

BEST PRACTICES

1. Mangrove afforestation and Conservation in Northern Kerala

Furthering the commitment of the institution in contributing to environmental sustainability, the college undertook a massive project of planting five acres of land with mangrove saplings. The site selected was at Chaal beach in Azhikode panchayath of Kannur district. Chaal beach is an area which has been facing acute coastal erosion. This coastal erosion in turn has been threatening the lives of people living along the coastal line. Planting of mangroves is expected to form an eco-barrier. 4500 saplings, spread over 5 acres, planted along the coastal zone has significantly reduced coastal erosion. Continuous monitoring of the growth of the saplings and maintenance is also carried out periodically. The project was undertaken in collaboration with OISCA International, Azhikode Panchayath and Haritha Kerala Mission.

In Northern Kerala, Mangrove forests are unique ecosystems, extremely rich in biodiversity, growing along inter-tidal coastal habitats such as shorelines, estuaries and backwaters. They are both refuges and nurseries for a large variety of threatened terrestrial and aquatic species, and an important source of fodder, medicines and firewood for people living in coastal communities. They also act as barriers against cyclones and tsunamis (evidenced in their important role in reducing the impact of the 2004 Indian Ocean tsunami), prevent coastal erosion, and maintain inland water quality by preventing sea water intrusion. Mangrove forests have faced considerable destruction the world over, with less than half of the original acreage remaining. However, mangrove forests have faced considerable destruction the world over, with less than half of the original acreage remaining. About half of that loss has occurred in the last 50 years, and a significant amount in just the last two decades, especially due to human population growth and intrusive development. Kannur has 7.55 sq km of mangroves, i.e. around 45% of Kerala's total mangrove forest cover. Nearly 90% of these forests – which support at least 10 species of mangroves (including the uncommon *Rhizophora apiculata*), 87 species of fish, 83 species of birds and 13 species of mammals – are under private ownership and are therefore highly threatened. The college is actively participating the conservation programmes of Mangrove growing in the Kannur and Kasargagod district-Northern Kerala. Every year students visit different mangrove forest in these two district and involving afforestation and conservation programmes. In addition to the conservation programmes, research scholars are working on the different mangroves aspects for the exploration of their tolerance potential of the plants species. Due to the active conservation programme, the coastal

are of Kannur is highly protected from the flood and related calamities. Sir syed college entire team, both students, teachers and non-teaching staff are actively involving such a sustaining programme to conserve the magical mangrove diversity for environment. The Mangrove conservation practice is considered as the most prestigious programmes of the college.

2. Conservation of Rare and Endangered Medicinal Plants:

Botanical Garden, *Hortus sirsyedicus*

The college has a long tradition of engaging in the studies and conservation of rare and endangered medicinal plants growing in the Western Ghats. *In-situ* and *Ex-situ* on conservation approach is key for the sustenance of these activities. With this insight we developed or promoted different satellite garden at nearby schools and colleges of Malabar eco region in which the farmers cultivate or conserve this dyeing wealth. Through this approach not only the conservation of biodiversity is ensured but also the transfer of knowledge on these species is promoted. Plants like wild or underutilized tubers RET medicinal trees, shade trees etc promoted in farmers plots through this programme.

Botanical Garden, *Hortus sirsyedicus* is a collection of plants that are scientifically ordered and maintained, documented and labeled for public education, research, conservation, and enjoyment. Ex situ conservation of the Rare, Endangered and Threatened (RET) Medicinal plants of South India is the major thrust area of the garden. The mission of the Botanical Garden is to foster science education to the society and appreciate the importance of Flora. The Botanical Garden of the College was found 32 years ago in the lush green panoramic land of the campus has developed into an excellent centre of biodiversity and ex-situ conservation of tropical flora and exotic species. At the entrance on the northern side, the visitors are greeted by Green house comprising of different species of Ferns and ornamental plants. The Medicinal Plant Demonstration Garden (MPDG) was started in 2013 and at present it is the largest medicinal plant garden among the colleges of Kannur University. The garden will be beneficial to the entire community of the society and it is an attraction to the local people, it also helps the students of schools and colleges to acquire knowledge about importance of medicinal plants available in and around the area and also their importance in medicine. More than 200 species are planted and it is arranged in the traditional Ayurvedic concepts like Triphala, Thrigadu, Nalpamaram, Thriganda, Janmanakshathra Sasyangal, Dashapushpam, Dashamoolam. Wild Aroids in India and rare Bamboo species are conserved in the Garden. **The Medicinal Plant Demonstration Garden was funded by Kerala state medicinal Plant**

Board (KSMPB), Trivandrum. Plants collected from different regions including tribal regions of Wynad district are planted in the garden. Teachers, and Gardner are taking care of the garden. Various projects are done by students for their Bachelors of Science, Master of Science, and at present doctoral research work on medicinal plants are carried out. At present we are cultivating about 200 species of plants belonging to 50 families.

Facilities in the botanical garden: Ferns are one among the oldest group of land plants and they are the pioneer vascular land plants. They are very diverse group only next to angiosperms. The fernery, Apushpi at the botanical garden is an ex situ conservation of more than 30 species of ferns and fern allies collected from different regions of Kerala. **ARANYKAM.** The open class room for demonstration of botanical garden activities to the students and visitors. **AROID HOME.** Collection of different varieties of Aroid Species of India. **Nakshathra Vanam (*Star Plants*)** A mythological garden has been established as a novel step for creating public interest on trees. As per Ephemeris, for each of the 14 birth stars a tree is denoted and a person caring his birth tree will get prosperity. This belief of the people has been perpetuated through the project for protecting these trees which are displayed at Botanical Garden.

Through the Botanical Garden college has distributed more than 1000 medicinal plants and 100 RET species to different ex-situ conservation sites in and around Kannur. Through the monitoring sites College noticed the keystone species aid to elevate the water table, increase the soil humus, soil fertility, home for many endemic birds, butterflies and other biological diversity. Sir Syed College is one of the supporting institute assist Government of Kerala to achieve the objective to neutralize the atmospheric carbon through a project on 'Carbon sequestration Taliparamba, Kannur District.