

SRI paddy to address water problems: Report of JalaSpandana, Andhra Pradesh, India

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 existing irrigation performance.

Mr. S. P. Tucker, Principal Secretary, Irrigation and CAD Department (I&CAD), government of Andhra Pradesh is making concerted 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 SRI paddy method on the top of the agenda. In addition, restructuring the department includes the Water and Land Management Training and Research Institute (WALAMTARI), where shifting from conventional style of training to results-oriented approach, and utilizing the services of NGOs in local capacity-building, etc. should improve performance.

The System of Rice Intensification (SRI) is a well-established paddy cultivation method that consumes only $\frac{2}{3}$ 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 (PTP) concept evolved by JalaSpandana – South India Farmers Organisation for Water Management, enriches farmers with all the SRI management techniques by involving them in all aspects of the programme. Training as conducted elsewhere 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 by some farmers. PTP is more encouraging to clarify apprehensions on different practices and to evolve strategies for managing the irrigation system more efficiently. The programme develops a number of Farmer Field Schools, which in turn carry out the training programme and reach many farmers in the region.

The number of NGOs directly working on water management in large-scale irrigation systems is very few. WALAMTARI empaneled 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 of paddy cultivation 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 technology could save estimated water of 264 TMC in Andhra Pradesh 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 in the region 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 the success of the crop.



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 crop attempted by these farmers 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 as the success of these schools would enable expansion of SRI area by itself. The attempt was not just to focus on SRI method as envisaged by the research institutes, but to introduce also 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 microorganisms.

The establishment of a training centre in the command area gained confidence among the farmers about the activities of JalaSpandana. The intensive motivation was promoted in villages by conducting Grama Sabhas. The video documentation prepared by WALAMTARI was shown through local video cable operators, and distribution of pamphlets on SRI and wall paintings were carried out. Farmers were motivated to purchase agri-implements for planting and weeding on their own, and several farmers paid money to obtain the markers and weeders well in advance.



Farmers in both command and non-command areas were motivated to take up SRI methods. The non-command farmers near the canals illegally 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 (FFS) 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 was motivated to take up SRI, and in the same land area she was motivated to grow first green manure called as *pachirota* in Telugu. In the beginning Mrs. Prabhavathamma decided to adopt SRI on two acres. But the way that the staff of JalaSpandana got into the field and started training courses for farmers and agri-labourers impressed her, and she extended her SRI area from two acres to ten acres. Mrs. Prabhavathamma 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; whereas 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 and intensified people’s awareness, motivation, and orientation on SRI in other areas. In addition, an important element was the concern shown by the department (specifically, Mr. Swargam Srinivas, IFS, and Mr. G. Kishan, Special Commissioners of I&CAD and WALAMTARI, respectively) who visited the FFS which boosted the morale of the experiment. As a result, more number of 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 39th day from transplantation. Mr. Rambabu of Srinagar village in Manopadu mandal of Mahabubnagar District who was surprised to see such seedlings calls the whole exercise as 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 irrigation. Mr. Ramboopal Reddy of



Nidzur village of Kurnool district after intensive motivation of JalaSpandana adopted SRI in 17 acres, of which 2 acres is organic farming. He has started believing SRI technology can succeed and has decided to adopt SRI in his 100 acres land under KC canal in the next season.

This enables us to transform SRI FFS to SRI villages with additional efforts by I&CAD, WALAMTARI and JalaSpandana in this region. 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. For more details, contact: JalaSpandana, South India Farmers Organisation for Water Management -- doraiswamy@vsnl.net -- or see JalaSpandana web page: www.jalaspandana.org.