

Multiple Water Use-based Integrated Farming System for Enhancing Water Productivity



Developed by _____

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RELEVANCE

- In high rainfall (> 1000 mm) areas, waterlogging and scarcity due to spatio-temporal variability of rainfall can be overcome by water harvesting. At the same time, multiple uses of the harvested water could be utilized for various enterprises of agriculture.

DESCRIPTION

- The integrated farming system (IFS) unit was based on a water harvesting pond (in 26% of the total area), dyke around the pond (16% area), field crop unit (55% area), and field bund (2% area).
- Harvested water was used for growing Indian major carps @ 10000 fingerlings/ha in ponds and papaya (45 plants) and banana (60 plants) on dyke. Vanraja poultry (50 birds) and Khaki Campbell duck (50 birds) were raised in GI net sheds (4 units at 4 corners) over the pond for poultry droppings directly into the water.
- A rice-horse gram and rice-sunflower cropping system, mulching with basin irrigation in bottle gourd and watermelon, and paired row bed planting in okra were adopted for water conservation.

BENEFITS

- Higher net return (₹188341 ha⁻¹) as compared to rice-fallow (₹27982 ha⁻¹).
- IFS generated more employment, 509 man-day/ha vs. 158 man-day ha⁻¹ in rice-fallow.
- Greater net water productivity (₹18 m⁻³) than rice-fallow (₹4 m⁻³).
- Potential to significantly enhance land and water productivity in rainfed areas receiving high rainfall (> 1000 mm).