

FACASI NEWSLETTER

April– June 2015 | Issue 5



Photo Credits: by Bisrat Getnet . Research Team training at Melkassa Agricultural Research Center, Ethiopia

Training of research teams in the calibration, operation, repair and maintenance of two wheel tractors and ancillary equipment

By Bisrat Getnet – Ethiopia

Trainning of research teams within the FACASI project aims at equipping the country teams with skills to conduct evaluation of the on-station and research component of the technology and evaluate attributes of best bet two wheel tractor based technologies.

Training in both theory and practical sessions was organized for the Ethiopian researchers at Melkassa Agricultural Research Center and conducted by experts Jeff Esdaile, from Australia and Joseph Mutua from the Kenya Network for Dissemination of Agricultural Technologies (KENDAT), Kenya.



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- ◆ International Soil Conference on Sustainable uses of soil in harmony with Food Security on 18–21 August, 2015, Thailand.
- ◆ 2nd Africa Ecosystem Based Adaptation for Food Security Conference July 30–31, Kenya

The training also involved a field trip to one of the FACASI project on-station trial sites at the Kulumsa Agricultural Research Center where Participants discussed the trials done by different two wheel tractor planters.

*Mounting national agro planter to a
two wheel tractor*



The theoretical aspects of the training covered principles of conservation agriculture and the differences with conventional plowing. The basics and dynamics of conservation agriculture was discussed with examples and some of the metering mechanisms which are found in planting machines were presented.

The two wheel tractors were described and existing research works in two wheel tractor auxiliary equipment were highlighted before moving on to the practical sessions which involved mounting, dismounting and calibrating, of all available 2WT attached planters.

After a routine mounting, calibrating and field testing, all the planters were tested and the trainees were awarded a certificate for participation by the trainers and center director of Melkassa Agricultural Research Center, Dr. Mohammed Yesuf. During this training a total of twenty five participants were trained in calibration, operation and use of two wheel tractors.

Service providers Training in 2WT operation and business management held at the Institute of Agricultural Engineering, Hatcliffe, Harare- Zimbabwe

By R Nazare, Bertina Edziwa, Musoni Special and Dorcas Matangi.

Training workshops within the project are one of the ways of enhancing understanding and knowledge of Conservation Agriculture as well as the use of two wheel tractors as an alternative source of farm power among smallholder and medium scale farmers.

In Zimbabwe, a five day training workshop was organized aimed at imparting knowledge on two wheel tractor operation and its management. The workshop also covered skills on business management of two wheel based businesses and related services. Practicals in the field which provided hands-on experience on the use of two wheel tractors and the auxiliary attachments were part of the training.

The training content included among others

- ◆ Conservation Agriculture principles and practices and its immediate economic benefits in reducing cost of production and improving farmers productivity.
- ◆ Value Chain for Small Scale Mechanization
- ◆ 2WT-Machine: structure, (including components), the safety, regulations, maintenance and applications in shelling, transportation, silage cutting, planting water pumping, fertilizer application, herbicide application and powering of processing equipment.



FACASI Monitoring and Evaluation and Knowledge Workshop, Nanyuki– Kenya



FACASI held its Monitoring and Evaluation workshop in April this year. The main objective of this workshop was to reflect on the expected results from the project intervention and secondly to re-evaluate the knowledge management and communication products.

At the end of the workshop, the Monitoring and Evaluation structure, was agreed upon and the set of indicators that would be collected at country level. These sets of indicators would be used to assess the on-going change .

NEWS ARTICLES

Is it ethical for FACASI to promote fossil fuel–base technologies in an era of climate change?

By Frédéric Baudron, FACASI project leader

This is a question I have been asked repeatedly (mainly by Western scientists and developers) since the start of the FACASI project. Given the fact that 75% of all anthropogenic greenhouse gases emissions globally are the result of fossil fuel combustion, the promotion of mechanization using diesel engines could be perceived as controversial.

My reply is three fold. Firstly, it should be noted that agriculture accounts for only 2.3% of global (largely fossil–fuel based) energy consumption, and that this share is declining. Climate change is caused by our cars, our light bulbs and our smartphones, rather than tractors! Secondly, most of the energy consumed by agriculture globally is represented by the manufacturing and provision of agricultural inputs, while direct

Is it ethical for FACASI*continued from pg3*

consumption by farm machinery is relatively small. Thirdly, the energy used per agricultural land area in Eastern and Southern Africa is negligible compared to industrial countries such as European countries. Therefore, while the issue of climate change mitigation calls for maximizing energy use efficiency in agriculture globally, this should translate into different approaches in different regions. Technologies that reduce energy demand while maintaining production levels should be deployed in European agriculture. In contrast, Eastern and Southern African agriculture, may require technologies

that increase energy demand but given the fact that farm power appears to be a major limiting factor on productivity in many farming systems of the region, the increase in production resulting from these technologies is expected to be disproportionately high compared to the increase in fossil fuel consumption. Two-wheel tractor-based conservation agriculture allows for crops to be established at the optimum planting time and at a precise density and depth, with only five liter of diesel per hectare or less. This set of technologies is characterized by high energy use efficiency. Can the same statement be made by the technologies used by the agriculture of the Western World?

Re-examining appropriate mechanization in Eastern and Southern Africa: two-wheel tractors, conservation agriculture, and private sector involvement

by Frédéric Baudron, Brian Sims, Scott Justice, David G. Kahan, Richard Rose, Saidi Mkomwa, Pascal Kaumbutho, John Sariah, et al.

Abstract

The need for sustainable intensification in Eastern and Southern Africa (ESA) is widely recognized as a requirement to achieve food security with minimum negative social and environmental consequences. In current Research & Development programs, much emphasis is placed on increasing the efficiency with which land, water and nutrients are used, whereas farm power appears to be a ‘forgotten resource’. This is a major concern when farm power in ESA countries is declining due to the collapse of most tractor hire schemes, the decline in number of draught animals and the growing shortage of human labour. A consequence of low levels of farm mechanization is high labour drudgery, which makes farming unattractive to the youth and disproportionately affects women.

Undoubtedly, sustainable intensification in ESA will require an improvement in access to farm power. In this paper, we suggest this can be achieved through the use of small, multipurpose and inexpensive power sources such as two-wheel tractors (2WTs) coupled with the promotion of energy saving technologies such as conservation agriculture (CA), whilst ensuring the profitability for farmers, service providers and other private sector actors in the supply chain. We argue that appropriate mechanization in Africa, a paradigm largely abandoned three decades ago, may be re-examined through the combination of these three ele-

This article by the FACASI team was published, June 2015– in the **Springer Science +Business Media Dordrecht and International Society for Plant Pathology Journal**. The final Publication is available at

<http://link.springer.com/article/10.1007%2Fs12571-015-0476-3>

2nd Africa Ecosystem Based Adaptation for Food Security Conference 2015 (EBAFOSC 2)

Dates: 30–31 July 2015 **Venue:** UN Complex

Location: Nairobi, Kenya

E-mail: afsac2015@aaknet.org **www:** <http://www.afsac2.aaknet.org/>

For more information: <http://climate-liisd.org/events/2nd-africa-ecosystem-based-adaptation-for-food-security->

International Soil Conference on Sustainable Uses of Soil in Harmony with Food Security on 18–20 August 2015 at Cha Am, Thailand

For more information about the conference and importance dates:

<http://www.act-africa.org/events.php>
[com=67&item=251#.VUcUw9Kqqko](http://www.apaari.org/events/isc2015.html)
<http://www.apaari.org/events/isc2015.html>;
http://www.ddd.go.th/WEB_ISC2015/Index.html

No-Till Conservation Agriculture Conference 2015

To be held on 1st to 3rd September 2015 at ATKV Drakensville, near Bergville with the theme “*Reap the Results of a Responsible Attitude in Agriculture*”

For more information and **registration**:

<http://notillclub.com/index.php/events/icalrepeat.detail/2015/09/01/12/-/no-till-club-conference-2015> or
contact SANDRA 082 472 5987 | 033 330 2062 | ntcsandra@gmail.com | Fax: 086 579 6926

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