

# Improved Livelihood Security and Water Productivity in Tribal Dominated Rainfed Agro-Ecosystem of Keonjhar, Odisha



Banana plantation under poly mulching



Brinjal under poly mulching and micro-irrigation



Adoption of HYV of paddy with line transplanting



Cultivation of hybrid vegetables by farmer

*Contributed by*

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## CONTEXT

- Study site: Three tribal-dominated villages (*Khuntapingu, Mallarpada, and Jamuda* of Saharpada block), Keonjhar district of Odisha, covering 645 households.
- Problems: Low paddy productivity ( $1.2 \text{ t ha}^{-1}$ ), Rainfed farming with acidic lateritic soil, Seasonal migration and Intermittent drought in upland paddy.

## INTERVENTIONS

- Adoption of water management practices, including water conservation measures, viz. micro irrigation, polythene mulching, piped conveyance, and rainwater harvesting.
- Adoption of line transplanting, modified SRI method and short-duration hybrid paddy seeds; balanced use of fertilizers; need-based application of pesticides in field and horticultural crops.
- Paddy-fallow was brought under vegetables during *rabi* (100 acres area); adoption of crop diversification and nutri-gardens (400 farm families).
- The adoption of backyard poultry farming (150 farmers) and fish farming in community ponds (three farm women groups).
- Adoption of mushroom cultivation.
- Capacity building through training and field demonstrations.

## OUTCOMES

- Cropping Intensity of the adopted cluster increased from 98% (2016-17) to 120% (2022-23).
- Shift in the cropping pattern (from paddy mono-cropping during the rainy season to Rice-Rice, Rice-Vegetables, Rice-Pulses); integration of nutri-gardens, mushroom, poultry, and aquaculture to enhance income.
- Increased use of non-chemical IPM methods and organic farming practices, such as yellow sticky traps, pheromone traps, light traps, neem oil, vermicompost, FYM and ITKs.
- Average farm income increased by 191.42% from ₹ 76,040 per family (2016-17) to ₹ 2,21,598 per family (2022-23).