MEDICINAL PLANTS CONSERVATION CENTRE
India

Equator Initiative Case Studies
Local sustainable development solutions for people, nature, and resilient communities
Local and indigenous communities across the world are advancing innovative sustainable development solutions that work for people and for nature. Few publications or case studies tell the full story of how such initiatives evolve, the breadth of their impacts, or how they change over time. Fewer still have undertaken to tell these stories with community practitioners themselves guiding the narrative.

To mark its 10-year anniversary, the Equator Initiative aims to fill this gap. The following case study is one in a growing series that details the work of Equator Prize winners – vetted and peer-reviewed best practices in community-based environmental conservation and sustainable livelihoods. These cases are intended to inspire the policy dialogue needed to take local success to scale, to improve the global knowledge base on local environment and development solutions, and to serve as models for replication. Case studies are best viewed and understood with reference to *The Power of Local Action: Lessons from 10 Years of the Equator Prize*, a compendium of lessons learned and policy guidance that draws from the case material.

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Medicinal Plants Conservation Centre (MPCC) encourages conservation, supports local livelihoods and improves the health of rural communities in the Indian state of Maharashtra, focusing on the revitalization of traditional health practices and use of medicinal plants. In cooperation with the state Forest Department, and with local communities in the lead, MPCC uses nurseries and commercial herbal production centers to sell sustainably cultivated medicinal plants. The organization oversees a network of 13 medicinal plant conservation areas, which cover an area of over 200 ha. Local management committees have formed to manage nurseries, and seed funds are provided to initiate production of herbal drugs as a local enterprise. The establishment of nurseries, demonstration plots, nature trails, and ecotourism sites has helped restore traditional health knowledge and folk traditions associated with medicinal plants.

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**KEY FACTS**

- **Equator Prize Winner**: 2002
- **Founded**: 1999
- **Location**: Maharashtra, India
- **Beneficiaries**: 310 members
- **Biodiversity**: 26 threatened plant species
Medicinal plants serve the primary healthcare needs of up to 80 per cent of people in developing countries, where there is an increasing awareness of and demand for medicinal plants for healthcare and dietary supplements that often help to save lives. A significant number of modern pharmaceutical drugs are based on or derived from medicinal plants, the majority of which grow wild. As natural habitats across the world are degraded, overexploited and destroyed, however, many medicinal plant species face threats to their survival. The role of local communities in conserving these species and preserving traditional knowledge of their uses is vital.

In the Indian state of Maharashtra, many people rely on plants for food, medicine and shelter. The Medicinal Plants Conservation Centre (MPCC) in Pune, the state’s cultural capital, aims to encourage conservation and development by revitalising traditional health practices. In co-operation with local communities, the State Government Forest Department, and local non-governmental organisations, the initiative uses nurseries and commercial herbal production centres to sell sustainably cultivated medicinal plants to a widespread rural audience.

A diverse partnership for medicinal plants conservation

Initially supported by the United Nations Development Programme (UNDP), the MPCC combines scientific research, community development, and environmental education with sustainable income generation and the revitalization of traditional medicinal practices. The initiative is promoted by the Foundation for Revitalisation of Local Health Traditions (FRLHT) in Bangalore, and is part of a wider plant conservation network covering five Indian states in more than 50 conservation sites. As a result of their efforts, around 1,500 varieties of medicinal plants are being conserved, including 76 highlighted as endangered.

The Medicinal Plant Conservation Centre uses a collaborative approach. The initiative was officially launched on 31 December 1999, with project activities commencing in Maharashtra in February 2002. From the outset, local communities have joined with scientists and local government to gain a better understanding of the status of medicinal plant species in rural Maharashtra. The work of the Centre has allowed tribal communities, previously excluded from conservation work, the opportunity to participate in efforts to conserve their botanical heritage while reaping the benefits of income generation and improved access to plants needed for healthcare. Collaborative mapping and botanical inventory exercises have laid the foundations for further conservation work in the state.

Today, the MPCC works through a network of thirteen Medicinal Plant Conservation Areas (MPCAs) throughout Maharashtra State, averaging between 250-400 hectares in size. These sites have cultivated some 50,000 plant specimens across more than 50 different species, including 26 species threatened with extinction. Documentation has been conducted through participatory approaches such as the “barefoot botanist” programme, Conservation Assessment and Management Plans, local healers’ conventions, and scientific assessments conducted by field botanists. The centre has also worked through its network of local healers, scientists, and Forest Department staff in Maharashtra to document and disseminate local knowledge of medicinal plants. The MPCAs created through these projects have been legally recognised by the Maharashtra state forest department as priority areas for conservation, and have inspired replication in other states. Finally, the centre has also supported the establishment of local management committees (LMCs) and women’s self-help groups (SHGs) to enhance the equitable spread of benefits from sustainable commercial herbal production.
Key Activities and Innovations

The MPCC initiative is implemented through Rural Communes, an NGO operating a range of initiatives in several states in India focussing on conservation, traditional knowledge, and the rights of tribal communities. In Maharashtra, Rural Communes works closely with the state’s Forest Department in promoting local entrepreneurial initiatives based on conservation of medicinal plants. The Centre’s programme team coordinates all aspects of identification, protection, training and promotion concerning medicinal plants production in Maharashtra State, working through its network of MPCAs. These four stages comprise the following:

**Identification**

Around 1,600 flowering plants used in various Indian medicinal systems have been identified and documented. On average, 200 to 300 species have been identified in each MPCA by informally trained botanists.

**Protection**

Thirteen forest areas, each more than 200 hectares in size, have been designated MPCAs containing threatened species of value for medicine. Within these forest areas, nurseries are used to grow new plants. To date, over 50,000 specimens of 50 different species have been cultivated, including 26 threatened species. Local Management Committees have been formed within each conservation area to prevent fires, grazing, or other destructive activities and to manage the nurseries.

**Training**

Self-help uses of medicinal plants and processing techniques for production of herbal medicines are taught by the MPCC to local management committees, particularly focussing on women from villages in the conservation areas.

**Promotion**

State-wide workshops featuring scientists, teachers, folk healers and suppliers have led to the identification of 26 medicinal plant species at high risk of extinction. Packages of 10-15 important medicinal plants have been distributed to thousands of households for domestic healthcare use, encouraging their ex-situ conservation by rural families.

Medicinal Plant Conservation Areas are selected through consultations with the Forest Department, local communities and available scientific literature. In general, the sites are relatively undisturbed forest areas representing different bioclimatic zones; are rich in biological diversity; are often micro-watersheds, or otherwise contain natural sources of water; and are locally known for harbouring medicinal plants. In this way, designation of these areas has been partly driven by local knowledge on their biological richness, tapping a traditional source of knowledge on genetic diversity and its uses. These sites have then subsequently been legally recognised by Maharashtra state.
Biodiversity Impacts

The MPCC project was initiated with the primary goal of in-situ conservation of medicinal plants in Medicinal Plant Conservation Areas. Since these thirteen MPCAs have been designated as sustainable local use areas, however, they have played an important role in the conservation of other flora and fauna, effectively preserving the integrity of entire local ecosystems.

After the initial success of conservation within MPCAs, the centre has pioneered ex-situ conservation of medicinal plants, encouraging local farmers to conduct trials of locale-specific medicinal plants. School and village herbal gardens are also evolving, engaging school communities and village communities on a wider scale for cultivation of medicinal plants.

The main conservation achievements of the project in its early years included the creation of its network of MPCAs, including high degrees of floral and medicinal plants diversity within their boundaries. Over 1,200 botanical surveys covering 45% of these MPCAs were completed, leading to the production of herbarium records for 804 species. Systematic data on medicinal properties and local uses were also documented on 326 plants; a unique illness-specific database of more than 265 plants has been developed based on these data. Documentation of medicinal plants has also enabled targeted conservation of threatened species. Using the IUCN Red List categories, 26 species were classified as critically endangered, endangered, or vulnerable.

One of the critical elements in effectively safeguarding the species found within MPCAs has been raising environmental awareness in local communities, who have also played an active role in monitoring biological diversity and disseminating information on key species. For example, 60 percent of MPCAs have put in place signs and forest trails to educate the local population. Eleven demonstration gardens have also assisted in this task, while ten MPCAs have been equipped with basic interpretation centres displaying exhibits on medicinal plants. Local healers and village botanists have been supplied with herbarium records; in some cases, these have been displayed in village schools.

Table 1: MPCAs’ contributions to medicinal plant conservation in Maharashtra State.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Reported in Maharashtra</th>
<th>Found in MPCAs</th>
<th>% of total reported in Maharashtra</th>
</tr>
</thead>
<tbody>
<tr>
<td># of flowering plant families</td>
<td>187</td>
<td>115</td>
<td>61.5</td>
</tr>
<tr>
<td># of flowering plant genera</td>
<td>1081</td>
<td>500</td>
<td>46.3</td>
</tr>
<tr>
<td># of flowering plant species</td>
<td>3025</td>
<td>850</td>
<td>28</td>
</tr>
<tr>
<td># of medicinal plants</td>
<td>2100</td>
<td>470</td>
<td>22.4</td>
</tr>
</tbody>
</table>

The table illustrates the extent to which MPCAs constitute a significant gene pool of plant diversity in Maharashtra. Source: Shukla, S. 2004
SOCIOECONOMIC IMPACTS

Social and economic benefits can be seen most clearly in two broad categories. Firstly, the project has had a significant impact on the welfare of rural households through popularising low-cost alternative healthcare options. This has led to significant improvements in the health and nutrition of poor rural populations.

A second, indirect benefit of the centre’s work has been the improvement of livelihood options in socially-disadvantaged communities, leading to some economic improvements for local communities in Maharashtra. For instance, local management committees have been provided with loans of 50,000 rupees from a revolving fund to initiate production of herbal drugs. Local enterprise development has also been boosted by technical assistance and capacity building activities, including market information surveys for selected plants and their products, training programs for SHGs on costing for finished products, hands-on demonstrations on labelling of herbal products, and supply of equipment for efficient drying and storage of medicinal plants, for instance. In one MPCA, an ecotourism enterprise has been initiated by the LMC members, who operate as eco-guides using the trails within the forested area.

A focus on women producers

Women’s self-help groups were also given seed funding of Rs. 5,000 for developing income-generating activities. In some cases this has allowed the groups to establish credibility to borrow larger funds from local banks to scale up their activities. Greater economic self-reliance for the women of these groups is one outstanding result of the work of the MPCC. The status of more than three hundred women in these MPCAs has been improved through various capacity building initiatives organized for the empowerment of SHGs. These groups have also benefitted from knowledge exchange within the MPCA network. Members have had the opportunity to participate in training visits to other LMC and SHG sites, enabling them to witness the innovative experiments being carried out by fellow communities. More than 50 LMC and 310 members of SHGs have benefited from cross-MPCA exchanges. ‘Best practice’ cases have also been recognised and had their innovations showcased by the MPCC.

The project has substantially contributed to the improvement of health care for the poorest of poor regions of Maharashtra State, where access to modern medical facilities is either non-existent or inadequate. The establishment of nurseries, demo garden, nature trails, ecotourism and other innovative activities by self-help groups and local management committees has helped restore the traditional health knowledge and folk traditions associated with local health improvement. The savings generated by the availability of improved local health options has also contributed to improving the wellbeing of poor and socioeconomically disadvantaged communities in and around MPCAs.

<table>
<thead>
<tr>
<th>Name of MPCA</th>
<th># of SHGs</th>
<th># of women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gadmauli</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Bhaskaracharya</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>Sawarna</td>
<td>1</td>
<td>41</td>
</tr>
<tr>
<td>Amboli</td>
<td>7</td>
<td>57</td>
</tr>
<tr>
<td>Navaja</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Vasai</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Honyakoli</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Amba</td>
<td>5</td>
<td>&gt;60</td>
</tr>
<tr>
<td>Toranmaal</td>
<td>2</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Shukla, S. 2004
SUSTAINABILITY

The initiative has generated new co-management possibilities through its effects in empowering rural communities. For example, the community at Amboli stopped the illegal extraction of the Narkya plant (*Nothopodytes nimmoniana*) – an endangered species – by outside traders. In another case, the local management committee encouraged the village community of Bhaskaracharya MPCA to cease illegal cutting of the highly valuable sandalwood tree (*Santalum spp.*) from the MPCA. The Gullarghat MPCA has successfully controlled excessive grazing of the forested area by villagers and outside herders. Finally, the local management committee in Sawarna MPCA mobilised community members to conduct night patrols to protect the area’s valuable medicinal plants and wildlife.

These community-driven initiatives have laid the foundation for partnerships with the Forest Department in sustainable management of forest biodiversity and ecosystems. The organization of village women in the form of a self-sustained network of SHGs has also provided a strong example for the government’s rural development agencies that women can be mobilized through linking conservation and development.

The informal network of village botanists across the MPCA network has been used in scientific monitoring exercises such as Conservation Assessment and Management Plans, while individuals have been recognized by the state forest department as useful resources for knowledge-based conservation. The capacity-building and learning opportunities created by the initiative at the village, district and state levels have given the project a high degree of resilience and internal momentum, making it an adaptable and self-sustaining solution to broader challenges of conservation and development in Maharashtra. The Forest Department is planning to expand the concept of MPCAs in other regions of the state, and ultimately through other Indian states.

REPLICATION

The initiative itself emerged from a process of replication within India, based on the idea of expanding an earlier project of the Foundation for Revitalization of Public Health Traditions (FRLHT) with the support of Rural Communes and the state forest department at the regional level. Trainings and capacity building in project areas were provided by local and outside experts to community members and government agents at various stages of the project implementation.
The project was based on FRLHT’s earlier work in Kerala, Karnataka and Tamil Nadu states, begun in 1993. FRLHT established three MPCAs in Maharashtra through partnership with the forest department between 1997 and 2000 with funding support from a local NGO, the Sir Dorabji Tata Trust. The NGO had developed and demonstrated the potential of their model of community health improvement and livelihood generation through the conservation and sustainable use of medicinal plants. The organisation’s expansion plan through the MPCC, backed by funding support from UNDP, created the platform for the partnership initiative. A series of workshops at the state level between partnering NGOs and the state Forest Department was held to prepare and finalize action plans. The criteria for identifying MPCA were jointly decided in these meetings.

The project also benefitted from the experience of senior forest department officials who had previously worked with FRLHT, and their familiarity with community-based conservation activities. The conviction and commitment of forest department officials was an important stimulus for the project’s conception, allied to a strong level of buy-in from local communities.

PARTNERS

The state Forest Department supplied infrastructure and staff support for the project in the beginning through their field offices at the sub-district levels. The existing staff of Rural Communes’ Mumbai office also helped in initially mobilising communities, while FRLHT and other agencies helped to support early capacity building activities.

The local field staff of the Forest Department identified suitable training NGOs; state agencies including the District Rural Development Agency and local NGOs such as Swayamshiddha and Shrmajivi Sangathan provided partial voluntary support in organizing trainings for the local village management committees and self-help group members.

Local forest officials and forest guards, meanwhile, have helped to establish demo gardens at select MPCAs. Individuals from the forest department and retired officials from the state department of science and technology helped in proposal writing. At the local level, individuals volunteered in helping to register local management committees as cooperatives.

There were no direct pre-existing relationships between these different actors, while only some of the individuals had prior experience of, or exposure to community development activities. Rural Communes had developed a working relationship with government departments through its earlier health, child and gender work, however, and FRLHT had also developed a strong partnership with state forest departments in southern India, making these two innovative civil society organizations suitable candidates for developing similar partnerships in Maharashtra.
FURTHER REFERENCE

- Shukla, S. 2004. Lessons from the Equator Initiative: Rural Commune’s Medicinal Plant Conservation Center, Pune, India. IDRC and UNDP.
- MPCC PhotoStory (Vimeo) vimeo.com/15671395 (English) vimeo.com/15671644 (Marathi)

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