

## Institutionalization of FOT a key ingredient to sustainability: lessons from Uganda



### Optimization of Fertilizer Recommendations in Uganda. Monograph 2

Harrison Rware<sup>1</sup>, Kaizzi Kayuki<sup>2</sup>, Charles Wortmann<sup>3</sup>, George Oduor<sup>1</sup> and Martin Macharia<sup>1</sup>

<sup>1</sup> CAB International, <sup>2</sup> National Agricultural Research Organisation (NARO), Uganda, <sup>3</sup> University of Nebraska-Lincoln, USA

## Overview

Research funded by the Alliance for a Green Revolution in Africa (AGRA) Soil Health Program in 2009 confirmed that the rate of maximum net return due to nutrient (nitrogen, phosphorus or potassium) application for various crops depends on the relationship between the cost of fertilizer use (C) to farm gate price for the commodity (P). Farmers need to use their judgment to predict what farm gate prices they will likely achieve as part of process of deciding how much fertilizer should be applied to which crops. When the C:P ratio is low, investment is attractive.

A single recommended fertilizer rate is not feasible due to fluctuating price of fertilizers and produce. To be effective fertilizer guidelines have to be tailored to the resources available to the farmer and their assumptions about the likely market price of their outputs.

As a result of the 2009 grant, a prototype fertilizer optimizer tool (FOT) was developed. This gives guidelines to resource constrained farmers on crop-nutrient-rate combinations that optimize returns on fertilizer investment.

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Socio-economic factors create conflicting calls on funds available to smallholder farmers and limit fertilizer investment. However, the FOT has a great potential to support decision-making at farm level on where to place fertilizer in mixed cropping systems and the best crop-nutrient combinations to generate maximum economic returns.

## Institutional arrangements for the sustainability of FOT

AGRA provided additional investment in 2013 to the Optimizing Fertilizer Recommendations in Africa (OFRA) project to develop versions of the FOT in 13 countries in sub-Saharan Africa. In many countries, including Uganda, versions were developed specific to different agro-ecological zones.

To entrench institutional arrangements for FOT will require buy-in from government, NGOs and the private sector to provide a platform for awareness creation, wider dissemination and sustainability of this technology beyond project life.

More importantly, to make an innovation self-sustaining, there is need for ensuring wider population and stakeholder ownership. This will happen if the supply side of the technology is intact and supported to further refine the technology and address emerging challenges. There must be real demand from consumers for of this technology. A system that ensures supply and accessibility within reach by the users is a key ingredient to sustaining the technology.

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Development of technologies has traditionally been undertaken by the science community and then left to be picked-up by the extension arm of governments, development organizations, and private sector to roll it out to the end users. There has been a paradigm shift where Research for Development (R4D) has integrated the science (research) with the development and thus new technologies are not left hanging. It is in this regard that OFRA factored in communication of the FOT technology and its potential to change agriculture practices as well as empowering the delivery pathways to ensure that the technology reaches the end users (farmers). Making the innovation self-sustaining has been main concern to the OFRA team who were keen to avoid the history of many innovations, which die before takeoff. Some of the reasons for such a scenario are lack on ownership, awareness and an understanding of the benefits of such innovations by key stakeholders.

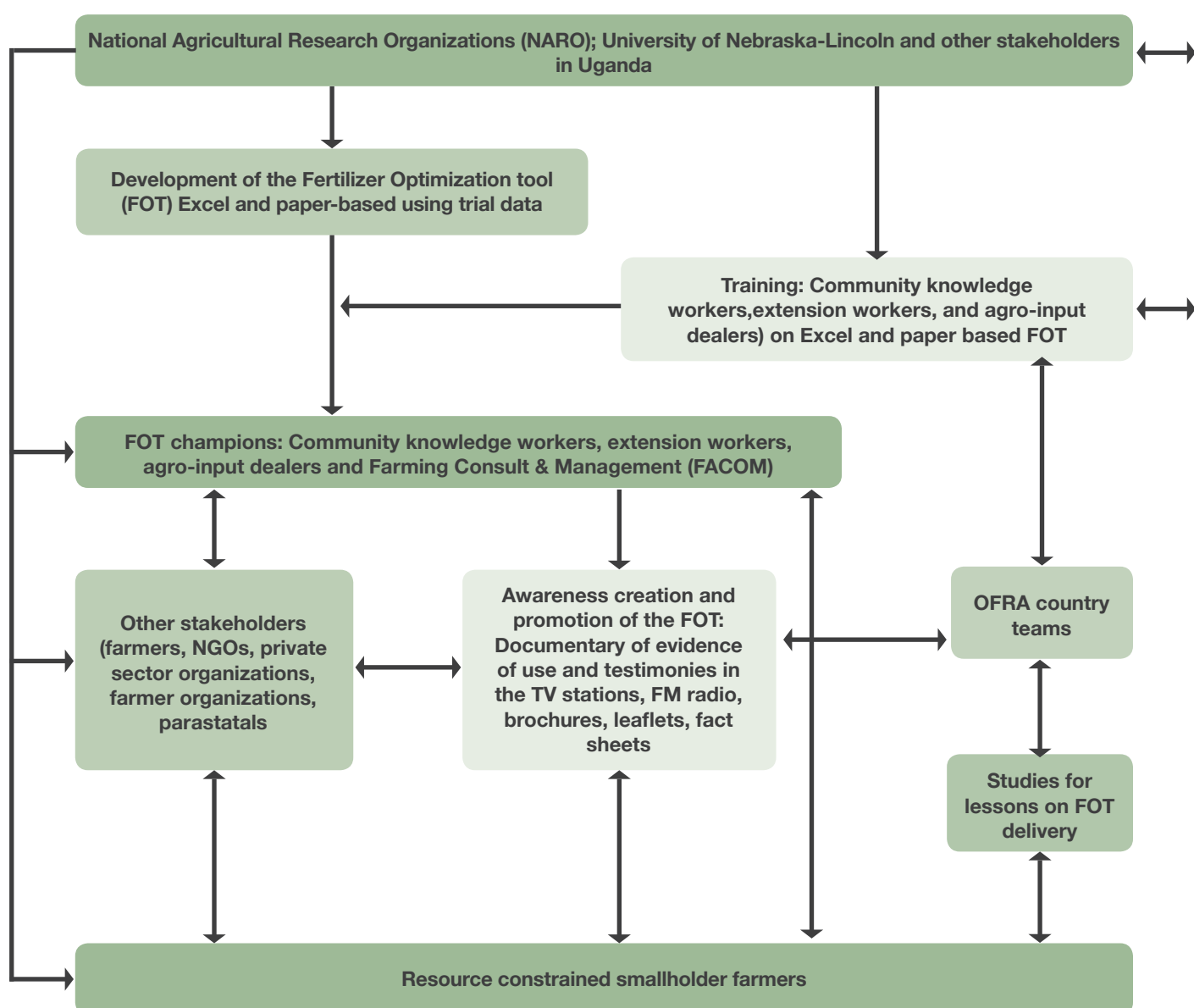
There are a number of players in the fertilizer industry in Uganda ranging from fertilizer companies, NGOs, farmer organizations, agro-input dealers and research institutions among others. Awareness creation among these stakeholders on the available fertilizer technology will create the potential pathways to reach farmers.

## Roll out of the FOT in Uganda

Once the FOT was developed, there was need for rolling it out through the technology uptake pathways. These were identified as the community knowledge workers and the government extension workers, among other key stakeholders in Uganda. The community knowledge workers and extension workers were trained to understand the FOT and to equip them with the skills to deliver it to the farmers.

The figure below presents schematic arrangements for how development, promotion and utilization of FOT by various stakeholders ought to be structured, with modifications to suit country specific needs. This arrangement will not only garner support but also foster the sustainability of FOT in the OFRA countries.

## A framework for development, validation, delivery and promotion of FOT for sustainability in Uganda





## Conclusions and recommendations

The first step towards institutionalization of the FOT requires creating awareness and soliciting for the buy-in of the FOT by public and private extension, ensure they feel a sense of ownership of the technology. Once ownership is in place, structures are critical to ensuring sustainability. A sustainable FOT will be anchored in the network of stakeholders who are aware of the technology and willing to use the technology with their farmers.

The Uganda interest in the FOT, especially within government circles, should be used as a case study to energize other countries to develop a roll out strategy

Key government stakeholders should be seen to be co-driving all stages of development and promotion the FOT technology. This will lead to enhanced ownership within government systems and a desire to use the FOT within its investment vehicles, includes the fertilizer subsidy schemes.

The Uganda interest in the FOT, especially within government circles, should be used as a case study to energize other countries to develop a roll out strategy that incorporates key and strategic stakeholders involvement in key decisions to build ownership and uptake.

## Acknowledgement

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## Links with additional information

1. More Profitable Fertilizer Use For Poor Farmers <http://bit.ly/1LJtU1G>
2. Uganda Work Positioned to Make Fertilizer Use More Profitable for Poor Farmers <http://bit.ly/1RCI1c8>
3. Fertilizer use among smallholder farmers in Uganda <http://bit.ly/1GVaRAr>
4. The Fertilizer Use Optimizer Solver and Macros Programming Manual <http://bit.ly/1LJuegY>

### Monograph series:

This monograph is part of a series of four published in July 2015 and based on case study research and focus group discussion in Uganda.

**Monograph 1:** Fertilizer Optimization Tool, an innovation for resource poor farmers in Africa

**Monograph 2:** Institutionalization of the Fertilizer Optimization Tool, a key ingredient to sustainability lessons from Uganda

**Monograph 3:** Farmers start appreciate the benefits of using the Fertilizer Optimization Tool in guiding fertilizer application in Uganda

**Monograph 4:** Fertilizer Optimization Tool: From the community knowledge and extension workers perspective in Uganda [following-up on trained intermediaries]

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For further information contact: Harrison Rware, M & E specialist OFRA project, CABI [h.rware@cabi.org](mailto:h.rware@cabi.org)

Website: [www.africasoilhealth.cabi.org](http://www.africasoilhealth.cabi.org)