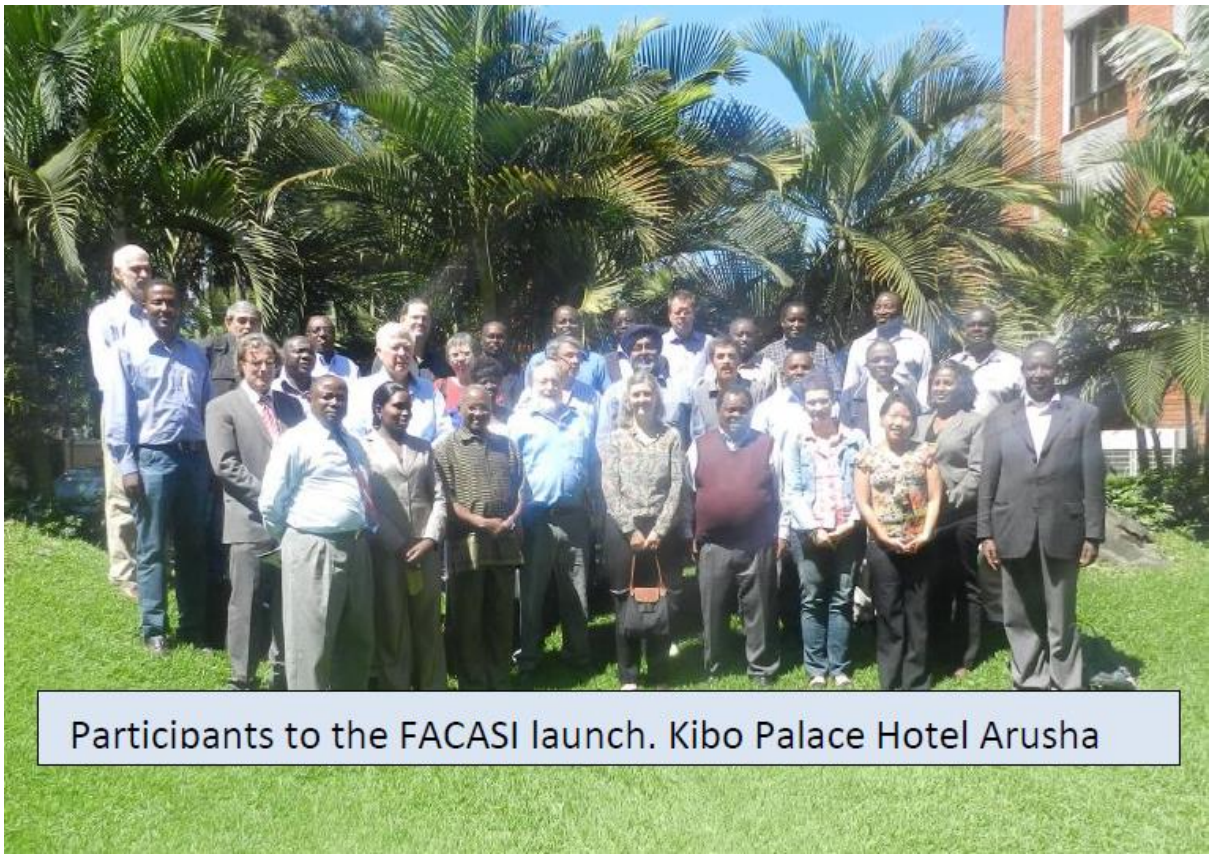
TWO WHEEL TRACTOR NEWSLETTER – MAY 2013

Launch of small farm mechanisation and conservation agriculture project for East Africa.



Participants to the FACASI launch. Kibo Palace Hotel Arusha

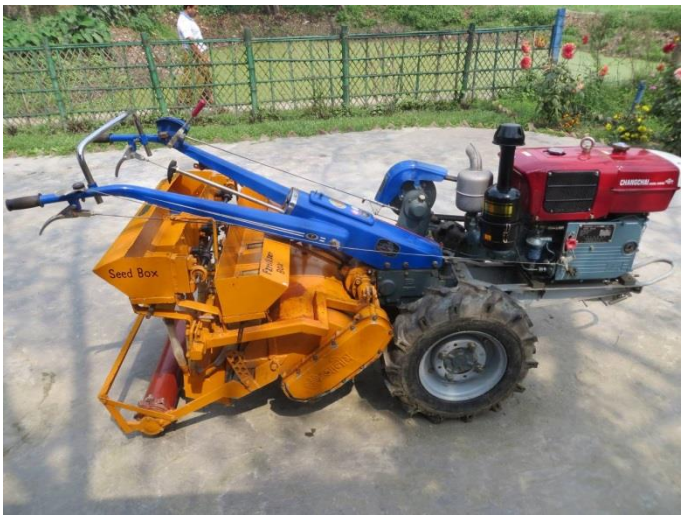
The need for sustainable intensification in sub-Saharan Africa (SSA) is widely recognized.
Although a lot of emphasis is being placed in current Research for Development work on increasing the efficiency with which land, water and nutrients are being used, farm power appears to be a 'forgotten resource'.
Undoubtedly, sustainable intensification in SSA will require an improvement of the farm power balance through increased power supply -via improved access to mechanization -and/or reduced power demand via energy saving technologies such as conservation agriculture (CA).This fundamentally informs the development, approval and launch of CIMMYT implemented ACIAR funded FACASI project at the project inception workshop held in Arusha Tanzania, 25-30th March, 2013.
The overall goal of the project is to improve access to mechanization, reduce labour drudgery, and minimize biomass trade-offs in Eastern and Southern Africa, through accelerated delivery and adoption of 2WT-based technologies by smallholders. The inception workshop attended by close to 40 participants from 12 countries was officially opened by Dr Lucas M Mugendi on behalf of the Director for Research and Development, MOA Tanzania.
It was graced by Dr John Dixon, Cropping Systems and Economics program of the Australian Centre for International Agricultural Research (ACIAR); and Ms Mellissa Woods, Director of the Australian International Food Security Centre (AIFSC).For more information, contact Frederic Baudron at: F.Baudron@cgiar.org

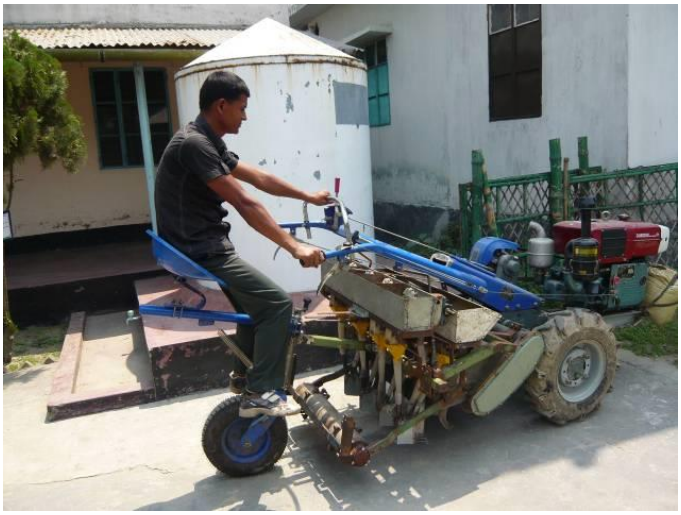
This project is using two wheel tractors as the main mechanical tractive power units for farm mechanisation. Two wheel tractors are the simplest and most affordable traction units for the small area farmer.

Further information:
http://aciar.gov.au/aifsc/news/new-aifsc-project-farm-power-and-conservation-agriculture-sustainable-intensification-facasi
http://aciar.gov.au/aifsc/sites/default/files/images/e-informa1836_0.pdf

Progress with the VMP (Versatile Multi Planter) in Bangladesh.

Enamul Haque (now with IDE Bangladesh) has sent me some pictures of the latest modifications to the VMP.





The Version 9 (left) has the dual type seed meters (as shown below) whilst the Version 10 (right) has a seat fitted.

The VMP now has both the fluted roller seed meters (for planting of cereals such as wheat and rice) and inclined plate seed meters (similar to the Earthway design) for spaced plants such as maize.

Enam has also informed me that the Smallholders CA Conference in Bangladesh has been rescheduled due to political instability. The new date is 7-11 December 2014.
Further details at:
http://www.ide-bangladesh.org/images/CA%20Conference%202014.pdf

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One of our regular contributors, Brian Sims, has sent me a copy of an older ICRISAT publication on the design of an animal traction planter, which uses inclined plate seed meters. It is at:
https://sites.google.com/site/twowheeltractorgroup/home/two-wheel-tractor--large-files
This publication is in Spanish, so some may have difficulty in translation. However there are several pictures and diagrams, which may assist members to understand the design of this seed drill.

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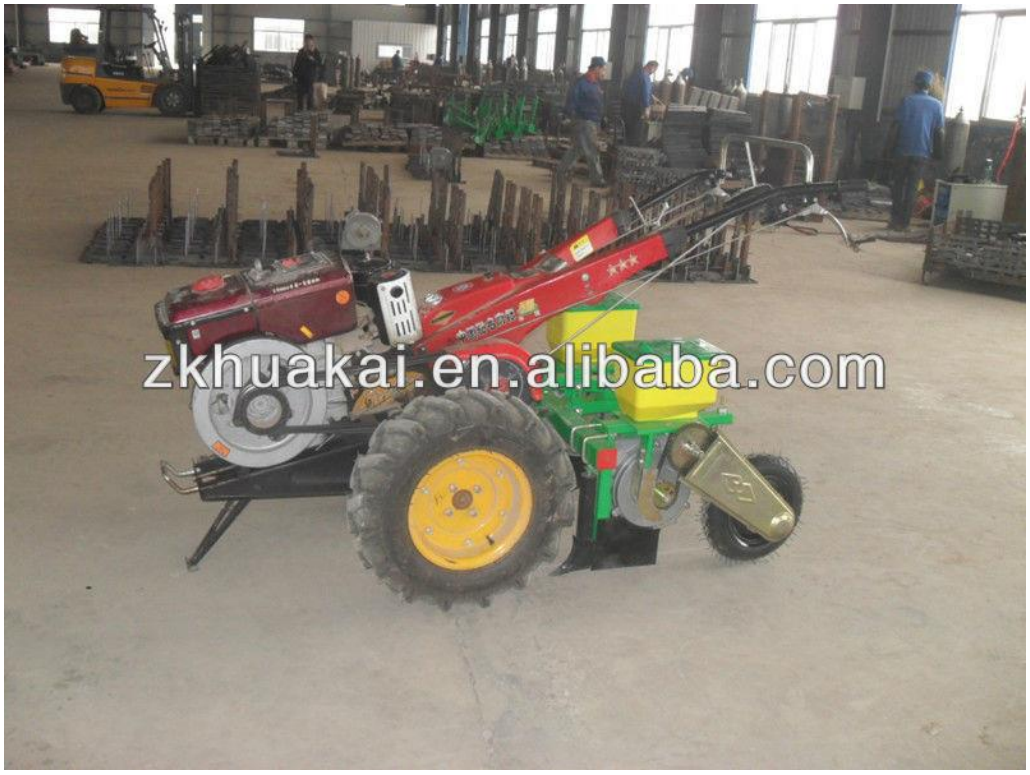
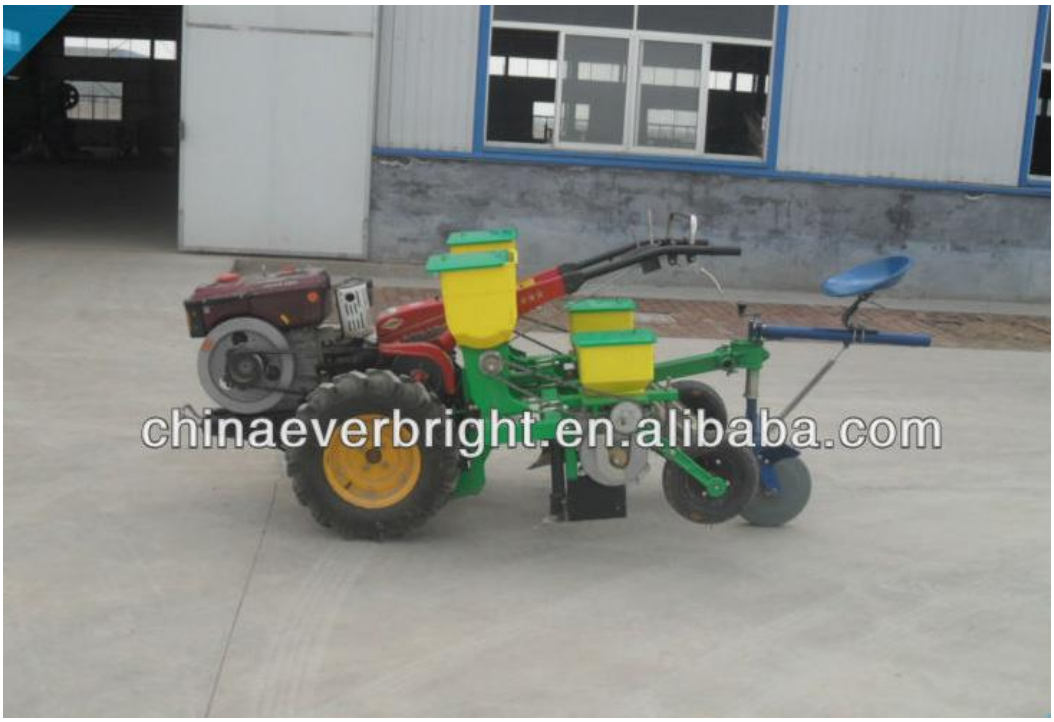
Some More Chinese Seed drills.
I have come across two Chinese 2WT seed drills when checking through a Chinese trade website.





The upper seed drill (seed only) is a little over $US400, whilst the lower drill (seed, fertiliser and seat) is around $US700. These two row implements are specifically designed for planting of maize and have quite sophisticated seed metering systems. Although used mostly for maize, they can be used in limited applications for other crops, such as soybeans.

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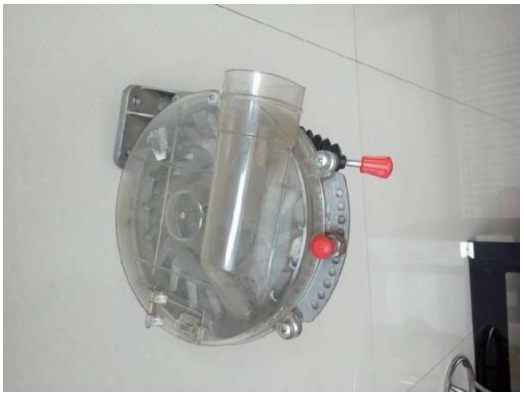
Further Design modifications to ARC Gongli seed drill.

As part of the ACIAR sponsored FACASI project, (see first story) there was considerable discussion regarding the ideal 2WT seed drill types to be used.
As maize is the principal crop being grown the FACASI group considered that a two row ARC Gongli type seed drill would be preferable to the standard four row unit, and the drill should be specifically set up for maize planting.
As an outcome of this, a group of five persons with links to the development of CA implements for 2WT and the FACASI project in particular met a few days ago at University of Southern Queensland in Toowoomba Australia. This was to specifically discuss the alterations that are to be made to the ARC Gongli to make it more suitable for maize planting in Africa.

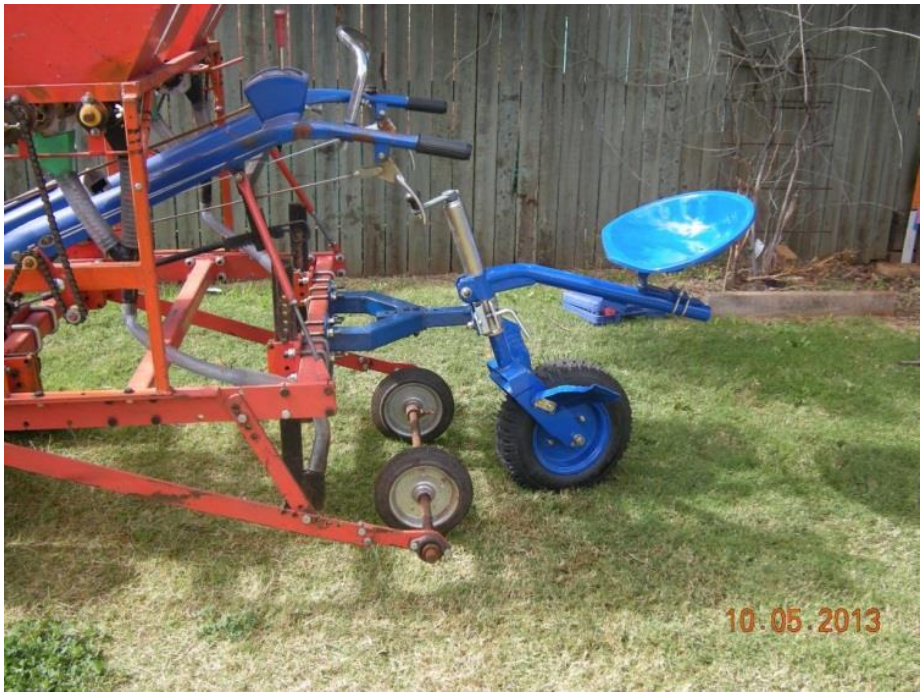
The group includes (from left): Sant Kumar Pratap (Ag. Eng. student at University of Southern Queensland) who is doing a 2WT project; Dr. Guangnan Chen (Senior lecturer at University of Southern Queensland); self –Jeff Esdaile; Dr. Jeff Tullberg (adjunct professor at University of Southern Queensland); Professor John Blackwell (Charles Sturt University, Wagga, Australia.)

The general consensus was that the basic tool bar frame and the soil engaging parts of the ARC Gongli would not be changed. However, as only two seed/fertiliser box set-ups are required to meter the seed, the boxes could be lowered to a position beside the handlebars. A more accurate seed metering system needs to be used to give more accuracy in single seed delivery compared to the fluted roller metering system now being used. Several types of inclined plate meters were checked out. There is also a Chinese vertical plate seed metering system (shown below) which will be considered.



This metering system is specifically designed for maize seed. However it can be used for other seeds such as soybeans.

The Arusha group also mentioned that it would be useful to have a seat on the seed drill. I had anticipated this request, as several other forum members have recommended that a seat be fitted.



This is a prototype of a seat that was made up recently to fit to the rear tool bar of an ARC Gongli. It is suitable for use when travelling between farms, or long distances, or when planting in large fields. However the seat assembly should be removed when planting in small fields, due to the frequency of turning. It can be re-attached when travelling to the next farm. The Toowoomba group inspected the seat assembly, and recommended further improvements which may be later incorporated into the design.

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This newsletter has been prepared by R. J. Esdaile, Agricultural Consultant of Tamworth NSW Australia. Opinions and comment would be appreciated. Please forward to all forum members if it is of general interest or alternatively send to me at rjesdaile@bigpond.com or rjesdaile@gmail.com.
E. & O.E.

Back issue of the newsletter are available at:
http://conservationagriculture.mannlib.cornell.edu/pages/resources/twowheel.html

Jeff Esdaile

11 May 2013