

N2Africa Podcaster no. 43

January 2017

Introduction

Welcome to the first Podcaster of 2017. N2Africa activities are running at full speed across the eleven countries. One of the great things about working across East, West and Southern Africa is that there are always crops in the field somewhere. Inside you'll find some photos from field days this week around maturing crops in Malawi and Mozambique. At the same time we have national planning meetings being held in East and West Africa – and we include a report from the Uganda workshop. In Ghana, collaboration with the African Soil Health Consortium is testing some innovative dissemination methods using videos through the GALA project. An internship report on climbing beans in Uganda highlights some unexpected problems faced by farmers due to rat damage and lack of staking materials, and provides some innovative ideas that we can test out in participatory work in the coming seasons.



Image 1. On Christmas holiday I had the chance to discuss climbing beans with a farmer who was tidying up his stakes in Kapchorwa, Mt Elgon, Uganda

We are currently finalizing the reporting for 2016. An internship report contributed to this process including developing a database on our public-private partnerships and testing of a rapid telephone survey method. A large number of research articles are also being developed for a special issue of *Agriculture, Ecosystems & Environment* which will be published later this year. The focus of these papers is to learn across countries and one of the articles in this Podcaster highlights important messages concerning within and between field variability and what this means for our dissemination work.

We have some promising signs for legume technologies in terms of an Argentinian inoculant company, Rizobacter, who have established a base in South Africa and who are, with assistance from N2Africa, actively seeking product registration in a number of African countries. More worrying news is a thread on our N2Africa WhatsApp that Theresa Ampadu-Boakye initiated that indicates a backlog of unsold soybean in northern Ghana due to a collapse in prices due to cheap imports. This example emphasizes the vulnerability of smallholder farmers to the vagaries of (international)

price fluctuations. We are currently preparing a report on government policies concerning legume-based technologies across the N2Africa countries and this year we will focus on supporting positive change towards an enabling environment for smallholders.

We have a range news items to bring to your attention. These include announcements for an online virtual symposium on *“Nitrogen: At the Nexus Between Food Security and Sustainability”* which will feature talks from Theresa Ampadu-Boakye and myself, and a new completely free online course on Sustainable Development Goal (SDG) 2 which I recommend to you.

Of course we look forward to receiving your reflections and contributions and hope you enjoy reading our newsletter.

Ken Giller

Uganda N2Africa Partners plan for 2017

N2Africa Uganda Annual Planning was conducted at central Inn Entebbe from 23- 25th January 2017. The workshop brought together representatives from national partner organizations including the NGOs (Africa 2000 Uganda, Agency for Sustainable Rural Transformation, CARD Uganda, World Vision Uganda), research (Makerere University, and the National Agriculture Research Laboratories Kawanda, National Agriculture Crop Resources Research Institutes of NARO), the private sector (Simlaw Seeds and Agrinet, Network for Commercial Farming and

Marketing (NECOFAM), Agricultural Innovation Systems Brokerage Association (AGINSBA) -ICT Platform for extension information access (M-Omulimisa) and the Ministry of Agriculture Animal Industry and Fisheries (MAAIF).

The Uganda project team (IITA Uganda), the Senior Business Development Officer (Edward Baars), and the Coordinator Research and Data (Joost van Heerwaarden) facilitated the workshop. During the workshop, progress made in 2016 was discussed, learning lessons were shared and

gaps identified to serve as input for the planning. Progress was made in delivery and dissemination, but gaps still exist in input supply and market access, mainly due to fractured demand and a lack of access to information by value chain actors. The country strategy therefore needs to prioritize the strengthening of information access and to disseminate proven grain legume technologies more widely beyond current project sites. To achieve this, an ICT platform developed by a new partner, Agricultural Innovation Systems Brokerage Association (AGINSBA). In this strategy, input distribution systems established and led by input suppliers

and agro-dealers are to be strengthened where opportunities exist, especially for soyabean and common beans.

New opportunities were also identified (i) to partner with projects from the Ministry of Agriculture Food security and nutrition, particularly with the school feeding programmes. This would be a promising avenue to promote nutritious iron-enriched common beans and institutionalizing dissemination approaches used by the N2Africa project and (II) to collaborate further in the testing and dissemination of promising experimental and released bean varieties from NACCRI's National bean programme and from CIAT's TLIII project in Uganda. These opportunities were incorporated in the planning. The planning process continued to embrace the four pillars of the project exit strategy of capacity building, inputs access, dissemination and output market access and nutrition, and some emerging cross cutting issues of gender which were presented by the gender focal person (Berna Twanza, World vision) and the Masters student (Eriya Kuule) conducting research in gender. Draft plans will be further reviewed by the country coordination team and the project ME specialist, Senior BDO and the coordinator researcher data for agreement making with partner and before onset of the commencement of the first season.



Image 1. Partners during a group session for joint development of 2017 work plans

Justine Onyinge, Field Liaison Officer, Southwestern Uganda and Peter Ebanyat, Country Coordinator Uganda

Multi-country study describes the distribution inoculation response across Africa

The many on-farm trials implemented by N2Africa over the last six years provide a wealth of information on input responses across sub-Saharan Africa. In a recently submitted study on soyabean we report on the patterns of inoculation response observed in a dataset of more than 2,000 trials, implemented in ten countries over six years. This study represents the largest effort so far to quantify the effect of inoculation as well as the variability in response at the plot and field level. We found that overall, inoculation increases yield by 115 kg ha⁻¹, with seventy five percent of fields having predicted responses between 102 and 172 kg ha⁻¹. Although this may seem to be a moderate gain, the low cost of inoculant means that the technology is predicted to provide economic benefits at 97 percent of fields. Twenty percent of fields would even be expected to have an added benefit of 100 USD ha⁻¹ (Figure 1). These figures represent statistical predictions at the field scale, which correct for experimental error at the plot level. This experimental clearly affects individual on-farm comparisons between inoculated and uninoculated plots, and is therefore relevant to the experience of individual farmers with the technology. As can be seen from Figure 1, this observed plot-level variability in response is very large. This means that although many farmers will observe a benefit when comparing two experimental plots, almost 40 percent of farmers may observe responses below that would be

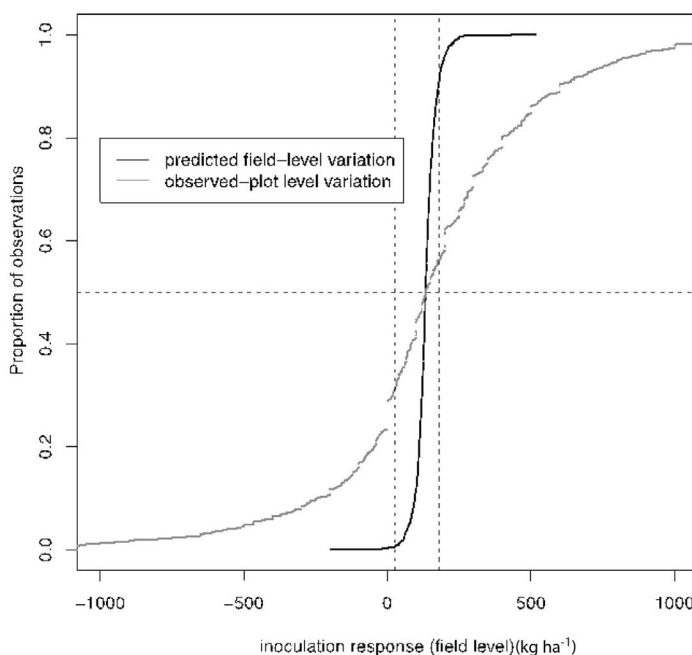


Figure 1. Cumulative distribution of predicted field-level responses (black) and observed responses at the experimental plot level (grey). Vertical dashed lines indicate the 25 kg ha⁻¹ and 180 kg ha⁻¹ points. The vertical dashed line marks the 50th percentile.

considered economically beneficial. This result, clearly argues for the need for replication when demonstrating technologies to farmers, either by using multiple plots per farm or by taking farmers to see a number of demonstrations. Discussing both the mean effects and variations with

farmers can provide a great way of helping farmers decide if a technology is appropriate for them.

Joost van Heerwaarden, Wageningen University & Research

MSc Internship N2Africa Review

My MSc Internship was undertaken from October 2016 to January 2017 with the Plant Production Systems (PPS) chair group at Wageningen University & Research and the N2Africa project. The purpose of my MSc Internship was to review aspects of the N2Africa project. The review process comprised of two studies, the Public-Private Partnership (PPP) study and the Quick Survey Study. These two studies will feed into the N2Africa project's Annual Reporting for 2016.

The overall purpose of the PPP study was to gain insight into the results and progress made in relation to the building and development of PPPs in the eleven N2Africa countries. A database of N2Africa PPPs, further referred to as the 'PPP Matrix', was compiled together with Lorraine Odhiambo at IITA and included information on collaborating partners and their activities. The PPP Matrix data was analysed to provide evidence of the current status of N2Africa's PPPs. The study demonstrates that from a quantitative perspective overall the PPPs that have been developed within the N2Africa project show strength, partners are engaging in activities and project targets are being achieved. Most countries have embraced the PPP strategy and achieved the project targets for PPP development, the project has, at the moment of analysis, 81 PPPs currently

under agreement. Future opportunities for improving PPP documentation, data capture and further engagement of other collaborating and supporting partners at local level were presented. The creation of the PPP Matrix is a good foundation for further research and data collection to build upon to facilitate future evidence based evaluation of project interventions as implemented through project partners.

I also evaluated the Quick Survey and Computer Aided Telephone Interview (CATI) approaches as tools for impact evaluation data collection. The main aim of the Quick Survey study was to assess whether change can be observed in farmers participating in the N2Africa project compared to non-participating farmers and whether any change observed can be related to the Outcomes and Impact indicators of the project Theory of Change (ToC). The Quick Survey was implemented as a Pilot study in Nigeria and Tanzania using the CATI approach. Although full Pilot results are not yet available the initial Pre-Pilot test results in Nigeria are promising. Interesting results presented by the Pre-Pilot test survey include, 43% of the N2Africa farmers surveyed used inoculant on their soya beans whereas inoculants were not used by any of the non-N2Africa farmers surveyed. Further, 67% of the N2Africa farmers surveyed sourced legume inoculants from agro-input dealers whereas in the project's Early Impact survey 88% of farmers obtained their inoculants from NGOs or projects. Survey questions and farmer responses can be related to the project ToC and differences were observed between N2Africa farmers and non-N2Africa farmers. The resulting data was also found to be comparable to Baseline and Early impact survey data. The Quick survey study demonstrates that both the Quick survey and CATI approaches can provide useful results and are valuable tools for this type of data collection.

Lisa Piper, Wageningen University & Research



Image 1-3. Agrochemical and Fertilizer Sales Outlet (Belongs to Mallam Bello Mohammed), Kawo Market, Kaduna City, Kaduna State Country in Nigeria

Rizobacter: Inoculants for Africa

Rizobacter is an Argentinian company strongly committed to delivering sustainable solutions to farmers around the world. In Rizobacter's 40-year history, excellence in quality and continuous innovation has been the forefront, enabling the company to develop state-of-the-art technologies in the formulation of liquid biological products. Strategic alliances with renowned companies, expanded the company's product line to include adjuvants and crop nutrition products. Whether through its own subsidiaries or through local partners, Rizobacter has commercial presence in over 25 countries worldwide.

Back in 2011, Rizobacter made its first commercial shipment to South Africa. From that day onwards, Rizobacter has been a major role player in the bio-fertilizer and adjuvant segments, steadily capturing 60% share in the soyabean inoculant market, and thus ranking as the undisputed leader in the continent. Through its dealers, Rizobacter products are available in countries like Botswana, Namibia and Zambia.

The firm entered the Kenyan market in 2012 by registering products for soyabean (Rizoliq) and maize (Rizofos). In this region, Rizobacter is firmly committed to making its product available to the smallholder African farmer and thus provide them with the latest technologies which have already been proven to be of great value to commercial farmers around the globe.



Image 1. Small-plot trial in Frankfort, South Africa testing Rizobacter's inoculants for soyabean.

As a result of growth in the African continent and looking towards developing further market opportunities in the whole of Africa, a Rizobacter subsidiary was established with offices in Pretoria, South Africa in 2015.

Alex Lehmann- Africa Business Development Manager
Rizobacter South Africa (Pty) Ltd.
alehmann@rizobacter.com.ar



Tackling some major constraints to climbing bean production in Uganda

A year ago, I was in Uganda to study farmers' adaptations of improved climbing bean technologies in the Eastern and Southwestern highlands. These improved technologies had been shown to farmers at N2Africa demonstration trials, and they tested the practices of their liking on their own land.

Skipping to one of the main findings: bean yields were not larger on plots where farmers tried some improved practices (e.g. row planting, narrower row spacing, only two seeds per hole) compared to plots with the farmers' usual practices (e.g. seed broadcasting). When explaining their yields, farmers indicated that any effects of cropping practices must have been overridden by more influential factors, including damage by animals, stake scarcity and soil fertility variability. Clearly, these constraints need to be tackled before the effects of any more detailed cropping practices can be revealed. I am therefore suggesting a few practical measures:

Biocontrol against rats

In the Southwestern highlands of Uganda (Kabale and Kanungu Districts), damage by rats was an evident problem. Rats cut bean stems, leaving the crop to perish (Image 1). Nest-box schemes for rodent control by owls have been



Image 1. Damage by rats

highly effective in Kenya, Israel and Florida (Ojwang and Oguge, 2003; Meyrom et al., 2009; Martin et al., 2009), so it would be interesting to try this in Uganda. Superstitions with regard to owls would have to be investigated first: implementation of biocontrol by owls has been prevented in some African countries because owls were associated with witchcraft (Enriquez and Mikkola, 1997).

Alternatively, it could be helpful to work together with farmers to test pitfall traps. Pitfall traps have proven to be successful in rodent control in East Africa (Makundi et al., 1999).

Plastic waste to replace stakes

Scarcity of staking material was another clear constraint for climbing bean production. On several demonstration trials, N2Africa introduced the practice of string staking: beans growing along strings that are supported by a few strong poles. This strongly reduces the number of stakes required, but farmers complain that strings are too expensive. I therefore propose to replace these strings with something that can be found in practically any ditch in villages: plastic waste. Recently a start-up company has released a simple tool to cut long strands from plastic bottles (Image 2). These strands are strong enough for string staking. Just one or a couple of the bottle cutter tools would be enough to provide a lot of free plastic string material.

<https://plasticbottlecutter.com/>



Image 2. Plastic bottle cutter

Soil fertility management

Unfortunately, mineral fertilizer, animal manure and crop residues are all scarce. Additionally, soil erosion and leaching of nutrients result in very high variability of soil fertility on sloping fields (Image 3). Yields are clearly dependent on the exact location of a plot (even over a distance of just several meters).

Shrubs or trees marking the edges of some fields may be replaced or complemented with leguminous trees such as *Leucaena* spp. that can be a source of green manure, fuel and fodder, while conserving the soil with deep roots that fix nitrogen.

The GALA project: Gender and the Legume Alliance: Integrating multi-media communication approaches and input brokerage

We recently asked our colleagues at N2Africa 'is soyabean a woman's crop?' Ken Giller reminded us that we could not make generalizations – and that we had to explore the context and location to know.

For the Ghanaian context Samuel Adjei-Nsiah came back with a great answer. He told us soyabean was introduced in Ghana as far back as 1909. However it was never utilized in food preparations until recently, due to difficulty in processing it at the household level. Even now when it is being promoted as food crop, less than 5% of the crop



Image 3. Soil fertility variability (Kanungu District)

More suggestions and findings with regard to farmers' implementation of improved practices can be found in my [internship report](#).

Eva Thuijsman, MSc student at Wageningen University & Research

References:

- Enriquez, P. A., & Mikkola, H. (1997). Comparative study of general public owl knowledge in Costa Rica, Central America and Malawi, Africa. In Duncan J.R., Johnson, D.H. & Nicholls, T.H. (Eds) *Biology and conservation of owls of the Northern Hemisphere*, p. 160-166.
- Makundi, R.H., Oguge, N.O. & Mwanjabe PS. (1999). Rodent pest management in East Africa - an ecological approach. In: Singleton, G.R., Hinds, L.A., Leirs, H. & Zhang, Z. (Eds). *Ecologically-based management of rodent pests*. Canberra, Australia: ACIAR. p 460-76.
- Martin, J. M., Raid, R. N., & Branch, L. C. (2009). Barn owl (*Tyto alba*). University of Florida, IFAS Extension, 185(1), 1-3.
- Meyrom, K., Motro, Y., Leshem, Y., Aviel, S., Izhaki, I., Argyle, F., & Charter, M. (2009). Nest-box use by the Barn Owl *Tyto alba* in a biological pest control program in the Beit She'an valley, Israel. *Ardea*, 97(4), 463-467.
- Ojwang, D. O., & Oguge, N. O. (2003). Testing a biological control program for rodent management in a maize cropping system in Kenya. *Aciair Monograph Series*, 96, 251-253.

is consumed at the household level. Recent interest in the cultivation of the crop by both men and women was mainly due to the availability of market. For women their interest lies in the fact that it could be produced easily with minimal external inputs.

This really helped us to put our thinking into context. N2Africa is working with the Africa Soil Health Consortium (ASHC). The team will implement a soyabean campaign in Northern Ghana and explore how different communication channels reach different gender groups and impact on



Images 1-3. A selection of photos from the inception event for GALA held at UDS in Tamale, Ghana in mid November

their attitudes and behaviour – with a specific interest in women and younger farmers. The work is funded by Bill & Melinda Gates Foundation (ASHC) and UK Aid ([Gender and the Legume Alliance](#)).

Although it is true that you can grow soyabean without inputs, doing so you are likely to get very low yields. A few years ago, when the commodity prices for soyabean in Ghana were relatively high, and so even modest yields gave good financial returns. But the shortage that led to the high prices of soyabean in Ghana has long since abated, and prices have returned to their old levels (commodity prices for soyabean around the world continue to fluctuate). However, during the past few years new technologies have become available that can support high yields in soyabean.

The team at ASHC is looking at a scale-up campaign in Ghana that is promoting a basket to improve legume technologies: improved seed, P-rich fertilizer and especially the use of rhizobia or inoculant. When these are coupled with good agronomic practices, such as careful seed handling, spacing and weeding, they produce good yields.

At the heart of the campaign will be 75 film screenings delivered by one of our media partners: Countrywise Communications Ghana. The films will arrive in the villages on a converted motorbike and trailer. As dark descends the generator will fire up and a series of short films will set out everything you need to know about growing soyabean. Audiences in 25 of the villages will be given short, cheap to produce, crib sheets of the key facts; audiences in the next 25 villages will be given a relatively expensive glossy poster and the final group will not get print and will have to rely on their memories. Another 21 extension meetings will be held in similar geographic locations, but with no use of films. The research will aim to quantify the effect of film and the added value of different print materials on attitudes and uptake of the technologies.

At the screenings, farming households will be asked to share their telephone contact details so that they can be followed up with SMS and voice messages and encouraged to purchase the inputs from their nearest agro-dealer. The delivery team has spent the last few months consulting with partners on what we call a technology brief. This is a step-by-step guide to all that is important to know

to successfully grow soyabean. It is worth pondering a moment on what we mean by successful – this has to mean economic viability and increased profit – not just increased production at any cost. Everyone involved in the project has been looking at the available data to be able to advise farmers about the benefit: cost ratios for the technologies that form the package. Growing soyabean has another benefit to farmers – it will improve the nitrogen content of the soil that should improve soil fertility and boost subsequent crops such as maize. So it is important that the benefit cost calculation reflects this too.

From the technology brief the team will refine a series of farmer-friendly messages in the form of film scripts and text for the posters and leaflets. During February our partners will be asked to validate the messages we have produced and to formally sign off the technology brief to confirm it covers best practice approaches. It is harder than it might appear to get a consensus on information that is easy for farmer to understand and work with. Kwoa, the young Ghanaian designer we are working with on this project was very strict. He told us that he wants us to produce farmer materials that are less than one third text and where the images do all of the work. This is very different to how the scientific community usually shares information!

Interestingly the films used in the field will be in two languages Dagbani and Gonja, while the print will be in English only. This is because the consensus of opinion is that if you are literate in Northern Ghana you can read English. And very few people read Dagbani or Gonja better than English!

In addition to the research on communication channels, a component of the GALA project led by IITA will look at building the capacity of agricultural input partners. The focus will be on better ways to forecast demand for legume inputs more accurately which will enable them to be better prepared to supply that demand. It is also looking at the importance of output markets, for this important cash crop. The team has been working closely with agricultural wholesalers GreenEf to ensure that agrodealers in the target areas will be able to respond to any demand stimulated by the campaign.

Duncan Sones, ASHC

A day in the life of N2Africa

On the WhatsApp group of N2Africa a discussion showed up on February 1st 2017. We wanted to share it as it signals how we find issues that need attention.

Theresa Ampadu-Boakye, M&E Coordinator:



Bags of unsold soyabean in a farmers room in Saboba District, Ghana



The woman is on strike - won't thresh her soyabeans, why? Low market price..., low demand...

Theresa Ampadu-Boakye: Any implications on input usage?

Bernard Vanlauwe: What is the price farmers receive for soyabean?

Samuel Adjei-Nsiah: Approximately \$23 per 100 kg bag.

Bernard Vanlauwe: This is too low... world market price is about \$380 per ton.

Samuel Adjei-Nsiah: The marketing of soya is a policy issue. The aggregators and nucleus farmers who purchase from the FBOs and outgrowers offer a price which is not acceptable to farmers. [The price has dropped] because the demand [of] processors has gone down because of importation of soya cake ... which is cheaper than what the farmers are selling locally.

Lloyd Phiphira Country Coordinator Malawi:



A field day conducted yesterday at a school's demos at Bilala - Ntcheu Malawi

Wilson Leonardo Country Coordinator Mozambique:



In Zambezia Province explain soyabean seed producers working with ACOF on the importance of thinning



Explaining soyabean seed producers in Zambezia how to identify active nodules

Related newsletters

- CIAT Blog: [The world without beans: opinion piece](#);
- CIAT Blog: [Snack bars with a winning twist: beans in the international spotlight](#);
- Tropical Legumes III: [Release of bio-fortified bean varieties in Uganda](#);
- Soybean Innovation Lab Newsletters: [December 2016](#) and [January 2017](#);
- Grain Legumes CGIAR: [Grain Legumes: championing pulses research through 2016, the International Year of Pulses](#);
- Grain Legumes CGIAR: [Pulses platter for a healthy planet: celebrating #GlobalPulseDay](#);
- Legume Alliance Tanzania blog: [Access to market key to adopting improved legume technologies](#);
- SAIRLA Blog: [A soybean campaign plan for Ghana](#).

Related publications

With the tremendous contributions made by dozens of pulse scientists from around the world, the final [10-Year Research Strategy for Pulse Crops](#) was completed in December ([see link](#)). It shows a rich picture of the tremendous potential of pulse crops and the key arenas for research investment.

On January 18th it was [Global Pulse Day](#) and the social media campaign appeared to be a phenomenal success.

N2Africa in the news

For those reading Dutch: an article was published in het Algemeen Dagblad with the title "[Vlinderbloempje als hoop voor Afrika](#)" (Legume flower as hope for Africa) using a photo of beans in experiments of Edouard Rurangwa.

In the Daily Trust an article was published on IITA working with N2Africa on a robust agricultural schema with Borno Youth resulting in reduction of unemployment.

BUSINESS



■ A section of the trained Borno Youth Agripreneurs

Agribusiness moves Borno youths out of unemployment

Many Borno youths benefitted from a robust agricultural entrepreneurial scheme after being dislodged and losing their farms to insurgency.

Ibrahim Musa Giginyu,
Kano

With the security challenges that rendered thousands of communities homeless and also created worrisome situations in the North-East by rendering thousands jobless, it is a known fact that youths are the greatest assets of every society. Indeed, the greatest investment for development should be that which targets the youths.

It was based on these, that the International Institute of Tropical Agriculture, (IITA), in collaboration with N2Africa project in Borno State that came up with a programme to effectively engage youth from the state in agricultural value chain to create opportunities and sustainable income from farming, value addition and agribusiness with an established chain of integrated, profitable, sustainable and mutually supportive agricultural enterprises, that will be wholly owned by young agripreneurs, who are focussed towards gainful self-employment.

Expatriating on the project in Kano, Borno State N2Africa project coordinator, Dr. Nkeki Kamai, stated that the project was aimed at re-orientating the youth

towards embracing agriculture and agribusiness as income generating activity. He added that the project was also aimed at training participants on best practices in agricultural value chain, particularly grain legumes such as soybean, cowpea and groundnut among others.

The coordinator also stated that the project seeks to specifically establish sustainable public-private partnership for legume intensification, by reaching to more than 40,000 farming families and increase biological nitrogen fixation and productivity of grain legumes in Borno State, coupled with contributing to enhanced soil fertility, improved household nutrition and increased cash income for smallholder farmers. Dr. Kamai revealed that the main target was to provide job opportunities for at least 2,000 Borno youths in agro-based enterprises.

According to him, out of all the eleven African countries participating in the project, only Borno State has the youth empowerment component, for obvious reasons, and particularly because of the direct visitation to the BMGF foundation in the United States by the state governor, Alhaji Kashim Shettima to request for the intervention.

He noted that there was urgent need to reconstruct the agriculture and food security infrastructure of Borno State, alongside a pragmatic youth engagement and empowerment scheme cannot be flogged at this time.

However, the coordinator recounted the project's success story, stating that 127 youths have been trained and empowered. He said this took place in ten value chains, ranging from input supply, direct crop production, crop processing, product marketing, poultry, animal fattening to fish farming; which the agripreneurs have independently chosen, out of the 20 identified business opportunities in the grain legumes value chain. According to him, all of these businesses also have the potential to further create direct and indirect job opportunities for other youth and women of Borno State origin.

It was also gathered that a total of 87 youths representing batch 3, 4 and 5 are being officially presented with a starter pack totalling to N23.4million. Each of the agripreneurs was given N450, 000 disbursed in three instalments and the spray service providers were given N100, 000 each in two instalments. Furthermore, all the Agripreneurs have been provided with a branded business location signposts and a Corporate Affairs Commission, (CAC), certificate of registration of the business name in their chosen value chain.

Announcements

Virtual symposium “Nitrogen: At the Nexus Between Food Security and Sustainability.”

This on-line, real time symposium will be held on March 8 & 9, 2017 from 9am-11:30am US Pacific Time, and is hosted by Michael Udvardi of the Samuel Roberts Noble Foundation, USA, and John Peters of Washington State University, USA.

Schedule of speakers, amongst whom are Mariangela Hungria, Advisory Committee Member for N2Africa, Theresa Ampadu-Boakye, M&E N2Africa, and Ken Giller can be viewed [here](#).

Information and free registration: <http://eu.montana.edu/nitrogensymposium/>

MOOC Feeding a Hungry Planet: Agriculture, Nutrition and Sustainability

The [SDG Academy](#) is launching a new MOOC (massive open online course) on March 20, 2017, entitled *Feeding a Hungry Planet: Agriculture, Nutrition and Sustainability*.



The course is free and available to anyone with an internet connection. Global experts, including [Achim Dobermann](#) and [Ken Giller](#), will cover topics such as nutrition, sustainable agriculture, and rural development. The 7-week course features video lectures, discussion forums, and live chat sessions about pressing challenges, development pathways, and solutions for achieving global food security and sustainably. You can already subscribe at [<https://courses.sdgacademy.org/learn/feeding-a-hungry-planet-agriculture-nutrition-and-sustainability-march-2017>], more info will follow soon!

The Podcaster is published six to eight times per year – we look forward to receiving news and contributions – particularly from partners. Please send in contributions well in time. Contact address for this newsletter is: N2Africa.office@wur.nl

Please feel free to forward this email to colleagues you believe would be interested. This email has been sent to you by N2Africa, funded by The Bill & Melinda Gates Foundation.

When you change your e-mail address and want to keep receiving the Podcaster, please send your new address to N2Africa.office@wur.nl. If friends/colleagues like to receive future Podcasters let N2Africa.office@wur.nl know as well.