

Using rice genetic diversity to support farmers' adaptation to climate change for sustainable production and improved livelihood in India

Inception meeting

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

1) Accelerate on-farm management and

conservation 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) 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) Represent innovative partnerships between research centres, farmers, civil society , and public/private sector leaders at all level and
- 4) Have the potential to be scaled up across agro-ecological zones, ensuring maximum positive impact and best use of current scientific data.

An inception meeting was organized to launch the project and introduce its objectives to stakeholders including scientists, researchers, civil society organisations, policy makers, students etc. The meeting was organized at the National Academy of Agricultural Sciences, New Delhi on October 1, 2012 .

to launch the Gene Campaign two project on: “Using rice genetic diversity to support farmers’ adaptation to climate change for sustainable production and improved livelihoods in India”

The inaugural session of the meeting was chaired by Dr. Suman Sahai, Chairperson, Gene Campaign and Dr. P. Mathur, South Asian Coordinator for Bioversity International. Dr. R.S. Paroda , Chairman TAAS and Dr. Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board were invited as special guests. There were 26 scientists who participated, including Dr. Arvind Kumar, DDG (Education, ICAR), Dr. J.S. Sandhu, ADG (Seeds), ICAR; Dr. S. Mauria, ADG (IP & TM) ICAR, Dr. N.N. Singh, Consultant APAARI, Dr. Bhag Mal, Consultant APAARI. The meeting was also attended by Scientific Experts from PVA, Civil Society Organisation representatives and Agriculture Students (list of participants attached as : Annexure A).

The inaugural session began with welcome address by Bioversity International representative and sharing of views on the background of the Treaty’s role and the importance of benefit sharing fund. The participants were informed that Gene



Campaign had the above mentioned project out of 400 project proposals submitted globally.

This followed a presentation by Dr. Sahai, highlighting the overview and conceptual framework of the project, progress made and future plans. During her talk she informed the participants about the state of agriculture productivity in the Indo-Gangetic Plains, which is one of the prime food producing region of our country. She also emphasized on the challenges and adaptation strategies farmers of this region will need to focus on, in adapting to future climate change adversities. The project activities will be implemented in ways to strengthen the farmers adaptation strategies including conserving and multiplying traditional rice genetic diversity, combined with introduction of new varieties/landraces. This will help strengthen local seed systems due to increased availability of rice diversity and will also enhance environmental resilience and improve security of food systems in the face of climate change. She 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

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Objectives:

- To ensure that rural communities are able to maintain and adapt traditional rice genetic diversity
- Introduction of new varieties/landraces, conserved in ex situ collections
- Build environmental resilience and security of production systems in the face of climate change.
- Strengthen local seed systems to provide farmers with increased access to rice diversity for the selection of better adapted varieties to climate change adaptation.
- Strengthen links between national and community gene banks

- Understand social and cultural barriers to adoption of adapted varieties and promote new adapted plant genetic resources.
- Understand the role of national and local seed systems in enabling adaptation under changing production constraints
- Strengthen capacity of local institutions and farmers for Climate adaptation and conservation of crop diversity
- Set up community based gene banks and information dissemination systems

Outcomes:

- ❖ Adaptive crop diversity validated would be used by farmers for climate risks adaptation.
- ❖ Participatory plant variety selection programmes to use climate adaptive diversity in marginal environments.
- ❖ Easy communication tools developed to allow researchers and farmers to access information about crop genetic diversity and suitability for climate adaptation.
- ❖ Developing and mainstreaming database to improve access to information on local genetic diversity along with associated climate information.
- ❖ Community seed banks established at each project site to facilitate local access to PGR.
- ❖ Community-based seed production organized for adapted materials.

It was informed by Dr. Sahai during the briefing about commitment of the project towards farmer and community rights, biodiversity conservation and access and benefit sharing made in national legislation like the Protection of Plant Varieties and Farmers Rights (PPV-FR) Act, the Biological Diversity Act, the Forest Act and the Forest (Conservation) Act.

She further informed the participants, the project activities will advance the goals of the four relevant missions enunciated in India's National Action Plan on Climate Change (NAPCC), the National Mission for Sustaining the Himalayan Ecosystem, National

Mission for a “Green India”, National Mission for Sustainable Agriculture, and National Mission on Strategic Knowledge for Climate Change, all of which aim conservation and sustainable use of biodiversity. There would be other beneficial outcomes of the project presented, that would support national policies and plans. Dr Sahai said Gene Campaign’s collection of rice diversity was being put to use to help farmers from all regions take advantage of it, if the material was adapted to their area.

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 and to International Agricultural Research Centres by demonstrating the value of genetic diversity to food security. The model of the Zero Energy Gene-Seed Bank developed by Gene Campaign which is labour intensive rather than energy intensive is an approach that can be followed in different centres of genetic diversity.

During the discussions experts welcomed the urgent need to evaluate rice germplasm present in gene banks for assessing their multi-stress characters, which can benefit farmers in mitigating climatic fluctuations and adversities like drought, flooding, water logging, salt stress, etc. An example of Eastern India was also cited, to highlight the importance of sharing more diversity with farmers, where farmers can cultivate short duration varieties to accommodate wheat in the cropping rice-wheat pattern, which would allow them to harvest two crops in a year than just long duration rice which they are presently practicing.

The event was covered and broadcast by the national television channel ‘Doordarshan’, (clip enclosed).