

Improving pulse biodiversity in rice fallow areas of tribal belts of Central and East Indian states to bring resilience in the farming practice, provide livelihood support and enhance nutritional level of the tribal population

Inception Workshop Report

17th-18th December 2019, Delhi

The ITPGR for food and agriculture through its benefit sharing fund invests directly in high impact projects supporting farmers in developing countries conserve crop diversity in their fields and globally help them and breeders adapt crops to our changing needs and demands.

Most of the world's food comes from four main crops – rice, wheat, maize and potatoes. However, local crops, not among the main four, are a major food source for hundreds of millions of people and have potential to provide nutrition to countless others. The Treaty helps maximize the use and breeding of all crops and promotes development and maintenance of diverse farming systems.

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) has opened a call for proposals for projects to be funded through its Benefit-sharing Fund (forth Cycle) to enable farmers in developing countries to use and conserve adapted plant varieties.

The overarching goal of the call for proposals under the fourth project cycle of the Benefit-sharing Fund is the conservation and use of adapted plant varieties that would lead to increased productivity, on-farm incomes, and nutrient-rich food, as well as enhanced resilience to production shocks and reduced adverse impacts to the environment.

The benefit-sharing fund for fourth cycle in India is to ensure sustainability of the efforts and focuses on capacity building, enhancing the exchange of information and making the appropriate technology available for the conservation and sustainable use of this diversity. This fund seeks to accelerate the conservation and use of plant genetic resources on a global scale through technology transfer, capacity building and innovative partnerships involving farmers, plant breeders, civil society and others stake holders.

“Projects selected for Benefit-sharing Fund support under this call for proposals will focus on responding to the needs of the poorest, most vulnerable segments of society, and those furthest behind in terms of development,” said Kent Nnadozie, Secretary of the International Treaty, who also noted that, “By responding to the needs of these segments of society, the projects are expected to also contribute towards the goals of the 2030 Agenda for Sustainable Development.”

Based on these above criteria, the benefit-sharing fund prioritises projects that

- 1) Documentation of traditional knowledge to conserve the varieties in collaboration with farmers and local communities, where a real opportunity exists for advances in crop diversity to improve nutrition and create more sustainable livelihoods.
- 2) Community Seed bank to strengthen the informal seed system and easily availability of seed to poorest of poor farmer and Increase food security, especially for local communities that stand to suffer most from the effects of climate change. The fund can and must help keep farmers ahead of the climate change curve and to produce seeds that will be adapted to thrive in much harsher conditions in the future.
- 3) Selection of varieties and the potential to be scaled up across agro-ecological zones, ensuring maximum positive impact and best use of current scientific data.



participant in inception workshop

An inception meeting was organized to launch the project and introduce its objectives to stakeholders including scientists, researchers, civil society organizations, policy makers, students etc. The meeting was organized at Indian Social Institute, New Delhi on December 17th and 18th, 2019.

The meeting was chaired by Shri Ajay Jha, Director at PAIRVI.

There were 16 stakeholder who participated, including Shri Soumya Dutta, Co-convener : South Asian People's Action on Climate Crisis SAPACC and Ashoka Fellow, Ms. Sonali Chauhan,

Consultant and Facilitator, PhD Fellow from Centre for Urban Ecology and Sustainability (CUES). Civil Society Organization representatives and Agriculture Students were present there. (List of participants attached as: Annexure B)

The inaugural session began with welcome address by Shri Ajay Jha, Director at PAIRVI and sharing of views on the background of the Treaty's role and the importance of benefit sharing fund for Fourth Cycle. The participants were informed that PAIRVI is running this above mentioned project on the field since September, 2019 in five states namely Bihar, Jharkhand, Chhattisgarh, Madhaya Pradesh, West Bengal.

This followed a presentation by Ajay Jha, highlighting the overview and conceptual framework of the project, progress made and future plans. He informed the participants about how we can increase the biodiversity of pulses in tribal belt in rice fallow areas in central and east India. It has two main objectives:

a) Pulses are an important source of proteins to the vegetarian and socio-economically weaker sections of the population. The reduced per capita availability of protein has decreased causing Protein-Energy-Malnutrition (PEM) especially among children below the age of five years in India. Per capita availability of pulses have reduced from 60 g to 41.7 g/ person/ day in the past 60 years India is deficit in pulses and imports 2-3 million ton to meet the domestic pulses demand

b) The selection of pulses biodiversity for cultivation in rice fallow areas of central and east Indian's tribal rich belt offer opportunities to increase biodiversity of pulses and for an additional crop for them utilizing the moisture that the soil retains post monsoon and thereby offers food and nutritional security.

He also emphasized on the challenges to fulfill these objectives. The project activities will be implemented in ways to strengthen the documentation of traditional knowledge related to biodiversity in pulses, oilseed, millets, and vegetables in the selected area of the five states including conserving, selection, field trial and multiplying traditional varieties/genetic diversity combined with introduction of new varieties/landraces.

This will help strengthen local seed systems due to increased availability of pulses, millet and oilseed diversity and will also enhance environmental resilience and improve security of food systems in the face of climate change and Protein-Energy-Malnutrition (PEM). He further emphasized on the importance of studying the role of social and cultural barriers in farmers adapting to new varieties and ways to strengthen links between national and community seed banks, which contribute significantly to climate adaptation and conservation of crop diversity.

The major objectives and outcomes of the project were presented, which were as follows

Objectives:

- To ensure that rural communities are able to maintain and adapt genetic diversity for traditional varieties of pulses, oilseed, millet and vegetables.
- Introduction of traditional and new varieties/landraces.
- Set up community seed bank
- Increase the pulses and oilseed biodiversity around the year.
- Understand social and cultural barriers to adoption of adapted varieties and promote new adapted plant genetic resources.
- Selection of pulses and oilseed varieties to build environmental resilience and security of production systems.
- Identified the role of women to conserve, maintain and adapt genetic diversity for traditional varieties of pulses, oilseed, millet and vegetables.
- Strengthen local seed systems to provide farmers with increased access to pulses diversity for the selection of better adapted varieties.
- To give exposure to farmers through farmers exchange visits
- Understand Need and vulnerabilities to the varieties
- GIS Mapping of the varieties

Outcomes:

- Increase pulses and oilseed biodiversity validated would be used by farmers for improving Protein-Energy-Malnutrition (PEM).
- Participatory plant variety selection programmes to use pulses and oilseed biodiversity to increase varieties of pulses and oilseed.
- GIS mapping and Community seed banks established at each project site to facilitate local access to PGR (Plant Genetic Resources).
- The identified role of women in the tribal area's agriculture activities will improve the knowledge gap on gender in agriculture.
- Increase pulses and oilseed biodiversity and community seed bank support to livelihood security to the tribal population.

It was informed by Mr. Ajay Jha during the briefing about commitment of the project to bring resilience in the farming practice, provide livelihood support and enhance nutritional level of the tribal population.

The project is in harmony with the International Treaty & addresses the goals of the Global Plan of Action for the Conservation and Sustainable Utilization of PGRFA, and the Global Strategy for Plant Conservation of the Convention on Biological Diversity (CBD). The rights of farmers and rural communities over PGR will be strengthened. This work will strengthen support to the CG system CGIAR (formerly the Consultative Group for

International Agricultural Research) and to International Agricultural Research Centres by demonstrating the value of genetic diversity to food security. This project will help to achieve the UN Sustainable Development Goals through strengthening the local system of conservation and protection of agriculture genetic resources and tackle the extreme poverty and hunger.

Ms. Sonali Chouhan explained the importance of the participatory system, documentation of traditional Knowledge.

She described four main parts and tools under Documentation of Indigenous Knowledge on Local Varieties and Local Seed System:

Main Parts:

- Understand change in agrarian practices
- Identify custodian farmers
- Identify seed networks (gap and problems)
- Make local knowledge more accessible

Main Tool:

- Household interviews
- Key-informant interviews
- Focus group discussions (FGD)
- Community observations

Expected outcomes should be following:

- Catalogue of local germplasm (special features)/ agrobiodiversity
- Document cultural and religious practices associated with crops
- Detailed description of rare crop variety/ traditional variety
- Short stories of custodian farmers

Concept of Community Seed Bank:

- Zero- energy seed bank
- Managed, maintained and monitored by local community member

- Enhance local germplasm availability
- Promote exchange of knowledge
- Creates a database of local knowledge

Tools of community seed bank

- Awareness workshops
- Training programs
- Seed diversity fairs

She defined the Field Experiments: Participatory Selection of Varieties among the farmers

- A collaborative process between scientists and farmers
- A two-step process (mother trials and baby trials)
- Agronomic traits
 - Seedling vigor (for direct-seeded trials)
 - Flowering date
 - Plant height at maturity
 - Ratings for damage by important pests or diseases
 - Date of maturity
 - Grain yield
 - Straw yield
- Preferential Analysis
- Farmers are the decision makers
- Mr. Vikas Arora define the concept of community seed bank and management of seed bank. He explain Informal Network -1.Donation basis -Seed transaction usually take place along familial or kinship lines , But seed exchanged between neighbour and between villages also happens. He specified that women primarily select the seeds before harvest, while men do this selection later. The example of Formal Network -1. Seed Purchase ; 2. Research Centre, He described the Community seed bank management and described A-Proper Documentation, B-Proper Management, C-Proper Labelling and 4

Books need to be maintained for proper documentation and management of community seed bank:

1. Registration book
2. Management book or card
3. Accession appointment dairy
4. Seed Movement book

Mr. Soumya Dutta explained the Need and Vulnerability assessment. All the partners planned the activities for the next one year.

Farmers from different states were trying to correlated with the actual farm reality and described the farm reality one by one. During the discussions all the farmers welcomed the need to increase pulses and oil seed varieties around the year not limited to rice fallow area to enhance nutritional level of the tribal population which can benefit to farmers in the tribal belt. An example of Central India was also cited, to highlight the importance of increase pulses biodiversity in kharif season where farmers replace rice with soyabean. The pulses and oilseed varieties at the same time would allow to enhance protein based nutritional level.

The concept notes were distributed both in Hindi and English Language. (Annexure –B)
