

Integrated Water Management Strategies for Enhancing Water Productivity in Canal Commands



Introduction of sprinkler irrigation system



Constructed surplus escape



Summer green gram



Rapeseed in summer season



Adoption of SRI



Harvested fish from canal-linked service reservoir

Developed by _____

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RELEVANCE

- Water unavailability forced rice mono-cropping and low incomes for tribal farmers. Several agricultural water management technologies were demonstrated to increase water productivity and the livelihoods of the tribal farmers of the Sundergarh district of Odisha.

DESCRIPTION

- Water management technologies, viz., Water flow-regulating devices, the lining of minor canals, dug wells with a pipe-based sprinkler system and raised and sunken beds, were used to improve water availability. Aquaculture, mushroom cultivation, and crops during *rabi* and summer were introduced to improve the farmers' incomes.

BENEFITS

- Irrigation intensity improved by 164%.
- The average annual net income improved to ₹ 1.79 lakhs ha⁻¹ (B: C ratio: 1.94) for the rice-rapeseed-groundnut + pisciculture system and ₹ 1.66 lakhs ha⁻¹ for the rice-rapeseed-green gram + pisciculture system.
- Water savings improved by up to 34%, and net water productivity rose by 81%.
- This scalable and replicable system offers significant potential for enhancing food security, livelihoods, and subsistence farming among smallholder tribal farmers.