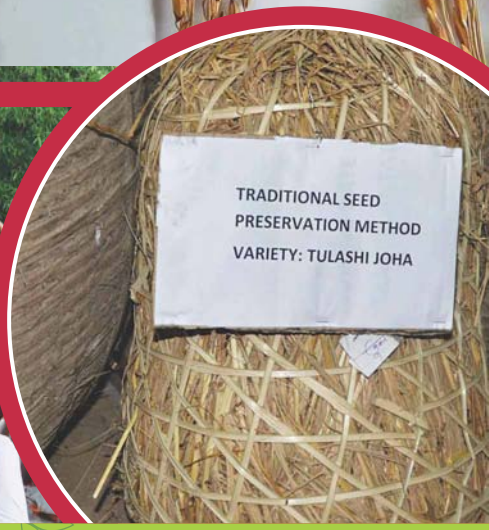
SGP The GEF Small Grants Programme



Biodiversity Conservation

"Restoring the Precious Indigenous Asset"
Promoting and Conserving the native varieties of paddy through Sustainable Farming

Govt. of India
Ministry of Environment, Forest & Climate Change

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CEE
Centre for Environment Education

FARMER : BIKU DEKA
VILLAGE : AMAYAPUR
VAR. GROWN : KUNKUNI JOHA
AREA : 4 BIGHA
SOWING DATE : 25/06/2014
TRANSPLANTATION : 27/07/2014

BACKGROUND

The project area is located in the central western part of Assam state between 91˚07'E and 91˚47'E Longitudes and 26˚N and 58˚5'N Latitude. The mean elevation is 89m above the mean sea level. The area falls under lower Brahmaputra Valley Agriculture Zone and experiences sub-tropical climate with warm and humid summers followed by cool and dry winters. The rainfall averages to 1500mm with 80% of humidity.

The negative impacts of modern day farming with the excessive use of fertilizers and chemical pesticides to sustain the cultivation of high yielding varieties (HYV) of paddy and the loss of native species has marked the beginning of this project "Promotion and Conservation of Native varieties of paddy through sustainable agricultural practice with special emphasis on increasing the income of grower families". Majority of the population in Barbhag, Barkhetry and Pub Nalbari development blocks are agrarian societies. The climate and the geographical terrain best suits for the cultivation of paddy. Varieties of paddy, native to this area, are not only rich in protein but also a few varieties are well known for their properties of preparation by just soaking them into the water at room temperature. However, since mid-1990's the farmers have been more inclined towards HYV crops which require high amount of water and nutrients. HYVs not being native to the environment gets infected by the local pests and diseases which further stimulate usage of chemicals in the form of fertilizers and pesticides. These chemicals result in contaminated water, soil and air via leaching, volatilization and run off. With this persistent practice the soil has lost its fertility, organic carbon content and moisture retention capacity. Besides these, the most critical concern is the rapid disappearance of the native paddy varieties resulting in the loss of biodiversity.

Name of the Organization
Lotus Progressive Centre,
Nalbari, Assam

Geographical Area
45 villages in Barbhag, Barkhetry and Pub Nalbari Blocks.

Project time period
Feb. 2014-July 2016

Funding
SGP Grants: ₹ 22,17,000/-
Co-finance: ₹ 23,43,605/-

GEF Thematic Area
Biodiversity Conservation

Number of Beneficiaries
Men: 2500 Farmers
Women: 3000 SHG Members

PROJECT GOAL

This project focused on conserving species of native paddy with the help of traditional and sustainable farming and to provide not only the ecological sustainability but also the economic and social sustenance through this practice.

PROJECT OBJECTIVES

- To conserve and promote the native varieties of paddy at farmer level.
- To promote sustainable agricultural practices and conserve the natural ecology of the site.
- To develop a community knowledge register on traditional agricultural practices.
- To explore marketing potential of the native paddy.

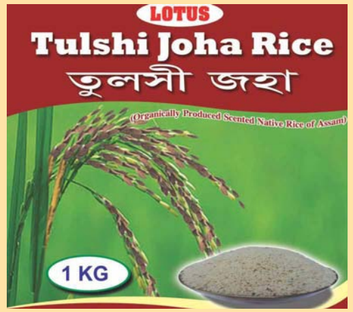
PROJECT ACTIVITIES

Awareness and Training:

Several seminars and workshops were organized to create awareness amongst farmers about the objective of the project. Various awareness programs were conducted to educate the farmers about the phenotypic character, need and importance of the native paddy along with the importance of biodiversity conservation and methods of sustainable agriculture which included bio-fertilizers and biological pest control methods, such as pheromone traps. Field level training on the techniques of farming such as System of Rice Intensification (SRI) was also given. An Agro-activist was created from each village that would help in sensitizing this issue with other co-farmers.

Exposure Visits:

A team of 7 members along with the farmers visited the Lokpanchayat at Sangamner, Maharashtra. They learned about seed bank, grain bank, SHG activities and replicating it at project site. Visits to Assam Agriculture University and Regional Rice Research Station, Titabor were also organized. Farmers interacted with the scientists and gathered information about the modern agricultural technologies. Another visit was organized to New Bongaigaon to learn about the issues regarding climate change.



Developing Seed Bank:

Development of a low cost seed bank of the indigenous varieties was an essential step taken which ensured the availability of the seeds to the farmers whenever required. Starting with 16,000 kilograms, the seed bank would help in preservation and multiplication of the native paddy varieties. By the end of firstquarter of 2016, the farmers started returning the Truth Fully Labeled seeds (TLS) to the seed bank.

Demonstration and Documentation:

Base line survey was carried out in 45 project villages and 37 varieties of native paddy were registered.Traditional methods of native paddy farming were documented from 100 project farmers. 300 plots were covered in the first half of the project with the varieties named Boka, Kunkuni Joha, Mainagiri Tengre, Phulgaj, Kalamdani,Nalborni, Tulsi Jaha, Baodhan, Kajeli, Thiagotha, Bordhan, Dubersigna, Bogajaha and few more. 12 truthfully labeled seeds (TLS) were documented from 4000 kg seeds. In the later half, 1200 plots covering 500 hectares of land were brought under sustainable farming. Demonstrations of bio-fertilizer were carried out in 20 project villages. Crops were treated with Azospirillum and Phosphatica. Demonstrations with the biological pest control were executed in 100 plots. Pheromone traps were used for the purpose which came out to be a successful attempt. The crop produced from these treated plots were almost double from the previous records. SRI methods were also demonstrated and production in the SRI plot increased by 30-40%.

Farmer 1:

Mr. Rajib Sarma had sown 9 kg of KunKuni Joha rice in 1.5 bigha (0.2 Hectare) of his land. He reaped 800 kg of rice from the entire land. Usually transplantation is done only once but he transplanted it twice which was a unique farming feature.

Farmer 2:

Mr. M. Kakati had sown 1 kg of black rice in 1 kotha (0.0268 Hectare) of unproductive land and reaped 80 kg of black rice and the rice seed produced by Mr. Kakoti is replicated in 16 bighas (2.1 Hectare) of land in 9 project villages. This indigenous rice variety is highly nutritious and native to Manipur.

Nutritional analysis of native varieties of paddy

Name of the vareity	Moisture %	Ash %	Protein %	Crude fat %	Starch %	Amylose %	Amylopectin %
Tulsi Joha	12.81	0.32	7.164	2.0	71.2	19.6	51.6
Kunkuni Joha	8.62	0.82	8.330	3.4	77.7	21.1	56.6
Bonni	8.83	0.76	6.664	3.2	78.6	6.3	72.3
Bordhan	10.05	0.58	6.162	2.8	78.9	24.0	54.9
Komal Chaol	5.88	0.98	6.830	1.2	70.5	13.3	57.2
Mainagiri	12.57	0.38	7.497	1.8	78.4	25.0	49.4
Kalamdani	9.36	0.62	6.331	1.8	68.7	27.1	41.6

Market linkage:

Exhibitions were organized in Project villages, Nalbari, Guwahati and Mumbai on different occasions with the prospect of bringing the seller and the buyer on a common platform. 4 Quintals of the native scented rice (KunKuni Joha) were sold within 2 days. 15 Quintals of the native rice were sold till July 2016.There were 11 varieties of packeted rice available at the selling venue. Registration number from Food Safety and Standard Authority of India (FSSAI) was obtained for the product. The Indian Institute of Technology (IIT) Guwahati helped in providing packaging techniques and low cost drying techniques.

Lotus Progressive Centre successfully initiated the new venture to form a Producer Cooperative Society known as 'Nabarun Agricultural Producer & Marketing Co-operative Society Ltd'. The society has already started marketing the native rice. It also trains the members of the society to manage the affairs on their own like maintaining the documents, such as cash book, ledger book and registering the transactions in an organized manner.

Other Income Generating Activities:

Various activities were carried out for strengthening Self Help Groups (SHG) and farmers' organization for further economic stability. SHGs were provided with goats, ducklings and poultry. Training camps were organized for knitting, sewing, fabric,cutting and scientific means of fisheries and livestock rearing. More than 180 SHGs participated in the training programs. This helped them generate extra income of about Rs.2500-3000/- per month to sustain their living. Veterinary services were also provided to the SHG members having ducks and poultry.

Geographical Indication Register:

Strong linkages were made with Assam Science Technology and Environment Council (ASTEC) to get the Boka chaol registered. It has jointly been applied for the registration by LPC and CEE-North East to GI Registry, Government of India.

Linkages:

Linkages were also established with Krishi Vigyan Kendra for technology support. Regional Low Rain-fed Rice Research Station for study of phenotypic characteristics, Assam Agricultural University for analysis of nutritional status of native rice and technical back up, Development of Research Communication and Services Centre (DRCSC) for training, State Bio-control Laboratory for promoting biological pest control methods, Regional Rice Research Station, Titabor for documentation of cultivating practice, Rural Technology Action Group (RuTAG), Indian Institute of Technology, Guwahati for developing vacuum packaging and low cost drying machine, Regional Agriculture Research Station, Shillongoni for learning of conservation method of native seeds, National Institute of Plant Health Management, Hyderabad for production of bio-control agent, and Amar Packaging Limited, Mumbai for packaging machine.

'LOTUS BARTA' the newsletter in Assamese is regularly published and is distributed to the farmers and the other stake-holders to show-case the traditional and sustainable farming. The activities of Lotus Progressive Centre and low cost seed bank are frequently published in English and local Assam dailies.

Project Achievements/Impacts

- More than 500 hectares of land was brought under sustainable agriculture with productive results through demonstration on over 1100 plots.
- Developed low-cost seed banks with 16000 kilograms capacity to maintain the quality seed of native varieties.
- Market linkages were successfully created with the technological aid of packaging and selling to the consumers. Pamphlets and the news coverage helped in sensitizing the issue.
- 200 tonnes of CO2 emission reduced by saving 75,000 litres of diesel through improved land use and enhanced cultivation in the shorter last crop cycle of 4 months duration.
- 1260 quintals of chemical fertilizers and 500 litres of chemical pesticides were avoided.
- Base-line survey was completed in 45 villages covering 1975 farmers and 37 native varieties were documented.
- Documentation of phenotypic characters of the native paddies along with the traditional methods of farming was done.
- More than 181 SHGs were formed where women equally participated in the activities. Gender equity and complete participation was ensured through 15 Farmers' Club.
- Institutional sustainability was achieved by the formation of Co-operative Society and linked it to bank facilities. Creation of an Agro-activist for each village was unique in its form.
- Income generating activities helped in economic sustenance of farmers' families with an additional income of Rs. 2500-3000/- per month which ultimately helped in their better participation.
- FSSAI Registration and attempt for GI Registration was an achievement in this project.
- Replication of the project is envisaged in Barpeta and Lakhimpur districts.

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