



In troubled waters

- Heavy intensity of rainfall
- Farmers blame climate change and the construction boom for flooding
- Flawed implementation of Kuttanad Package

■ Change in cultivation pattern

Vembanad Lake has shrunk from 36,000 ha to

12,500 ha

Water carrying capacity of Vembanad Lake has diminished by

78%

Shift in cropping pattern to blame: experts

Rise in acreage under Virippu crop has reduced land for retaining floodwaters

T. NANDAKUMAR
THIRUVANANTHAPURAM

Changes in agricultural practices and land use, construction of granite bunds and choking of natural drainage channels have played havoc with the hydrology of Kuttanad region, aggravating the flood situation caused by heavy rainfall during the southwest monsoon, according to agricultural scientists and disaster management experts.

The shift towards the Virippu (rainy season) paddy crop, especially in northern Kuttanad, is pointed out as the causative factor behind the land use change in the region known for its unique system of below sea level farming. Experts point out that the increase in area under Virippu crop had reduced the land available for retaining the flood water, contributing to the prolonged spell of water-logging this monsoon. The fact that the heavy rainfall occurred during the new moon period coinciding with high sea level worsened the situation.



Construction of permanent but submersible bunds and the development of roads have fragmented the wetland ecosystem and disrupted the natural hydrological balance.

“Over the last 10 years, there has been a marked shift to rice cultivation during the rainy season, mostly driven by the high soil acidity during the summer,” observes K.G. Padmakumar, Director, International Research and Training Centre for Below Sea level Farming, Thottappally.

“Almost 30,000 acres in Kottayam district, have been brought under Virippu crop. This has affected the water-holding capacity of the entire region, leaving less land to accommodate the influx of water from the higher areas beyond Kuttanad.”

The Kuttanad basin is fed by four rivers and a lake that extends from Alappuzha in the south to the Kochi harbour in the north where it opens out into the Arabian Sea. Traditionally, the Kuttanad Below Sea Level Farming System (KBSFS) favoured only one crop of paddy followed by fish farming. The fertile paddy fields were replenished by the silt brought by the rivers.

Breach in bunds

A major problem faced by the farmers in raising the second crop of rice was the flooding of fields due to breaches in the temporary bunds. The construction of permanent but submersible bunds to address this problem and the development of roads since the early Seventies fragmented the wetland ecosystem and disrupted the natural hydrological balance.

Over the years, accumulation of silt and sediments reduced the depth of canals and rivers, affecting their capacity to flush out floodwaters. The proliferation of aquatic weeds choked the flow further, choked the flow further.

“The traditional method of maintaining paddy fields as a flow-through system was designed to work in tandem with the network of canals to drain out floodwaters. Tampering with the system is bound to have disastrous consequences for the region as a whole,” says Dr. Padmakumar. “Ideally, only one-third of Kuttanad should be cultivated during the rainy season, with the rest left free for water retention.”

The failure to deepen the canals under the Kuttanad package has reduced their carrying capacity to almost a fifth. With 25 tonnes of silt deposited by rivers in every hectare of land large parts of Kuttanad are also experiencing major problem of land subsidence.



A scene from Pala town last week.