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SRI

SRI: A Potential Water Saving technology for rice farmers

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Coochbehar district is located in the sub-Himalayan plains of West Bengal belonging to *terai* agro-climate. Out of 3345 sqkm. of geographical area, 2353 sqkm. (70.30%) is under cultivation. The crop production is the principal sector of agricultural economy. Despite notable increase in crop production in absolute terms over the last decade the crop economy of the district is still to have low growth status. The principal crops grown in this district are rice, jute, potato, maize, mustard, vegetables, etc of which rice is cultivated in more than 3 lakh hectares. Though rice farming accounts for a significant sown area, the productivity is very poor and much below the state average. During *kharif* season high rainfall with erratic distribution sometimes creates an unfavourable environment for rice. Again, coarse-textured soil with poor water retention capacity and low pH with multiple micronutrient deficiencies further contributes towards poor productivity.

Table 1. Rice growing scenario of Coochbehar district

Year	Area ('000ha)	Production ('000t)	Productivity (kg/ha)
1980-81	272.7	277.7	1018
1990-91	305.7	401.9	1315
2000-01	291.9	517.3	1772
0006-07	239.4	445.8	1862
2007-08	293.5	518.8	1768
2008-09	309.8	500.9	1615
	West Bengal		
2008-09	5935.7	15037.3	2533

Constraints in rice cultivation

Important problems associated with rice farming of this zone are as follows:

- Stagnant rice yields
- Cultivation of age-old varieties year after year
- Poor rate of varietal replacement
- High degree of weed, pest and disease infestation due to high humidity
- High cost involvement towards manual weeding
- Occasional micronutrient deficiency
- Huge irrigation expenditure in *boro* rice

All the operations performed under SRI were very specialized especially nursery management, transplanting, main-bed preparation, water management, etc and these specialized operations holds the key for success of the entire programme. Farmers need to be educated more on these sets of practices with which they are not much familiar.

Important steps in SRI

- Nursery management – Small raised beds (6" high) having specification 8 m × 1.25 m were prepared and 250 g of sprouted seeds were broadcasted on those raised beds. Number of beds depends on the area under rice cultivation and it should be adjusted by taking seed rate @ 5 kg/ha. Initially seeds were protected from scorching sun by spreading paddy straw over the beds and watering was done twice (once in morning and another one at evening).
- Early transplanting – In *kharif* season, 8-12 days old seedlings and in *boro* season, 15-18 days old seedlings were transplanted. Care was taken in uprooting the seedlings from the bed without disturbing the roots.
- Wider spacing – Seedlings were transplanted at a spacing of 25 cm × 25 cm.
- Weed management – Cono weeder was used for weeding. First weeding was done 10 days after transplanting (DAT) and subsequent (2-3) weedings were performed at 10-12 days

Despite various problems associated with rice cultivation, the farmers in the Sub-Himalayan plain of West Bengal are compelled to grow rice even under various land situations as there is no alternative. Under the circumstances, System of Rice Intensification (SRI) came as a boon to step-up the existing productivity level of rice. SRI was introduced in the year 2006-07 in both kharif *and* boro *season and it was experimented at KVK Instructional Farm as well as in nearby farmers' field for subsequent 2-3 years. After getting the encouraging results in experimental plots of KVK farm, the technology was demonstrated on a large scale by the KVK in different adopted villages over the district.*