N2Africa Podcaster no. 33

September and October 2015

Introduction

When N2Africa was invited to prepare for a second phase, our funding partner the Bill & Melinda Gates Foundation challenged us to develop a business led approach. N2Africa had rapidly achieved a 'proof of concept' of our (G_L x G_R) x E x M approach - that we need well-adapted legume varieties (G_L), rhizobial inoculation (G_R) where needed, and that the technologies for crop management (M) need to be tailored to the local conditions (E). Above all we found that the closing of legume yield gaps at farm scale depends on the critical role of good agronomy and integrated soil fertility management to manage deficiencies of phosphorus and other nutrients such as potassium (and less commonly secondary nutrients such as calcium, magnesium and sulphur and micronutrients, notably zinc). We were already working with large numbers of farmers and had learned a lot about the adaptation of technologies to local conditions. The new challenge was to move to scales of operation and to reach farmers in numbers that we had never imagined possible.

To start, public private partnerships – PPPs – were a vague notion that was given shape and meaning with leadership from our team of Business Development Officers under Edward Baars. Over the past two years the PPP concept has been embraced by N2Africa and has taken off at a scale we could not envisage when we embarked on this journey. We devote this issue of the N2Africa Podcaster to examples of PPPs that have been established. We're really excited by the approach and the strong engagement with private sector partners. We're delighted to include some articles contributed by partners. We have a saying in English that *"the proof of the pudding is in the eating"* (Freddy Baijukya tells me that the equivalent in Swahili is *"radha ya chakula aijuaye muonja"*) and we look forward to seeing the outputs from these PPPs over the coming years. We have an increasing number of requests for collaboration across the countries where N2Africa is active and it is clear we have become a "go to" project based on the successful partnerships we have formed to date.

In addition to the focus on PPPs, we have some other news items and announcements from the different countries and links to new student theses and papers. We hope you'll enjoy reading and look forward to your feedback!

Ken Giller

On Public Private Partnerships and how they can learn about 'The Market'

N2Africa proudly takes stock of the strategic partnerships established to scale out and sustain its promoted services and technologies. Being implemented in 11 countries, N2Africa sealed 86 comprehensive partnerships with public and private organizations reaching 222,850 farmers in 2015-16 and aiming towards 550,000 in 2018. The partnerships are linked to value chain projects with similar objectives, leveraging resources and creating synergies. In this article we describe how partners view the benefits of partnerships, the various market models used in partnerships and the main challenge different legume value-chain partners encounter: how to generate sufficient supply of produce for a market based approach. Using one specific example, we disentangle the factors that determine supply by farmer cooperatives.

Joined efforts

All project countries formed strategic partnerships. As an example, partners summarized such a partnership for Ethiopia in a poster (on the next page). Ethiopia spearheaded the partnership formation, which was earlier elaborated on in the January-February 2015 Podcaster (29). The 'Tanzanian Legume Alliance' poster, showing a large partnership, recently featured in international events held in Berlin, Oxford and The Hague.

During the recent partner planning meetings it became clear that many partners thought the same: *'we cannot hope to achieve our common objectives on our own'*. They also recognized that there are many challenges ahead to achieve the objectives. The consensus was that when efforts of various partners are joined and when partners can learn from each other, the chances that goals can be met are higher. Better coordination among partners was therefore high on the agenda when the partnership agreements were signed and put into action. In addition, structures and modes of operations to achieve common goals were agreed upon.

The N2Africa coordination and planning efforts so far already received appreciation. Addis Teshome of IFDC mentioned that *'with N2Africa to have taken up responsibilities for dissemination, IFDC can now focus better on the marketing aspects for their farmers'*. Abubakari Kijoji of CRS Tanzania stressed *'N2Africa made an important contribution to the capacity building to our Soya ni Pesa Project'*.

Market models

The first pillar that was mentioned under discussion during annual partner planning meetings in Nigeria, Ghana, Uganda, Ethiopia and Tanzania was always 'the Market'. Across the partnerships, various models for markets are used. One of the market models that is commonly used in N2Africa is a (variation on) the 'out-grower' model. In those cases a strong 'buyer' supports its contracted farmers with

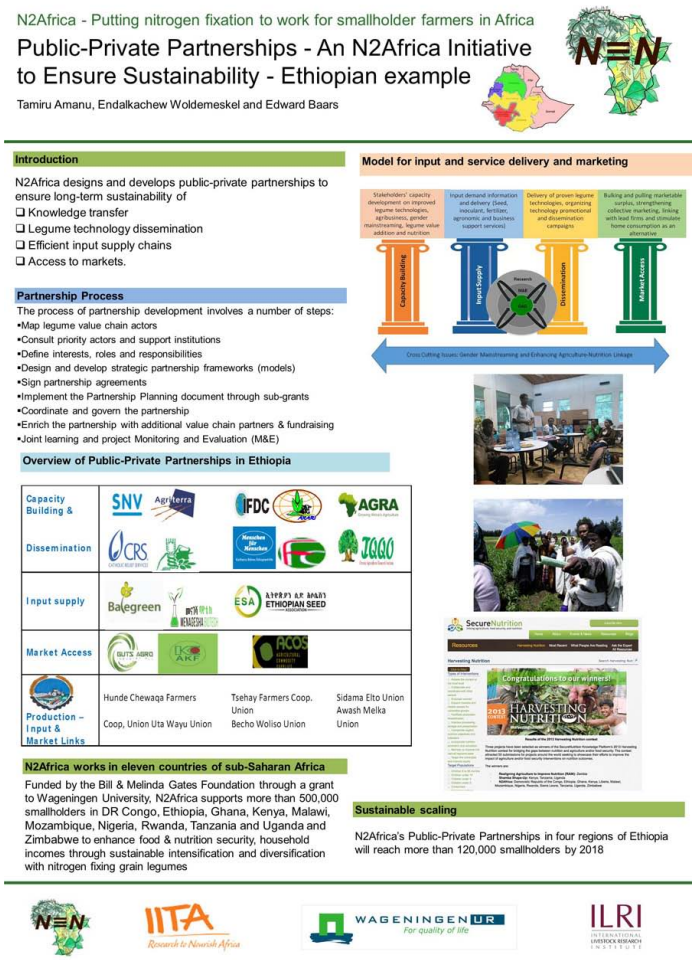


Figure 1: Ethiopia PPP Poster

inputs, credit, training on post-harvest handling, quality control, thereby also focussing on information flows and building trust relations with the farmers. ACOS, seen in figure 1, is one of those cases. Other examples are GUTS Agro Industry Plc, Alema Koudijs Feed Plc (AKF) in Ethiopia; WACOT, Hule and Sons, De Ideal Agro Allied Services, Mernan Jef Concept, Emma & Co, Madakiya Women Processing Group, Falke oil and AACE Foods in Nigeria, AgDevCo and Premium Foods in Ghana, Export Trading Group (ETG) and Kilimo Markets Ltd. in Tanzania.

In other cases, N2Africa and partners build farmers' business skills and organizational capacities to improve on their marketing. Skills and capacities include sourcing seed, using seed, using (bio-)fertilizer, good agricultural practices, post-harvest handling, storage and quality control. Meanwhile farmers stay informed of and are linked to market demand.

Legume Alliance

We also saw cross fertilization between partnerships. A good example of this is the Legume Alliance, coordinated by the CABI-African Soil Health Consortium (ASHC-II). The Alliance is now implementing the campaign on Maharage Bingwa (Champion Beans) in which they develop and share information on common bean technologies with different partners. One of the strengths is that different partners use different media to disseminate information, ranging from radio to comics, thereby reaching different audiences. Figure 2 shows a page from a comic made by Maharage Bingwa partner Shujaaz, which uses mass circulation comics, YouTube and social media to target younger members of the farming families with inspirational ideas on new varieties and good agricultural practices. The article on page 6 of this Podcaster gives more information on the Maharage Bingwa campaign.

In terms of partnerships, the Legume Alliance includes CABI, Farm Radio International (FRI), African Fertilizer Agribusiness Partnership (AFAP), IITA and the Agricultural Seeds Agency (ASA) as partners. The Alliance also cross cuts the N2Africa partnerships with CRS, BRAC-ETG, Faida MaLi-ARI-Selian-Uyole and AGRA-RUDI- the African Conservation Tillage Network -BRiTEN. New projects to join the Alliance are the ICT Challenge Fund, Integrated Seed Systems Development (ISSD) and possibly the Integrated Value Chain Development (IVCD) Project.

Recently, the Legume Alliance was awarded the Canadian International Food Security Research Fund (CIFSRF) -

Figure 2: Comic page Shujaaz

Scale up of improved legume technologies through sustainable input supply and information systems!

The Challenge of supply

Kassahun Bekele of partner ACOS-Ethiopia mentioned, *'we guarantee farmers a premium price for our registered variety of red kidney beans that serves a niche market but we don't always get the quality and quantity we had hoped for'*. This usually opens a lively discussion from all angles on how to jointly improve on this. Because the challenge of supply of raw material is a common denominator across partnerships and countries, we deliberate more on the possible causes in the case of ACOS.

The first question we can ask is whether the disappointing quantity of bean supply was caused by an unfavourable climate conditions or high pest and diseases pressure that particular season. But because several other cooperatives in the region reached near 100% delivery of their expectations, we cannot attribute the lack of supply only to these causes.

Could it then have been a lack of inputs? The cooperatives were funded in advance to pay farmers cash on delivery and farmers received credit for seeds and (bio)-fertilizers (to be deducted at harvest time). SNV – Agriterra facilitated a credit scheme for this which will be expanded in 2016. It thus seems that payment and credit facilities were in place. In addition, the cooperatives started their own seed multiplication in sufficient quantities using ACOS variety foundation seed. We therefore do not think that lack of seeds has been a problem. However, in some areas lentils compete with the ACOS variety, and the bean varieties used by ACOS seem to be slightly lower yielding than other bean varieties grown.

We can also ask whether some cooperatives might not be strong enough to produce sufficient quantity of sufficient quality. Some cooperatives are not 'strong' indeed. Currently, they are enrolled in an institutional capacity building program working to improve their performance.

The farmer perspective

The use of improved seeds, (bio) fertilizers and good agricultural practices were disseminated among farmers using demonstration and adaptation plots, Farmer Field Schools and training materials. The N2Africa Learning Monitoring & Evaluation (M&E) tools, including 'technology evaluation' and 'willingness to buy' surveys, are currently looking at the rate of adoption. In addition, they assess availability of inputs and monitor input demand and that can feedback to partnerships' market models. The M&E can be rapidly expanded using Computer Aided Telephone Interviews (CATI).

Way forward

In conclusion, the way forward is to track the results of the joint activities and to start partner planning meetings with a 'situation analysis' from a farmer perspective using ICT based learning M&E surveys complemented by adoption studies from MSc. students. This is already planned for and ongoing in Mozambique, Nigeria, Ghana, Tanzania and Ethiopia.

Edward Baars

Public-Private Partnerships (PPPs) for Sustainable Input Business: The Case of Menagesha Biotech Industry in Ethiopia

Introduction

Menagesha Biotech Industry (MBI) is a private bio fertilizer producing company established in 2012 with the objective of producing and distributing bio-fertilizers and long run vision of becoming the leading bio-fertilizer producing industry in the region.

The production capacity of the company was slightly increasing across years from 30,000 packets (125 grams each enough for quarter hectare) of inoculant in 2012 to 50,000, 70,000, and 102,000 packets in 2013, 2014 and 2015, respectively. Even though the production capacity of the plant was getting improved across cropping seasons since its establishment, MBI has faced different challenges including limited awareness and use of bio-fertilizers by smallholder farmers, lack of effective input demand information, inefficient distribution infrastructure, and poor business linkage all contributing to poor sales performance of the company.

As a penetration strategy to the inoculant business, the company has been supplying inoculants for a minimum

Inoculant Production Process at MBI Unit

steady price and also in the form of credit where defaulting was a key challenge. The Ministry of Agriculture at federal level and Bureaus of Agriculture at regional, zonal and district levels were approached to be a bridge between the company and smallholder famers. Although the ministry and bureaus of agriculture do promote inoculants knowing its immense contribution to soil health, yield increments and affordability by pro-poor famers, the model was finally observed to be inefficient and unsustainable.

The PPP Approach-The New Inoculant Business Model

The International Livestock Research Institute's (ILRI's)

"Putting Nitrogen Fixation to Work for Smallholder Farmers in Africa" (N2Africa) Project's initiative to create an efficient and sustainable inoculant business through the "Public-Private Partnerships" has been working with the company and made a business relationship Farmers' Cooperative Unions. The rationale to use the Farmers' Cooperative Unions as an entry were: 1) the unions are business entities mandated by the government, 2) unions are good means to reach more number of farmers, 3) unions work hand in hand with bureaus of agriculture in forecasting input demands and, 4) it is easier to bulk grain products and deliver back to buyers through the unions and 5) it is easier to link farmers to better grain markets (which has been a good driver to buy inoculants and adopt legume technologies) via unions.

Table 1: Overview of the Business Model for MBI

Inoculant production unit (MBI)	Inoculant distribution channels (Unions)	Inoculant buyers (Union member/non-member farmers)	Technology promotion, technical support, strain supply and input demand information
			

This partnership approach (PPP) has put forward the inoculant business and the company has witnessed a huge inoculant demand, better collaboration from stakeholders and an improvement in sales. After almost same sales records for the last two years (2013-2014) as compared to production, a general estimation of 10% sales increment has been attributed to partnership for 2015.

Table 2: Summary of Company's Production and Sales Performance across years

No.	Production years	Volume of production (packets)	Sales Volume (packets)	Sales Volume (100%)	Unit price (USD)	Key partners
1	2012	30,000	10,000	0.33	2	Bureaus of Agriculture
2	2013	50,000	25,000	0.5	2	Bureaus of Agriculture
3	2014	70,000	35,000	0.5	2	Bureaus of Agriculture
4	2015	102,000	65,000	0.64	2	Unions, NARS, NGOs, Bureaus of Agriculture

The partnership is designed in such a way that there will be a business and technical support coming from other legume value chain actors including the public research and extension (research institutes, universities, and bureaus of agriculture), development partners, and the private actors to the smallholder farmers (the inoculant buyers) with a multiplier effect to the inoculant business.

Dejene Woldemariam (MSc), MBI Chief Executive Officer and Asnake Beshah (MSc), MBI Senior Production Technologist, Menagesha Biotech Industry, Addis Ababa

N2Africa and Feed the Future Nigeria Livelihoods Project Partnership: A working collaboration

In response to solving some of the challenges being faced by most farming households in Nigeria, International Institute of Tropical Agriculture and Catholic Relief Services signed a partnership agreement that provides mutual support and collaboration in the joint implementation of N2Africa and Feed the Future Nigeria Livelihoods Projects in FCT and Kebbi State. The collaboration aims at increasing agricultural production and incomes and improving nutrition of farming households, with a focus on cowpea, groundnut and soyabean.

Through this collaboration, a lot of interventions have been made in the area of introducing improved varieties of these crops and improved agricultural farming practices. The N2Africa project provides support to promote new technologies and approaches to increase agricultural production while Feed the Future Nigeria Livelihoods Project provides the platform to reach out to beneficiaries. With this arrangement, both projects are able to meet their common objectives. To ensure quality program delivery, there is a joint monitoring approach of the field activities. This has already increased the project's impact of on the beneficiaries within a short time.

In the first year of the collaboration, 136 producer groups with 4410 members (3549 male and 861 female) were reached. Six improved management practices including improved varieties, right spacing, seed treatment technology, use of hand-held planter, use of inoculant in soyabean and aflasafe in groundnut to prevent aflatoxin have been introduced to the farming communities through the establishment of 202 Demonstration Farms across project locations. More than 1,800 of the reached farming households have started adopting improved agronomic practices in production of cowpea, groundnut and soyabean. This is expected to translate into increased yield and income at

Participants at a cowpea demonstration site during Green field day at Ujariyo in Kebbi State.

the end of the current season. The project also introduced five high yielding, tolerant and disease resistant varieties of leguminous crops. To ensure that farmers have access to most of these introduced varieties within the communities in subsequent planting seasons, 107 community seed farms of approximately 0.5 ha/farm were established by trained seed entrepreneurs. Field days were conducted in all the 12 communities with 570 (Male-517, Female-53) farmers in attendance.

Besides introducing new technologies, the collaboration also has various other interventions to improve the agricultural production, incomes and nutrition of farming households. Agricultural trade and input voucher fairs were held in all the project locations. 446 vulnerable households were supported with input vouchers that covered up to 20% of the inputs required to cultivate 1 hectare of land. In addition, the capacity of 93 agro dealers was built in the area of effective handling of agro-chemicals and appropriate linkages with rural farmers. To avoid problems of marketing agricultural products with the anticipated increased agricultural output, marketing committees were formed in all the communities. Their task is to link producer groups to the target market. Field agents and lead farmers were trained on the use of non-chemical storage using triple bagging for cowpea (PICS bags) and use of locally fabricated groundnut oil processing machines. Farmers are continuously being encouraged to make use of PICS bags as this does not only reduce post-harvest losses but also removes the risk of contamination associated with the use chemical storage.

No doubt, collaboration work between N2Africa and Feed the Future Nigeria Livelihoods Project can be described as one of the collaborations that is achieving its goals of improving agricultural production, income and nutrition of farming households.

Charles Iyangbe (CRS), Nigeria

Towards a public private partnership for grain legumes: A case of World Vision Uganda

Public private partnership (PPP) is a co-operative venture between the public and private sectors on the basis of expertise of each partner. A PPP meets clearly articulated public needs through the appropriate allocation of resources, risks and rewards. This approach is guided by four important pillars: capacity building, awareness creation and dissemination, information to support input supply and output markets. The N2Africa project and World Vision Uganda (WVU) both see the PPP approach as an exit strategy to sustain development interventions and address the chronic dependency syndrome in the communities where they work.

Both the N2Africa project, and the WVU's Food security and Community Resilience Programme seek to contribute to improved food and livelihood security amongst the most vulnerable farming communities through increased agricultural production and productivity, and improved nutrition and incomes. WVU and N2Africa agreed that strengthening the competitiveness of the smallholders is the appropriate approach to meet the desired goals of improved food and livelihood security. This led to a joint project on **strengthening the capacity of smallholders to engage in value chains of grain legumes for improved livelihood security and incomes.**

Aligning the N2Africa goals with the strategic objective of WVU led to collaboration with more partners because diverse knowledge and skills were required and could only be met by partnering with public and private organisations. N2Africa linked WVU with the following partners:

- Integrated Seed Systems Development (ISSD) builds the capacity of farmer groups in local seed businesses to fill the critical gap of availability of quality seed. WVU and ISSD Wageningen University signed a memorandum of understanding (MOU). Some seed money is provided to the farmer groups to start up the seed businesses as well. Other partners such as the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) are included for inspection and certification of quality declared seed.
- The National Research Systems build capacity and backstop WVU staff and farmer organizations in legume agronomy and experimentation (NARO-NARL) and management of inoculants N2Africa (Makerere University). N2Africa is giving some funding support through sub-agreements.
- AgriNet is a private sector organization that buys soyabean. AgriNet is providing basic post-harvest training to farmers to achieve the desired grain quality. It also guarantees the price of soyabean and establishes bulking centres. They have placed a demand of 300MT of soyabean per season. An MoU was signed as well.

World Vision Uganda also took up some of the aspects for strengthening the linkages:

- Co-funding farmer institution development to address the collective marketing and business skills development. WVU engaged Uganda Co-operative Alliance to train farmer organizations and made linkages to microfinance

Figure 1. Farmers being taken through the different treatments of the soyabean demo during the field day in Oyam District

Figure 2. Farmers evaluating the soyabean technologies of the demo garden managed by World Vision Uganda in Oyam District.

institutions to access agricultural credit for farmer groups.
- Establishing an MoU with PlantWise to address the issues of pest and disease management.
- Establishing an information sharing system including a portal and quarterly reflection meetings to keep partners informed and regularly review the joint action plan.
- Engaging the district local governments (DLG) in Oyam and Kole to mobilize communities to implement the project in line with the government goal of combating poverty and increasing household incomes through agriculture.

Although the approach used does not embody all the PPP development steps, it already provides some lessons: a need for major re-adjustments in mindsets to work jointly, clear definition of roles to work effectively and efficiently and continuous capacity building for farmers and partners.

Whereas N2Africa is already facilitating the creation of partnerships and directly signs partnership agreements with various organizations, we are looking forward to the time farmers will be able to engage these partners on their own. We envisage that the current partnerships develop into a public private partnership where all partners will be accountable to each other and where there are clear roles and responsibilities, leading to the achievement of the common goals and targets.

By Connetie Ayesiga, BDO N2Africa, IITA Uganda & Dorcas Adrale, Partnerships Specialist, World Vision Uganda

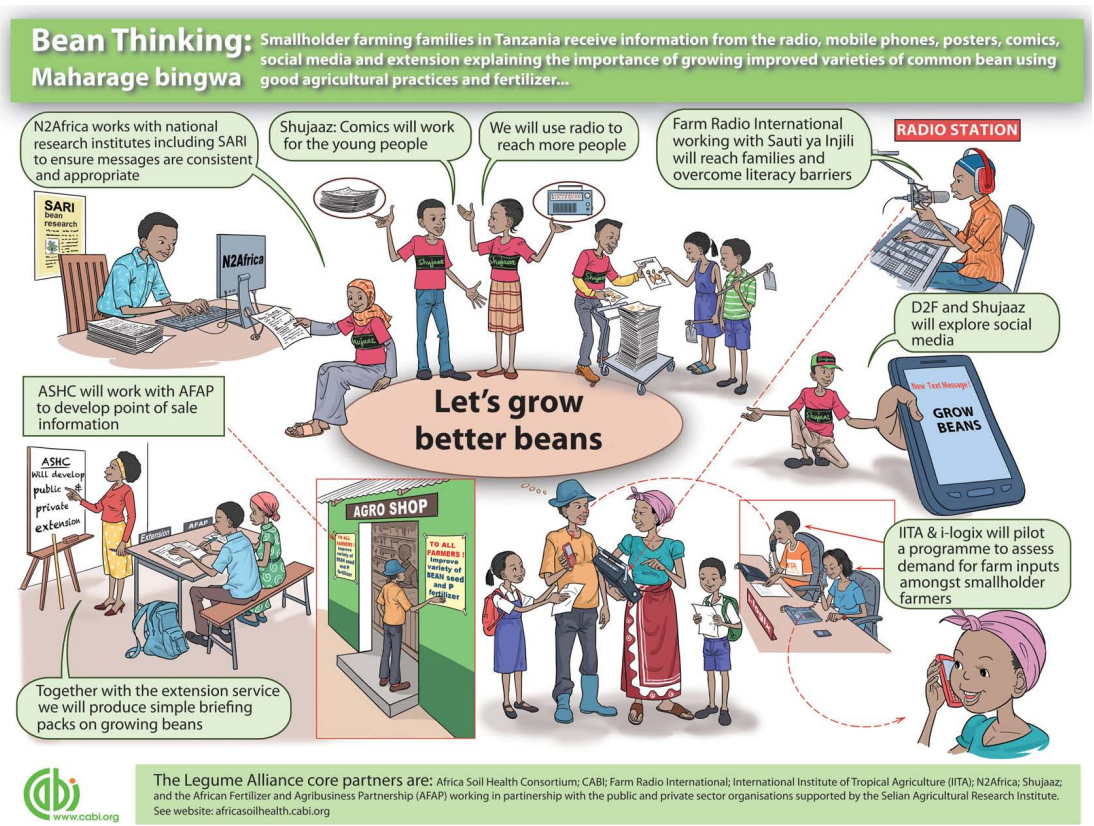
Tanzania Legume Alliance

In early 2015 African Soil Health Consortium helped convene a group that became the Tanzania Legume Alliance. This group is now implementing the campaign called Maharage Bingwa (Champion Beans).

The Maharage Bingwa campaign is supporting the dissemination of common bean technologies and practices recommended by the Selian Agricultural Research Institute (SARI) and N2Africa. The Alliance is testing a new integrated approach to developing and sharing agricultural information, initially with common bean technologies.

The Alliance aims to test two hypotheses, central to the ASHC phase 2 approach:

- By targeting smallholder farming families at multiple entry points, with media that appeals to, or reaches younger and older people, men and women, literate and not, we stand the best chance of creating a shared understanding across the generations of new agricultural technologies
- Making sure different age cohorts and demographic groups access messages first hand should create a debate in the family leading to greater levels of adoption of the technology. It also ensures no one-person is responsible for remembering how the technology should be applied thereby making it more likely the technology will be applied correctly.



Multiple media and distribution channels are being used simultaneously, each targeting different members of the farming family, but all with nuanced messages based on consistent, sound science and business principles.

This approach aims to overcome major problems associated with common practice. Usually different organisations in the same locality disseminated subtly different messages. This can confuse farmers which impacts negatively on adoption. Project often selection dissemination approaches without thinking through the impact of the decision.

Choice of media has been shown to have a big impact on who gets access to information – men or women, different age cohorts and people with different literacy levels. Overall the diversity of media approaches means that it is the campaign that is engendered, the constituent materials and approaches are gender neutral.

The campaign involves testing prototypes, pilot materials and dissemination channels. An integrated legume campaign is being rolled out in the run up to, and during, the short rains beginning in October 2015. The emerging lessons will be applied in a scale-up phase campaign in the run up to and during the major planting season, which should start in March 2016. This will see the Alliance bring forward interventions involving groundnut and soyabean.

The Legume Alliance Maharage Bingwa campaign could become a model for future jointly developed and delivered campaigns to help smallholder farming families improve their agricultural practices. The ASHC team will be looking to develop projects in other countries which could include Ethiopia, Ghana, Nigeria and/or Uganda.

The blog for the project can be found at www.africasoilhealth.cabi.org/category/blog.

Duncan Sones, ASHC, Nigeria

N2Africa D.R.C.: training farmers in agribusiness

Mr. Berkimas is one of the farmers trained by N2Africa on soyabean processing at IITA Kalambo. After the training he decided to start a small business of soyabean and cassava processing in Kavumu (one of the villages of Bukavu, around 25 km from Bukavu city). Here, soyabean cultivation is common. Mr. Berkimas bought processing equipment worth 4600 US$ with his own funds. The processing machine takes an hour to transform 120 kg soyabean in 48 liters of soyamilk and 78 kg of waste. The wastes are being used to produce cakes and feed for livestock.

Mr Jean Marie Sanginga, N2Africa country coordinator, visits Mr. Berkimas and his soyabean processing unit

Mr. Berkimas' aims are to add value to soyabean, compete on the regional market and improve his income. He has started with soyabean but also wishes to expand to other crops like cassava. He wants to be a model to other farmers who want to start a venture in agribusiness. N2Africa promised to continue advising the farmers. Through Mr Berkimas we encourage other farmers to be engaged in this venture for poverty reduction.

Sanginga Jean Marie, Despines Bamuleke and Bintu Ndusha

N2Africa holds workshop on data collection for university staff, students, extension workers

In view of the need to introduce researchers to contemporary methods of data collection, N2Africa-Nigeria in conjunction with the International Institute of Tropical Agriculture (IITA) organized a 1-Day workshop for staff and Postgraduate students of the School of Agriculture and Agricultural Technology (SAAT).

The workshop took place at the School of Agric Board Room, Main Campus.

Declaring the workshop open today, the Dean SAAT, Prof. Reuben Jiya Kolo said the School is committed to quality and cutting edge research that would impact on the society.

Prof. Kolo further expressed gladness at seeing one of the university products working with international organization and for coming down to the university to conduct training for staff and students which he noted would enhance learning and research.

From left to right: Dr Daniya Emmanuel (N2Africa research partner), Dr Joost Van Heerwaarden (N2Africa research coordinator and data management specialist), Prof. Akim Osunde (N2Africa research partner), Prof. Kolo (Dean of Agriculture, FUT Minna), Dr Emmanuel Sangodele (N2Africa country coordinator) and Dr Bassey Ukem (N2Africa Data management officer)

The Country Coordinator of N2Africa, who is an alumnus of the university, Dr. Emmanuel Sangodele said the workshop was geared towards moving away from the analogue method of pen and paper of data collection to technology enhanced data collection and analysis.

Dr. Sangodele stated that labour would be saved through the technology method of data collection and would assist farmers and extension workers to do their work and enter data through mobile phone for processing.

He said the information when processed would be available for farmers online and people can also make recommendations.

Speaking earlier, the special guest at the event, Prof. Akim Osunde who was the former DVC (Academic), commended the guests speaker for coming to the university to conduct the workshop for staff and students.

Emmanuel Sangodele, N2Africa coordinator, Nigeria

N2Africa Pushes for Improved Soyabean Technologies at Malawi Agriculture Fair

The Malawian Minister of Agriculture, Dr. Allan Chiyembekeza, is urging players in the agricultural sector to take modern technology to farmers and help Malawi move from a predominantly importing nation to an exporting one.

With this message he opened the 12th National Agriculture Fair, held from 27th-29th August 2015 with the theme "Accelerating Agriculture for Economic transformation." The fair gave IITA and other organizations yet another opportunity to showcase their technologies to farmers, processors, consumers, producers, suppliers and partners.

During his speech, Dr. Chiyembekeza expressed his satisfaction about the fair. "As the government we applaud the wide participation of different players in agriculture at this fair as it shows commitment to expose farmers to emerging technologies, promote partnerships and linkages, sharing of ideas, experiences and innovations in agri-business ventures and to facilitate access to farmers. As reflected in government policy document, we are committed to increase agro-income for farmers to realize economic growth".

Concurring with the Minister, Lloyd Phiphira, the N2Africa National Coordinator, believes that IITA is complimenting government efforts by encouraging innovations and promoting improved soyabean and other legumes varieties. According to Phiphiria, a substantial number of farmers have adopted various new legume technologies, especially in the Central Region of Malawi. Yet, there is still a lot to be done to optimize adoption rates of such technologies in other regions as well. "Under the N2Africa project, we have helped a lot of farmers to increase legume yield production and productivity by promoting the adoption of improved varieties, use of inoculant and improved agronomic practices. We have also strengthened our collaboration with partners in the production of soyabean inoculant".

At the fair, IITA showcased different improved legume technologies and products from legumes that included Soyamilk, soya cake, soya vegetables, soya flour, cowpea fritters, groundnut snacks and many other products. Various IITA and N2Africa manuals, guides, leaflets and fliers were also distributed.

Also profiled at the IITA stand was the newly introduced project of Feed the Future (FtF) Malawi: Improved Seed Systems and Technologies. This project aims to increase

Picture 1: Olivia Kacheyo of IITA hands a soyabean recipe document to one of the visitors to the IITA stand tasting soyamilk


Picture 2: A young man, Macklean Mafubza gets to read an N2Africa publication from the IITA stand

soyabean production and productivity through a sustainable improved seed system so that Malawi can meet its annual soyabean seed and grain demand.

During the fair it was noted that many farmers would like to venture into soyabean production but do not have enough (recent) information on improved technologies for soyabean. Also, many people do not know the various ways of using soyabean apart from a basis for porridge or as a cash crop.

As compared to 2014 Agriculture Fair, more people visited the IITA pavilion. The recorded number exceeded 800 people. Mr. Phiphira explains the difference in interest by the increasing number of people that are becoming aware of the work of IITA in Malawi. Throughout the fair,

the IITA stand attracted a lot of people who were eager to learn about soyabean farming and new technologies. This showed a complete change compared to other years on understanding and perception of people on Soyabean as a cash crop. It also highlighted that soyabean is becoming a national crop with farmers in all the three regions of Malawi eager to venture into soyabean farming.

Lloyd Phiphira, N2Africa coordinator, Malawi

Kick-starting commercial soyabean farming with Teso Farmers in Busia, Kenya

Teso Farmers is a farmers' group cultivating soyabean in Busia Kenya. This group is linked to the platform WeRATE. George Otanga tells the story of how he commenced the group and how he envisages farmers can benefit from economies of scale in soyabean production.

30 acres

I commenced commercial farming by working on 20 acres of leased land in South Teso on my own. The owners of the leased land were my field managers. However, the crop was destroyed by floods. During the long rains this year I changed my strategy and I worked on five acres. Two acres were my own property and three other farmers had one acre available each: two in Teso and one in Mumias. I supplied the three farmers with Biofix inoculants, Sympal fertilizer and seeds as a loan, deductible after harvest.

Next season, after El Nino, I plan to expand the farming in partnership with someone who believes in my work ethics. Our philosophy will be to form a community based organization (CBO) covering the three counties with five acres of our own and 25 acres belonging to satellite farmers in our nucleus group. We have opted to invest in 30 acres, five in Mumias, thirteen in Teso and twelve in Budalangi. The group will be formalised and registered as a CBO. When the name is accepted by the director of Social Services it will be provided to WeRATE for their records.

The model

Using my previous model we will supply seeds, Biofix and Sympal to fifteen farmers in our Nucleus. We expect the farmers to do their own weeding. After harvest we will buy their produce at an equitable agreed price. We will deduct the costs of the inputs and pay the net margins depending on agreed price from the consolidating processor.

This business model comes out of my experience that soyabean is only profitable as a large-scale group activity. Because most farmers in Western Kenya are peasants they cannot succeed without technical and financial support.

Youth

We expect 20 group members, of which at least five women and two youth. One of the youth lives in Mumias. This person is below 30 years and a graduate with a degree in Chemical Engineering from the University of Nairobi. Currently without a job but with an inheritance of eleven acres of family land this person is willing to devote five acres to soyabean cultivation.

The key achievements that we aim for are group synergy and profits based on volumes. Farmers freely and willingly provide land in exchange for seeds and fertilisers and we all gain from the produced volumes.

George Otanga, WeRATE member and commercial farmer

PhD update: Response of Groundnut varieties to Rhizobia inoculation in the Sudan and northern Guinea savannas of Nigeria

My names are Umar, Faruk Galadanchi. I enrolled for my PhD programme at Bayero University, Kano, Nigeria in the 2013/2014 session. I developed my research topic and got the approval of my supervisory team, which consists of Prof. Ado A. Yusuf, Prof. Jibrin M. Jibrin, Dr. Abdelaziz Abdelgadir (IITA based supervisor) in collaboration with Dr. Babu N. Motagi (ICRISAT-Kano Station), to start the field work.

The aim of my research is to test the response of groundnut varieties to rhizobia inoculation and to assess different varieties' potential to fix nitrogen. The justification for this

work is twofold. First, good results with groundnut have been obtained elsewhere. However, little information is available in the region where I am conducting my research. Second, most of the work on rhizobia inoculation focusses on soyabean and not on groundnut.

The first experiment is done in two locations, Zaria and Kano, and consists of six groundnut varieties (four improved varieties, released for farmers, and two local varieties[1]) in the main plots and six inoculant treatments in the sub-plots. The inoculant treatments consist of four types of inoculants[2], a treatment with Nitrogen fertilizer and a control. The aim of this experiment is to come out with the best combination(s) of variety (or varieties) of groundnut and strain(s) of rhizobia for both locations.

The aim of the second experiment is to assess the biological nitrogen fixation potential of several groundnut varieties, of which some are not yet released for use by farmers. Nitrogen fixation can then be included in the varietal characteristics such as yield and fodder qualities. Therefore I test fifteen groundnut varieties[3] with an inoculant treatment (NC 92), a Nitrogen fertilizer treatment and a control. Also here I use a split plot design with variety in the main plot and inoculant in the sub-plot.

Although not fully analysed yet, the raw data is showing differences between the tested varieties already. Full analyses will probably confirm that observation. The legumes in the experiment clearly fixed sufficient nitrogen when all the necessary components, such as the right legume variety and rhizobia, were put in place.

[1] Local varieties: Kampala, Kwankwaso. Improved varieties: SAMNUT 21, SAMNUT 23, SAMNUT 24 and SAMNUT 25

[2] Inoculants: I1 = NC 92, I2 = SBG 234, I3 = MJR 518, I4 = WDL 129 (all source from Aliyu Abdullahi Anchau in Australia)

[3] ICG 12991, ICGV 86024, ICGV 86124, ICGV 94379, ICGV-IS 07803, ICGV-IS 07947, ICGV-IS 07965, ICGV-IS 09926, ICGV-IS 09932, ICGV-IS 09982, ICGV-IS 09992, ICGV-IS 09994, ICGV-IS 09996, ICGV-SM 08523, and ICGV-SM 08568 (not are released to farmers) with SAMNUT 24 as a check

Introducing Minke Stadler

This month, Minke Stadler joined N2Africa as a research fellow. She wil be analyzing data, developing reports, and giving support where needed.

Minke holds a MSc. in Human Resource Management and a MSc. in Farming Systems Ecology. She worked for twelve years as a consultant, providing advisory services in the field of project management and talent development. Last June, she graduated at the Wageningen University (CGIAR-program in Barotse floodplain, Zambia). Her research efforts were aimed at evaluating how mindset and values systems contribute to (more) effective learning events for small-scale producers. The study contributed to a better understanding about how to build up from perceived best practives and roll activities out on a wider level.

Minke will gradually take over from Greta van den Brand who will be leaving N2Africa around Christmas.

Message from Pamela Anderson, Bill & Melinda Gates Foundation on the launch of AgriKnowledge

Dear grantees and partners,

I'm excited to inform you about the launch of AgriKnowledge – an online portal to publically share learnings from grants and contracts funded by the Bill & Melinda Gates Foundation's agricultural development team.

The URL is: www.AgriKnowledge.org

Many of you will be aware that the Gates Foundation has been working on ensuring broader open access to peer reviewed journal articles resulting from our support. AgriKnowledge complements that effort by providing access to the 'grey literature' we help fund – largely reports and presentations – which we feel would be informative to the broader agricultural development community. Today, as we launch, the site features over 700 such documents.

I am writing in hopes that many of you will find this resource helpful, and share it with colleagues who you think would find it helpful too. I would also like your feedback. Our team has worked closely with knowledge management specialists at the Albert R. Mann Library at Cornell to assemble a collection of documents which is as complete and updated as possible. But if you find any errors or omissions please let us know by reaching out to Emily Naftalin at Cornell, en279@cornell.edu, who is very ably helping oversee the collection. Please also feel free to reach out to your Program Officer to discuss what additional documents might be most appropriate for AgriKnowledge. And, below, I have included some questions we expect might arise.

This resource is really a compilation of a lot of your hard work and careful analysis. Thank you, as always, for your passion and partnership.

My best,
Pamela K. Anderson

N2Africa in the news

In the September issue of the Dutch magazine Vork, published by Agrio, a critical platform that discusses developments in the food chain, an interview entitled "Stikstofbinding voor kleine boeren in Africa (Nitrogen fixation for smallholder farmers in Africa)" with Ken Giller was published. In 6 pages it shows photos and gives information on the background and aims of N2Africa.

N2Africa publications

A publication by Fidèle Barhebwa Balangalize et al.: Competitiveness of smallholder legume production in South Kivu region, Democratic Republic of Congo.

Reports uploaded on the N2Africa website

MSc thesis by Wytze Marinus: Opportunities and constraints for climbing bean (*Phaseolus vulgaris* L.) cultivation by smallholder farmers in the Ugandan highlands: Developing a basket of options.

MSc thesis by Verena Mitschke: Farmers' Constraints vis-á-vis the Adoption of Improved Bean Varieties and Seeds in Hai District, Tanzania.

MSc thesis by Ludy Keino: Nutrients limiting soybean (*Glycine max* L.) production in acrisols and ferralsols of Kakamega and Busia counties.

BSc thesis by Fidèle Barhebwa Balangalize: Uptake of technology and competitiveness of legume production in small scale farming in South Kivu, Democratic Republic of Congo.

MSc thesis Jan Huskens: Climbing bean (*Phaseolus vulgaris* L.) cultivation and its diffusion in Kapchorwa District, Uganda.

Workshop report Taking Stock and Moving Forward. The workshop was convened to take stock of issues related to project implementation in all countries and to develop action plans on how to move forward. The workshop was structured through: 1) One-on-one meetings with country coordinators and Fred, Ken and Edward, 2) Plenary sessions with discussions and 3) Group work to develop work plans. Outputs include an inventory of issues for each country, a list of decisions that were taken during the plenary discussions and work plans for activities on labour saving tools, nutrition and rhizobiology.

The N2Africa Communication Master plan can be downloaded it covers the N2Africa strategy for internal and external communication.

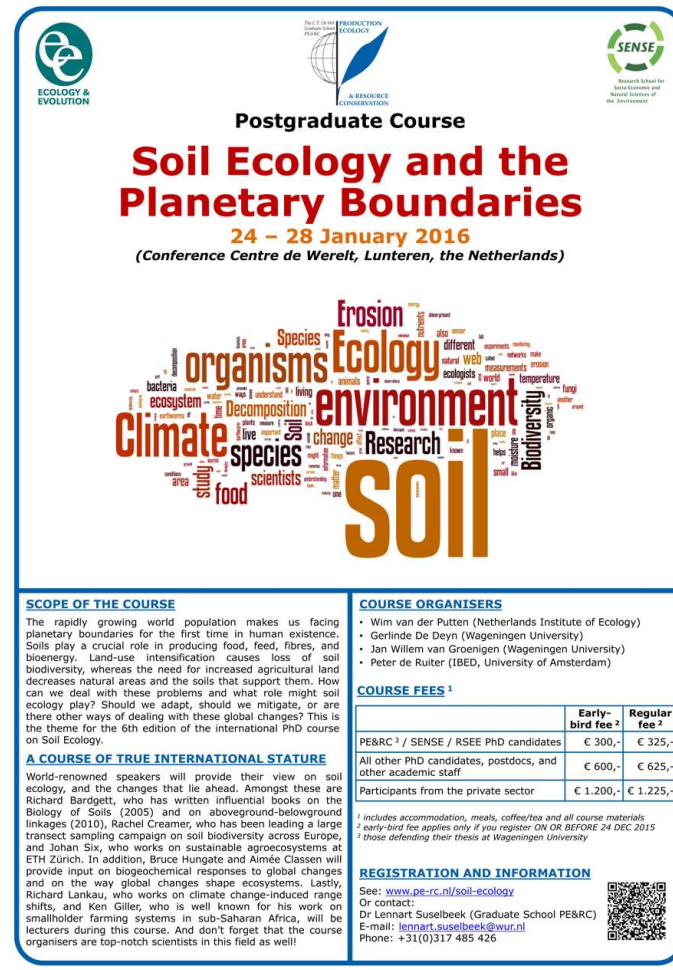
Related publications

Can Short-season Grain Legumes Contribute to More Resilient and Productive Farming Systems in Semi-arid Eastern Kenya? A publication by A. Sennhenn, D.M.G. Njarui, B.L. Maass, A.M. Whitbread in Procedia Environmental Sciences (Volume 29, 2015, Pages 81–82).

This is the first published abstract proceedings [from Agriculture and Climate Change - Adapting Crops to Increased Uncertainty (AGRI 2015)] in a series of publications on short season grain/dual purpose legumes from Anne Sennhenn's PhD work. All the work was with the kind assistance of KALRO (Dr Donald Njarui) in and around Machakos.

Announcement

Link to this poster



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.