

IMPACT OF CLIMATE CHANGE

BIODIVERSITY & ENVIRONMENT

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Impact of Climate Change Biodiversity and Environment

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Chapter 16

Geophysical Quality of Selected Areas under Kuttanad Wetland Region

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Kuttanad, virtually known as 'Rice Bowl of Kerala' is situated in Alappuzha district, received much attention on research and development by virtue of the fact that the area is being approximately 3 m below the sea level. During rainy season the complete area gets submerged due to high flow of river/canal resulting in the loss of its fertile soil and paddy crop. Since, the sustainability of agricultural production system has become an issue of national and international concern; one of the option to assess the soil quality as impacted by the various soil and crop management practices. Being a potential agricultural production area, Kuttanad needs research attention in the context of nutrient capacity of the soil that enables the sustainability of agricultural practices and resource utilization. Kuttanad is a deltaic formation of mainly four rivers namely Achankovil, Pampa, Manimala, and Meenachil. The Muvattupuzha River in the northern part of the region is also contributes to the formation of deltaic plains. The deeper portions of the lagoon formed the backwaters (locally named as *Kayal*). The present investigation made an attempt to quantify the nutrient status of Kuttanad wetlands as whole by taking into consideration of three micro-ecosystems namely Kainakari, Edathuva, and Ala. The three ecosystems represent three administrative units/panchayats located at different altitudinal levels under Kuttanad wetland system. The complete area is dominated with black clayey soil (locally named as *Kari* soil). Comparative seasonal analysis of soil quality of the three micro-ecosystems reveals the acidic nature of soil as well as the insufficient concentration of Nitrogen, Phosphorus and Potassium (NPK) in the wetland system.