

Crop Diversification and Water Management Strategies to Improve Water Productivity and Farm Income in Groundwater Irrigated Areas of Kalahandi, Odisha



Adoption of ridge & furrow method of water management technologies in vegetable crops



Adoption of sprinkler irrigation in Chilli



Adoption of sprinkler irrigation in Onion



Contributed by _____

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CONTEXT

- Study site: *Dangariguda* village (Karlapada Gram Panchayat in Bhawanipatna block), Kalahandi district (2018-23).
- Problems: Cotton monocrop using groundwater, low yield from bore wells, water scarcity and low farm income.

INTERVENTIONS

- Introduced water-saving technologies, viz. sprinkler irrigation besides high-yielding onion and vegetable varieties.
- Adopted crop diversification by introducing maize and vegetable crops round the year.
- Provided input support and capacity building in the area of water and crop management.

OUTCOMES

- Gross Cropped Area (GCA) increased from 140.7% in 2018-19 to 202% in 2022-23.
- The share of vegetable crops, including onion, increased from 28% in 2018-19 to about 78%, and the adoption of onion became a game changer in improving yield and augmenting farmers' income.
- The onion varieties *Agri-found Light Red*, with a maximum average yield of 31.8 t ha⁻¹, and *Arka Bheem*, with a maximum yield of 46 t ha⁻¹, showed great potential for this area.
- The average annual net income of bore well-owned farmers increased by 132% from ₹ 58500 ha⁻¹ in 2018-19 to ₹ 135750 ha⁻¹ in 2022-23.
- Water productivity increased from 4.4-5.8 kg m⁻³ under surface irrigation to 6.2-7.6 kg m⁻³ under sprinkler irrigation.
- Overall, sprinkler irrigation saved 13.5-19.4% of water and improved water productivity by 32-46%, compared to surface irrigation.