

## **Local Manufacture of Rotary Weeders Is Linked to Adoption of SRI in Kenya**

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The System of Rice Intensification (SRI) was introduced in the Mwea irrigation scheme in Kenya in 2009. Prior to that, mechanization of rice cultivation included mostly the tillage of rice fields by tractor or rotavation with a smaller implement like a rototiller. The tractors were owned by the National Irrigation Board (NIB) and tillage services were leased out to farmers. Paddy field levelling was done and continues to be done using animal-drawn wooden boards. All other rice farming activities were by manual labour i.e., nursery seeding, transplanting, weeding, harvesting, and threshing. A lot of progress has been made since then.

The System of Rice Intensification recommends adoption of mechanical weeding, preferably using simple push-weeders that are low-cost and utilize human labour (avoiding the costs of petrol or diesel-powered weeders). In 2009, there were perhaps three rotary weeders in the whole of the Mwea scheme which had been brought by researchers for various studies. It was not clear which weeders were most suitable for the area and its soils.

In 2010, a small study was conducted in Mwea led by Prof. Patrick Home of JKUAT which assessed a set of seven weeders from various countries, mostly from Japan or India and a wooden model from Tanzania. This was hands-on research in which groups of farmers tried their hand at each of the seven types of weeders. The farmers settled on three weeders, but their favourite was the Japanese model (see photos below).

The next year, the three preferred models were taken to three foundries based in the Wanguru Market in Mwea and to a youth training centre (*Mucii wa Urata* Youth Polytechnic). This was managed by Moses Kareithi, the first rice farmer in Mwea to use SRI methods who subsequently was hired by the NIB to assist in SRI popularization. This initiative used funds from one of the NIB-funded SRI components at the time in 2011.

The Youth Training Centre made an error and produced weeders whose tines were parallel, i.e., the drum in the back cut the soil exactly in the same line as the drum in front, making for inefficient weeding. Hence, efforts were concentrated to the commercial foundries in town, finally settling on one which had the requisite metal forging lathes and machines.

By that time, the foundries were making a few weeders a day, which were mostly sponsored by projects and distributed to farmer free. Later, in 2015-16 when implementing the SRI extension project in Western Kenya serving the Ahero, West Kano and Sisso irrigation schemes, we introduced the making of weeders

at a foundry in Ahero town under that project (which was supported by AgSRI in India). That foundry initially made 30 weeders which were distributed to farmers

It is now over 10 years since SRI was introduced in Kenya. As SRI adoption has spread, the demand for weeders has grown, and individual farmers started ordering for weeders directly from the foundries. Today, rotary weeding is the preferred mode for weeding in Mwea, Ahero and West Kano irrigation schemes.

The weeders are sold for between Ksh.2,000 to Ksh.3,000 (20 to 30 USD) and farmers are able to buy locally-made weeders without project support. It is a win-win value-chain development, creating employment opportunities and reducing the drudgery of labour in paddy rice production.

**PHOTO GALLERY follows:**

**PHOTO GALLERY**



Moses Kareithi and Bancy Mati at the Mwea Irrigated Agriculture Development (MIAD) centre, viewing weeders to be evaluated



Mwea farmers with rotary weeders to be tested (4-11-2010)



Foundry of the *Mucii wa Urata* Youth Polytechnic where youth were trained on making weeders



Youth trainees holding rotary weeder components (10-3-2012)



Artisan at work making rotary weeders, Mwea (12-8-2014)



Typical foundry workshop in Wanguru market, Mwea (12-8-2014)



Moses and Bancy inspect weeders made at foundry in Mwea (1-21-2015)



Foundry in Ahero town where rotary weeders are made (3-16-2016)



Farmers receive rotary weeders in Ahero Irrigation Scheme (3-16-2016)



Farmers using rotary weeders in Ahero Irrigation Scheme (3-16-2016)