

## Developing SRI Implements Through An Innovator's Dialogue

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For strange reasons System of Rice Intensification has been evolving within the domain of people's knowledge/ innovation systems; the formal science establishments remaining as indifferent spectator. SRI has stimulated the creativity of several farmers taken in by the very idea and there are several efforts from them to improvise the system. The cumulative capacity of several inspired farmers to innovate, we thought, would provide a solution to the vexed problem of developing a set of appropriate implements SRI- markers and weeders.

The idea of SRI-Implements Workshop with farmer innovators thus emerged. The goal we set for ourselves is to facilitate development of marker(s) and weeder(s) appropriate for all soil types through a process of dialogue and experimentation and that we would be able to come with a solution for Kharif 2006.

*Cultivation by SRI method requires two types of implements –**marker**, to mark distance of 25 x 25 cm for transplantation of 8-12 days single seedling and **weeder**, for weeding in between two rows of paddy.*

The workshop was anchored by Watershed Support Services and Activities Network (WASSAN) in collaboration with Center for Sustainable Agriculture under the WWF-Dialogue Project at Thrive campus at Chintapally from 12<sup>th</sup> and 13<sup>th</sup> July, 2005. This workshop was basically meant for farmers, engineers, designers and mechanics who have involved themselves innovatively with implements used in SRI. This workshop discussed in detail the problems related to implements used in SRI, in different situations, and analysed them. Dr. Aum Sharma, who has been the backbone of the research in the Agriculture University to develop SRI implements, has also participated along with the Dean-Extension and other colleagues. Every one was asked to bring the implements that they have prepared/ improvised for the workshop. THRIVE provided the facilities to field test the implements in its farm. The picture panel (see box) provides a glimpse of various implements prepared by the farmers and the agriculture university.

### The Requirements of Good Weeders and Markers:

#### **WEEDER**

1. It needs to have built-in adjustability to change width of the working area.
2. Its design should be improved to avoid mud getting stuck-up between the teeth of blades.
3. It is fitted with a guard.
4. The weeder should be simple in design so it can be manufactured / assembled locally.
5. It should be made in different models so that the farmer has the option to choose one that is most suitable.
6. It should be rugged, sturdy and be all-weatherproof.

#### **MARKER**

1. The marker should be redesigned to mark the pathways simultaneously.
2. It should have an arrangement to add weight so that markings are visible clearly.
3. It also should have built-in adjustability to change the width.

4. *It is preferable to have an arrangement for direct sowing of seeds.*





Viewing for large pictures please browse [www.wassan.org/sri/weeders equipments.htm](http://www.wassan.org/sri/weeders equipments.htm)

	
Tarimella star weeder	Cono weeder
	
Three row weeder – Raichur	Japan weeder
	
Kollur weeder	Mandava weeder
	
Mechanized weeder - thrive	Single drum weeder
	
Ghatkesar wooden marker	Roller maker
	
Koundinya Marker	Bommireddy marker

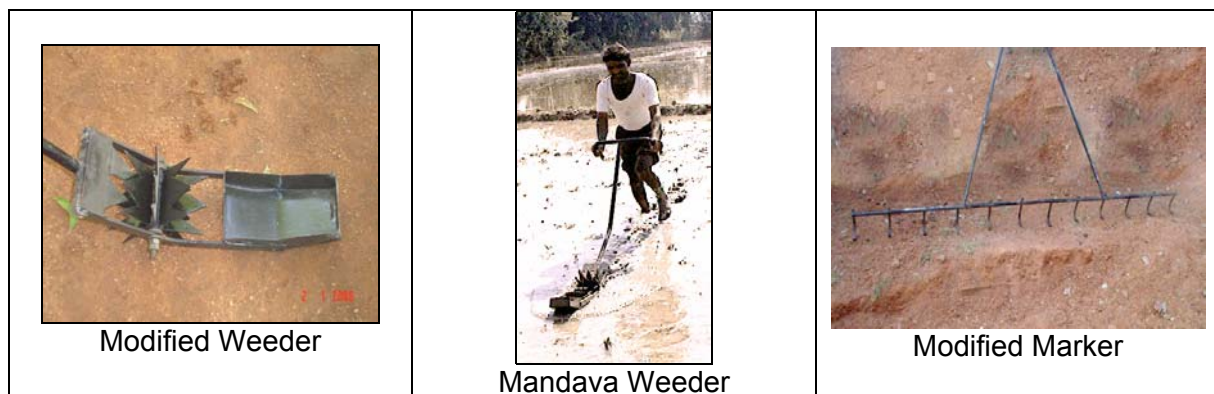
Sri. Kishan Rao, an engineer-farmer-SRI promoter anchoring this process at WASSAN, facilitated the workshop. The workshop started with a general brainstorming session on the main problems in SRI resulting into developing a set of principles for a 'good' marker and weeder. (see Box 2). Dr. Aum Sharma prevailed upon the rest with his deeper insights, while the farmers brought out several problems with the present set of rotary marker and Cono-Weeder being promoted by the University and distributed by the government with subsidies. In the following session, the participants showed their implements to the rest followed by a detailed discussion on their respective merits and demerits.

Meanwhile the field was organized and all the types of weeders were tested on ground in the field, including the ones promoted by the Agriculture University. After each trial, observations of the participants were noted. 'Star Weeder' prepared by (name...) a farmer from Anantapur and 'Kollur Weeder' prepared by Koundinya from Tenali emerged as the hot favorites. They are simple without much loose parts, light weight and are easy to operate.

The following table provides a summary of dialogue on different weeders and the recommendations of the participants to improve them.

 <p><b>Cono Weeder</b> Developed by the Agriculture University</p>	<b>Name</b>	<b>Cono Weeder</b>
	<b>Rate (Rs)</b>	1000
	<b>Description</b>	It has two rotating cone shaped drums, with width adjustability
	<b>Merits</b>	<ul style="list-style-type: none"> <li>• Better soil working efficiency.</li> <li>• Operational simplicity.</li> </ul>
	<b>Demerits</b>	<ul style="list-style-type: none"> <li>• Not suitable for black and loamy soils.</li> <li>• The axle hole gets widened upon continuous use.</li> </ul>
	<b>Recommendations</b>	<ul style="list-style-type: none"> <li>• The total weight can be reduced.</li> <li>• The conical drums can be fitted with bush bearings.</li> </ul>
 <p><b>Kollur Weeder</b> Developed by Koundinya (Kollur, Tenali)</p>	<b>Name</b>	<b>Kollur Weeder</b>
	<b>Rate (Rs)</b>	About Rs 750
	<b>Description</b>	A Swastika-like arms fixed to an axle with a worker friendly handle
	<b>Merits</b>	<ul style="list-style-type: none"> <li>• Simple design and fabrication.</li> <li>• Low weight.</li> <li>• Soil working depth is much deeper</li> </ul>
	<b>Demerits</b>	<ul style="list-style-type: none"> <li>• Has a tendency to dig deeper into the soil than required thus becoming unworkable.</li> <li>• No provision for width adjustment.</li> </ul>
	<b>Recommendations</b>	•
 <p><b>Tarimella star weeder</b></p>	<b>Name</b>	<b>Star Weeder</b>
	<b>Rate (Rs)</b>	400
	<b>Description</b>	A cylindrical drum with worker- friendly handle
	<b>Merits</b>	• A simple low-cost, light-weight design.
	<b>Demerits</b>	• No provision for width adjustment
	<b>Recommendations</b>	•
 <p><b>Raichur three- row weeder</b></p>	<b>Name</b>	<b>Raichur Three Row weeder</b>
	<b>Rate (Rs)</b>	1000
	<b>Description</b>	Three drums placed laterally to cover three rows with to handles, one to pull in the front and another push and steer from the back.
	<b>Merits</b>	<ul style="list-style-type: none"> <li>• Three row weeding by two persons results in labour saving.</li> <li>• Suitable to any soil.</li> </ul>
	<b>Demerits</b>	<ul style="list-style-type: none"> <li>• Needs two persons</li> <li>• Careful steering from the back is needed.</li> </ul>
	<b>Recommendations</b>	<ul style="list-style-type: none"> <li>• The front pulling rod can be made flexible horizontally so that steering by the back person becomes easy and the plants can be spared from being stomped by the drums.</li> </ul>

WASSAN has further worked on the recommendations from the workshop. The focus is on building on the 'star-weeder' as agreed in the workshop. The float from the Cono-weeder, handle from Kollur Weeder and the mechanism to remove soil from the drum-plates in the Raichur weeder were integrated into the star weeder. This has resulted in the Mandava Weeder (named after the village of Kishan Rao, where this has been perfected). This has been tried at several places. The marker prepared by Bommi Reddy Sudhakar Reddy was also improvised in terms of adding more rows to it to minimize labour requirement; costing about Rs.600. More than 40 such implements are fabricated at a cost of Rs.550 each and are being used in the Rabi season (2005-06).



Both these equipments are being tried in different locations and situations. The total cost of these implements is almost equal to the subsidy that the government is providing on the implements developed by the Agriculture University. Above all, these can be manufactured locally and does not need any sophisticated equipment. With the farmers' innovative capacities behind us, we are almost nearer to the target we have set for ourselves.

(For details and photographs of various implements visit the website: [www.wassan.org/sri](http://www.wassan.org/sri))