

# N2Africa Podcaster no. 30

March and April 2015

## Introduction

### Impatient for change!

N2Africa is all about learning. Learning how best to put nitrogen fixation to work for smallholder farmers in the eleven countries of sub-Saharan Africa where we work. Learning which farmers are best able to both diversify and intensify production on their land using the best grain legume technologies. Learning how best to deliver new technologies to farmers, to ensure that the necessary infrastructure and institutions are in place to support them and to remove barriers that may impede them from benefiting. We work around the 'development to research' model that we developed during the first years that N2Africa was active, which is explained in the adjacent diagram.

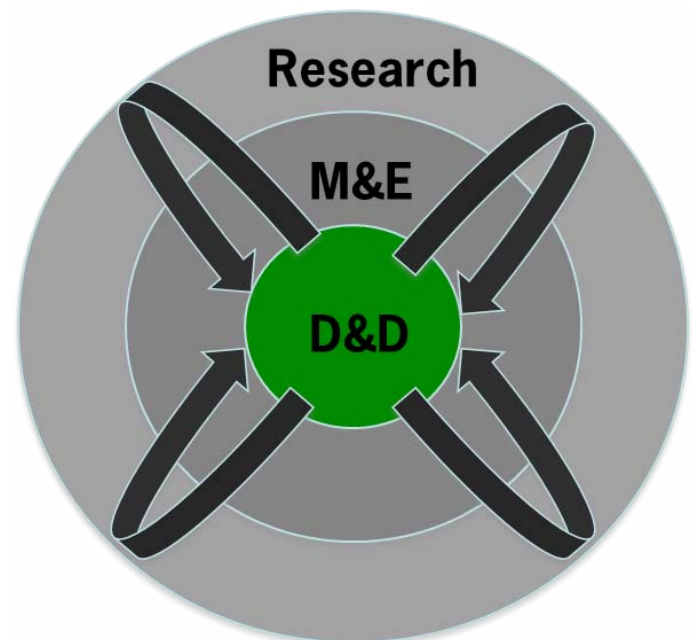
A key to effective learning is ensuring that our 'feedback loops' or 'learning loops' are working fast enough to change and refine the focus of our activities. In the first article of this Podcaster, Joost van Heerwaarden describes the N2Africa data capture and management system of which we are very proud. It is the culmination of a substantial effort from many N2Africa staff and is a flexible system that stores data and makes it available for all to use in any format they wish. Getting data from surveys or experiments into a form that can be used quickly is a real challenge for all concerned and we are constantly looking for ways of speeding up this process without compromising quality. One major indicator for success of N2Africa in my view is that our activities change – and don't simply stay the same from season to season. So if you want to hold us to account (and if we want to make sure that our Country Coordinators are doing a good job!) just keep asking the questions "*What have we learned?*" and "*What have we changed?*" in project activities since last we heard from you!

In addition to the update on data capture and management systems we have a bias of stories from southern Africa where the season has just ended. These include an update from the far south of Tanzania and reports from our

### From field to feedback, an update on data flows within N2Africa

Learning plays a central role in N2Africa. The success of our dissemination approaches depends on the ability to determine what works, where how and for whom and to adapt activities accordingly. Key to this process of learning, is a system of data collection, management and delivery that ensures that data is captured from the field and converted into an accessible form as quickly and accurately as possible. N2Africa has worked hard to establish such a system and we are happy to report on recent progress and future plans for improvement.

Our data flows are organized in the following way: our partners use paper survey forms to collect data from the field.



N2Africa is a "development to research project" in which delivery and dissemination (D&D) are core activities that take N<sub>2</sub>-fixing technologies to thousands of farmers, monitoring and evaluation (M&E) provide the learning of what works where, and why for whom, and research feedback loops analyse and feed back to improve the technologies and their targeting in D&D

three countries in southern Africa - Malawi, Mozambique and Zimbabwe. On our theme of learning there is also an MSc thesis update, and two articles that provide contrasting examples of learning at an early age – one from Kenya where N2Africa has been working with school children and a surprise story from the USA where N2Africa has provided inspiration for a university MSc project.

We're always interested to hear how you are learning with N2Africa so please do send in your stories.

Ken Giller

The information on these forms is passed on to special Excel forms that are easy to fill and provide a uniform template for data processing. In each country, the responsible data manager collects these forms and uploads them to the N2Africa intranet. From that moment on, the data is centrally stored and backed-up for safety and can be downloaded by all N2Africa staff with an intranet account. Data on the intranet is subsequently checked for consistency and completeness and read into the N2Africa central database. The database is the central point of storage and access for data in N2Africa. All information in the database can be written to Excel workbooks that can be downloaded by N2Africa staff and used in further analysis (Figure 1).

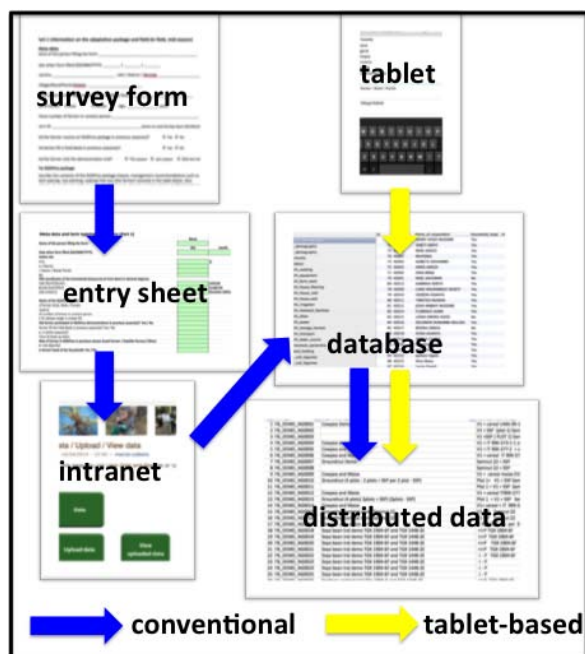


Figure 1. Current and tablet-based data flows

In 2014, this system of data flow was implemented successfully and all countries having contributed data that is now accessible through the intranet. Some of this data was already analysed and the results shared with the country teams. This experience has also taught us some valuable lessons for improvement. The first lesson is that the time and effort involved in passing data from paper to the computer can be a burden on N2Africa staff and partners. It also can lead to delays in data entry, meaning that

data is not available for analysis before the next season starts. Another point of improvement is the complexity of the survey forms, which can lead to incomplete and inconsistent data.

With these points in mind, we have undertaken several steps to improve data collection and management in 2015. First, the field books for demonstration and diagnostic trials were greatly reduced and simplified, thanks in large part to the very useful feedback from field staff and partners in the different countries. Second we are starting to implement tablet-based data collection using Open Data Kit (ODK) forms in all countries. Tablet-based data collection has the advantage that it eliminates the need for separate paper forms and electronic data entry sheets (Figure 1). Data is collected directly on a hand-held electronic device and automatically sent to the central database, thereby greatly reducing data turnover time. An added advantage is the possibility to include pictures and to take GPS coordinates directly on the device.

A tutorial document was distributed and a simple training session using the ODK survey form for Focal Adaptation trials was successfully concluded. For 2015, we are aiming to move data entry increasingly to tablet-based capture using ODK. We are looking forward to working together with all N2Africa staff and partners to make this transition a success and together achieve even higher standards of data quality and a more timely delivery.

Joost van Heerwaarden

### Options for climbing bean cultivation in Uganda – A detailed farm characterization

Climbing bean can be an important crop for sustainable intensification of cropping systems in the densely populated highlands of eastern Africa. With a potential yield that is approximately two times higher than for bush bean, climbing beans provide an excellent opportunity to enhance bean yields in areas where land is constrained.

From May to August 2014 I conducted my MSc thesis field work in the two main areas with potential for climbing bean cultivation in Uganda, the south-western and eastern highlands. I will explain what type of data I gathered, how this fits within the N2Africa framework and how my results could be used for further research and eventually, for the development of options for improved bean productivity among smallholder farmers in Uganda.

In my study, I compared an area with relatively good market access (Kapchorwa, eastern Uganda) with an area with poor market access (Kanungu, south-western Uganda). I conducted a detailed farm characterization (DFC) in both areas. Building on the work of Reckling (2011)<sup>1</sup> and Van den Brand (2011)<sup>3</sup> I started with a rapid characterization of 50-75 households in each area to develop a farm typol-

ogy similar to the one described by Tittonell et al. (2010)<sup>2</sup>. This farm typology was used to select 16 households in both areas (four per farm type), with whom I conducted the DFC. The DFC was meant to gather a mix of qualitative and quantitative data to describe the current farming systems, main drivers of these systems and opportunities and constraints for improving climbing bean cultivation. In practice this meant that I visited all fields of each farm included in the DFC. I measured field sizes, assessed crop management practices, took soil samples for selected fields and measured important characteristics of climbing beans on fields where they were cultivated (i.e. stake length, stake density, plant density). In interviews I asked each household about labour availability and demand of different crops. I also asked more detailed questions about climbing beans, which could help to explain why households cultivated climbing bean in the way they currently did. At the end of the season I also gathered yield data to relate this to differences in crop management between farmers.

The collected data was used to describe current farming systems and to find possible entry points for improving





Two distinct climbing bean cropping systems; smaller area climbing bean intercropped in banana-coffee fields and sole cropping on larger fields by 'better-off' farmers.

climbing bean productivity. Main constraints in Kapchorwa were the availability of stakes and, for poorer farm types, land availability. This was a reason why currently 80% of the households cultivating climbing bean did this on a very small area as an intercrop in their banana-coffee fields. Only 20% of climbing bean cultivating households used sole cropping. Farmers cultivating their climbing beans in intercropping had smaller yields than those who grew them as sole crops. The low yields of these small intercropped climbing bean fields could be an entry point for improving climbing bean cultivation. Part of the variation in yields between farms was related to management. For example, higher planting densities were positively correlated with yields. These higher planting densities were two to three times higher than currently advised planting densities. Even though higher sowing densities might not be the 'best agronomic' practice, it can be a cheap and easily accessible option for 'poorer' farmers. 'Better-off' households were more often cultivating climbing bean in sole cropping on larger areas. For these households, options to improve climbing bean productivity would be an increased stake density and better pest control, as these farm types have

more cash and land available to invest in climbing bean cultivation.

Currently, only sole cropping of climbing bean is shown in N2Africa demonstrations. Further research on improving management of climbing beans in intercropping systems can be important to improve climbing bean yields for poorer farmers in Kapchorwa.

Wytze Marinus

- <sup>1</sup> Reckling M. (2011) Characterisation of Bean Farming Systems Across Farm Types in Northern and Eastern Rwanda - Identification of Potential Niches for Legume Technologies. Plant Production Systems - N2Africa. Wageningen University Wageningen.
- <sup>2</sup> Tittone P., Muriuki A., Shepherd K.D., Mugendi D., Kaizzi K., Okeyo J., Verchot L., Coe R., Vanlauwe B. (2010) The diversity of rural livelihoods and their influence on soil fertility in agricultural systems of East Africa—A typology of smallholder farms. *Agricultural systems* 103: 83-97.
- <sup>3</sup> Van den Brand G. (2011) Towards increased adoption of grain legumes among Malawian farmers - exploring opportunities and constraints through detailed farm characterization. Plant Production Systems - N2Africa. Wageningen University & Utrecht University, Wageningen.

### Cowpea fritters a new delicacy with N2Africa farmers in Zimbabwe

Through N2Africa, farmers in Zimbabwe have perfected the agronomy of grain legumes, and they are now perfecting their grain legumes processing skills. Over the years, the N2Africa team in Zimbabwe has worked with farming communities to perfect the art of processing soyabean into different nutritious products. We have seen this bearing fruit as farmers now grow soyabean, irrespective of the availability of a ready external market.

#### Cowpea fritters

For other grain legumes, however, local consumption can suffer from 'monotony of same food products'. For cowpea for example, the traditional boiling/cooking process resulted

always in non-inspiring ready to eat products. This has changed now. Farmers' innovations are no longer limited to soyabean processing. With some simple value addition training through the Cluster Agricultural Development Services (CADS), an important NGO N2Africa partner disseminating N2Africa technologies, farmers came up with interesting innovations of their own. Below is the recipe for cowpea fritters.

#### Not just for women

During 2014, at least 10 N2Africa nutrition campaigns were held across the 5 districts where N2Africa is implementing activities. Both men and women (Photo 1) participated



Ingredients	Method
<ul style="list-style-type: none"> <li>• 1 kg cowpea grain</li> <li>• 1 cup self-raising flour</li> <li>• 2 eggs</li> <li>• 1 medium size onion</li> <li>• 2 large and ripe tomatoes</li> <li>• Salt to taste</li> <li>• Cooking oil for frying</li> <li>• May add spices (green pepper, chilli, etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Cook cowpeas until tenderly done</li> <li>• Put them in a dish to cool</li> <li>• Grate tomato, onion and green pepper into cowpeas.</li> <li>• Add egg, salt, spices and mix and add self-raising flour and mix until it becomes thick dough for frying.</li> <li>• Heat cooking oil</li> <li>• Use a spoon to drop mixed dough in pan and fry until golden brown colour is achieved</li> <li>• Can be served with juices, tea or as a snack</li> </ul>



Photo 1 Both men and women participating



Photo 3 Men and women participate in N2Africa nutrition activities



Photo 2 ... and the cowpea fritters are really delicious

in these value addition activities. Through these activities, N2Africa is dismantling the tradition that grain legumes are for women.

**In search of more innovations**

We are now approaching the harvest season in Southern Africa. As from June, we will work again with old and new farmer groups to reach out to thousands of farmers with new innovations on local level processing and value addition of grain legumes.

Regis Chikowo

**Agriculture Field day exposes flaws and solutions**

Malawi faces a decrease of 27% in maize yield this season compared with last year. The recent Agricultural field day held at LUANAR Natural Resources College organized by the African Institute for Corporate Citizenship (AICC) and attended by different agricultural organizations and students has shown that some fields yielded well, despite the floods and the dry spells that have characterized this growing season and that will have good harvest.

“We should accept that the floods and the dry spells have affected us a lot but at the same time Agriculture advisers should seek farmers better solutions that they be exposed to better farming activities. If you have noticed, in the same area, some farmers will harvest much more than others.

This shows me they followed proper farming practices and others did not” commented Dr. Wilfed Lipita, the Director of Agriculture and Extension services in Malawi who was the guest of honor at the function.

The International Institute of Tropical Agriculture (IITA) is coming up with varieties that can adapt to changing climate. “Our breeding unit is currently working on coming up with better varieties that are both early maturing and drought tolerant. We already have released one variety named Tikolore, for which farmers who planted it this year, can testify that this was not much affected by the dry spell that hit the country”.



Indeed, visiting the IITA plot at the field day showed that Tikolore soyabean variety had already matured, ready for harvest well before other soyabean varieties on the demonstration field. When asked why IITA is promoting production of legumes, it was explained that soyabean and other legumes help in nitrogen fixation in the soil thereby helping to improve soil fertility.

“Within N2Africa we have reached over 25,000 farmers with dissemination messages on agriculture and Nitrogen fixation. Through our interaction with farmers backed by research and demonstration we have established that they are spending close to MK60,000 (US\$140) per hectare on inorganic fertilizer while they could be spending about MK6,000 (US\$13) in just applying inoculant to their legumes. We think farmers should be given a wide choice of crops for them to be successful and let them know that agriculture is money. Apart from maize, they can also do soyabean farming” says N2Africa National Coordinator, Mr. Lloyd Phiphira.

Agnes Zala is a soyabean farmer who came to the field day and was left only to admire the technologies hoping she



will have the opportunity to apply them. “The difference is we, are still using hoes to do farming while our friends are using tractors, this limits our abilities to expand our farming. We are also worried with where we are going to market our crops this year. It’s a challenge for government to help us smallholder farmers”.

Emmanuel Mwale

### N2Africa interventions that improve agricultural productivity in Malawi

In Malawi, N2Africa is working to resolve some of the issues through engaging farmers in trainings and capacity building, field demonstrations and sensitization on new technologies such as the use of rhizobial inoculant. N2Africa is collaborating with Kasungu District Agriculture Development Office (DADO) and Churches Action in Relief and Development (CARD) to conduct training on inoculation, appropriate soil fertility management, integrated pests management and post-harvest practices.

Joseph Chimutu is one of the farmers from Kasungu who has benefited from N2Africa interventions. He was previously harvesting 7 bags of Makwacha soyabean

variety from his 1 acre field. N2Africa and CARD came in to support farmers with soyabean seed multiplication program and training on modern soyabean farming and use of inoculants. He is now expecting to harvest 10 bags despite serious drought that hit this season.

“Before N2Africa trained us, our crops were affected by aflatoxin. We didn’t know how to take good care of our legumes after harvest and even from the field,” says Chimutu, adding, “this time we have been trained to keep our seed and we hope it will help us that our produce can compete on the market”.





Although some of the soyabean varieties are **promiscuous** and can nodulate with rhizobia present in the soil, N2Africa observed that even these varieties respond strongly to inoculant and that farmers harvest much more when they apply inoculant to their fields. National Coordinator for N2Africa Lloyd Phiphira explained, “We organise different activities such as field days, agriculture fairs and legume food nutrition fairs, which are helping us to be in touch with farmers and guide them where necessary. IITA is a research organization and its approach is research based.

“However we have also taken into consideration nutritional needs of our research in promoting value addition after realizing that there is not much profit in agriculture produces,” he said.

The N2Africa project, with its partners, has so far set up 240 demonstration plots in its 7 target districts namely Salima, Kasungu, Dedza, Lilongwe, Mchinji, Ntcheu, and Dowa. These demonstration fields are promoting technologies and interventions around groundnuts, soyabeans, cowpea and common bean varieties.

“We are training farmers in double row planting compared to single row planting of groundnuts and soyabean, it is astounding to see positive response from the farmers and their hope for better harvest following our interventions. Farmers have observed that double row planting lead in increased plant population per unit area and certainly results in increased yield.” Said Phiphira.

Phiphira explained that the N2Africa project’s mandate of fixing nitrogen in the soil has been well received by farmers as they are the currently facing challenges of land degradation that has led to poor harvest.

“Many farmers are now seeing the importance of applying inoculants to their legume crops, this helps to restore nitro-

gen to the soil, it is even made better with crop rotation,” he said.

But how will N2Africa ensure availability of the inoculant to all farmers?

According to Mr. Phiphira, the project has private-public-partnership whereby a private firm is working hand in hand with the public sector. The N2Africa Project in Malawi has provided technical support to Agri-Input Suppliers Limited (AISL) who are producing, branding and distributing Nitrofix inoculant. This inoculant was produced at Chitedze Research Station by the Department of Agriculture Research Services.

N2Africa is also supporting agricultural commercialization in Malawi by encouraging farmers to diversify and do legume farming. Since 2009 N2Africa has been involved in formulating improved inoculant products and delivery systems as well as building local expertise in each target district. So far N2Africa in Malawi has reached out to over 25,000 farmers in its target areas.

Despite early success indicators, the project has encountered challenges this growing season as farmers grappled with effects of climate change. Malawi experienced one of the worst incidences of flooding in some parts of the country whilst in some areas crops dried due to long dry spells. Salima was the only district among the N2Africa impact areas that was not affected by the floods. However, the district was also hit by long dry spells, which saw crops drying before reaching maturity stage. According to the government of Malawi, the estimated crop loss due to the drought is put at 27%. However, one interesting thing is that soyabean and cowpea fields have been less affected by the drought compared to maize and groundnuts.

Lloyd Phiphira and Emmanuel Mwale

### Expanding soyabean cultivation to Zambezi Valley in Mozambique

N2Africa, in collaboration with its partner in the soyabean value chain iDE (International Development Enterprises), is testing the adaptability of five promiscuous soyabean varieties (earlier, medium and later maturing) for the first time in the Zambezi Valley, a non-traditional soyabean area. The Zambezi Valley is characterized by soils with heavy texture, therefore not the most recommended for soyabean. However, pushed by the idea of diversifying crop production and improving diets of smallholder farmers in the Valley, demonstration plots were established in January in Caia and Mopeia districts. This effort is also intended to complement the initiative of the District Directorate of Health who is using soyabean to supplement the diet of patients with HIV.

As follow up, a field day was organized on April 16 to visually evaluate the performance of the soyabean varie-



Soyabean growing on heavy vertisols in Caia District, Mozambique



Soyabean crop at late stage of maturity in Caia District, Mozambique



Participants at field day observing different soyabean varieties growing in Caia District

ties. A total of 254 people participated from which 200 were smallholder farmers. Given that for the majority of farmers this was the first time that they had close contact with soyabean, it triggered an active discussion between farmers, the N2Africa coordinator and iDE. Questions such as: where to get soyabean seed, how to process it, where to sell at which prices dominated the discussion. Just to quote a farmer “I heard about soyabean but I never saw it growing. Now that we know that it can be cultivated in Caia where we can get the seed? How do we consume soyabean? Where to sell and what is the price?”

The N2Africa country coordinator had the opportunity to explain to the participants the N2Africa approach to make seed available through partnerships with seed companies

and agro-dealers; the legacy left by N2Africa phase I in terms of knowhow on soyabean processing; the existing market for grain and soyabean by-products. As follow up it was agreed that N2Africa will provide a training on soyabean processing that will coincide with the harvesting of soyabean.

An important participant in the Field Day was the District Directorate of Health, represented by Mr João Simão Guiraze who welcomed the initiative by stressing the nutritional value of soyabean and how soyabean has been incorporated in their programs of supplementary nutrition for patients suffering from HIV.

Wilson Leonardo

### Visit to Southern Highlands of Tanzania to strengthen partnership and explore areas of collaboration among soyabean value chain actors

Linkages among soyabean value chain actors in Tanzania are weak and coordination between participants and enterprises seem to be a totally alien concept. For over one year now, N2Africa and CRS led - Soya ni Pesa project (SnP) have been working to foster partnerships in soyabean value chain development. As meaningful partnership starts to develop, a strong team from N2Africa and SnP, once again, took the initiative to meet various stakeholders. This time to monitor activities and identify on ground challenges and opportunities to expand collaboration.

The visiting team included Director of SnP Mr Amsalu Gebreselassie, his deputy Neema Mrema, SnP production manager Dr Abubakary Kijoji, N2Africa team leader Professor Ken Giller, N2Africa co-ordinator Dr Fred Kanampiu and coordinator of N2Africa in Tanzania, Dr Frederick Baijukya. Others were Aida Magelanga from Agricultural Research Institute Uyole (ARI-Uyole) and Mr David Inyani, marketing and quality production manager of Promasidor-Kenya.

The three-day field visit, 10-13 March, included visits to District Commissioner (DC) for Songea; six farmer groups

in demonstration and production of soyabean in Songea, Namtumbo and Ludewa districts; N2Africa-ARI Uyole collaborative trials on soyabean variety evaluation, soyabean disease monitoring and soyabean-maize rotation trials; SILVERLAND company at Makota in Mufindi district (in production of soyabean, manufacturer of animal feed



In the south of Tanzania with CRS and the Soya ni Pesa project. Guess - which are the inoculated plots in this on-farm demo?



and producers of day-old-chicks); and finally the Anchor Farm project managed by Clinton Development Initiative (CDI), located at Dabaga in Kilolo district.

At the District Commissioner's Office in Sangea, the team was welcomed by District Administrative Secretary (DAS) Mr Juma Ally. Speaking on behalf of district commissioner, Mr Juma assured N2Africa and SnP of support from district government in execution of activities. The team discussed further collaboration between the projects other initiatives by the district. In this respect, the district requested the project to provide technical support to district's agriculture department so as to relaise the long term plan of making soyabean become a major cash crops for Songea district. Addressing farmers at Maposeni village, Mr Juma urged farmers to expand soyabean fields to a commercially viable size and to grow the crop using recommendations by the projects.

Traversing through a number of villages, the team noted steady expansion of soyabean fields. Farmers are growing soyabean, some expanding soyabean fields to above 30 acres, at the expense of maize, the staple and traditional cash crop. However, constraints including pest and diseases, poor quality seed and nutrients depleted soils are major challenges across many farms. Nevertheless farmers have higher expectations from growing soyabean as they indicated the crops has low production costs and good price compared with maize. Given possible price fluctuation and possible loss of soyabean yields due to above biophysical factors, N2Africa and SnP need to focus on introducing to farmers other benefits of growing soyabean including household nutrition, value addition and its rotational benefit to maize in order keep farmer's interest to grow soyabean.

At SILVERLAND-Makota farm, the team was informed of the company's plans to expand production of animal feed from the current 4,000 MT per year to above 10,000 MT by 2016 and to 60,000 MT in the next 5 years, where soya-bean account for 20% of feed ingredients. The company has also installed soyabean oil extruder plant with readily



Halima Nyange, Aida Magelanga, Fred Kanampiu and Freddy Baijukya proudly introducing a long term experiment in Songea District that examines the long-term rotational effects on soyabean

available market for soyabean oil. This new development not only adds value to soyabean but also creates markets for soyabean varieties with high oil contents including Semeki and Spike being promoted by SnP and N2Africa. With sizeable demand of soyabean and social responsibility agendas make SILVERLAND a potential partner to N2Africa and SnP.

Concluding the three day visit at Anchor Farm project, the team was introduced to the core business of the farm. This included production of maize and soyabean seeds there by increasing the availability of high quality seed to the domestic market, encouraging smallholder farmers to grow soyabean as a rotation crop. The Anchor Farm acts as hub for the distribution of inputs, collection of crops after the harvest, and organization of smallholder clubs. The team had opportunity to visit soyabean seeds multiplication fields on 100 ha. With the land size of about 300,000 ha, state-of-the-art farm machinery and technical expertise, the Anchor Farm is well positioned to multiply significant amounts of soyabean seed to supply to farmers in the southern highlands. It was however, noted that lack of well adapted soya-bean varieties, unreliable supply of quality seed are major bottlenecks to soyabean seed multiplication. The team also visited smallholder farmer schemes demonstrating good agronomic practices of soyabean and maize including rotation of two crops. These activities complement well with those of Soya ni Pesa and N2Africa and expands the scope to reach more farmers in the southern highlands.

In the second week of May, 2015, N2Africa and SnP will facilitate soyabean stakeholder meeting to launch Soyabean Innovation Platform in Tanzania. The platform members are drawn from farmers groups, buyers, processors, researchers and policy makers. It is through this innovation platform where identified areas of collaboration will be further discussed and activities for joint implementation identified and agreed.

Freddy Baijukya and Ken Giller



CRS and N2Africa staff discussing some of the problems of seed multiplication in southern Tanzania



## Improved Early Education N2Africa Style

Published on Facebook on 13 April 2015

BNF outreach in west Kenya now includes working through local primary schools to install simple legume technology demonstrations and hold low cost farmer field days around them. This move was spontaneous, meaning not planned by the Country Coordinator, but originates among 13 WeRATE R4D Platform members working through 22 schools in response to reduced funding for outreach activities within the Phase 2 Tier 1 arrangement. For example, Dick Morgan Ongai of the MFAGRO farmer organization in Vihiga arranged for students of Munugi Primary School to



install and manage a roadside legume inoculant and fertilizer demonstration during the on-going long rains growing season. Students were eager to learn about BNF, nodulation and application of inoculants (see photos). A stakeholder survey last November revealed that nearly 5200 students were reached through this effort in 2014. Credit is due to our innovative outreach members for this new brand of early education!

Paul L. Woomeer, Kenya Country Coordinator



## Hannah Boughton – a student studying for an MSc in Environmental Studies, Antioch University, New Hampshire, USA wrote to us “The N2Africa program was a great inspiration for me...”

Today’s high school students have a myriad of things clamoring for their attention, many of which are far more interesting to them than their average classroom period. In light of this I wanted to create a science unit that was novel and meaningful to keep them engaged in learning topics from food chains to carbon cycling. I also had a broader goal of creating a learning environment that would lay the foundation for students to develop and practice the skills and knowledge necessary to become responsible global citizens.

I chose to use soil as the lens through which I could prioritize and focus my curriculum. Soil is an ecosystem that has comparatively little attention paid to it in science education but it plays a critical role in problems this generation will have to tackle; including biodiversity, food security, and carbon sequestration to name a few.

As part of my curriculum I chose to present students with an authentic real-world problem, represented as a challenge. The real-world problem the students were faced with was how they might change the reality that *“by the time they graduate from high school the number of hungry people in Africa will be the same or more than it is today”*. Using model terrariums for farms and their knowledge, students would collaborate to develop solutions as their farms were confronted with risks that African farms might face (i.e. drought, prices of soil amendments, over-cultivation of soil). My hope is that students learn that healthy soils are essential for a food-secure planet but also that their interest and compassion for people in other parts of the world will be developed alongside their realization of their own potential to make change.

Hannah Boughton (h.j.boughton@gmail.com)



## MOOC Summercourse

In January-March there was the possibility to follow the Wageningen MOOC (Massive Online Open Course) on “Growing our future food: crops” via edX. This successful six weeks course, that brings you knowledge to understand and quantify the basic agricultural processes, will also be offered as Summer Course. Part of the course material is filmed at N2Africa locations. The start date for this course will be June 15<sup>th</sup> and access will be available until September 25<sup>th</sup>. To follow this course you need to subscribe to [edX](#), where the course will be announced very soon. Updates will also be published on the [N2Africa website](#).

## N2Africa in the news

Please see <http://www.scidev.net/global/food-security/news/beans-africa-fertiliser-farming.html> for a news report.

Although I always argue that benefits from nitrogen fixation should be seen as an additional source of N rather than a substitute, journalists seem to prefer to state the alternative!

Ken Giller

## Reports uploaded on the N2Africa website

Andrew Farrow wrote, with support of the country coordinators of the Core Countries, a background [report pointing out the action areas for Ethiopia, Ghana, Nigeria, Tanzania and Uganda in 2014](#).

A compact report with condensed information on the [project progress made in Year 1 of Phase II](#) has been uploaded on our website.

An MSc internship report on “[Adoption constraints with climbing beans in Kashambua subcounty, Uganda](#)” by Bharathwaj Shridhar.

## ADVANCE II Newsletter

ADVANCE, a partner for N2Africa in northern Ghana, sent us [the March edition of their ADVANCE II Newsletter](#). In this issue, they share news of how a nucleus farmer is supporting female smallholder farmers increase yield and income, how women in agriculture were celebrated on the International Women’s Day, some field stories and many more.

## IFDC training program “Linking Farmers to Markets in Africa“

IFDC organizes courses, among others this one on [linking farmers to markets](#), that will take place in Nairobi from July 20-24, 2015 and conducts in English. (previous versions were in English and French).

## Legume Perspectives issue 6

From The Editorial Board of Legume Perspectives, the journal of the International Legume Society (ILS), we received a link to the issue 6 of Legume Perspectives that has been published in March. Please download it from [their journal web page](#), together with previous issues.

You are also welcome to visit the archives of [Grain Legumes](#), the predecessor of Legume Perspectives.

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](mailto:N2Africa.office@wur.nl)

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