

## COMMUNITY SEED SAVING FOR FOOD SECURITY

### BACKGROUND

The Green Revolution shifted the focus of Indian agriculture away from biodiversity to increased yield. With the modernization of agriculture, agricultural practices and cropping patterns changed and genetic diversity started getting lost. As a result, the genetic base of traditional seed varieties reduced considerably and several traditional seed varieties are now facing extinction. These varieties were inherently more compatible with local farming conditions, economically practical and environmentally sustainable than the high yielding varieties being used today. They were also more resistant to pests, diseases, droughts, and floods.

A Demonstration seed saving unit was set up by Bio Resources Development Centre (BRDC), at Laitmynsaw Experimental farm, Upper Shillong, East Khasi Hills District whereby Eighty (80) local, indigenous, heirloom & exotic varieties of seed crops were conserved in-situ. A pilot seed conservation unit was also initiated in Cham Cham Village, East Jaintia Hills District in /collaboration with MSRLS in which the Village Organizations (VOs) and SHGs were actively involved. 7 crops were prioritized for seed saving based on the agro-climatic zone, local variety which has a market value was selected



Picture 1: Community involvement a major role for success story: Active participation of the SHGs and Village organization at the Cham Cham village , community seed bank for a sustainable and operational model

### PROBLEM STATEMENT AND BASELINE INDICATORS

Climatic conditions in Meghalaya permit a large variety of agricultural and horticultural crops but due to changing land use patterns and the introduction of high-yielding varieties, the local indigenous germplasm of various crop species is slowly disappearing. Therefore, there is a need to establish a comprehensive system that ensures the collection and conservation of diverse indigenous, heirloom and local plant seeds of Meghalaya and promotes sustainable agriculture practices from farm to plate.

Community seed banks will help smallholders to preserve seed of the most adapted varieties for the region. The community seed bank will play a very important role in maintaining the availability of quality seed. Seed diversity will be enhanced, and additional income will be generated when seeds/crops are exchanged or sold to neighbouring farmers/communities. Diversification of crops and varieties is also highly important in terms of smallholder's food security because it reduces the risk of total production failures and contributes in strengthening the communities' resilience.

## **BEST PRACTICES:**

Best practices on Traditional seed saving method suited for this region was incorporated with scientifically proven seed saving techniques to developed standard seed saving practices for targeted crop

- **Integration with sustainable green technologies:** Seed saving techniques was integrated with sustainable green technologies including compost making, green manuring, preparation of bio inputs (vermi wash, OGP and Fish Meal extract), Integrated pest management, application/usage of biofertilizer & bio pesticide
- **Selection of healthy, disease-free plants for seed saving** to ensure quality seed
- **Isolation techniques:** for prevention of cross-pollination by isolating different varieties of the same species or using hand-pollination techniques
- **Harvesting season:** Knowledge of harvesting season for seeds saving which will allow seeds to fully mature on the plant before harvesting. This ensures maximum viability and vigour
- **Community engagement:** Involving the community in seed-saving initiatives to share knowledge, resources, and seeds.
- **Storage conditions:** Seeds were stored in a cool, dry, and dark place in airtight containers. Some seeds were also stored at refrigeration or freezing temperatures for longer shelf life.
- **Proper drying Methods:** Seeds were thoroughly dried to prevent mould and rot. air-drying in a well-ventilated area is usually the best method
- **Labelling & Documentation:** Clearly labelling and documenting each seed variety with important information such as species, variety, and date of collection was an important step in seed conservation.
- **Seed Viability Testing:** Periodically testing the viability of stored seeds to ensure they are viable over time.

## **BENEFICIARIES AND IMPACT:**

Key beneficiaries under this initiative includes but not limited to Individuals, village organization, farming community, SHGs practicing organic farming. Some of the major impact of the initiatives includes

- **Increased crop diversity:** Promotion in cultivation and conservation of the local/ indigenous/heirloom crop varieties has safeguarded the traditional varieties thus leading to an increase in the crop diversity
- **Increased in yield:** Integration of sustainable green technologies has resulted in an increase in crop yield of about 10-20 % and also enabling the farming community to be less dependent on chemical inputs and move towards organic farming practices
- **Progress towards Organic farming:** Three Local Groups (LGs) were registered from Cham Cham village under PGS-Organic Certification programme covering an area of 1.73 Ha thus boosting Organic farming in the State

- **Climate Resilience:** The local /indigenous/ heirloom seeds were more adaptable and resilient to pest, disease and varying environmental conditions
- **Prolonged Shelf Life:** With standard seed saving practices for targeted crops and proper storage the shelf life of the seed crops was prolonged
- **Revival of loss/ endangered seed crops:** Due to the emergence of high yielding varieties the local/heirloom/ indigenous varieties are declining thus in this project the local varieties of Meghalaya were promoted for cultivation like the Sohmynten Pnar (Chilli), Pathaw Shimon (Pumpkin), Sohkhia Khasi (Cucumber), and Soh saw Laitkynsew (Tomato) which would have otherwise led to varietal loss or a decline in production.
- **Economic Impact:** Additional income was generated through the marketing of the seeds saved and reduced dependency on external seed sources

#### **KEY LEARNING AND TAKEAWAYS:**

- Community involvement plays a vital role in the seed saving initiative. Active participation of the SHGs and Village organization at the Cham Cham Village community seed bank was a major contributor to the success of this initiative
- Capacity building programme has armed the community with knowledge in the area of seed saving techniques, seed viability assessment, seed storage methods, importance of seed moisture content and humidity, seed grading, maintaining seed purity and quality, packaging and data recording.
- Although the farming practice in the village is organic by default, but induction into the organic certification programme (PGS-India) will add more value to their crop produce
- During the initial stage of the project both the local and the exotic varieties was tried and tested for survival and adaptability and it was found that the local /indigenous/ heirloom seeds was more adaptable and resistant to pest and disease when compared to the exotic varieties brought from other States
- Market linkage is an important aspect, linking the seed banks with farmer groups/ producer, Government Departments etc., for generating the market for the surplus seeds available in the seed banks to extend financial support to the farmers and seed banks.

This initiative has a potential for upscaling and implementation in other Districts of the State based on the different agro-climatic conditions