"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
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 variety of paddy at farmer level.
- To promote sustainable agricultural practices and conserve the natural ecology of the site.
- 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 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 pheromones. Field level training on 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 their own level. In the end of first quarter of 2016, the farmers started returning the Truth Fully Labeled seeds (TLS) to the seed bank.

- 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 Intigator 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. 30 plots were covered in the first half of the project with the varieties named Boka, Kunkuni Joha, Mainagiri Tengre, Phulgaj, Kalamdani/Nabalori, Tiele Jha, Raslan, Kajit, Thagatha, Bootas, Dugsering, Bogajaha and few more. 12 truthfully labeled seeds (TLS) were documented from 4000 kg seeds. In the latter half, 1200 plots covering 100 hectares of land were brought under sustainable farming. Demonstrations of hitoe fishing 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 than the previous records. SRI methods were also demonstrated and production in the SRI plot increased by 50-60%.

Developing seed bank:

**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 9 kg of KunKuni Joha rice.

**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. Kakati was replicated in 16 bighas (0.2 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:

<table>
<thead>
<tr>
<th>Name of the variety</th>
<th>Moisture %</th>
<th>Ash %</th>
<th>Protein %</th>
<th>Crude fat %</th>
<th>Starch %</th>
<th>Amylose %</th>
<th>Amyllopectin %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tulshi Joha Rice</td>
<td>12.85</td>
<td>1.12</td>
<td>7.164</td>
<td>2.0</td>
<td>71.2</td>
<td>19.6</td>
<td>55.6</td>
</tr>
<tr>
<td>Kunkuni Joha</td>
<td>6.12</td>
<td>0.82</td>
<td>6.131</td>
<td>3.4</td>
<td>77.7</td>
<td>21.1</td>
<td>56.6</td>
</tr>
<tr>
<td>Mainagiri</td>
<td>5.63</td>
<td>0.76</td>
<td>6.864</td>
<td>3.8</td>
<td>79.6</td>
<td>8.3</td>
<td>72.3</td>
</tr>
<tr>
<td>Boka</td>
<td>10.09</td>
<td>1.18</td>
<td>6.162</td>
<td>2.8</td>
<td>78.9</td>
<td>24.0</td>
<td>54.9</td>
</tr>
<tr>
<td>Raslan</td>
<td>5.88</td>
<td>0.98</td>
<td>6.810</td>
<td>1.2</td>
<td>70.5</td>
<td>13.3</td>
<td>57.2</td>
</tr>
<tr>
<td>Bootas</td>
<td>12.57</td>
<td>1.38</td>
<td>7.487</td>
<td>1.8</td>
<td>70.4</td>
<td>8.3</td>
<td>49.4</td>
</tr>
<tr>
<td>Bogajaha</td>
<td>9.16</td>
<td>1.26</td>
<td>6.331</td>
<td>1.8</td>
<td>68.7</td>
<td>27.1</td>
<td>41.6</td>
</tr>
<tr>
<td>Nabalori</td>
<td>11.10</td>
<td>1.59</td>
<td>7.790</td>
<td>1.3</td>
<td>71.2</td>
<td>19.6</td>
<td>55.6</td>
</tr>
</tbody>
</table>
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 news coverage helped in sensitizing the issue.
- 250 quintals of CO2 emission reduced by saving 75,000 liters 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 liters of chemical pesticides were avoided.
- Base-line survey was completed in 45 villages covering 1975 farmers and 37 native varieties were documented.
- 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.
- 15 Quintals of the native scented rice (KunKuni Joha) were sold within 2 days. 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.
- Geographical Indication Register:

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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, 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:

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