Two-stage Rainwater Conservation for Integrated Rice-fish Culture

Two-stage rainwater conservation for Integrated Rice-Fish culture at Sadeiberini, Dhenkanal, Odisha

Developed by

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RELEVANCE

- In a high rainfall zone, most rainwater overflows from the bund during rainy days, causing an unproductive loss of water and nutrients.
- To address this problem, a two-stage rainwater conservation (both *in-situ* and *ex-situ*) technique and a rice-fish culture system for medium-land rice ecosystems have been developed.

DESCRIPTION

- Provision of a peripheral trench on three sides of rice fields (1.5 m width and 0.5 m depth), a refuge in 9% of the field area with a weir height of 12.5 cm and fish stocking density of 25,000 ha^{-1} has been found optimal for greater productivity and conserving rainwater.

BENEFITS

- This system helps to conserve rainwater (98%), nutrients (74%), and sediments (92%) in the rice-fish system.
- The system's rice equivalent yield corresponds to 6.6 t ha^{-1}.
- Paddy yield of 5.2 t ha^{-1} and fish yield of 1.8 t ha^{-1} 120 d^{-1} can be achieved with a B: C ratio of 2.4 and net water productivity of ₹ 9.8 per m^3 of water.
- Net profit: ₹ 78,000 ha^{-1} per crop.
- Conserved water could be used for low-duty *rabi* crops and on-dyke horticulture to enhance cropping intensity to 183%.
- This technology suits the medium-land rice ecosystem of high rainfall zones of the Country.