

# Need for Community Initiatives for Conserving Invaluable Mango Diversity of Malihabad

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India is well recognized worldwide for being richest centre of mango (*Mangifera indica*) diversity. Malihabad is one of the important places in the country where hundreds of varieties were evolved and being conserved by the farmers over the generations. Orchards in Malihabad and its vicinity are rich in unique mango varieties and features ecological, genetic, economic, scientific and social values and also benefits to the society. Growing consensus that loss in genetic diversity is a continuous process due to urbanization and pressure of commercialized varieties. Genetic erosion is among the most serious foremost hazards to the global food system including mango. Primarily, habitat conversion (including the replacement of conventional varieties by commercialized ones) causes diversity loss. Replacement of a large number of non commercial varieties with a few, high-yielding varieties like Dashehari, Lucknow Safeda is not uncommon in Malihabad.

Among the various options, conservation of diversity on farmers' fields, also called on-farm conservation, has recently received considerable attention by the international community. Being impractical to conserve all potentially useful genes *ex situ*, due to cost and technical reasons, *in situ* conservation is gradually gaining acceptance. Consequently, on-farm conservation, is becoming more attractive because of its dynamic features, its capacity to maintain crop diversity and the indigenous knowledge associated with it, and the opportunity it opens up to link conservation and rural development are the typical preferred features of on-farm conservation. Severe socio-economic problems of poverty-ridden custodians of genetic wealth are well known. On-farm conservation extends a unique opportunity to link

up conservation objectives with the poverty and farmers' participation in conservation initiatives takes place if these activities support their livelihood strategies. There is a need to identify the kinds of varieties that can/cannot survive in the course of economic development interventions.

Considering the importance of on-farm conservation, Society for Conservation of Mango Diversity (SCMD) came into existence with the initiatives of community members to conserve and promote hitherto lesser known varieties of mango. SCMD is community based organization committed to conserve and promote mango varieties in Malihabad with participation of farmers communities. The organization has a vital role in on-farm conservation of mango varieties in Malihabad. Since its inception SCMD has been working consistently to promote diversity conservation activities in Kasmandi Kalan, Gopramau, Sarsanda and Mohammad Nagar Talukedari. SCMD adopts value based philosophy while practicing conservation and promotion of mango varieties. Farmers prefer to cultivate varieties which are commercially viable for a longer period. SCMD tried to analyse the low price associated with the non commercial varieties and demonstrated commercialization of lesser known mango varieties by linking them with suitable markets besides educating farmers about technological advancements in harvesting, packaging and marketing. SCMD made multidirectional efforts for on farm conservation of the mango diversity available in the area.

**On-Farm Conversation:** Instead of planting the grafts in field genebank in government organizations, varieties are planted in the community orchards. SCMD has achieved significant





Custodian farmer of Malihabad getting recognition by DDG(HS) at New Delhi



Display of diversity by the community farmers of Malihabad



37 farmers varieties were submitted for registration with PPV&FRA, New Delhi



Display of diversity by the community farmers of Malihabad



Diversity fair organized at community level



Diversity fair organized by Kasmandi Kalan





Display of diversity from Malihabad at Cochin



Diversity fair organized at Kasmanid Kalan



First display by the community farmers of mango varieties visited by SAUs staff and several international organization staff in 2010



Farmers observing diversity display



Participation in diversity fair organized in a mango orchard, outside the community





Planting community variety diversity garden outside the community

participation from local communities to realize the goal of on-farm conservation of mango diversity. Thousands of grafted plants were prepared for planting varieties in the orchards of communities where they are not common.

**Genetic Diversity Documentation: Farmers**

**Catalogue:** SCMD consistently carried out assessment of various traditional and commercial mango varieties documenting information on each variety and its feature. A unique Catalogue has been prepared by SCMD which provides comprehensive information and picture of different mango varieties of the communities and not available commercially. Farmers' Catalogue has been of immense help to farmers to gain mango plantation status of different varieties along with data as authenticated by SCMD members. SCMD has adopted participatory approach and community members were specially trained to prepare farmers friendly description and other information of genetic diversity for each plant seedling. Farmers of communities were also trained on different aspects of using and benefiting from Farmers Catalogue by scientists from CISH. SCMD has been, so far, successful in documenting and sharing knowledge on different mango varieties to farmers through effective media of communication. Community catalogue knowledge not just

provides information on older mango varieties and production methods but also innovative methods to select the best plantation materials to improve value of mango crop. Cataloguing genetic diversity information is a comprehensive knowledge pool to strengthen knowledge on traditional varieties. This, however, was materialized by SCMD members only with the active participation of farmers by sharing their knowledge and experience.

**Community Mobilization:** The society has successfully mobilized different farmers as well as scientific communities from across the country inviting huge mass attention. It holds mango diversity fairs periodically to create awareness and cross learning among farmers as well as general public. In pursuit of successful mobilization of communities, SCMD organizes participatory interactions for educating farmers, general public, students etc about the varieties and implementation of advanced practices in their conversation.

**Custodians of Mango Diversity:** SCMD has consistently assessed the impact of communities' participation in conservation of mango varieties. Active participation of members of the communities with farmers having a large number varieties being cultivated for several generations helped in identification of custodian farmers. SCMD members maintain over 3500 mango varieties in the orchards of four communities. A Single orchard comprises multiple mango varieties ranging from 1 to 150 in an orchard. Several varieties are grafts of heirloom varieties and majority are the seedlings accounting for large chunk of the diversity.

**Conversation of Diversity:** Conservation of seedling mango varieties ensures conservation of a diversity associated with non commercial varieties. A good number of varieties is existing in orchards of Gopramau (1303), Sarasanda (1002), Kasmandi Kalan (723), Md Nagar Talukedari (492). The number includes grafted and seedling varieties both. Participation of local communities



from mango farming fraternity has been at the centre of mango diversity conservation for the last 5 years. SCMD members and non-members with the help of CISH and Bioersivity scientists have developed effective community based action plan for conservation of mango diversity in Malihabad. Members of SCMD and local communities have consistently realized that when put in effectively concerted efforts can go a long way in conservation of mango diversity.

**Consolidation of Lesser Known Mango Varieties:**

Rare mango varieties generally fetch little interest from marketers in whole sale mandi due to their low volume and farmers do not find it economically viable to cultivate such varieties. Consolidation of rare mango varieties help fetch better rates for the varieties by meeting large-volume requirements of marketing entities.

**Multiplication of Lesser Known Varieties:** The lesser known varieties are grown by few farmers at a small scale. These include varieties like Gilas, Malihabad Safeda, Abdul Khalid Khan, Acharwala, Amin Khurd, Fakira, Fakirwala, Gilas, Gola, Gola Bhadaiya, Gullu, Hathizhool, Heere Hayat, Intaquab, Jafarbagh, Jauhari, Kalua, Khasul Khas, Muntkhab, Nawab Pasand, Nayab, Ramkela, Benajir Sandila, Taimuria etc. among others. These varieties were evolved through seedling selection by farmers. Several other rare varieties are also being cultivated by few farmers at very small scale level for conservation and personal consumption purposes.

**Custodian Farmers:** Custodian Farmers are those members who have been a vital link between the mango varieties and mango diversity conservation efforts in Malihabaad. These farmers have been consistently making effort for conserving a good number of mango varieties. SCMD chose these farmers who consistently sharing their vision of mango diversity conservation with Society for Conservation of Mango Diversity (SCMD). Three associated farmers from Custodian category are Mr Chhotey Lal, Mr. Raja Ram and Mr. Nawab Hasan who have vast experience of cultivating different

mango varieties in their orchards. Keeping in view their remarkable contribution to the mango diversity conservation objective of SCMD these were invited to the "Workshop on Custodian Farmers of Agricultural Biodiversity" on February 11 and 12 at New Delhi together with other custodian farmers from of 22 tropical fruits conservation communities from India, Indonesia, Malaysia, Nepal and Thailand to exchange mutual challenges and techniques relating to efficient conservation of mango diversity across the region.

**Community Nurseries of Farmers Varieties:** The Society works in close association with mango nurseries to multiply mango varieties through grafting. SCMD executes consistently action plans to grow mango varieties through multiplication right at community level. Community Nurseries maintain various non-commercial mango varieties which are not easily available for farmers for cultivation. The traditional varieties can also be availed by outsiders willing to cultivate traditional mango varieties in their orchards.

**Mango Diversity Orchards:** SCMD members along with farmers' communities have put in concerted efforts to select about 51 high potential varieties. These varieties have been planted at different orchards in Sarsanda and Gopramau villages. These orchard have vast range of mango varieties (over 50 varieties) comprising several highly sensitive mango varieties some of which might be on the verge of extinction if not protected efficiently.

**Mango Diversity Fair: Connecting Farmers to Markets:** SCMD has put in efforts to bridge the gap of communication between the masses, farming and scientific communities by organizing Mango Diversity Fairs at frequent intervals. SCMD mango fairs and meant for sharing knowledge and fun. The Mango Diversity Fairs are organized across different parts of the country. So far, SCMD has organized 15 Mango Diversity Fairs for intents and purposes of inviting huge public interest besides providing an efficient platform for farmers to exchange mango germplasm. First Mango Diversity Fair at Kasmandi Kalan was organized by the





community members on June 18, 2011 where mango varieties from different orchards of the community were put to exhibition. There after several diversity display were organized by SCMD and at many places the number of varieties exceeded 600 in numbers. The diversity fairs were organized at New Delhi, Dehradun, Bhubneshwer, Lucknow and Cochin.

**Multidimensional Training:** SCMD has helped imparting trainings for development of mango catalogue, successful organization of Mango Diversity Fairs besides offering value addition practices to the products. SCMD members coupled

with the guidance of Scientists and Technical staffs at CISH, Lucknow also provide training for value addition such as raw mango panna, amchoor and allied products, harvesting, ripening and maintaining value quality of mango varieties. A section of SCMD also offers training for farming and nursery professionals for effective management of mango nurseries.

The community based organization (SCMD) has made several efforts focusing on-farm conservation which is the only effective way to conserve the unique diversity in effective way of saving the invaluable mango wealth of Malihabad



Child running in field.

Photo credit : BS Annigiri



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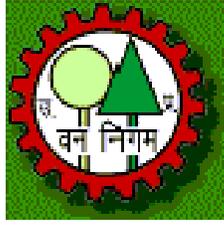


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