



Multiple use management of conserved surface and groundwater

TECHNOLOGY BRIEF

Improving water productivity in a canal command through conservation of surface and ground water using tanks and wells and its multiple use management was carried out at Daspalla of Nayagarh district, Odisha, The harvested water was used for aquaculture, on-dyke crops, agriculture, vegetable cultivation, poultry and lifesaving irrigation to agriculture fields in dry period. Pond water has become the source of drinking water to livestock. Auxiliary tank-cum-well system has brought an additional area of about 35 ha under irrigation; which otherwise would have remained fallow during post-rainy season. The net income from the integrated farming systems varied between Rs. 1,42, 000 and 2, 38, 000 ha⁻¹. This replicable system has a potential of transforming subsistence agriculture to commercial agriculture and also has a potential of generating net water productivity of ₹ 21.2 per m³ of water used, creating more employment opportunities, nutritional security and is sustainable.

HIGHLIGHTS

- This work was awarded with BKJF-INCSW Team Award -2018 (MoWR, GoI).
- Improve water use efficiency & water productivity (₹ 21.2 m⁻³).
- Conjunctive use of water facilitated alternate cropping systems viz. rice + (fish in pond)-sweet corn, rice + (fish in pond) + sunflower, rice + (fish in pond) + blackgram, rice + (fish in pond) + pigeonpea (on dyke) + greengram, and rice + (fish in pond) + banana & papaya (on-dyke) + vegetables.

IMPACT / UTILITY

This technology has been highly beneficial especially to the tail-end farmers of canal command where, very often, canal water supply is inadequate. It has improved land and water productivity, increased cropping intensity to a level of 230% from mere 150%, and increased livelihood of farmers through multi-enterprise systems viz. fish culture, horticulture and field crop production.



Project Details

Improving water productivity under canal irrigation command through conservation and recycling of runoff, seepage, rainwater and groundwater using tanks and wells (INCID-IWP externally funded project)

Publications

- Res Bull No. 75, ICAR-IIWM (2016), 64p,
- Mandal et al. (2015) Theor. Appl. Climatol, 121: 517-528



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