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# SRI paddy to address Andhra water problems

In India, most of the large-scale canal irrigation projects are underperforming when compared to their design features and international standards of water and crop productivity. The inequity in water distribution, the wide gap between the potential created and what is utilized, salinity, tail- end deprivation, eco-system degradation, growing burdens on the state exchequer, social differentiation and inadequate livelihoods are some of the common problems in many irrigation projects.

Until recently, irrigation development focused more on the technical issues of irrigation like hydrology and hydraulics and gave less attention to social factors, including effective extension services that encompass water and crop management. Instead of making serious attempts to utilize well the existing large-scale irrigation projects, there is a rush to put up more irrigation projects including interlinking of rivers. The future of these new projects cannot be very promising based on the past experience with such projects.

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Mr. S. P. Tucker, Principal Secretary, Irrigation and CAD Department, govt of Andhra Pradesh is making efforts to get existing irrigation projects to perform better. Some of the attempts are training programmes for farmers on water and crop management with introduction of the System of Rice Intensification (SRI) in paddy cultivation on the top of the agenda. In addition, restructuring the department includes the Water and Land Management Training and Research Institute, where shifting from conventional style of training to results-oriented approach, and utilizing the services of NGOs in local capacity-building, etc. to improve performance.

SRI is becoming increasingly well-established paddy cultivation method that consumes only ? as much water compared to the present normal practice, requires only 2 kgs/acre of seed, involving early transplantation of single seedlings (8-10 days old) with spacing of 25x25 cm, less use of chemical fertilizers, and yield that is double the normal practice. The food grain produced is better for health as the application of chemical inputs is reduced.

The participatory training programme evolved by JalaSpandana – South India Farmers Organisation for Water Management, enriches farmers with all the SRI techniques by involving them in all aspects of the programme. Training as conducted in a classroom approach for a few days has its own limitations for converting learning into practice in the field. The PTP approach gives opportunity for the users to understand the problems better and to find solutions, while also coming to realise the mistakes committed. PTP encourages clarification of apprehensions and evolution of strategies for managing the irrigation system more efficiently.

The number of non govt. organisations directly working on water management in large-scale irrigation systems is very few. WALAMTARI empanelled some of them to work in irrigation projects and carry out participatory training programmes in the command area. It also released video documentation on the SRI method in regional language in simple manner which could be easily followed by anybody. The documentation gives details on the merits of SRI, step-by-step procedures, and its impact on water, soil and livelihoods of the people. The document also says that adoption of SRI could save upto 264 TMC water in AP alone.

JalaSpandana undertook the task of promoting SRI paddy cultivation in major irrigation projects like Rajolibanda Diversion Scheme, Priyadharshini Jurala Project, and Kurnool Cuddapah canal. The programme is supported by I&CAD and WALAMTARI. The approach was to develop SRI Farmer Field Schools which enable fellow farmers in the close vicinity to learn by seeing regularly the growth of paddy crop.

There were several apprehensions among the farmers about the feasibility of SRI in canal irrigation systems. In the beginning, farmers were of the view that the SRI was simply not possible under canal irrigation because the water availability is uncertain, and there is plot-to-plot irrigation, seepage, water logging, salinity, etc. The general opinion in the region was that the SRI was best suited to farmers with small landholding and not for big farmers. In addition, the SRI results of a few farmers in the past in this area were not promising, which raised doubts about its success.

JalaSpandana conducted detailed investigation on the reasons for the past failure of SRI attempted by a couple of farmers in the field, on possibilities of SRI under large-scale canal irrigation, and the normal practice of paddy, cost and yield in the region. One of the major reasons for the previous failure of the SRI was that there were no proper extension services provided to them. Although the problems in canal irrigation highlighted by the farmers were true, it was discovered that mitigating measure were within the reach of farmers.

**Normal practice** The normal practice of paddy cultivation in the region is using 25 kgs of seed per acre and transplanting after 30-40 days. The average tillers per plant is 25, growing in 3 inches of standing water in the paddy plots. The average yield in the region is about 28 bags (75 kgs/ bag) per acre.Based on these findings, the SRI Farmer Field School was thought appropriate. The attempt was not just to focus on SRI, but to also introduce traditional practices of growth promoters like *panchakavya*, a decoction prepared out of cow dung, urine, milk, ghee, curd, toddy, palm jaggery, rotten banana, and water to stimulate the growth of micro organisms.

**Farmers could not believe their own eyes when they saw seedlings 23 cms long in 11 days and then plants with 84 tillers on the 39th day from transplantation.**

The process involved conducting Gram Sabhas, showing the WALAMTARI video, and distribution of pamphlets on SRI and wall paintings. Farmers were motivated to purchase agri-implements for planting and weeding and several farmers bought the markers & weeders.

Farmers in both command and non-command areas were motivated to take up SRI methods. The non-command farmers near the canals siphon water from the canal and create problem for the water management at the main system level. Thus, it is equally important to motivate non-command area farmers.

The first SRI Farmer Field School was set up in Rajolibanda Diversion Scheme, an interstate project with low performance compared to its design features.

Mrs. Gani Prabhavathamma of Tanagal village in Wadepally mandal, Mahabubnagar District agreed to take up SRI, and in the same land area she grew first green manure called as *pachirota* in Telugu. In the beginning Mrs. Prabhavathamma decided to adopt SRI on two acres. But after seeing training courses for farmers and agri-labourers, she extended SRI area to ten acres. She says during the initial days of transplanting, “Fellow farmers came to my FFS and saw the single seedlings in infant stage and made fun of me for adopting SRI in 10 acres of fertile land. But after 30 days, the same farmers came to my FFS and saw more number of tillerings than normal and started repenting for not taking up SRI in their own lands.”

JalaSpandana arranged farmers' exposure visits to this and other FFSs. An important element was the concern shown by the department (specifically, Special Commissioners of I&CAD and WALAMTARI, respectively) who visited the FFS which boosted the morale of all concerned. As a result, more farmers adopted SRI in neighbouring mandals. The SRI paddy areas ranged from half acre to 20 acres.

Farmers could not believe their own eyes when they saw seedlings 23 cms long in 11 days and then plants with 84 tillers on the 39$^{th}$ day from transplantation. Mr Rambabu of Srinagar village in Manopadu mandal of Mahabubnagar Dist calls the whole exercise a miracle.

JalaSpandana extended similar exercises in Priyadharshini Jurala Project and Kurnool Cuddapah canal. At present there are 160 acres of SRI paddy cultivation in 36 SRI FFS. In addition, there are attempts to promote organic farming in canal areas. Mr Ramboopal Reddy of Nidzur village of Kurnool district adopted SRI in 17 acres, of which 2 acres is under organic farming. He has decided to adopt SRI in his 100 acres land under KC canal in the next season.

SRI could be one of the approaches needed to address several problems in irrigation projects like water conflict, equity, water logging, salinity, tail-end deprivation, and poor livelihoods.

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