

# Soil Health news

May 2014



Down to earth information...

## Celebrating the first 100 ISFM materials on the ASHC website

This newsletter coincides with the first 100 resources being added to the ISFM materials library on the Africa Soil Health Consortium (ASHC) website. As you will see on page 10 we plan to develop many more resources in this phase of ASHC. I am proud that we are on course to produce over 300 materials – probably as many as 500 if you count every language version of every resource. The vast majority of these materials are available as Creative Commons so are free to reuse and adapt.

There are two case studies in this newsletter. One shows how ASHC worked with the International Plant Nutrition Institute (IPNI). The case study follows the complete production cycle and shows how we took on board feedback. The second case study looks at two approaches to exciting young people about what became known as Smart Farming – a great shorthand for ISFM. In Kenya we found that young people were very receptive to ideas that made farming more profitable.

Profitable smallholders are a recurring theme in the newsletter. The OFRA project sees 13 partners doing original research into increasing economic returns from the application of different crop nutrients. This should lead to the development of tools that help farmers utilize this knowledge to apply fertilizer in ways that maximize their profits. This has huge implications in terms of communicating recommendations

to farmers, input suppliers and policy makers alike: all of the learning from phase 1 of ASHC will be put to the test as we start to share these messages.

I am delighted to be reporting 3 awards for work associated with ASHC. We are proud to be working with the best in Africa to develop world-class communications.

**George Oduor**  
ASHC Project manager



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## How the Africa Soil Health Consortium helped IPNI find its voice with smallholders in Western Kenya

**Nathaniel Ndemba** has a reason to smile. He is a smallholder farmer from Siaya County, who is now harvesting 40 bags of maize from his 2-acre farm – up from just 10 bags!

Nathaniel's success story is one of many in his community who have benefitted from the International Plant Nutrition Institute's (IPNI) 4R Nutrient Stewardship project intervention in Western Kenya.

4R is about the best fertilizer management practices, that is:

- applying the right fertilizer source
- at the right rate
- at the right time in the growing season
- in the right place.

Nathaniel was trained on using the right source of fertilizer for his farm, which had very low levels of potassium (K). DAP and CAN fertilizers do not contain potassium and so could not address the potassium deficiency in his soil. This led to the low yield of just 10 x 90 kg bags. He is now using NPK fertilizer, which provides balanced nutrition for his maize, consequently the yields increased.

Launched in January 2013, phase 1 of the 4R project seeks to address and close the gap between farmers' low yields and the higher yields achieved in scientists' research trials. The low yields have been attributed to poor crop and fertilizer management, widespread nutrient deficiencies and depletion of soil fertility.

According to Samuel Njoroge, the 4R project manager, on-farm demonstrations, training workshops and field days, and knowledge products can be shared through media and ICT platforms to inform farmers, extension agents and fertilizer dealers about 4R practices.

*"We recognize CABI for their significant support in the project so far. Their expertise in developing 4R communication materials and preparing and field-testing a questionnaire to measure the impact of the materials is commendable"* said Dr Shamie Zingore, IPNI's regional director for sub-Saharan Africa.

At a project review meeting in January 2014, IPNI's President Dr Terry Roberts presented a certificate of appreciation to CABI for their outstanding partnership with the 4R project. Over 20 participants were in attendance from AGRA, a range of NGOs, international agricultural research organizations, the Kenya Agricultural Research Institute, the University of Nairobi and IPNI's private sector partners Kenya Seed Company Limited and MEA Limited.

The first phase of the 4R project is supported by Agrium, a leading global producer and marketer of agricultural nutrients and industrial products. It will run until December 2016.



IPNI's President, Dr Terry Roberts, presents a certificate of appreciation to CABI's Lydia Wairegi to mark a year of success collaboration on material development.



Samuel Njoroge shows the impact of the new approach to growing maize at Nathaniel Ndemba's farm in Siaya

The review meeting looked at the outputs from first year. Project activities with research and development stakeholders and partners were also discussed.

Grace Omondi, the communications specialist at ASHC, explains how the team worked with IPNI.

*"IPNI approached ASHC with a clear brief. They wanted materials to help smallholder farmers to understand the value of three nutrients - nitrogen, phosphorus and potassium. They had*



IPNI farmers training in action

*identified that the best approach was to have a leaflet and a poster for each of the three nutrients. When ASHC had completed the materials they were tested on a diverse group."*

In November 2013 IPNI held a field day for farmers in Gem district, Western Kenya. The event was an opportunity to test ASHC materials developed for IPNI on maize nutrients. A diverse group of 20 smallholder farmers were questioned about the materials.

The smallholders responded positively to the material. They all planned to use the information in the posters and leaflets. However, those with limited educational opportunities requested help from others to understand the content.

There was a split in the farmers along education lines. The smallholders who had primary or secondary level education understood the messages well – for example commenting on the materials produced to support growing better or healthier maize, they picked up on the importance of proper planting and top dressing to be able to harvest healthy maize. Not surprisingly the farmers who had reached tertiary level could clearly recall all the messages accurately.

There was a problem with some of the farmers with limited education who said they "needed more time to figure out the messages". In reality they meant that they needed the help of their more educated children to understand the messages.

All the smallholders who are functionally literate said that they

will use the materials for reference to identify nutrient deficiency and also gain knowledge on nutrients. Those that cannot read will get help from family and friends to use them. The smallholders also said that they would share them with other farmers, students, relatives and their neighbours.

There is a real dilemma about pitching materials in relation to levels of literacy and visual literacy. When clients like IPNI are keen to present precise information to farmers we need to explore how we can make the materials more intuitive to audiences for whom reading is a challenge.

Once the farmers understood the messages they felt they were beneficial to them and other farmers. They also felt that if they applied the lessons it would result in better maize harvest.

One of the farmers commented that materials in Kiswahili would be appropriate for older audiences. However ASHC's experience in Ghana has been that people who can read can read in English; people who cannot read in English often cannot read in local languages either.

The smallholders like to see photos of healthy maize on the leaflets and posters as this is what they aspire to grow.

### Summary of smallholder responses

	Male	Female
% of smallholders	50%	50%
Age		
18-30	20%	10%
31-45	10%	60%
46-60	40%	30%
61 and above	30%	0
Education		
Primary	40%	70%
Secondary	40%	10%
College	20%	10%
No formal education	0	10%

The posters used strong colours - red, blue and green - which the smallholders found attractive and also complemented the design of the posters. In particular the smallholders liked the photos of green maize and healthy cobs. It was a motivation for the smallholders to see what farmers like them had achieved.

The farmers also liked the phosphorus flyer featuring a photo of a woman with her maize cob and also the maize leaflet that showed how to measure and apply fertilizer.

One respondent liked the fact that the materials could help him identify nutrient deficiencies on his maize. However, for the less literate farmers,

the distressed crops were off-putting: some failed to understand the nature of nutrient deficiency stating this was a disease that had been introduced to the area.

30% of farmers had seen similar materials before, mostly produced by an NGO active in the area. In comparison the farmers stated that the IPNI ones were well produced, relevant and relayed relevant information on soil fertility, which they wanted to know about.

In conclusion, the materials stood up well to the test in the field but we need to be vigilant for effective ways to further help smallholders who have limited access to formal education.



Good agricultural practices for better maize leaflet, validated by IPNI

All materials mentioned in the article can be downloaded from the materials section of the ASHC website.

the prize, was so impressed by Felix that he has agreed to mentor him so he could reach his career goal in agriculture.

Grace Omondi from ASHC explains: "We set a tough challenge to the young people of Kenya. First they had a science lesson to understand what smart farmers should do. Then the students had an art lesson to find ways of sharing the information with farmers in their areas. The results are really impressive."

Young African Express, a Nairobi-based curriculum development agency, worked with ASHC to set up the competition and develop the curriculum resources. These can be found on the ASHC website in the ISMF principles section of the materials page.

The science lesson was based on the smart farming principles of ISFM. This is a way of improving crop production with improved seed, fertilizer and organic inputs like manure or compost or the integration of legume crops. When ISFM is combined with other good farming practices it boosts farmer productivity and profits. Gentiana Primary School received the award for the most supportive school: they won a greenhouse starter kit that will enable them to feed the whole school with lunch once it is up and running. All the evidence shows you cannot learn when you are really hungry. Being able to support better nutrition in school should have an impact on the exam results of the school in the medium term - especially for the children from very low-income families, including resource poor farmers.

A series of award ceremonies took place during the daily assemblies at the winners' schools. In addition to receiving their prizes, they also got the opportunity to meet Juliani, a rising star in the Kenyan music scene who is the Amiran poverty eradication ambassador. The Amiran Foundation Kenya sponsored the greenhouse starter kits awarded to the winning schools.

Susan Carvalho of YAE noted: "As for Young Africa Express, we are now busy developing these curriculum ideas into fully interactive learning packages. This will help to really consolidate learning about smart farming."

"We set a tough challenge to the young people of Kenya. First they had a science lesson to understand what smart farmers should do. Then the students had an art lesson to find ways of sharing the information with farmers in their areas."

George Oduor concluded: "ASHC supported the development of an initial set of curriculum support materials with the help of the CABI agronomist. Young African Express got behind the idea of the Smart Farming campaign that they went on to develop further science lessons

themselves. This protracted school closures caused by industrial action by teachers and the election in Kenya that led to the extension of the deadline for the competition."



Felix with the Kiambu County Deputy Governor, Hon. Gerald Githinji

## Kenya's young people use innovative poster designs to encourage smart farming

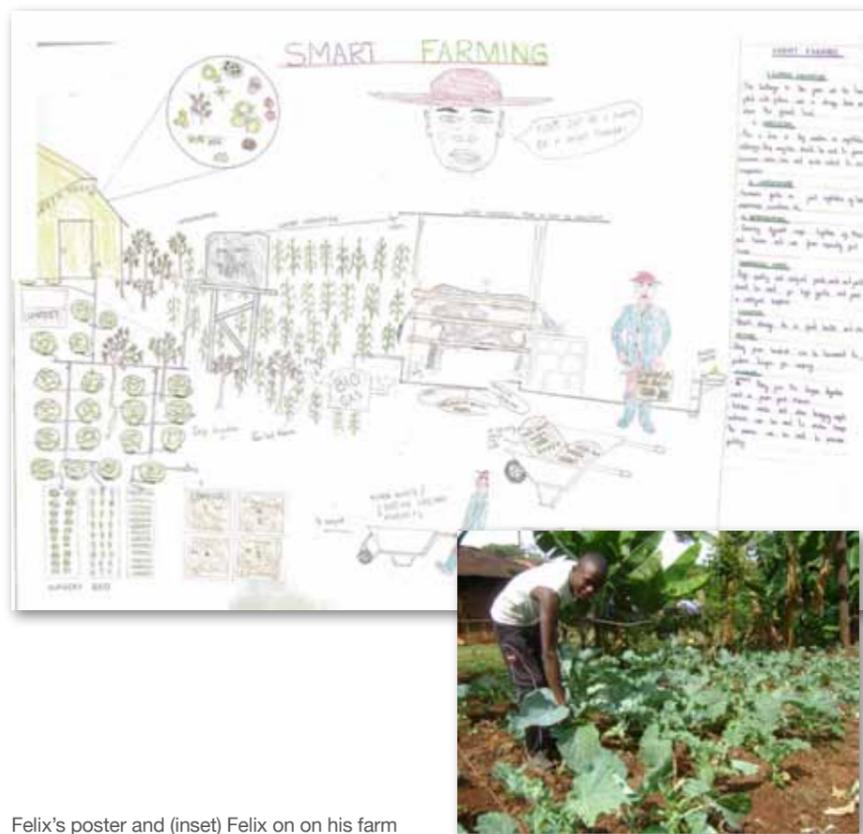
### An ASHC devised schools poster competition has shown that Kenyan young people really understand what farmers need to be successful.

"It is often thought that young people don't take an interest in agriculture. This competition shows that, with a combination of exciting lessons and incentives, young Kenyans quickly pick up the basics of smart farming. It also shows they are keen to be part of it", explains George Oduor of ASHC.

"When ASHC met Felix Kamiri Muchiri of Kiambu High School at the award ceremony it was clear why he was the winner of the Smart Farming poster competition. He is already actively involved in farming and he sees that it could represent a successful career option for him."

Felix's poster shows how integrated soil fertility management (ISFM) can be combined with other practices to make farming more productive and profitable. Felix's prize of a laptop will also help to make sure he can make effective plans.

The Kiambu County Deputy Governor, Hon. Gerald Githinji, who presented



Felix's poster and (inset) Felix on his farm

### ASHC lessons from running the Smart Farming competition:

- Farming does not need to be on the formal curriculum. With creative thinking it can fit into the science and art & design curriculum.
- Young people can be excited by the opportunities that smart farming offers. They can see the difference between smart farming and traditional approaches that are not standing up well to climate uncertainty and other challenges
- Competitions take a great deal of effort to organize. They probably work better for promotional purposes than for curriculum support. Directing the effort invested in the competition into staff training in schools may have been more productive.
- In addition to the development of curriculum support material and teachers' notes, professional animators were employed to help the young people complete their competition entries. However, given the quality of the prizes, we would expect stronger buy-in for any subsequent competition
- The competition did give ASHC a direct link to the school and enabled us to see what had been produced. In Felix's case, this saw him combine knowledge from school lessons with learning from his family and neighbours' farms. It was this additional work that made him stand out as a winner.
- It is hard to know if young children can be a catalyst for change in their communities, or if we are just sowing the seeds for them to be smart farmers when they get land themselves. Either way it seems many young people are open to these messages.

## The ISFM superheroes

In March 2014 the Kenyan youth media phenomenon Shujaaz won its second Digital Emmy Award. ASHC has produced two story lines with Shujaaz to explore how integrated soil fertility management (ISFM) messages can be packaged in very different ways for a youth audience.

*“When ASHC was conceived we allocated some funds to allow us to invest in innovative communication approaches. Shujaaz is a great example of how we have developed exemplary materials.*

*As we reviewed our approach to gender we realised that there were emerging opportunities for targeting young people. Traditional thinking is that young people are not interested in farming. However, when we find ways of making the information relevant young people respond very positively.”* explains George Oduor.

Rob Burnet of Shujaaz explains the background to the project: *“When Shujaaz was conceived a little over four years ago, everyone we spoke to told us their concerns about underemployed Kenyan youths. Half of Kenya’s population is under 18 and two-thirds are under 30.*

*As we talked to people we kept coming across interesting opportunities that young people were using to improve their lives. Brilliant*

*new ideas for better agriculture, new markets, small enterprises, job creation, ways to hold government to account and demand services peacefully and effectively. It seemed to us that lots of solutions were available to common problems, but young people just didn’t seem to know about them.*

*Finally we started looking for media that was talking intelligently to Kenya’s youth, engaging them in productive, inspiring conversations. But apart from pop-music radio, there seemed to be gap when it came to positive, youth-focused media. And that’s when we realized there was really a need - and an opportunity - for us to act.*

*Shujaaz has created a multi-media channel that looks and feels like the real world to young people who have never seen people like themselves in the media before. It can reach and engage a monthly audience of over 6 million young Kenyans aged 10-30 in conversations about big ideas that can transform their lives.*



On the mike: DJ B broadcasts to a rapt audience. Picture: Shujaaz.

*Part of the magic is the creation of DJ Boyie. Like all heroes in comics, this character has a secret – he has built a radio station in his bedroom. So the broadcasts that Shujaaz syndicates to 23 radio stations comes straight out of the life of one of the comic characters. Sometimes Boyie talks to other characters in the comic and sometimes to Kenyan young people who have contacted him through social media. It is this blended reality that makes the whole thing seem fresh, exciting and relevant to Kenyan young people.”*

### The story so far:

- Over 35 million copies of the monthly comic book have been published and distributed free since 2010 – 11 million distributed inside The Nation newspapers and the rest picked up from Mpesa kiosks and youth clubs in villages, urban slums and peri-urban areas
- 1,200 daily radio broadcasts have aired on more than 20 Kenyan radio stations -more than 24,000 broadcasts
- Over 41,000 active Facebook fans. Daily live chats with Shujaaz.FM

host DJ Boyie including q & a with agriculture experts including ASHC technical advisory member Peter Okoth

- Tens of thousands of SMS exchanges between the audience and the Shujaaz characters
- Shujaaz videos uploaded on our YouTube channel featuring Shujaaz fans
- A web archive of all the Shujaaz stories online

Through free distribution on multiple

platforms at huge scale Shujaaz is becoming a reliable friend to a generation of young people for whom accessing education, information and moral systems can be a real challenge.

ASHC was a perfect partner for Shujaaz. There were several proven practical ideas on ISFM that can speak directly to the youth audience. One of the ASHC sponsored issues looked at making compost and highlighted sources of organic matter in a peri-urban area.



Extracts from *Malkia saves the seed*, by Shujaaz

This idea was presented by referencing a previous story about growing kale in sacks – years of intensive cropping had left the soil depleted and compost was seen as a cheap way of restoring the soil health.

But Shujaaz also presented the idea of making compost as a commercial enterprise for Kenyan youth. It is an ideal business start-up – it turns rubbish into a valuable and needed product and requires no capital outlay.

Shujaaz likes ideas like this that nudge its audience towards new ways of working, thinking and acting. Every Shujaaz comic has had at least one story relating

to agriculture. Agriculture is presented both as a valid career opportunity and as a means to an end. So, for example, young people use agriculture to pay for school fees or support themselves moving towards their career aspirations.

This is agriculture with attitude or, as DJ Boyie might say, sw’agriculture.

In August 2014 Shujaaz.TV is launching on a national TV station in Kenya and Shujaaz launches in Tanzania. ASHC wishes them continued success.

### Schools as a conduit for information

At the recent ASHC facilitated write-shop in Addis Ababa, Ethiopia, the delegates talked about dissemination of leaflets to farmers. They explained that elementary schools are used to disseminate leaflets to farming households. This is a good way of pre-selecting farming households that are literate.

Many households rely on the educated young people to read development communications materials.

## ASHC working with universities

ASHC is keen to work with universities around Africa to help them access the materials produced as curriculum enrichment materials.

A number of universities are represented on the technical advisory group for ASHC.

ASHC is currently working on a range of materials based on the ISFM handbook. The handbook is being turned into a series of PowerPoint presentations designed as ISFM curriculum support materials.

Over time a range of resources will also be made available for

use within universities relating to the ASHC cropping guides. Our aspiration is to work towards creating a community of practice where universities use ASHC to share curriculum enrichment materials relating to soil health.

ASHC is also working with the University of Development Studies in Tamale, Ghana to develop a college textbook introducing ISFM to the agricultural curriculum.

Universities interested in working with the ASHC should contact James Watiti at ASHC.

# The ISFM materials library



## Materials to use...

The ISFM materials library contains over 80 resources in diverse print and audio-visual media. 20 **How to...** guides also help organisations to plan the production of their own ISFM communications material.

## Materials to adapt...

You can use any aspect of most of these materials to spread the message on ISFM (exceptions are clearly stated on the summary page). These materials vary from one-page fact sheets and leaflets to 150-page guides on the principles of ISFM. There are even films and comics too.

## Materials to share...

Do you have ISFM communications materials you would like to share with the world?

ASHC is happy to consider any ISFM materials for addition to the website – provided they are Creative Commons and are scientifically sound.



## What is ISFM?

- ISFM principles
- Improved seed
- Mineral fertilizers
- Use organic materials
- Pests and weeds
- Crops

- Cowpea
- Groundnuts
- Pigeonpea
- Soybean
- Maize
- Sorghum and millet

- Rice
- Cassava
- Coffee
- Banana
- How to improve communications

CABI, as the lead partner in ASHC, is the copyright holder for the materials listed here but they are offered as **Creative Commons**. This means the materials can be used and repurposed and edited, without the need for permission. ASHC is working to make it as easy as possible for you to work with these materials – if you need help or advice just email [ashc@cabi.org](mailto:ashc@cabi.org) for guidance or practical support.

## The legacy of phase 1 of ASHC

Phase 1 of ASHC will run until September 2014. This is therefore a good time to reflect on what the lasting legacy of ASHC will be and to think about what this means for the future.

With six months to go, ASHC has over 300 materials in production with around half already completed. A further 50 titles will be added with the arrival of translated and repurposed versions of the ISFM handbook and the cropping guides.

George Oduor of ASHC explains the progress to date: "In phase 1 ASHC worked with over 40 organisations to develop materials that promote integrated soil fertility management. So far this has resulted in around 300 materials going into production. The figures are a little misleading because we only count materials once – so there is a lot of material on intercropping that we have categorised as cereals. This means the legume figures are understated; however the website will allow us to post materials under both headings."

In phase 1 a great deal of effort has gone into developing materials that cover the ISFM and communications principles. The flagship products are the ISFM handbook and the 5 cropping guides.

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George continues, "We have taken our responsibility for building capacity across Africa very seriously. This plays out in two ways. First we have developed very practical and action-orientated cropping guides for four staple and one cash crops. These work together with the ASHC ISFM handbook to cascade information

on ISFM to suit a wide range of extension and academic audiences. These will increasingly influence the content of farmer-level information. Secondly we are building up a set of How to... guides which will eventually cover all aspects of communication.

Where we find materials developed by others, such as the USAID guides to radio and film and the RIU guide to digital photography, we simply signpost to these resources. We need to make it easy for anyone who wishes to create farmer-friendly development communications".

Content	% of output
ISFM principles	30.6
<b>LEGUMES</b>	
Cowpea	3.6
Groundnut	
Pigeon pea	
Soybean	9.1
<b>MAIN CROPS</b>	
Maize	23.8
Sorghum-Millet	5.8
Rice	8.5
Cassava	6.5
Banana – Coffee	3.6
<b>ISFM PRACTICES</b>	
Improved Seed	
Mineral Fertilizer	1.3
Use of Organic Matter	4.2
Use of Inoculant	2
Pest management	1

All materials will be posted to the ASHC website and most are available under a Creative Commons license. This means that all or part of the documents in the ISFM materials library can be reproduced at will, provided ASHC is credited where this is feasible.

Manuals and teaching aids have made up about a third of the project output. Without proper manuals and support materials in place, it is hard to build capacity in the sector. These aids include the How to... series, flip charts and briefing sheets for use by extensionists training farmers.

ASHC is being actively commissioned to develop materials and has a busy schedule of write-shops over the coming months including in Ethiopia, Malawi and Tanzania.

Media	% of output
Manuals	13
E-books	0.3
Audio power-point	6
Leaflets	18
Posters	14
Teaching Aids	24
Audio	5
Film	11
Comics	2
Case Studies	2
Policy briefs	3
Calendar	2

## AGRA funding supports a fresh approach to fertilizer

### recommendations in Africa

The Optimising Fertilizer Recommendations in Africa project (OFRA) seeks to increase crop productivity, profitability and food security in smallholder farming systems in Africa. To achieve this OFRA will:

- Develop capacity in the national agricultural research and extension services (NARES) in 13 participating countries
- Develop the basis for efficient fertilizer use decisions to increase profitability and food security for smallholder farmers

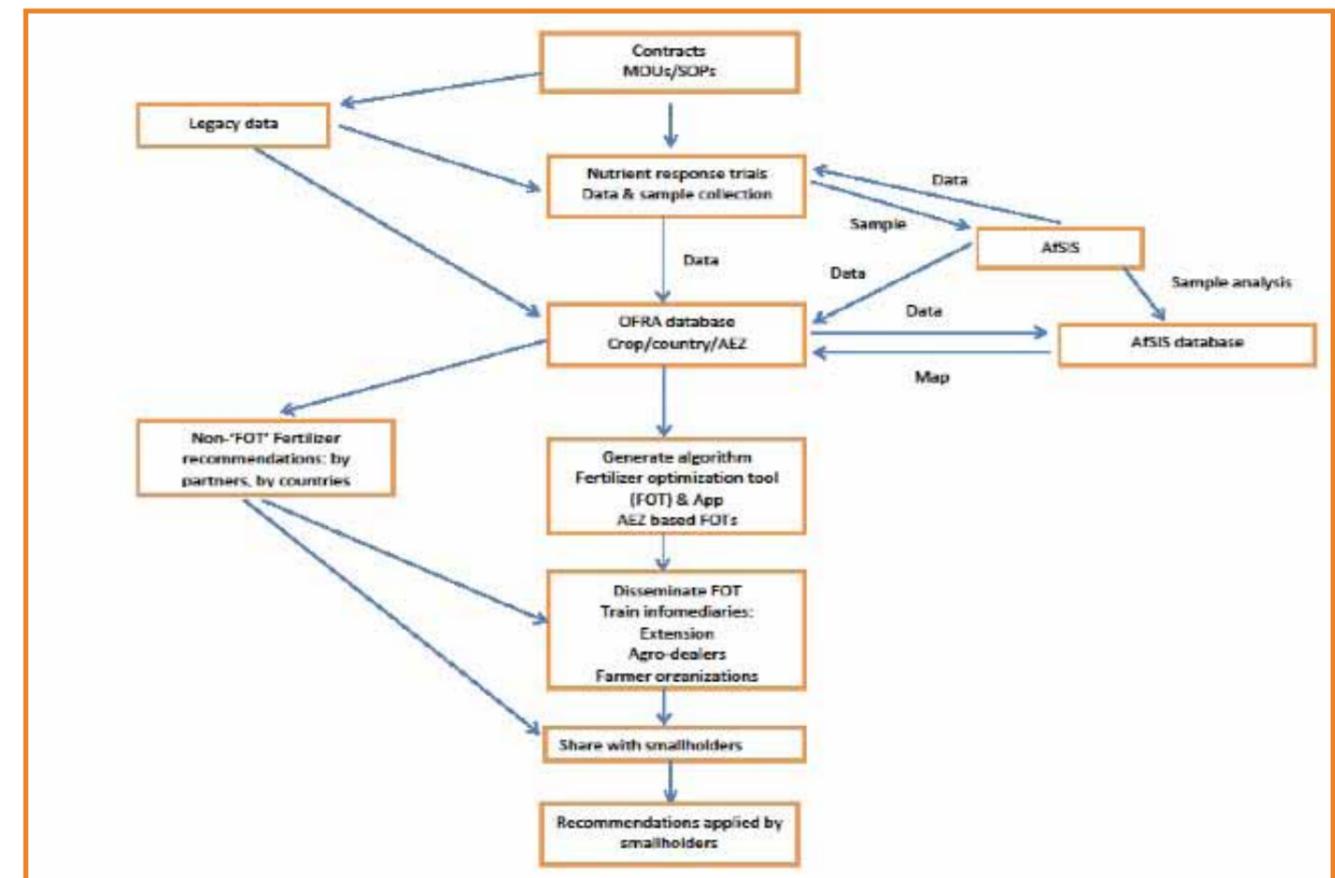
OFRA is a partnership project funded by the Alliance for a Green Revolution in Africa (AGRA). The grant is administered by CABI and scientific leadership provided by the University of Nebraska-Lincoln. The wider partnership also includes 13 NARES, the Africa Soil Information Services (AfSIS) and the Grameen Foundation. The contribution of these partners will be:

- The generation of the needed crop nutrient response information
- The development of agro-ecological zone decision support tools, such as phone applications



- Using spatial information for more efficient research and information delivery
- The engagement of stakeholders to enable smallholder farmers to improve their fertilizer use decisions

Professor Charles Wortmann of the University of Nebraska Lincoln (the OFRA science co-ordinator) leads the research effort and will ensure the efficacy of the science. George Oduor of CABI (the project director) leads the communications work plan as an integral part of the Africa Soil Health Consortium (ASHC) and oversees all aspects of OFRA as the accountable officer.



This diagram shows the relationship between the partners, the research and development and the range of anticipated products developed by OFRA partners.

The objectives of OFRA are:

- To improve use of research data to support fertilizer decisions
- To increase use of spatial information to improve the efficiency of research and in extrapolation of nutrient response functions for development of fertilizer use optimization tools
- To improve fertilizer use decision tools within an ISFM framework
- To improve access to information and communication materials for extension

The project runs from July 2013 to June 2016.

### Why is OFRA necessary?

Soils in Africa are highly degraded and have low nutrient availability. This results in low crop yields. In most sub-Saharan countries maize yields are often less than 1 tonne per hectare.

Compare the top country's average maize production with the lowest African country

**Belgium: 10.3 tonnes /hectare**

**Angola: 0.5 tonnes/ hectare**

Crop yields can be greatly increased in sub-Saharan Africa by use of fertilizer. The average use of fertilizer is currently estimated to be just 9 kg per hectare per year. Total consumption in the EU (excluding Malta) was estimated at an average 76 kg of nutrients (nitrogen, phosphorus and potassium together) per hectare in 2009.

**Soils in Africa are highly degraded and have low nutrient availability. This results in low crop yields. In most sub-Saharan countries maize yields are often less than 1 tonne per hectare.**



Delegates at the OFRA induction workshop creating the table that appears on the next page

Fertilizer recommendations that are available to smallholder farmers are generally outdated, 'blanket' and overly generalized with inadequate consideration of profitability.

Some recommendations advocate fertilizer blends that include expensive nutrients that offer little or no return on investment, whilst deficient micro-nutrients are usually missing from recommendations.

Fertilizer recommendations currently do not include guidelines to adjust for the effects of cropping system and other management practices such as the application of organic matter. The recommendations have typically been developed with the intent of maximizing yield per hectare rather than profit.

Smallholder farmer fertilizer use can also be hampered by supply problems such as the purchase cost, compounded by the lack of affordable credit. Typically a smallholder will not apply fertilizer or only apply it to a small part of her farm. Existing recommendations do not allow farmers to maximize net returns on their investment and often do not focus on the most profitable choices. The thinking behind OFRA is that if smallholder farmers could access information on the crop-nutrient rate combinations that give the greatest

net returns for their investment capacity – then this could aid rational decisions about fertilizer use.

Further, continued support and advice could move the smallholders into a virtuous circle of investment where crop yields and profits increase, financial capacity increases to enable better soil management, and soil depletion is halted or reversed.

### There are two sides to OFRA:

- A major research effort to establish nutrient/ crop responses leading to improved fertilizer use decisions
- A major communications effort to increase awareness of the new fertilizer use and decision tools with policy and information delivery support in 13 sub-Saharan countries

### The crop research

The research phase will be collecting, generating and interpreting nutrient response information for:

- Grains: maize, sorghum, pearl millet, finger millet, teff, rice, wheat
- Root crops: cassava
- Legumes: bean, groundnut, soybean, pigeonpea, chickpea, cowpea.

### Where OFRA is working

OFRA will be implemented in Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Niger, Nigeria, Mozambique, Rwanda, Tanzania, Uganda and Zambia.

Fertilizer response trials by country and crop	Country												
	Ethiopia	Kenya	Rwanda	Tanzania	Uganda	Burkina Faso	Mali	Niger	Nigeria	Ghana	Malawi	Mozambique	Zambia
Maize	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Sorghum	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Pearl millet	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Finger millet	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Teff	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Irrigated rice	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Rain-fed rice	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Beans	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Groundnut	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Soybean	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Pigeonpea	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Chickpea	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Cowpea	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Cassava	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

## OFRA progress to January 2014

### Agreements and protocols

- Agreement between AGRA and CABI, and others between CABI and partners signed.
- Development of the research protocol and a data sharing protocol.

### Developing capacity

- Recruitment of delivery team initiated, including the appointment of:
  - Lydia Wairegi as project manager.
  - Charles Wortmann as scientific lead.
  - Alex Verlinden as soil spatial information analyst.
  - Harrison Rware as M&E specialist.
  - Kayuki Kaizzi as fertility coordinator (East & Southern Africa).
  - Manam Nouri as fertility coordinator (West Africa).
  - Martin Macharia as data manager.

Details of all of these appointments can be found on the ASHC website. All other ASHC team members will deliver agronomic and communications support to the project, as required.

- 13 NARES were trained on the financial procedures .
- Improvement and application of extension training methods and resources for optimizing fertilizer use.
- Completion of the programing manual for fertilizer optimizer tools.
- In Uganda, National Agricultural Research Organisation (NARO) researchers at National Crops Resources Research Institute (NaCRRI) including Zonal Agricultural Research and Development Institute at Mukono, Rwebitaba and Mbarara were introduced to the research required to develop fertilizer optimization tools and 100 local government staff, National Agricultural Advisory Services and NGO extension

staff and agro-input dealers from Mbarara and Fort Portal were trained.

### Planning

- OFRA inception workshop involving all partners successfully completed.
- National inception workshops held in 8 out of 13 participating countries and work plans agreed upon to the end of the planting seasons and formed the basis of information exchange.
- Joint development of research plans between OFRA and NARES in eastern and southern Africa to ensure 2013/14 planting season was included in the nutrient response trials.

### Communications and awareness building

- OFRA activities were promoted at a workshop organized by the Uganda Soil Health Consortium and at a consultative workshop on developing fertilizer strategy for Uganda.
- Grameen Foundation-led stakeholder workshop to assess needs for fertilizer optimisation tools in Uganda, Kenya, Ghana and Tanzania.
- Presentation on OFRA to the East Africa Soil Science Society Conference held in Nakuru, Kenya in October 2013.



Frances Tetteh from the Ghana delegation summarising the proceedings for day one.

- Discussions with staff from AfSIS, IITA, ICRAF, CIMMYT, Grameen Foundation, CIAT and other potential collaborators to discuss complementarities and to request for results of previous studies.
- ‘Dare to share’ workshop in July 2013 at which partners (especially those funded by BMGF) discussed their commonalities and potential to share data.
- OFRA logos were developed in the 3 working languages of OFRA.

### Research

- Over 700 fully or partly geo-referenced nutrient response functions have been collected from previous research and a database is being designed to hold this data.

- Digital soil maps were collected for the target countries.
- On-farm and on-station trial sites have been selected for Kenya, Malawi, Mozambique, Uganda, Tanzania and Zambia, and soil samples analyzed in line with the research protocol.
- Field trials have been established in Malawi, Mozambique, Uganda and Zambia. Criteria for selection of crops included AEZ of selected sites, available market, local consumption and level of initial investment by AGRA.
- Soil samples were collected from the trial sites in Mozambique and Zambia and were prepared for analysis both by the NARES and the IR Spectroscopy lab at ICRAF in Nairobi.

### New product development

- Grameen built the phone application of the Nebraska-Lincoln Fertilizer Optimisation Tool to be piloted by their community knowledge workers.

### M&E

- Plans for the baseline survey were developed at the inception workshop and in consultation with AGRA M&E specialists based in Kenya and Ghana.

## A winning partnership

### Four awards amongst ASHC partnership

We congratulate our partners ICRISAT and Agro-Insight on coming first in their category at the 2014 International Visual Communications Association awards ceremony held at Grosvenor House Hotel, London on 28 March. The category was the Industry Award for Communication Effectiveness sponsored by The Edge Picture Company. ASHC supported this project with funds to translate the films into additional languages including French and Portuguese.

Each year the African Union formally recognizes contributions made by African scientists by presenting the African Union Kwame Nkrumah Scientific Awards. It makes the award to encourage the continent's scientists to publish, mentor and do research that is applicable in the African context. ASHC is pleased to share the information that the 2013 winner in the Earth and Life Sciences category is our technical advisory group chairperson Andre Batiano.

Shujaaz has been won a digital EMMY for the second time in 3 years. The Shujaaz team won the EMMY, awarded in Cannes, France on 7 April 2014, for their outstanding work in creating interactive digital content in the children and young people category.

Grace Omondi, the ASHC communications specialist, has recently completed her Masters in International Communication. She was selected as producing the best thesis in Europe in the communications field. This involved her being awarded at the Euprera Conference in Barcelona. For this, Grace is now being inducted into the Walk of Fame of Hanze University of Applied Sciences in the Netherlands in May 2014.



Grace Omondi of ASHC

## Cassava Field Guides Launched

The Cassava Cropping System Guide is one of a series of practical handbooks designed to support extension worker introducing or enhancing ISFM techniques.

Traditionally cassava has been a means to feed the family, but it is increasingly becoming a commercial crop. Many cassava farmers are cultivating cassava both for household use as food and for income.

This guide covers cassava grown as either a monocrop or intercrop. Extension workers can use it to support a shift from producing cassava under traditional cropping systems for subsistence, to more market-oriented enterprises through sustainable intensification.

The objective of the guide is to provide simple, useful tips on how smallholder farmers can increase cassava yields from

about 10 tonnes per hectare to 16 tonnes per hectare (fresh roots). At the same time the guide helps lower the unit cost of production. Lower production costs increase profitability where suitable markets for cassava can be exploited.

Lydia Wairegi, from ASHC said: *“The authors have tried to bring together the most important information needed to effectively grow cassava alone or with a range of other crops. The guide includes intercrops and crop rotations, but the primary focus is on cassava.*

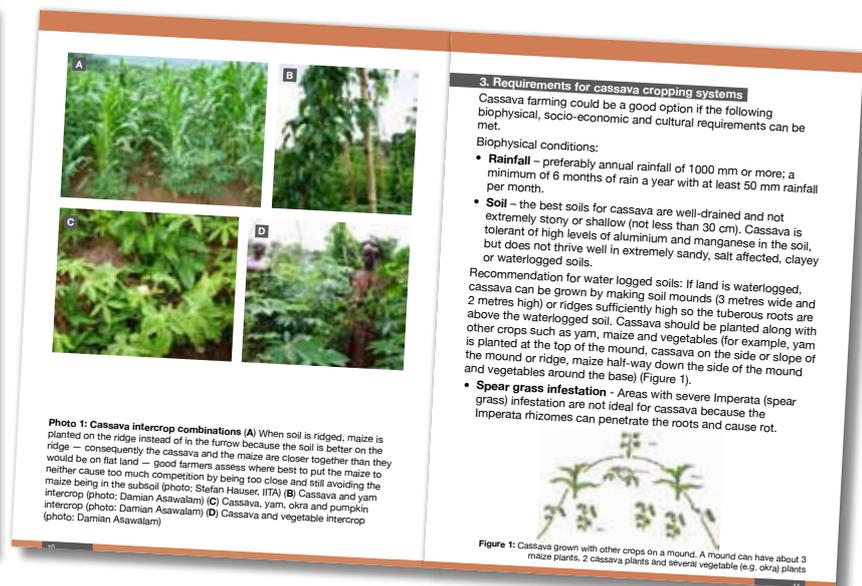
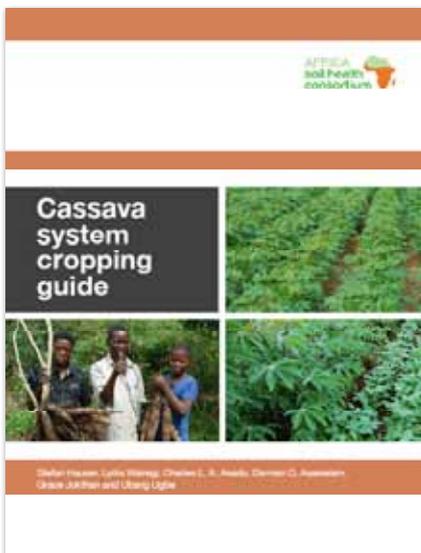
*Although ASHC’s work is focused on the needs of smallholder farmers in Africa, emerging and established commercial farmers*

*will also find the contents relevant and useful.”*

Due to the experience of the authors, this guide has drawn examples mainly from west and central Africa, but it is relevant and useful to cassava producers across Africa.

This guide is available in full colour and also a black and white easy print version. Materials on the ASHC website are low resolution – high resolutions versions can be supplied on request.

French and Portuguese versions of the guide will be published next month.



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