

Traditional seeds helping marginal farmers to increase food production for enhance livelihood - a case of Malkangiri District



ORGANISATION FOR RURAL RECONSTRUCTION AND INTEGRATED SOCIAL SERVICE ACTIVITIES (ORRISSA)

Background and Overview

Trocaire has had specific programmes on reviving and promoting traditional agriculture to ensure food security in 33 villages of Malkangiri District with tribal farmers since 2010 through its partner organization, ORRISSA. This programme includes specific work on the conservation, selection and preservation of traditional seeds with the objective of reviving ecological agriculture in this region. This work has contributed to an important need in the district, as is evidenced that many of the tribal farmers have lost diverse varieties of traditional local crops while trying out market seeds. The high level of use of market seeds, chemical fertilizers and pesticides, economic cash crops, post harvest machines and farm tools could not yield any sustainable result to small tribal farmers in the long run rather these investments in farming have increased the debt burden on farmers. The local resilient crop systems got destroyed through the increasing adoption of market seeds. As a result, small and marginal farmers have become food insecure.

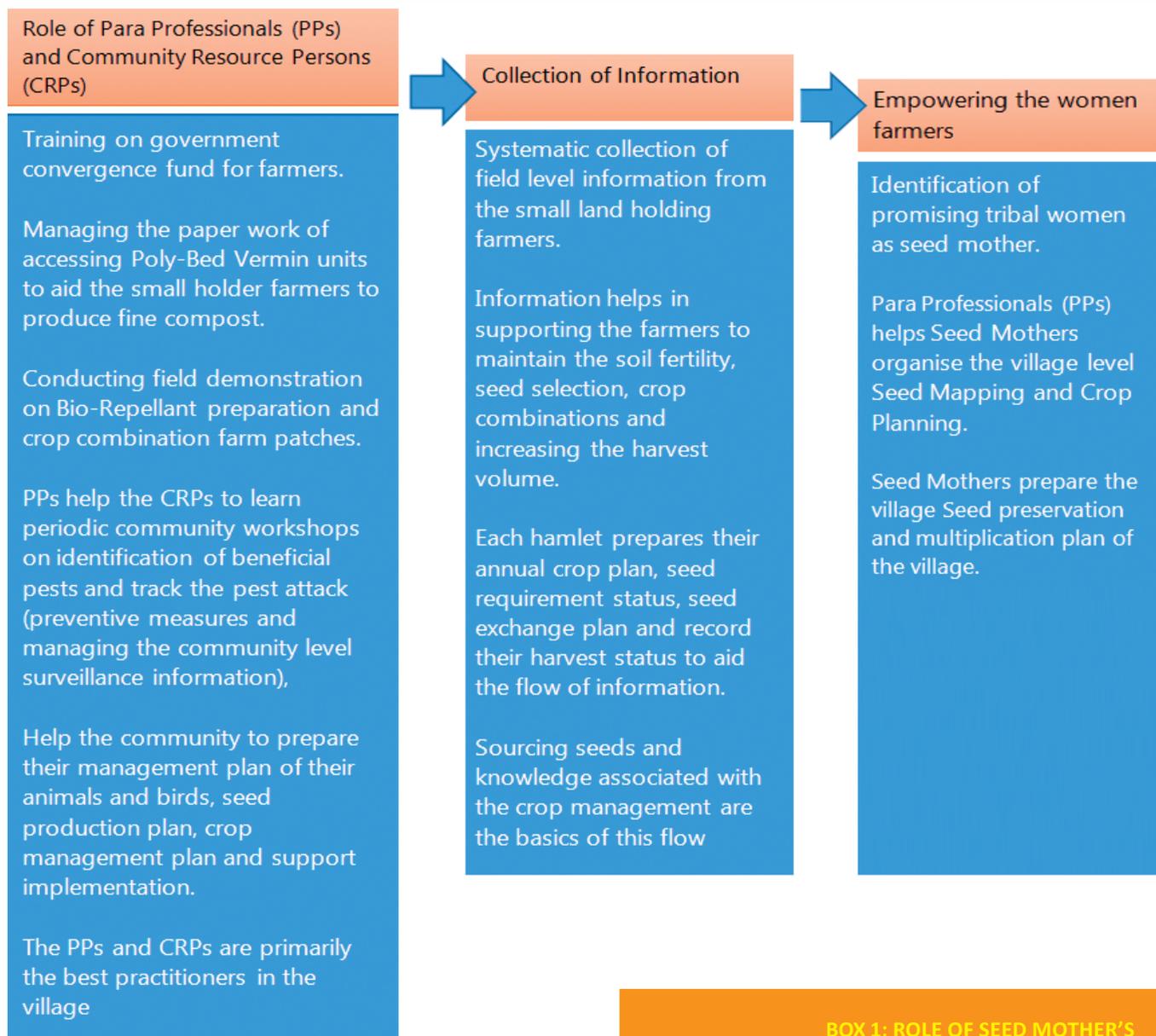
In 2010, in cooperation with ORRISSA, a partner organisation, in Malkangiri, Trocaire started an innovative 5 year livelihoods programme. The programme includes a specific component on working with tribal women to conserve traditional seeds and help them to continue the important knowledge they have about these seeds. The purpose is to revive and promote traditional agricultural practices to enable families to increase their food security with no investments.

The core component of the programme is on reviving the traditional millet based mix crop practices which have enabled families to have additional food. The millet based foods with varied crops have made available better nutrition based food which are not present in rice. To do this ORRISSA has supported exchange visits, encouraged awareness raising campaigns and rallies on the rights of indigenous farmers and tribal women. Communities are now coming forward to promote local traditional crops, exchanging seeds and helping farmers to access seeds from others. Tribal women were the first to share their experience of local farming in the meetings and celebrations during the community seed fairs. This happens primarily for the fact that local seeds come with their resilient characters of water conservation, capacity to withstand long dry spells and fits well within the natural habitat of the local terrain and other land races. Women have realised the need to retain the local seed diversity and shared their harvest with fellow farmers. The focus of the intervention to date has been to encourage communities to build up their traditional seed diversity process and increase the household level food productions.



Traditional Seeds

Approaches followed for revive traditional agriculture practice in the village



▼ Kamala Gadaba, Seed Mother



BOX 1: ROLE OF SEED MOTHER'S

The inherent knowledge of tribal women on local traditional seeds and its cropping designs is an important input that sustains the local traditional agriculture practices. Recognising this important knowledge of the tribal women the community decided to identify the promising tribal women to act as Seed Mothers at the villages. Her role is to nurture the local traditional seeds, support seed conservation, multiplication, seed storage and to help facilitate inter and intra village seed exchange. She keeps the seed samples of the village so that visiting farmers can see those seeds. She mobilises the community at the village level and gathers knowledge from the fellow farmers on different varieties of seeds. Seed Mothers role is essentially to assist the villagers to enrich the diverse cropping systems.

Methods used to revive traditional agricultural practices

Crop plan and seed mapping:

Seed mothers organise annual village level seed mapping where all the families of the village come together. During this process, farmers recreate the map of their farm land. Different categories (upland, dry lands, dry patches and low lands) of land are identified in the map. The seeds available with the families are also identified and listed. Once seed and land types are identified, families choose the kind of crops they would like to grow on their land. At this point families then exchange their seeds with fellow farmers. The village also lists out type of seeds it would source from other villages. The seed mother facilitates the whole process of crop plan of the village.

Seed Multiplication:

The seed mothers have struggled a lot to enrich the crop diversity in their villages. This is because there are not enough seeds available to support all the small farmers' families. The selected willing farmers therefore take the responsibility to first multiply these seeds which subsequently get exchanged within the village. The women's group in the village have built seasonal nurseries to raise saplings of fruit bearing trees and vegetable saplings to help families multiply the seeds.

Seed Storage:

The wide array of community knowledge on seed storage gets further strengthened through knowledge sharing practices. Seed Mother's continue to learn from outside farmers on new appropriate methods of seed storage and then transfer this knowledge to other households of the village.

COMMUNITY SEED FAIRS

Community Seed Fairs brings together hundreds of tribal farmers to spread their knowledge and awareness of traditional seeds and exchange varieties of seeds with other farmers. This is a celebration where community beliefs in the traditional farming systems have the capacity to feed the families in the villages and to protect local natural resources. This helps to reduce dependence on markets for agricultural seeds by promoting the use of traditional varieties. People have travelled from far and wide to participate in the exchange of traditional seeds. This also brings legitimacy to the approach of sustaining local agricultural systems. The tribal women actively participate in this fair to display the bounty of the resources and share knowledge during this occasion. The community proudly prepares millet based food, through traditional food recipes during these fairs. The issues related to food diversity, sensitization about the loss of abundance of locally available foods are addressed through these fairs.

Women at Community Seed Fair of Podabhata



BOX 2 :

LOCAL FOOD FESTIVAL

The Seed Mothers lead in organising food festivals. The women cook various recipes using the seasonal food sources around the habitation. Many times the seasonal food mappings are undertaken as the first step to the food festivals. The women display the variety of un-cultivated food available surrounding their region as well as the cultivated food. The diversity of the uncultivated food available in the area authenticates the importance of the forest in tribal day-to-day life and food habits. Food festivals are mostly theme based. Themes like dry food, forest food, uncultivated food, fish from the wild and meat from the wild are chosen to initiate dialogue. The tribal youths are also given support to prepare food using the local food grains. The youths now prepare finger millet soup, sweets using millets and bake millet cakes. The seasonal food festivals authenticate the diverse food culture of the community. The food festivals along with the seed fair assert the tribal food identity with its rich heritage and nutritional components to visitors and wider society.

District Collector visited Traditional Food festival at Malkangiri



¹ Lead Farmers: Lead Farmers are the farmers who have the knowledge and practice of traditional farming systems and willing to work on same in the village and they can able to motivate other farmers. Four to five lead farmers are available in a village.

Pure Seed Production:

To sustain the efforts of local farms, the seed mothers and lead farmer¹ realised that pure seed production should be a continuous process to enrich the local family farms and that of the local crop diversity. This process is intense and time demanding. However, the seed mothers continue to bring out new seeds from the local varieties. This process is being done through selection (pure line selection as usually done by the external scientists which is facilitated by ORRISSA). The lead farmers and the seed mothers take extra care in identifying seeds from the time of raising nurseries, weeding, during the branching of plants, during fruiting and during harvest. The large number of seeds (or new seed varieties) has emerged through intense interactions of countless farmers through generations.

Impact observed in village's life

Most of the families in the operational villages have increased their crop diversity in their backyards, upland mixed crop fields and that of the regular crop fields. This has also resulted in increased cultivation areas as the traditional crops are not cost intensive. As of 2015 more than 5000 families have gained produce from their backyard garden all year round. More than 1200 families have vermi poly beds, 3272 households have their own compost pits and 3267 use liquid manure. These practices have led to more food available at the household level and increased nutritional intake. Traditional crops are climate resilient so families can more easily harvest food.

▼ Table 1 : Food availability in Malelguda village, Malkangiri

Crop	No of Families	
	2010	2014
Produce Paddy for consumption in their households meeting up to 12 months of food in the family	4	18
In Excess 12 months of food in the family	0	11
9 months of food in the family	15	21
6 months of food in the family	21	15
4 months of food in the family	10	7
Less than 3 months of food in the family	18	3
Produce Millet for consumption in their households meeting up to		
12 months of food in the family	8	11
9 months of food in the family	7	13
6 months of food in the family	9	11
4 months of food in the family	6	6
Less than 3 months of food in the family	2	4
Produce Pluses for consumption in their households meeting up to		
12 months of food in the family	0	2
9 months of food in the family	17	28
6 months of food in the family	10	15
4 months of food in the family	7	9
Less than 3 months of food in the family	4	6
Oil Seeds		
Families earned more than Rs. 10000 from the sale proceeds of the oilseeds grown by them	5	10
Families earned less than Rs. 10000 from the sale proceeds of the oil seeds grown by them	8	14

NOTE: The villagers have done this assessment of availability of diversity food in various quantities across months. (Survey done by partner organisation ORRISSA with help of villagers)

Tubers		
4 months of food in the family	6	10
Less than 3 months of food in the family	16	26
Mix Crop at the Uplands (with local varieties)		
12 months of food in the family	2	4
9 months of food in the family	5	7
6 months of food in the family	3	10
4 months of food in the family	1	5
Less than 3 months of food in the family	5	5
Backyard garden		
12 months of food in the family	0	4
9 months of food in the family	5	13
6 months of food in the family	10	28
4 months of food in the family	15	18
Less than 3 months of food in the family	6	11

▼ Bio-diversity mapping by villagers at Mauliguda and Chandanguda Village

BOX 4 : BIO-DIVERSITY MAPPING

The seed conservation starts with a dignified approach to understanding the local resource base and farm wisdom through community Bio - Diversity Mapping. Farmers, with the help of seed mothers, have displayed their available local natural resources and asserted the values associated with it. This includes the economic, social and cultural aspects linked to the local resource base. The critical role of the local forests is acknowledged for its role in supporting traditional agriculture, the animal populations of the households along with non cultivated forest food and income from the non timber forest produce the community accesses freely from it. The bio - diversity map displays all resources of the community.



Lands which were previously left uncultivated are now covered with mixed crops and millet crops. This was made possible through continuous exchange of seeds. The increase in the cultivation area increases the volumes of bio-degradable matter which has meant more fodder for domestic animals and for the composts as well as vermin composts. Soil fertility has increased and water conservation has also improved with the increased coverage of local traditional crops and non-pesticide management of crops. The eco-services offered through the process have generated more than **3000 hectares of new forest coverage and reclaimed 12 traditional streams for the local bio-diversity.**

The incremental income at the household level has been at an average of 4000 INR per year per family found. Decreased dependence on market inputs has helped families earn an average of 7000 INR from the sale of vegetables from their backyard garden only (at 17 villages). This has reduced the incidence of debt burdens of families. The traditional knowledge helps to protect cultural identity and thereby protects the dignity of the small family farms. At an average the women farmers earn cash between 5000 to 21000 INR in a year from the surplus food they sell in the local market. This is additional to the incremental income the families save by not buying seeds from the market and producing key foods like onions, tuber and some spices, including oilseeds.

In addition, cooperatives have generated substantial community and individual savings as women farmers have formed their own cooperatives to manage the input and post production sale of the surplus produces. Sustainable assets are also created through use of government schemes like rural job schemes to develop the family lands for agriculture by taking creating family farm ponds, family compost pits and poly-ved vermin compost pits.

Millet

- More than 4700 families are now growing 2 to 3 varieties of millets
- 2531 families are growing 4 to 5 varieties of millets
- 1187 families are growing more than 5 varieties of millet
- 135 farmers are taking up line transplantation of millet
- 4874 families have taken up millet centred mix crop

Now I have more than 161 varieties of paddy seed and 123 varieties of pulses, tubes, oil seeds, domesticated wild food, vegetables and greens. Said Jamuna Kirsani (Seed Mother), Mauliguda Village

Challenges faced by the Programme

Women's work burden:

Seed mothers are involved in many activities from nurturing the local traditional seeds, conserving seeds, supporting seed multiplication, seed storage and facilitating inter and intra village seed exchange. All these activities are time consuming

▼ Women farmers of Malaliguda village



and is in addition to their other household work and farm work which results in little leisure time for themselves. ORRISSA has made efforts to ensure the identification of second seed mothers in the village as a second line leader who will support others but women's workload remains an ongoing challenge.

Materialistic lifestyle has become a desire of many:

The tribal community is not far from materialistic lifestyles. The lure of city life, advertisements of high profits and the temptations of consumerism are leading to migration from rural areas. The expectation from the farm machines and the drudgery involved in traditional farming are factors which demotivate young farmers. ORRISSA has been working to address these challenges by increasing awareness amongst younger generations on the adverse effects of many modern agricultural practices and also promotes the conservation of traditional varieties of seeds and agriculture practice but it remains an ongoing challenge.

Promotion of hybrid seeds and chemical fertilisers under government schemes:

The cost intensive promotion of the second green revolution combined with the strategic privatisation of agricultural investment and absence of monitoring of spurious agro inputs are the factors which are destroying traditional wisdom. The entry of multinational agro corporations in tribal areas to market hybrid/GMO seeds, chemical fertilisers promoted through local traders and money lenders who are luring farmers to adapt to cost intensive agriculture have seriously weakened traditional agricultural practices. This is an ongoing challenge for ORRISSA and those who understand the importance of traditional agricultural knowledge.

Improving the seed and crop diversity:

Facilitating agricultural scientists to work with the tribal farmers is a challenge as very few scientists are willing to work with tribal farmers.

▼ Adivasi Seed Mothers at Sorisomala discuss the issues on their efforts on dry land rice conservation initiatives at the Annual Seed Fair, at Malkangiri block on 20.02.2013



Lesson Learnt

The traditional seed traits have the capacity to produce foods in the event of extreme climate conditions:

The local farm systems are efficient and their sustainability needs to be recognised. The crop diversity in the traditional family farms is resilient to the local environment. The small farmer's wisdom in managing these small farms has the capacity to grow food even in extreme climatic situations. The continuous engagements with women farmers and their families has ensured the important knowledge and practices are transferred among the young farmers who were earlier attracted to modern farming. The simple but efficient farm practices have demystified the concerns of investment, access to resources as well as ensuring sustainable food production in extreme climatic conditions.

Women are more knowledgeable about their local environment and food systems:

The role of women is critical in the family farms and community set up. The value of traditional agriculture is well grounded in the minds of the women farmers. They know the simplicity of harvesting food for the family across all seasons of the year. The resilient characters of various food species are efficiently managed by these women. They nurture the traditional local seed with care and affection.

Economies of Scale makes small holder farmers vulnerable:

The attraction to new things, the lure of attractive packages, and endorsement of the local government officials make it difficult for the farmer to negate modern agricultural practices. The financial back up by the banks, the subsidy linked with the finance mechanism, and promises by various market stakeholders make it difficult for the farmers not to choose the offered packages. However, to bring back the community focus on the traditional seeds and traditional farming wisdom, a focused community level approach is required. ORRISSA has found that by covering a handful of villages and bringing in small models where the small holder family produce food using local knowledge and resources is a helpful strategy in convincing larger numbers of farmers.

Conclusion

Trócaire's sustainable livelihood programme in Malkangiri applies a range of innovative methods to engaging with tribal farmers. Central to the success of the programme's work on engaging with tribal women is ensuring the dignity of traditional knowledge and is a key mechanism to sustain this effort at the community level and to inspire the tribal youth. Many innovative steps such as community level food festivals and seasonal assessment of free foods have helped to develop wider community understanding and appreciation of its natural habitats.

Millet is the key staple food of my family and it feeds us all through the year. This crop is resilient to change in climate conditions. Said by Radhika Sisa, Gangala Village

We get food and income from the forest. We feel more secure with the forest coming close to our village – Jamuna Kirsani, Seed Mother, Maleguda Village

Contributed by:



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