other crops. Presently, only 12-13 varieties of crops are being grown in the region.

Local communities are forced to purchase food to meet the food needs for at least 200-210 days per year. This makes them dependent on local money lenders and other external sources to meet the rest of their food grain needs. On an average, each household has a debt of Rs. 2800. The loans are taken primarily to meet food shortages. In return they mortgage their piece of low land (usually used for paddy cultivation), livestock, matured fruit trees (mango, jack fruit etc.) or crops (turmeric & mustard) at a throw away price.

During 2011, NIRMAN, an NGO, conducted a study on millets in Dupi village in Guma gram panchayat of the block. NIRMAN has been working on sustainable agriculture, conservation of bio-diversity and rural livelihoods in the region and started working in Kandhamal on millets based farming, since 2011. The study revealed that the area under millet based bio-diverse farming system has been declining having a serious impact on food and nutrition security at the household level. NIRMAN made several consultations and found that millets were hardy enough to survive under conditions of increasing temperatures and water scarcity while providing nutritious food. NIRMAN started encouraging farmers to re-establish millets based farming system. It also facilitated the formation of millet farmers' network/organisation for influencing policy advocacy.

With the revival of millets based farming system, the crop diversity increased from 13 to 25 and enhanced the household level food security by 45 to 60 days. The seed-scarce community has moved towards seed-sufficiency within one cropping season.

Restoring millets based bio-diverse farming

NIRMAN conducted village level meetings with communities in 14 villages covering around 306 households. Issues like food and nutrition insecurity and changes in the farming practices were discussed extensively with the communities. Communities realized the need for revival of millets based farming. The major strategy of intervention for NIRMAN was community led approach where village level institutions were facilitated to assert their control over food production system and improve livelihoods by establishing seed bank, sharing knowledge with community through learning sessions and exposures, and revival of millets based bio-diverse farming system.

In each village, a village level institution was formed. It was agreed that the village level institutions will assess the seed requirement and procure seeds for the whole community. These village institutions were oriented on millet seed bank and its management. The focus was on open pollinated varieties, which can be regularly multiplied by farmers particularly by women farmers.

Community groups assessed the requirement of seeds of millets and pulses. Initially, NIRMAN provided 12 varieties of seeds as a one-time support to the community. The seeds were then transferred to the village level institution (VLIs) as seed capital to establish seed bank, multiply it and fulfill the seed requirement of the community.

Women owing to their knowledge on seed selection and storage were given a major role to play in the implementation of the program. In selection of variety of seed and household requirement, women were actively involved in the discussion of assessment, procurement and distribution among households. At village level institution meetings, community selected women as office bearers eg. President and Secretary.

In a single crop season, a total of 25 crop varieties were revived. The length of planting calendar increased and community got more yield. This ultimately enhanced the food security levels at the household level.

Celebrating bio-diversity

BurlangYatra is a community festival celebrated by *Kutia Kondh* community at the village level after the crop harvest. NIRMAN facilitated the celebration of the festival at village level. Also, to build solidarity among people from various villages, the *Burlung Yatra* was organized for the first time at the Gram Panchayat level. The festival was used as an opportunity to celebrate the revival of

agro-biodiversity in the form of displaying various local seeds, farming practices and their life style. There was a humble attempt by the community for displaying conservation of local seeds; farming systems and how this enhanced crop diversity improved food and nutrition security. The seeds displayed were millets, pulses, rice, oilseeds and vegetables grown by local community. There was exchange of seeds, experience and knowledge on farming practices. Also, farmers from other parts of the state and neighboring state i.e. Andhra Pradesh, participated. Farmers of Guma gram panchayat shared their rich experience of how they are strengthening their food and nutritional security through the revival of millets mixed bio-diverse farming. The community used this opportunity to articulate and influence the mindsets of those concerned, on the necessity to include millet foods in the menu of mid-day meal of the schools and Anganwadi centres.

Benefits and way forward

Reestablishment of millets based farming system has increased crop diversity from 13 to 25 in agriculture fields of 14 villages and has added to the food basket. The food security at the household level has extended for another 45 to 60 days. The seed-scarce community has moved towards seed-sufficiency within one cropping season. The most important accomplishment has been restoration of traditional knowledge base which eroded along with degradation of crop diversity. Organic Certification under Participatory Guarantee System (PGS), value addition, market linkage and strengthening Women's Collective are being planned for the future.

Efforts are made to spread the multiple benefits of millets based farming system on human and environmental health, as well. Communication materials are developed and distributed. A newsletter titled Krushak Swaraj is also being brought out focusing on millets and crop diversity.

This model promoted by NIRMAN offers solutions in today's crises in farming, meeting the food and nutritional needs of the communities in semi-arid areas in Kandhamal district. The model has greater adaptive strengths against erratic rain fall and climate change while increasing the resilience of agriculture system. The hands-on-experiment is in the second year and it has up-scaled to 27 villages covering 445 households. Efforts are being made to include millets in the midday meal programme of the Anganwadis. Active engagement with government officials, opinion makers and media, is initiated towards achieving this.

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Call for Articles

Family farmers in living landscapes

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"Landscapes" come in different shapes and sizes: mountainous areas, drylands, forests, coastal areas, watersheds, and many more. They are always changing, and so are the strategies of the people living in them. Growing pressures on the land lead to competing claims for resources, within and between communities of farmers, pastoralists and forest dwellers, but also increasingly from pressure by larger external forces including expanding cities, tourism, mining and agro-industries. Family farmers, pastoralists and forest communities depend on their landscapes for food, fuel, fodder, timber, medicines and more. For many rural communities, landscapes also have cultural and religious significance. Landscapes are intrinsically connected with the local culture and the regional economy. Yet, these communities are often excluded from land governance structures, natural resource management and policy development.

In recent years, landscape approaches or territorial approaches have gained popularity as tools to enable researchers, policy makers, NGOs, activists, private sector players and rural communities to better understand the multiple functions of landscapes and the competing demands of different landscape users. This issue of LEISA India will look at the efforts of family farmers, pastoralists and forest communities in shaping resilient and living landscapes. How do communities deal with the increasing pressures on their landscapes – whether internal or external, local or global?

Send us your articles on the struggles to defend these landscapes from the threats of large-scale industries, mining companies and other forces. What governance mechanisms and policies are needed to ensure that the rights of rural communities are respected? Can win-win arrangements be reached with other landscape users, allowing local communities to strengthen their agro-ecological production systems? What future do rural communities envisage for themselves and their landscapes? We look forward to reading about your experiences.

Articles for the September 2014 issue of LEISA India should be sent to the Editor, before June 1st, 2014.
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