MONITORING OF FOUR AQUATIC INVASIVE PLANTS IN THE KOLE WETLANDS OF CHERPU BLOCK PANCHAYAT – THRISSUR

Major objectives of the study was to Monitor, mapping, and documentation of four aquatic invasive plants *Eichhornia crassipes*, *Ipomoea aquatica*, *Cabomba furcata*, and *Salvinia* in the 'Kole wetlands' which is an internationally recognized Ramsar site in central Kerala, and to address the ecological and economic problems associated with invasive plant growth through personal interviews and field observations.

The study area is the Kole fields in the 4 panchayats of Cherpu block. Using Arc GIS and QGIS. Land Use Land Cover Map, Species map Elevation map and slope map, Drainage density Map were created.Trend of species distribution in elevation map and drainage density maps found out by incorporating species presence in these maps. Species density maps are provided the current density of species distribution over surveyed area. Out of the total area of 5400.44 hectares, it is found that 749.19 ha are in a high-risk category and the very high-risk zone is for 241.29 hectors. Drainage density, elevation, and slope have a relation with species distribution. The invasive species are found in low elevation (<5) and low slope (0-2) classes. The majority of the species are found in areas with high drainage density.

Kole fields of Cherpu block severely infested with aquatic invasive macrophytes, which in turn indicates the suitability of an agroecosystem for invasive species growth. The periodic cleaning is done by the irrigation department and Kole farming societies are keeping their spread under check. Ipomoea is the major invader in the surveyed area. But it should be mentioned that the cleaning process was carried out in many areas during the survey. The survey was carried out in the post-harvest season and many canals were drained, which promotes the growth of Ipomoea species over others since this plant is semiaquatic. So possibilities that other species may be present earlier where their absence is marked.

Invasive alien species invasion imparting more burden to the farmers who depend on paddy cultivation as a livelihood. The irrigation department had spent about Rs.31 lakhs for the removal of floating vegetation for the period 2019-2020 in Cherpu block panchayat alone. In addition to this, each of the Kole farming societies (1.75 lakh/season) and individual framers (2000-5000 rupees) have to spend for the cleaning before and after the cultivation period. There are many reasons for the excessive growth of aquatic invasive macrophytes in the study area. Canals are getting rich with nutrients by the pumping of water from fields which has a higher concentration of nutrient, phosphorous, and nitrogen content by

The Kole wetlands should be considered as an important ecosystem which needs immediate action to mitigate the spread of these invasive plants in a cost effective and environmental friendly mechanism.