

COMMUNITY SEED SAVING FOR FOOD SECURITY

BACKGROUND

The Green Revolution brought higher crop yields to Indian agriculture, but it also led to a decline of indigenous genetic diversity. Traditional seed varieties, naturally suited to local conditions, began disappearing as modern, high-yield crops took over. These indigenous seeds were more resilient to pests, diseases, droughts, and floods, making them vital for sustainable farming.

Recognizing this urgent challenge, the **Bio Resources Development Centre (BRDC)** took a decisive step to conserve and revive traditional seeds. A **Demonstration Seed Saving Unit** was established at **Laitmysaw Experimental Farm, Upper Shillong**, successfully preserving **90 indigenous, heirloom and exotic seed varieties**. But the real impact came when the effort expanded to the grassroots level. In **Cham Cham Village, East Jaintia Hills**, a **pilot seed conservation unit** was launched in collaboration with **MSRLS**. By actively involving **Village Organizations (VOs) and Self-Help Groups (SHGs)**, the initiative empowered local farmers to become custodians of their own seed heritage. Seven key crops, selected for their market value and suitability to local agro-climatic conditions, were prioritized for conservation.

This effort wasn't just about saving seeds-it was about restoring a lost tradition, strengthening local farming systems, and ensuring food security for future generations.

PROBLEM STATEMENT AND BASELINE INDICATORS

Meghalaya's diverse climatic conditions make it ideal for cultivating varieties of crops, yet changing land-use patterns and the dominance of high-yielding varieties have caused indigenous germplasm to dwindle. Without intervention, local crop diversity would continue to decline, leaving farmers dependent on costly, input-intensive seeds that may not thrive in their environment.

To combat this, community seed banks were introduced as a long-term solution. These seed banks will enable smallholder farmers to **preserve, exchange, and reintroduce local seed varieties**, ensuring their continued availability. By maintaining seed diversity, farmers gain access to **locally adapted, high-quality seeds** while reducing the risk of total crop failure. Additionally, surplus seeds can be sold, generating extra income and fostering self-reliance. This approach not only strengthens food security but also reintroducing climate resilience crops, ensuring that communities can withstand environmental challenges.

BEST PRACTICES

The success of the initiative depended on **integrating traditional seed-saving knowledge with scientific techniques**, creating a robust and effective seed conservation system. Key best practices included:

- **Blending Indigenous and Scientific Methods:** Traditional seed-saving techniques were refined using proven scientific methods to enhance seed viability and longevity.
- **Sustainable Green Technologies:** The initiative incorporated composting, green manuring, vermish application, biofertilizers, biopesticides, and integrated pest management to strengthen organic farming practices.
- **Selection of High-Quality Seeds:** Only healthy, disease-free plants were chosen for seed saving to ensure superior quality.
- **Preventing Cross-Pollination:** Isolation techniques, including spatial separation and hand pollination, were implemented to maintain genetic purity.

- **Optimal Harvesting:** Farmers were trained to let seeds fully mature on the plant before harvesting to ensure maximum viability.
- **Community Involvement:** Seed-saving became a **collaborative effort**, with farmers actively sharing seeds, knowledge, and resources.
- **Proper Storage Techniques:** Seeds were stored in cool, dry, airtight containers, with some kept in refrigerated conditions for prolonged shelf life.
- **Meticulous Documentation:** Each seed variety was clearly labeled and recorded to maintain traceability.
- **Regular Viability Testing:** Periodic testing ensured that stored seeds remained productive over time.

By following these best practices, farmers were equipped with the tools to not only conserve seeds but also **improve soil health, reduce chemical dependency, and transition towards sustainable farming.**

BENEFICIARIES AND IMPACT

This initiative directly benefited **local farmers, Village Organizations (VOs), and SHGs engaged in organic farming.** In **Cham Cham Village, 29 SHGs under two VOs** actively participated, leading to remarkable results:

- **Increased Crop Diversity:** The cultivation and conservation of indigenous and heirloom crops protected traditional seed varieties from extinction, restoring diversity in local farmlands.
- **Higher Yields:** The integration of sustainable farming techniques resulted in a **10-20% increase in crop yield**, reducing farmers' dependency on chemical inputs.
- **Organic Farming Advancement:** Three Local Groups (LGs) from Cham Cham Village registered under the **PGS-Organic Certification Program**, covering **1.73 hectares**, further boosting Meghalaya's organic farming movement.
- **Climate Resilience:** Traditional seeds proved **more adaptable to pests, diseases, and extreme weather conditions**, strengthening the region's agricultural resilience.
- **Prolonged Seed Shelf Life:** Standardized seed-saving techniques ensured longer seed viability, reducing the need for frequent replacements.
- **Revival of Endangered Crops:** Indigenous varieties like **SohmynkenPnar (Chilli), Pathaw Shimon (Pumpkin), Sohkhia Khasi (Cucumber), and Soh Saw Laitkynsew (Tomato)** were revived, preventing their loss.
- **Economic Benefits:** The **Cham Cham Seed Saving Unit** saved **1,600 kg of seeds**, generating an additional income of **₹1,50,000 (2023-2024)** through seed sales, reducing reliance on external seed sources.

The initiative has not only safeguarded seed diversity but also **empowered farming communities to take control of their agricultural future.**

KEY LEARNINGS AND TAKEAWAYS

This initiative demonstrated that **community participation is key** to the success of seed-saving programs. The active involvement of **SHGs and VOs** in Cham Cham Village was a driving force behind this achievement.

Through **capacity-building programs**, farmers gained essential knowledge on **seed-saving techniques, storage methods, viability testing, seed purity, grading, and data management**. Although many farmers were already practicing organic farming by default, their **induction into the PGS-India Organic Certification Program** added value to their produce, increasing market potential.

Another key insight was that **indigenous seeds outperformed exotic varieties** in local conditions. Trials showed that locally adapted seeds were **more resistant to pests and diseases**, making them the superior choice for sustainable farming.

Market linkage was crucial. Establishing connections between **seed banks, farmer groups, and government agencies** ensured that surplus seeds found a reliable market, generating financial support for farmers and sustaining the initiative.

Encouraged by the success of the **Cham Cham Seed Saving Unit**, the model has now been **replicated in six other districts across nine villages in Meghalaya**. With its proven impact, there is significant potential to **scale up seed-saving efforts across the entire state**, tailored to different agro-climatic conditions.

CONCLUSION

What began as a response to the loss of traditional seeds has evolved into a powerful **movement for self-sufficiency and sustainability**. By **reconnecting farmers with their agricultural heritage**, this initiative is not just about preserving seeds—it is about securing a future where communities **thrive, adapt, and prosper** in harmony with nature.

With every seed saved, we are planting the foundation for a **resilient and food-secure Meghalaya**.



Daily activities at the Seed Saving Unit Cham Cham Village