

12 Site description for Sirsi, India

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12.1 Context

Sirsi is located in the central part of the Western Ghats, a range of hills that stretch 1500km along the western coast of India. This area is known for its high percentage of endemic flora and fauna and is one of the world's 34 hotspots for biodiversity. It also hosts a high number of ethnic groups, most of which are culturally tied to the forest for resource utilization and cultivation. Eighty per cent of the area is covered with forest and one-third of household income is contributed by non-timber forestry products, of which 60-70% is wild fruits.

12.2 Institutional and project setting

The lead organization in the coordination of the global CBM study at Sirsi site is the College of Forestry, Sirsi. In partnership with Life Trust Sirsi, the College of Forestry has conducted research relevant to CBM in the study site. The project, entitled, Documentation of community biodiversity management practices with respect to (primarily) *Garcinia spp.* resources in the Central Western Ghats, India, focuses on the objectives of documenting CBM practices for these tropical fruits at the site, understanding empowerment issues related to these resources, and developing a set of best practices for value addition and value chains for these resources.

12.3 Key project activities

Key activities in the above-mentioned project include both documenting and characterizing tropical fruit resource use patterns, further elaborating these descriptions and analysing CBM practices. Additionally, identifying opportunities for value addition, income generation, and livelihood improvements, whilst generating awareness and developing the capacities of stakeholders in these respective value chains are important activities too.

12.4 Social and institutional organization

In the early 1990s, the state government of Karnataka implemented the Joint Forest Planning and Management (JFPM) project with the intention of encouraging the communities' participation in the conservation and sustainable utilization of biological diversity in the Western Ghats. The principle of this participatory forest management is based on a relationship of 'co-management' and 'give and take' between the two major stakeholders; namely, village communities and the Forestry Department, in most cases mediated by a non-governmental organization. Karnataka Forestry Department and local communities share the responsibility of jointly planning and managing areas of forests with the incentive of mutually benefiting from the conservation of the forest.

Over 500 village forest committees (grassroots community-based organizations) were formed in Uttara Kannada district to facilitate the implementation of JFPM. In order to facilitate the JFPM activities, the general auctioning of NTFPs to the forest contractors was excluded from the VFC areas, so that the communities could harvest as well as sell these products. The VFCs have started planting prioritized plant species in degraded areas, in consultation with the KFD. Any benefits arising out of this activity will be shared between the KFD and VFC. Every VFC has a revolving fund, which is raised jointly by the government and the communities and which is utilized for different activities. Today, because of the JFPM, there is a relatively high level of social learning among the communities and a scaling-up of collective community action has taken place.

Awareness raising activities have been attempted. Two fairs were organized by outside organizations, including the Department of Agriculture, but no clear connections to CBM were expressed. Diversity kits have as yet not been introduced, but an on-going project on tropical fruit trees aims to establish nurseries and distribute grafts of mango landraces. Demonstrations on grafting techniques were observed, having been delivered by a member of a women's group.

The establishment of diversity blocks is a positive example of awareness creation and capacity building within the site among its community members. This practice was initiated owing to the interest of innovative farmers. On a diversity plot, spread over 6 ha, mango and *Garcinia* trees were planted separately to experiment with individual treatments. The desire to harvest better mango types over a longer season has driven these farmers to collect varieties that mature during different months of the year. This also ensures a longer period of income for farmers. A fairly high number of wild mangos that are more aromatic and which can be harvested whilst slightly unripe in order to make a pickled product are also collected and maintained by the farmers. These wild mangos carry a high price due to their acclaim in traditional culinary use. About 54 mango varieties are being maintained in the diversity plot, of which about 12 are pickling types. Importantly, about 22 varieties are endemic to the district. All of the mango trees in the diversity plot were grafted from the original parent in the wild. Several *Garcinia gummi-gutta* and *G. indica* have also been included in the diversity block. The farmer has identified three different varieties of *G. indica* (bright red, big red and pale yellow). For *Garcinia spp.*, the farmer tested two methods of propagation: seed origin and graft origin. Seed-origin individuals were preferred because grafted individuals turned out to be more bushy in architecture. Over the past 10 years the farmer has been training several others interested in these issues.

12.5 Plant genetic resources

During discussions between VFCs and the state, communities expressed their concern about the disappearance of valuable timber and NTFP species that were lost, allegedly because of the state's earlier policies. Before British rule, local communities managed the forests under a set of traditional rules and regulations, suggesting a higher level of understanding of local biodiversity. Today, important NTFPs that are extracted include: *Garcinia gummi-gutta*, *G. indica*, wild varieties of mango, nutmeg, cinnamon, rattan; *Terminalia sp.*; and *Phyllanthus emblica*. In contemporary times, the main cultivated crops are arcanut palm (betel nut), coconut palm, banana, black pepper, and irrigated rice. Cardamom, cocoa, and vanilla are also sparsely cultivated.

12.6 CBM practices

This list serves to enumerate all the different activities taking place in the Sirsi site which pertain to community-based conservation and sustainable utilization of agrobiodiversity.

1. Generating awareness and an understanding of local diversity:
 - awareness has been enhanced by village workshops and by biodiversity and food fairs;
 - different organizations working in the area have documented the biodiversity and the practices of extraction and use of forest genetic resources;
 - four cell analysis of common, unique and rare PGR;
 - biodiversity register for locating seed sources and documenting traditional knowledge;
 - identifying site-specific NTFP species crucial to livelihoods;
 - identifying biological, social and economic factors limiting the cash income of rural households and suggesting mitigation measures.
2. Establishing community institutions, developing their capacities and consolidating CBM in their working modalities:
 - capacity development including methods for swot analysis;
 - village-based training programmes;
 - enhancing NTFP management among forest user groups;
 - key institutions were identified for playing coordinating roles and roles and responsibilities, including institutional norms, were defined;
 - establishment of a CBM committee representing members of the farming community and the community based institutions;
 - development of a code of conduct for the management of genetic resources;
 - consolidating community roles in the planning and implementation, coordination and development of annual action plans;
 - facilitation of the above through village meetings;
 - defining specific guidelines for the season of collection, permissible amounts for collection, and methods for harvesting, storing and processing NTFPs.
3. Developing conservation practices (including entrepreneurship and marketing of agrobiodiversity), monitoring and evaluating practices, promoting social learning and scaling-up:
 - the custodian farmers act like gene banks, they have access to a high diversity of mango varieties and have the habit of exchanging scions and making grafts;
 - about 54 mango varieties are being maintained in the diversity plot;
 - group saving and credit programmes;
 - facilitating joint learning;
 - priority given to poor, female and disadvantaged members of the community in the implementation of the CBM plan;
 - community monitoring and evaluation;
 - identifying evaluation indicators and methodology;
 - review meetings;
 - travelling seminars are organized regularly to monitor and evaluate community actions;
 - identifying innovations and new practices that can be scaled up to other households and communities;
 - cultivation of *Garcinia* plants in home gardens;
 - redesigning agroforestry systems;
 - involvement of village forest committees and self-help groups in collecting fruits for handover to the Forest Department and contractors.