



## AGRF 2016 – “SPECIAL” SESSION REPORT

Day 4 - Thursday, September 8

14:00pm- 15:45pm

Working Sessions

Managing Africa's Soils for Greater Yields

### SESSION BRIEF

**Context:** Improving the health of Africa's soils is central to transforming the continent's agriculture and ensuring food and nutritional security for its fast-growing population. Even more than that, Africa's soils hold the key to its future prosperity, and its ability to sustain not only agricultural growth, but industrial development as well. Low productivity has plagued Africa's smallholder agriculture over the past 40 years. During this period, the average yield of maize, a staple food crop in Africa, has stagnated at about 1.5 MT/ha, while average yields in many other regions have reached 5.5 MT/ha or higher. A key reason for this lagging productivity is continuous mining of soil nutrients, without sufficient replacement using organic fertilizers or inorganic mineral nutrients. Africa's soils – particularly on small land holdings – have steadily lost their ability to support strong crop growth. In order to transform African agriculture, farmers must start using fertilizers in much greater quantities than currently, and apply it in appropriate ways to ensure environmental sustainability.

The book launched during this session chronicled the journey of the Soil Health Program (SHP) of the Alliance for a Green Revolution in Africa (AGRA). The Program was established in 2008 to address the problems of declining soil fertility in Africa, with generous support from the Bill & Melinda Gates Foundation and The Rockefeller Foundation. The term “soil health” as used in this book arises from the fact that Integrated Soil Fertility Management (ISFM) practices, which were a central focus of SHP, are a key contributor to the health of living soil. The book uses the term “soil health” to convey that soils are not just an inert, lifeless, crop-growing medium, but rather a vital, ever-changing element of our surrounding environment – a reservoir of the nutrients and water needed for plant growth – one that is full of life and deserving of careful management.

**Session objectives:** The goal of this side event was to launch the SHP book that documents proven soil health technologies that are instrumental in transforming Africa's agriculture. Going Beyond Demos documents an institutional innovation – a mode of operation, even a philosophy – aimed squarely at helping to transform African agriculture for the better, more prosperous future that all African's deserve.

#### Key Issues/ Questions:

- How can we take proven soil health technologies to a threshold scale that can transform Africa's agriculture for sustainable food security and incomes?
- How is the Going Beyond Demos Innovation of AGRA different from the other value chain approaches used in the past?
- How sustainable is the fertilizer micro-dosing technology in the Sahel?
- What is the importance of using agricultural lime in acid soils in Africa?



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- What are some of the sustainable models for increasing fertilizer supply and use in Africa?
- What policy frameworks need to be implemented to ensure quality supply of fertilizer to smallholder farmers in Africa?
- What are the emerging lessons for ensuring relevant training of the next generation of Soil Scientists and Agronomists in Africa?
- What lessons are emerging from the country soil health consortia: Are they sufficient policy platforms for generating one-stop shops of knowledge products?
- What are the key take away lessons from the Journey of AGRA’s Soil Health Program?

**Outcome Desired:** Readers of this book may not come away with all the answers they are looking for, but they will have a much clearer sense that achieving Africa’s agricultural transformation is not only possible, but already underway.

**Organizer(s):** AGRA

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**Managing Africa’s Soils for Greater Yields**

Name	Picture	Discussion
<p>Dr. Bruce Scott, Senior Advisor, Africa Soil Information Service (AFSIS)</p> <p>Role: Moderator</p>		<p>Dr. Scott opened this session by stating that during this special session the focus would be on the launching of a book on AGRA’s Soil Health Program. He emphasized that the book offers lessons and experiences about Africa’s soil gathered over several years.</p> <p>He added further that improving the health of Africa's soil is central to transforming the continent's agriculture and for ensuring food and nutritional security for its fast growing population. Africa's soils hold the key to its future prosperity, and its ability to sustain not only agricultural growth, but industrial development as well.</p> <p>The goal of this side event he continued is to launch a book that documents proven soil health technologies and shows how they are instrumental to transforming Africa's agriculture. During the launch, an international panel of experts has been assembled to discuss key ways of ensuring that smallholder farmers are applying improved soil management technologies. The panel will</p>



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		<p>also examine some of the challenges that have prevented smallholder African farmers from learning about and adopting a number of proven soil health management practices in the past.</p> <p>Lastly, he stated that the panel members will elaborate on some of the innovations and models put forth in the book and highlight how value chain actors and policy makers can scale up the use of improved soil health technologies.</p> <p>"Africa agriculture can't develop without taking care of soil", he concluded. He then introduced the session panel.</p>
<p>Dr. Rebbie Harawa, Head, Farmer Solutions Program, Alliance for a Green Revolution in Africa (AGRA)</p> <p>Setting the Stage: The Soil Health Book Launch</p>		<p>Dr. Harawa opened the session by sharing with the delegates that AGRA was now 10 years old and its soil program was one of its initial principal programs. The book we are launching this afternoon, she continued, chronicles the journey of the Soil Health Program (SHP) of AGRA.</p> <p>The program was established in 2008 to address the problems of declining soil fertility in Africa. While creating awareness of improved soil technologies through on-farm demonstrations, early on, the program identified the fact that more had to be done.</p> <p>This led to the development of its key innovation of "going beyond demonstrations" - in order to facilitate the scaling up of soil health technologies.</p> <p>A critical learning that emerged out of the program was the fact that we cannot transform African agriculture without talking about how to manage, rehabilitate and nurture the health of the continent's soils.</p>



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Dr. Amit Roy, Former President, International Fertilizer Development Center (IFDC)

Role:  
Keynote Speaker



Dr. Roy, who until recently headed the IFDC, a long standing partner of AGRA, and himself a longtime advocate of soil health and soil management, was called upon to give the key note speech in this session.

He began his remarks by choosing to discuss the “green revolution” as a back drop to his comments on the importance of soil health. The concept of a “green revolution” was first coined around work that was being undertaken in Asia in the 1960s that focused primarily on developing improved varieties of two key crops: rice and cereals (wheat). The “green revolution” in Africa he noted will have to be significantly different – because, we have many varieties of crops, man agro-ecological systems, and many different types of soils.

He further noted that low productivity has plagued Africa's smallholder agriculture over the past 40 years. During this period, the average yield of maize, a staple food crop in Africa, has stagnated at about 1.5T/ha, while average yields in many other regions have reached 5.5MT/ha or higher.

A key reason for this lagging productivity is the continuous mining of soil nutrients, without sufficient replacement, and the sustained use of organic and inorganic fertilizers. In order to transform African agriculture, farmers must start using improved soil technologies that will improve crop productivity.

He also added that there is a perception that fertilizers in Africa are cheap (because in part of widespread reliance on government subsidies), that is not real! Fertilizer, in still far too many countries, is unaffordable for many smallholder farmers because of high transportation costs. Road density (congested highways) and inadequate and poor rural roads contribute to high transports costs.

We need to produce fertilizers on the same land where we want the agriculture transformation to take place!



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		<p>Food demand in sub-Saharan Africa will increase by 178% in 2050, which for farmers to keep up will require a yield increase of 1.5% per hectare per year. We have a huge challenge . . .but we also have solutions!</p> <p>Soil management must be featured as it is the key to increasing productivity!</p>
<p><b>Panelists</b></p>		
<p>Dr. Bashir Jama Adan, Division Manager, Islamic Development Bank</p>		<p>Dr. Adan spoke first among the panelists and opened his remarks by asking the question, “Why is soil management the key to Africa's agriculture transformation?”</p> <p>Soils in Africa, he responded to his rhetorical query, are very diverse and because of this present a challenge for farmers, as different seeds, different fertilizer can be needed in one field or in quite proximate fields - and as such require different soil health maintenance strategies.</p> <p>To maximize soil health and ensure that our soils are at their most productive levels for our farmers, we need: i) men and women who are committed to supporting soil health – and as such extension services are key; ii) to use quality seeds that are proven to grow in the type of soil where planted; iii) to have soil where nutrients have been retained as this is a fundamental for good production; iv) good agronomy; v) integrated soil fertility management; and, vi) good water management.</p> <p>It's a combination of all of these aspects which will lead to Africa's agriculture transformation.</p> <p>The real question for me, he added, is how to ensure that farmers have increased access to markets for their extra produce - after investing in fertilizers and achieving higher yields? We need men and women who can put pressure on our government institutions to create an open economic environment and who promulgate policies that help farmers to turn their livelihoods into businesses and use productive farming as a catalyst through which they can achieve their goals.</p>



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Mr. Pradeep Paurana,  
Group CEO, Athi River  
Mining (Mavuno  
Fertilizer)



Mr. Paurana contributed to the panel discussion by introducing himself and sharing experiences from the work of his company. As a topic, he spoke on: 1) the role of the private sector in managing soils; 2) how a fertilizer supplier can reach the farmer; 3) and how he knows which kind of fertilizer is appropriate for which soil?

In 2005, he began, we came up with the idea to undertake research through many partners in the field, through work with university students, and extension workers, and we came up with different types of nutrients for different types of soils.

We had at that time 25,000 farmers working in our program. A typical farmer in Kenya (on one hectare (ha) of land) produced a yield of 10 bags per ha of maize. Today, using our improved soil fertilizer, the same farmer can produce 25 bags per ha.

Mr. Paurana noted that there will always be challenges in using soils fertilizers (in Kenya up to 4 million smallholder farmers) because one of the key factors will be farmers able to access the fertilizers on time or not? There are often delays during the rainy season when roads are impassable and often government policies create other challenges. When there are subsidy programs, there can be uneven distribution of vouchers for fertilizer, or late distribution – which means that farmers do not get the fertilizer on time.

One solution is to get the government to set a consistent budget to buy and distribute fertilizers on time. This will increase the productivity and help farmers to produce more.



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<p>Dr. Shamie Zingore, Regional Director, sub-Saharan Africa, International Plant Nutrition Institute (IPNI)</p>		<p>Dr. Zingore addressed the delegates by focusing on some of the progress that has been made in the management of soil science over the past decade. He noted that many promising technologies have emerged, but the challenge remains - how to take them to the scale?</p> <p>For the past 10 years we have emphasized the importance of organic and inorganic fertilizers, however, increasingly we are realizing that we need local blending to address the diversity of the soils that the farms have to manage.</p> <p>We have started to move in a good trajectory, but there remain challenges. We need to think through the progress we have made and evaluate our progress so that we can improve. Things are happening and we have to continue to plan our next steps.</p> <p>We now know what works and what does not, and we now know how things work, so we need to focus on the repetition of the successful processes. Fertilizer use must go hand-in-hand with effective soil management as successful farming in Africa requires such an integrated approach. The key emphasis is on how to adapt the technologies to the demands of the farmers.</p> <p>We still have a gap in knowledge in terms of all of our soils, so we need to continue to invest in research related to our soils, and share the insights gained with our farmers so they too get to understand how to care for their soils.</p>
<p>Prof. Daniel Mugendi, Principal, Embu University College</p>		<p>Prof. Mugendi began his remarks where Dr. Zingore left off – and picked up his theme of the importance of research. He shaped his remarks around the role of national research organizations and universities and how to empower the next generation to handle soil issues and transform African agriculture?</p> <p>He began his remarks by noting that he has been involved in soil research and study for almost 20 years. Unfortunately though, he continued, soils are too often ignored even when we want to develop strategies to</p>



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		<p>fight hunger. From his point of view, he added, we also need to take time to work with farmers and to educate and empower our youth about the importance of soil care in farming – and for food security.</p> <p>Africa’s universities are doing a commendable job, but too much of their work is limited to research and too little to applied learning and practice. There needs to be greater consultation with farmers and companies developing fertilizer and soil nutrients. At present there is no consolidated effort to undertake these types of working engagements and no way to get the research results that are found in university labs directly to the farmers.</p> <p>Nevertheless, he commented, we have made a lot of progress - and the key now is to consolidate our results and make sure they reach the farmers. Platforms that can deliver this engagement are what we need most.</p>
<p>Hon. Felix Jumbe, Member of Parliament &amp; Former Chairperson of the Parliamentary Committee on Agriculture, Malawi</p>		<p>The Honorable Member of Parliament from Malawi, Mr. Jumbe joined in the discussion by responding to the following question from the moderator: “As a politician can you please share your experiences related to agriculture policy development and provide insight on policy makers assess spending on fertilizer subsidies when calculating the government’s “bottom line”.</p> <p>His response was that, as a politician he was disappointed by the fact that too many of his fellow politicians are developing policies and regulations related to agriculture, but they are lacking an accurate understanding of what is going on in the sector and what the impact - on the ground – will be of the laws and rules that they are passing.</p> <p>He gave an example from his home country, Malawi, and pointed out that there, the government decided to subsidize fertilizers but the farmers rejected them because the type of fertilizer acquired was not aligned to their soil and was not effective. The take away that government got from this lesson was the importance of</p>



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		<p>engaging with farmers/ beneficiaries to ensure that the support given is adequately aligned with their needs.</p> <p>In other areas, he continued, we have to ensure that our policies and regulations are updated and effective in regard to agenda that we want to see fulfilled. We cannot begin promoting the use of new technologies, without revisiting our policies to ensure that they align with our interests – otherwise we need to reform them.</p>
<p><b>Q &amp; A/ Comments</b></p>		<ul style="list-style-type: none"> <li>• We need a crusade to support soil health care. Africa is not without access to needed technologies, nor are we wanted in agronomy or knowledge skills, where we are failing though it is to our benefit to have appropriate and effective policies and regulations!</li> <li>• We need to build a strong next generation of soil scientists;</li> <li>• We need to set up clinics where farmers can test their soils;</li> <li>• We must package agronomy (extension services), soil nutrients, appropriate technologies, and finance together - and work on effective policies to drive agricultural transformation;</li> <li>• We must focus on the developing farmers knowledge of soil management best practices to help them increase their productivity;</li> <li>• We must familiarize farmers with fertilizers and introduce new blended products to help improve the transformation of agriculture;</li> </ul>
<p><b>Closing Remarks by Dr. Agnes Kalibata, President, AGRA:</b></p> <p>Readers of this book may not come away with all of the answers they are looking for, but they will leave with a much clearer sense of the fact that achieving Africa's agricultural transformation is not only possible but the process is already well underway.</p> <p>We must " [g]ive the right information to the right people, let's take this book to the farmers!"</p>		