EXECUTIVE SUMMARY OF UGC MINOR RESEARCH PROJECT

Diversity and Conservation of Mangrove Ecosystems with special reference to Marshy Backwaters of Southern Kerala, Western Ghats

Diary No 858, Ref No. 1781-MRP/14- 15/KLKE057/UGC-SWRO Dtd. 29-Oct-15

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Mangroves are woody plants that grow in tropical and subtropical areas along the land-sea interface, estuaries, back waters, and in the rivers, reaching upstream up to the point where the water remains saline. In the present study on diversity and conservation of Mangrove Ecosystems with special reference to marshy backwaters of southern Kerala recorded 9 true mangrove species belonged to 7 genera under 6 families from Kollam District. The true mangrove species identified during the study are *Acanthus ilicifolius* L., *Aegiceras corniculata* [L.] Balco., *Avicennia marina* [Forssk.]vierh., *Avicennia officinalis* L., *Bruguiera cylindrica* [L.]Blume, *Bruguiera conjugata* Merr.,*Excoecaria agallocha* L., *Lumnitzera racemosa* willd., *Rhizophora mucronata* Poir. A total of 84 species of mangrove–associates have also been identified and listed

A detailed taxonomic study of the mangrove flora of the Kollam district was carried out.. In comparison to that of eastern coastal part, the western coastal region of Peninsular India comprises less area of mangroves. Therefore, establishing new mangroves in suitable habitats in this region is more essential to maintain the ecological processes in coastal landscape. To select the suitable mangrove species for newer areas of Kerala coast, a preliminary study on ecology was carried out in two natural mangrove vegetations at Ayiramthengu and Mandrothruthu, Kollam district. The study revealed that out of 34 (Ayiramthengu) and 24 (Mandrothruthu) species present, a sizable number of 8 and 6 species respectively were true mangroves and adapted more prominently in their respective site indicated by higher importance value index (IVI) and relative value of importance (RVI)

Anatomical studies shows that these mangroves have special adaptations in ordered to survive in saline environment, specialized rooting structures are present and sunken stomata, thick and waxy cuticle in order to reduce the transpiration. Seed maturation studies of *Rhizophora mucronata* was carried out. In true mangroves a unique biological phenomenon called vivipary, ie. Seed germination occurred within the fruits, while still hanging or attached to the mother plants. The seedlings are called propagules. The best collection time for the collection of seeds of *Bruguiera cylindrical* is April to June. The seed maturity is determined on the basis of dry weight and decrease in moisture content. In *Rhizophora mucronata* moisture content is higher than that of *Burguiera cylindria* is good for seed germination.

During the study major threats faced by the mangrove areas of Kollam were noticed. Almost all mangrove areas of Kollam are now either in the process of primary succession towards climax or under secondary succession after the destruction of primary vegetation. Because of the continuous biotic and abiotic interference full growth is attained only in very few localities. The Ayiramthengu mangrove ecosystem supports maximum biodiversity and is rich in both flora and fauna. Since the existence of the ecosystem is vital for the well being of all associated flora and fauna, and also for the protection of coastal zone from the havocs caused by natural calamities such as fury of waves, tsumani etc. Government organizations and other local initiatives have started the intensive and extensive conservation and ecosystem restoration programmes for protecting the environment from these major threats.