



## **N2Africa Annual Report 2015**

**Malawi**

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March 2016

## **N2Africa**

**Putting nitrogen fixation to work  
for smallholder farmers in Africa**



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N2Africa is a project funded by The Bill & Melinda Gates Foundation by a grant to Plant Production Systems, Wageningen University who lead the project together with CIAT-TSBF, IITA and many partners in Ethiopia, Tanzania and Uganda.

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Lloyd Phiphira, 2016. N2Africa Annual Report 2015 Malawi, Report N2Africa project, [www.N2Africa.org](http://www.N2Africa.org), 23 pp.



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## Acronyms

AEDC:	Agriculture Extension and Development Coordinator
AEDO:	Agriculture Extension and Development Officer
AICC:	African Institute of Corporate Citizenship
AI SL:	Agri-Input Suppliers Limited
BNL:	Blantyre Newspapers Limited
CADECOM:	Catholic Development Commission
CARD	Churches Action in Relief and Development
CIAT	International Centre for Tropical Agriculture
CRS:	Catholic Relief Services
DADO:	District Agricultural Development Office(r)
DAES:	Department of Agricultural Extension Services
DARS:	Department of Agricultural Research Services
EPA:	Extension Planning Area
ICCO	Interchurch Organization for Development Cooperation
MBC:	Malawi Broadcasting Corporation
MOST:	Malawi Oil Seed Sector Transformation
NPL:	Nations Publication Limited
NRC:	Natural Resources College

## Keywords

N2Africa Annual country report, Results framework 2015, biological nitrogen fixation, grain legumes, Malawi



## 1 Progress narrative

This paper presents report of the year 2015 from Malawi's N2Africa, which implements its activities in seven districts of the Central Region. These seven districts are Lilongwe, Dedza, Ntcheu, Salima, Dowa, Kasungu and Mchinji. Malawi has one rainy season that starts from November to April, hence there is an overlap whereby some activities in preparation of the agricultural season are done in the previous project year.

### 1.1 Project strategy, coordination and implementation and capacity strengthening

- The Country-level Annual Planning meeting in preparation for 2015 season took place in November of 2014.
- The mid-season review and planning meeting took place from February 26<sup>th</sup>-27<sup>th</sup>, 2015. Participants to the meeting reviewed the implementation progress on the 2015 season's planned activities, identified challenges and resolves being pursued. The meeting also planned and harmonized execution of main events of the season such as field days, agriculture fairs and legume food nutrition training. Twenty participants were drawn from DADOs of Dedza, Ntcheu, Kasungu, Mchinji, Salima, and Lilongwe, CADECOM, CARD, AISL and IITA.
- A Memorandum of Understanding (MoU) between IITA and CARD/ICCO was signed. CARD is working in one of the districts (Kasungu) where N2Africa is also operating. Areas of intervention include:
  - (a) Increase soya production and productivity;
  - (b) Enhance access to good quality seed;
  - (c) Enhance seed inoculation and use of inoculants; and
  - (d) Consolidate and strengthen farmer organization and market linkages.N2Africa is providing technical support by training farmers in soyabean production, use of inoculants and monitoring activities of soyabean demonstration plots'.
- Country Coordinator participated in the National Seed Industry Conference, which was held under three main themes:
  - (a) Policy and regulatory framework for seed industry,
  - (b) Supply and demand dynamics of legume seed, and
  - (c) Mitigation the impact of climate variability in legume seed production.The meeting also developed the roadmap in order to promote more production and marketing of legume seed in Malawi.
- A Country-level Annual Review and Planning meeting was organized by N2Africa in October 2015. Participants to the meeting reviewed the 2014/2015 season and developed plans for 2015/2016 season. A total of 25 participants (3 female, 22 male) from Dedza, Ntcheu, Salima, Dowa, Mchinji, and Kasungu DADOs, CADECOM, CARD, and AISL were in attendance. Presentations were made by partners from the six district of Dedza, Lilongwe, Ntcheu, Salima, Kasungu, Dowa and Mchinji including CADECOM. Participants included District Agricultural Development Officers (DADOs), Crop Production Officers (CPOs), Agricultural Extension Development Coordinators (AEDCs), Project Manager & Project Officer (CADECOM) & Project Assistant (CARD).
- A reviews/planning meeting held earlier was followed by a staff orientation workshop held at the end of October 2015. Twenty-seven participants (20 male, 7 female) included AEDCs, Project Officer, Field Officers and the Project Assistant. Discussions were related to demonstration protocols i.e how demos are going to be mounted and managed (including data collection & field days). Participants also developed detailed work plans and budgets for October – December 2015.
- Conducted pre-season consultations with District Extension Staff and Lead Farmers on demonstrations and activities for the 2015/2016 season resulted in the following suggestions:
  - (a) In-put demos – to use different brands of inoculants;
  - (b) Comparisons on use of inorganic fertilizer, inoculant and organic manure;
  - (c) Double row planting of groundnuts;
  - (d) Labor saving technologies such as use of herbicides and groundnut threshing machine;



- (e) N2Africa requested to facilitate farmers' exchange visits, and;
- (f) Some selected secondary and primary schools should also be considered for setting up of demos.
- The Country Coordinator of N2Africa-Malawi attended a short course titled 'Geographic Information System (GIS) Training Course for Agricultural Research in Africa' that was held at IITA-Ibadan in May 2015. The course was conducted by Geographic Information System Unit and Capacity Development Office of IITA, Ibadan, Nigeria. The course contents were as follows:
  - (a) Getting started with ArcGIS Desktop;
  - (b) Creating map Symbology;
  - (c) Referencing data to real locations;
  - (d) Organizing geographic data;
  - (e) Getting started with GIS Analysis;
  - (f) Working with Geoprocessing and modelling tools;
  - (g) Designing maps with ArcGIS;
  - (h) The use of GPS, and;
  - (i) Introduction to ArcGIS online.

## 1.2 Delivery and dissemination, sustainable input supply, and market access

- Demonstration plots and field days in the N2Africa impact districts DADOs, CADECOM and CARD mounted 312 demonstration plots, which show-cased N2Africa technologies and interventions such as legumes variety assessment, use of inoculants, legume-maize planting system among others, facilitated 37 field days with total attendance of 5,362 (3,170 women and 2,192 men, i.e women representation was 59%) (Table 1).

Table 1: Number of demonstrations and field days conducted.

District/ Organization	Demonstration trials, field days and attendance				
	Demonstration trials (#)	Field days (#)	Male (#)	Female (#)	Total (#)
Salima (DADO)	62	10	227	302	529
Dedza (DADO)	36	5	756	1,327	2,083
Kasungu (CARD)	2	1	157	22	179
Kasungu (CADECOM)	140	4	167	486	653
Ntcheu (DADO)	32	10	613	810	1,423
Mchinji (DADO)	40	7	272	223	495
<b>Total</b>	<b>312</b>	<b>37</b>	<b>2,192</b>	<b>3,170</b>	<b>5,362</b>

- The 12<sup>th</sup> National Agriculture Fair 'Accelerating Agriculture for Economic Transformation' took place from 27<sup>th</sup>-29<sup>th</sup> August 2015 in Blantyre. The following items were displayed: five banners one for N2Africa, two for MISST and two for IITA; two IITA flags; one rolling banner from AISL; soyabean seeds; food products made from legumes. There was higher patronage to the IITA stand compared to the previous year. The recorded number of visitors was 734.
- A project within IITA-Malawi known as Seed Systems under INVC produced 80 metric tons of basic soyabean seed, which is being sold to stakeholders for planting in the season ahead.



- One media event was held where two print media (Nations Publication Limited, Blantyre Newspapers Limited), one TV and one radio station (Malawi Broadcasting Corporation) were invited to a community food fair after training of lead farmers and Food Nutrition Agents done by CADECOM with sponsorship from N2Africa.
- Two Farmer Associations with 460 farmers collectively sold their soya legume seed amounting to 40 metric tons.

Table 2 presents types of training conducted and number of staff and farmers trained:

Table 2: Type of training and number of staff and farmers trained.

Topic	Type of training and target group	Men	Women	Total	Remarks
Demonstration set-up management & data collection; storage, handling and use of inoculant	Training-of-trainers of Extension Staff	58	21	79	14 of the trained personnel were agro-dealers trained by AISL on storage, handling and use of inoculant
	Training-of-trainers of Lead farmers	177	92	255	
Post-harvest handling and crop storage	Training-of-trainers of Extension Staff	54	17	71	
	Training-of-trainers of Lead and follower farmers	498	595	1,093	
Legume food nutrition and utilization	Training-of-trainers of Lead farmers/smallholder farmers	450	631	1,081	These were Lead farmers training
<b>Total</b>		<b>1,225</b>	<b>1,354</b>	<b>2,579</b>	

A number of dissemination materials were also distributed as outlined in Table 3.

Table 3: Type and number of dissemination materials distributed.

Type	Number distributed	Remarks
Integrated Pest Management For N2Africa Legume Crops	130	Recipients included Districts Agriculture Extension Staff; visitors to the IITA stand during the National Agriculture Fair
Biological Nitrogen Fixation and Grain Legume Enterprise: Guidelines for N2Africa Lead Farmers'	80	Recipients included Districts Agriculture Extension Staff
Participatory research extension approach: N2Africa extension method	30	Recipients included Districts Agriculture Extension Staff
N2Africa: Final Report of the First Phase 2009-2013	22	DADOs, CADECOM, CARD, GIZ, IITA Researchers
Legume Food Processing recipes: pamphlet	50	Visitors to the IITA stand during the National Agriculture Fair



### **1.3 Empower women to increase benefits from legume production**

- Participation of women during field days was very good at 59% (3,170 women, 2,192 men);
- Comparison of staff and farmers trained in post-harvest handling of legumes: District Extension staff - 71 (54 men and 17 women (20%)) and Lead farmers trained - 1,093 (498 men, 595 women (54%)).
- Comparison of farmers trained on legume food processing and nutrition: Lead/Follower farmers trained: 1,081 (450 men, 631 women (58%))
- CADECOM established one Nutrition Rehabilitation Centre at Nkhamenya Healthy Clinic and trained women, who come for under five clinic every Wednesday on improving nutrition status of their families. CADECOM has also trained 111 Community Nutrition Agents who target women along with their husbands.
- A labor saving tool-comparison between use of herbicides versus manual weeding. At least 64 demonstration plots been planned for 2016 season targeting women on use of herbicides.
- A questionnaire on legume food processing and utilization has been developed in conjunction with the Social Economic Section at IITA-Malawi. The aim is to conduct a survey to find out how much food processing skills have been imparted to the farmers (following a few training sessions conducted by N2Africa and other organizations), how much of the knowledge is being put to practical use and what are the challenges, amongst others.

### **1.4 Tailor and adapt legume technologies to close yield gaps and expand the area of legume production within the farm**

- Establishment of PPP: AISL was identified as a private firm to multiply, package and distribute inoculant (Nitrofix) in Malawi. Chitedze Research Station (of DARS) as a public entity is providing technical support to AISL and conducting quality control checks. N2Africa is providing technical support by overseeing the establishment and management of demonstration plots, training of field staff in demonstration management and training field staff and agro-dealers on storage, handling and use of inoculants.
- IITA facilitated the acquisition of an elite USDA110 rhizobial strain by AISL, which is being used in the production of Nitrofix inoculant.
- Production of inoculant started in October 2015 and as at November 2015, a total of 80,000 sachets of 50g each of Nitrofix inoculant had been produced and some consignments are already out to selected retail shops (agro-dealers).

### **1.5 Enable learning and assess impacts at scale through strategic M&E**

2015 Data collected from various partners was computed and inferences were drawn as per reports under objectives above. However, delay in some partners and collaborators in collecting and submitting correct data and on time has been a challenge, in addition to slowness in computing the data in the face of limited human resources at IITA.



## 2 Results 2015 Malawi

Table 4: Results framework

Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
<b>Objective 1</b>							
1.3. Engage research, development, private sector, and other relevant partners in each of the target countries	1.3. Partners along the legume input and output value chains cooperate actively towards achieving the overall N2Africa goals	# of partnerships developed and active	2	0	1	1	
	1.3.1. By Q2 of year 1, potential partners operating within priority legume value chains mapped	# partners within N2Africa legume value chains mapped	2	3	1	4	CARD was also identified
	1.3.2. By Q3 of year 2, MoUs with priority partners in each of the target countries signed	# MoUs signed with priority legume partners	2	0	1	1	Have opted to work with individual DADOs rather than signing MoUs with DAES. The arrangement has so far been working well with the 5 DADOs since 2014.
1.6. Organize seasonal/yearly project-wide and country-specific	1.6 Scientists and other stakeholder groups are empowered to further the N2Africa research and	# Scientist and stakeholder groups leading implementation of	0	0	0	0	No targets were set



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
planning workshops	development	activities in N2Africa yearly plans					
	1.6.2. By Q4 of each year, 1 or 2 seasonal, in-country implementation plans developed, evaluated, and revised through in-country-planning meetings	# Seasonal in-country plans developed	1	1	1	2	
1.8. Develop and implement a non-degree-related capacity strengthening plan for relevant partners working within legume value chains	1.8.1. By Q4 of year 1, a non-degree-related capacity strengthening plan developed	Project-wide capacity strengthening plan	0	0	0	0	N/A
	1.8.2. By Q4 of each year, at least 4 relevant and demand-driven training materials developed in cooperation with the African Soil Health Consortium (ASHC)	# training materials developed with ASHC	1	1	1	2	
	1.4. By Q4 of year 5, at least 320 partners trained in N2Africa technologies and approaches	# of persons trained (gender disaggregated data) in N2Africa technologies and approaches & # of N2Africa technologies (by type) in which the persons were trained. (Note: Count the total number of persons trained from the collaborating partners)	Refer to Table 2 for details				



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
		<i>for dissemination. Disaggregate data by gender)</i>					
<b>Objective 2</b>							
2.1. Constitute and facilitate in-country/in-region N2Africa stakeholder platforms	2.1. Country-specific inoculant, seed, and fertilizer supply strategies guarantee the sustainable supply of high quality seeds and inoculants and legume-specific fertilizer	# and types of input supply strategies related to seed, fertilizers and inoculants. Performance of various strategies identified in relation to sustainable input supply	0	0	0	0	
	2.1.1. By Q2 of year 1, N2Africa stakeholder platforms operationalize	# N2Africa stakeholder platforms operational	1	1	1	2	Stakeholder platform being facilitated by MOST/AICC
	2.1.2. By Q4 of years 1-4, stakeholders agree on specific roles and responsibilities across the various N2Africa objectives	# N2Africa stakeholders with agreed roles and responsibilities	-	-	-	-	
2.2. Facilitate N2Africa-led dissemination campaigns in the context of development-to-research learning	2.2. Dissemination partners attain/surpass the anticipated number of households targeted and continue to engage in legume intensification post-project	# of target households (men/women) reached ( <i>outcome level: these farmers continue to engage in legume intensification activities after</i>	-	-	-	-	



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
cycles with specific attention to gender		<i>participating in dissemination activities)</i>					
	2.2.1. By Q1 of years 1-4, specific dissemination guidelines for legume intensification assembled	Document indicating specific dissemination guidelines for legume intensification	-	-	-	-	
	2.2.2. By Q4 of years 1-4, specific dissemination guidelines evaluated by a preset (see Returns-on-Investment calculations) number of male and female farmers	# of farmers (men/women) who evaluate the guidelines (Note: # of farmers (men/women) who have evaluated technologies and dissemination activities and methods (Disaggregated by type of dissemination activity))	-	-	-	-	
2.3. Create widespread awareness on N2Africa technologies and interventions	2.3. Local agro-dealers marketing fertilizer, seed, and inoculants are aligned with grass-root producer groups and input wholesalers and manufacturers	*Volume of seeds, fertilizers and inoculants used per targeted producer groups per land area, *Volume of seeds, fertilizers and inoculants sold by agro-dealers	-	-	-	-	



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
	2.3.1. By Q4 of years 1-4, at least 2 media events (e.g., radio, newspaper articles, field days, etc) per country implemented	# of media events implemented	2	0	1	1	Opportunity for the 2 <sup>nd</sup> one was cancelled due to unsuitable weather conditions
2.4. Facilitate <u>partner-led</u> dissemination campaigns with specific attention to gender	2.4. A preset (see Returns-on-Investment calculations) number of households engaged in the collective marketing and value addition of legume grains and value-added products	# of individual households (men/women) engaged in collective marketing, value addition of legumes and value added products. Volume of produce sold through collective marketing, volume of value addition products and types of value added products	0	0	40 tons	40 tons	No targets were set
	2.4.1. By Q4 of years 2-4, household targets (see Returns-on-Investment calculations), dissemination approaches, and content for partner-led dissemination activities agreed and implemented, with specific attention to gender	# of partner-led agreements/partnerships with agreed target households, dissemination approaches & activities focusing on gender	0	1	1	2	



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
	2.4.2. By Q4 of years 3-5, feedback on the performance of the dissemination models and the demonstrated content fed back to N2Africa	*Performance reports of dissemination models *Type of performance feedback fed back into N2Africa	-	-	-	-	
2.5. Facilitate private-public partnerships towards the sustainable supply of inoculants and fertilizer	2.5.1. By Q4 of years 1-4, inoculants available through public-private partnerships, through importation and/or local production, the latter facilitated by the inoculant production pilot plant	# of inoculant outlets in the target areas Volume of inoculants imported and /or produced with the identified outlets	0	2 outlets 350 kg inoculant	14 outlets 4,000 kg inoculant	14 outlets 4,350 kg	No targets were set
	2.5.2. By Q4 of years 1-4, legume-specific fertilizer made available to smallholder farmers by fertilizer companies/retailers	# of fertilizer outlets in the smallholder target areas  Volume of legume-specific fertilizer at the retail shops	0	0	0	0	There is no legume-specific fertilizer
2.6. Facilitate the establishment of private sector-led and/or community-based legume seed systems	2.6.1. By Q4 of years 1-4, sufficient legume foundation seed produced by private enterprises and/or government institutions	# of private enterprises & government institutions producing legume foundation seed in the target countries. Volume of legume foundation seed produced by private enterprises & government institutions in the	0	1 institution 15 tons	1 institution 80 tons	95tons	Basic seed produced by IITA's Seed System Project



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
		target countries					
	2.6.2. By Q4 of years 1-4, sufficient quality legume seed available to farming communities	Volume of quality legume seed available to target farming communities in the target countries	-	-	-	-	-
2.7. Engage agro-dealer and other last-mile delivery networks in supplying legume agro-inputs	2.7.1. By Q4 of years 1-2, a minimum number of agro-dealers and other delivery network partners trained in the storage, handling, and use of inoculants	# of agro dealers & other delivery network partners trained in storage, handling and use of inoculants	25	50	43	93	These are 29 Extension Staff and 14 Agro-dealers
	2.7.2. By Q4 of years 2-5, agro-dealer and other last-mile delivery networks engaged in the commercial supply to farmers of agro-inputs, including inoculants	# of agro dealers & other last mile delivery networks in full business of supplying agro-inputs to target farmers including inoculants	25	1	13	14	
2.8. Establish agri-business clusters around legume marketing and value addition	2.8.1. By Q4 of years 1-4, opportunities for collective marketing and value addition for smallholder farmer associations identified	# of collective marketing and value addition opportunities identified for smallholder farmer associations	0	2	2	2	
<b>Objective 3</b>							
3.1. Sensitize partners, farmer	3.1. Female farmers increasingly lead N2Africa	# Female farmers leading N2Africa	0	177	90	267	



Activity per Objective	Milestone	Indicator	Milestone Target 2015	Achieved 2014	Achieved 2015	Achieved so far (2014&2015)	Reasons for Variance with Planned Target (if any)
associations, and farming households and mainstream approaches to address gender inequity in farming and decision-making	promotion and dissemination activities	promotion and dissemination activities					
	3.1.1. By Q4 of years 1-4, all partners and households engaged in N2Africa activities that address gender inequity	# of Partner agreements with gender specific activities	0	1	1	2	
3.2. Assess business opportunities for women in agro-input supply and legume marketing and value addition opportunities	3.2.1. By Q4 of years 2-4, business opportunities for women identified	# business opportunities identified with focus on women	0	-	34	34	
	3.2.2. By Q4 of years 4-5, at least 2 businesses led by women established per country	# of businesses established and led by women & # of women involved in the businesses established	0	-	34 business opportunities 87 women	34 business opportunities 87 women	
3.6. Develop legume product-enriched food baskets for smallholder families	3.6.1 Food consumption and diversity scoped for at least 2 Core Countries	Food consumption and diversity patterns for women and children identified	-	-	-	-	
<b>Objective 4</b>							
4.8. Develop standard operating procedures for the production, quality control and application of rhizobium inoculants	4.8.1. By Q4 of year 2, standard operating procedures of quality control (storage), product registration and application of inoculants used by inoculant producers and retailers	# of inoculant producers and retailers (public private suppliers) using standard operating procedures	1	0	1	1	



### 3 Lessons learned and decisions made

#### 3.1 Input (inoculant) demonstration trials

Yield results from demonstration plots showcasing the importance of using inoculant on soyabean showed that despite the general low yields (due to the drought), using Nitrofix inoculant resulted in more yield/ha (about 38%) than without inoculant. The results were consistent across all demonstration trials and districts. Due to unavailability of other brands of inoculant, such as Biofix, it was not possible to compare the performance of Nitrofix with the other. Efforts have, however, been made to source N-Fixer from Zimbabwe and will, in the 2015/2016 season be assessed together with the local inoculant, Nitrofix, .

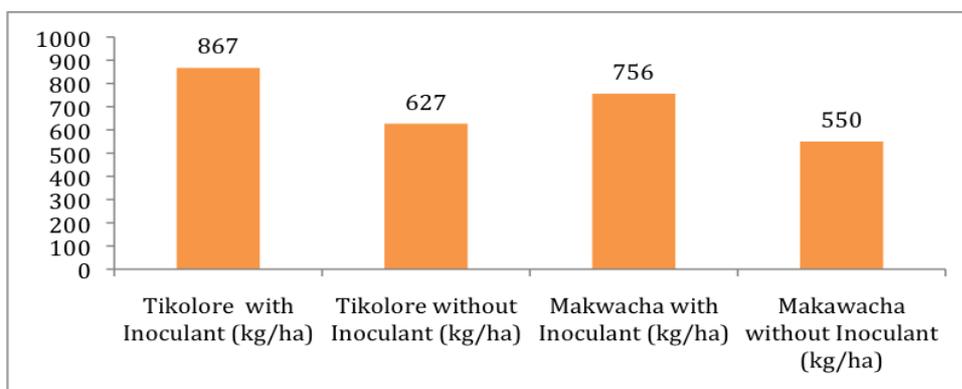


Figure 1: Yield results from soyabean inoculant demonstration

#### 3.2 Groundnut demonstrations

Average yield results from 17 demonstration trials that were comparing single row planting (tradition) and double row planting (introduced) showed that yields were much higher, almost doubled where double row planting system was used compared to single row planting system. The results were consistent with both groundnut varieties across both areas. Farmers who all along had been planting their groundnut crop in a single row were very much impressed and stated that they would adopt the newly introduced technology. They also appreciated, as expected that CG7 yields are higher than those of Chitala variety. It should also be noted that the yields were negatively affected by drought that hit the country between February and April 2015.

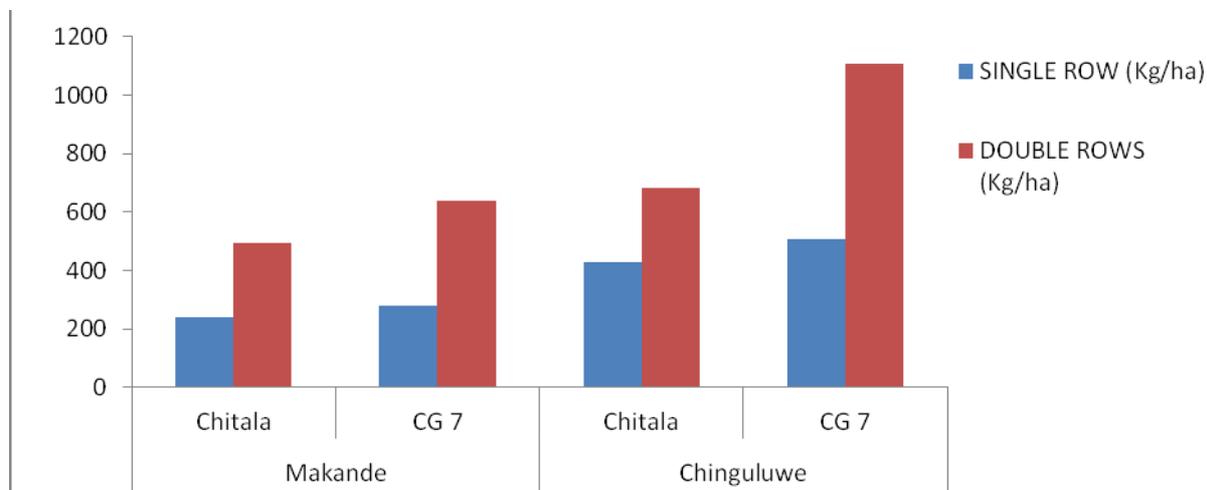


Figure 2: Yield comparison between single row and double row planting of groundnuts.



### 3.3 Legume-cereal rotation demonstration:

Average maize yield for plots that were planted on fields that had previously been planted to soyabean were at 1.8 mt/ha compared with 1.4 mt/ha for plots that were previously planted to maize.

Table 5: Legume-Cereal rotation demonstration.

<b>AVERAGE PRODUCTION (Metric tons/ha)</b>	
<b>Maize planted where there was soyabean</b>	<b>Maize planted where there was maize</b>
1.81	1.40

Cowpea was the most resistant crop among all legumes affected by the 2015 severe drought, followed by soyabean and the worst affected legume crop was groundnuts.

At two demos where compost and animal manure were applied unintentionally to soyabean crop, it was observed that the crop was growing with vigour and had more pods per plant than those without manure. This has therefore prompted partners to set up adaptation demos in 2016 where one of the plots will have manure applied to it.

### 3.4 Summary evaluation of the project success

N2Africa Project in Malawi through its partners and collaborators managed to set up demonstration where female host farmers reached more than 40% hence empowering women to be in decision making position/situations.

Total number of farmers and extension staff trained in various themes was 2,474 and out of these 1,304 were women representing 53%.

N2Africa partners and collaborators conducted 22 field days that were self-funded in addition to the 15 field days, which were funded by N2Africa across the districts. Total attendance at these field days was 5,362 people (2,192 men and 3,170 women).



## **4 Challenges encountered in implementation**

- Prolonged dry spell drastically affected crop development in all districts where N2Africa is operating and this resulted in overall yield reduction.

## **5 Opportunities identified**

- An opportunity to form a new partnership with AISL has arisen. AISL was in 2014 identified and certified by government as a private entity in the PPP to be producing and distribute inoculant (which had since been named Nitrofix) in Malawi.



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## List of project reports

1. N2Africa Steering Committee Terms of Reference
2. Policy on advanced training grants
3. Rhizobia Strain Isolation and Characterisation Protocol
4. Detailed country-by-country access plan for P and other agro-minerals
5. Workshop Report: Training of Master Trainers on Legume and Inoculant Technologies (Kisumu Hotel, Kisumu, Kenya-24-28 May 2010)
6. Plans for interaction with the Tropical Legumes II project (TLII) and for seed increase on a country-by-country basis
7. Implementation Plan for collaboration between N2Africa and the Soil Health and Market Access Programs of the Alliance for a Green Revolution in Africa (AGRA) plan
8. General approaches and country specific dissemination plans
9. Selected soyabeans, common beans, cowpeas and groundnuts varieties with proven high BNF potential and sufficient seed availability in target impact zones of N2Africa Project
10. Project launch and workshop report
11. Advancing technical skills in rhizobiology: training report
12. Characterisation of the impact zones and mandate areas in the N2Africa project
13. Production and use of rhizobial inoculants in Africa
18. Adaptive research in N2Africa impact zones: Principles, guidelines and implemented research campaigns
19. Quality assurance (QA) protocols based on African capacities and international existing standards developed
20. Collection and maintenance of elite rhizobial strains
21. MSc and PhD status report
22. Production of seed for local distribution by farming communities engaged in the project
23. A report documenting the involvement of women in at least 50% of all farmer-related activities
24. Participatory development of indicators for monitoring and evaluating progress with project activities and their impact
25. Suitable multi-purpose forage and tree legumes for intensive smallholder meat and dairy industries in East and Central Africa N2Africa mandate areas
26. A revised manual for rhizobium methods and standard protocols available on the project website
27. Update on Inoculant production by cooperating laboratories
28. Legume Seed Acquired for Dissemination in the Project Impact Zones
29. Advanced technical skills in rhizobiology: East and Central African, West African and South African Hub
30. Memoranda of Understanding are formalized with key partners along the legume value chains in the impact zones
31. Existing rhizobiology laboratories upgraded
32. N2Africa Baseline report
33. N2Africa Annual country reports 2011



34. Facilitating large-scale dissemination of Biological Nitrogen Fixation
35. Dissemination tools produced
36. Linking legume farmers to markets
37. The role of AGRA and other partners in the project defined and co-funding/financing options for scale-up of inoculum (banks, AGRA, industry) identified
38. Progress Towards Achieving the Vision of Success of N2Africa
39. Quantifying the impact of the N2Africa project on Biological Nitrogen Fixation
40. Training agro-dealers in accessing, managing and distributing information on inoculant use
41. Opportunities for N2Africa in Ethiopia
42. N2Africa Project Progress Report Month 30
43. Review & Planning meeting Zimbabwe
44. Howard G. Buffett Foundation – N2Africa June 2012 Interim Report
45. Number of Extension Events Organized per Season per Country
46. N2Africa narrative reports Month 30
47. Background information on agronomy, farming systems and ongoing projects on grain legumes in Uganda
48. Opportunities for N2Africa in Tanzania
49. Background information on agronomy, farming systems and ongoing projects on grain legumes in Ethiopia
50. Special Events on the Role of Legumes in Household Nutrition and Value-Added Processing
51. Value chain analyses of grain legumes in N2Africa: Kenya, Rwanda, eastern DRC, Ghana, Nigeria, Mozambique, Malawi and Zimbabwe
52. Background information on agronomy, farming systems and ongoing projects on grain legumes in Tanzania
53. Nutritional benefits of legume consumption at household level in rural sub-Saharan Africa: Literature study
54. N2Africa Project Progress Report Month 42
55. Market Analysis of Inoculant Production and Use
56. Identified soyabean, common bean, cowpea and groundnut varieties with high Biological Nitrogen Fixation potential identified in N2Africa impact zones
57. A N2Africa universal logo representing inoculant quality assurance
58. M&E Workstream report
59. Improving legume inoculants and developing strategic alliances for their advancement
60. Rhizobium collection, testing and the identification of candidate elite strains
61. Evaluation of the progress made towards achieving the Vision of Success in N2Africa
62. Policy recommendation related to inoculant regulation and cross border trade
63. Satellite sites and activities in the impact zones of the N2Africa project
64. Linking communities to legume processing initiatives
65. Special events on the role of legumes in household nutrition and value-added processing
66. Media Events in the N2Africa project



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67. Launch N2Africa Phase II – Report Uganda
  68. Review of conditioning factors and constraints to legume adoption and their management in Phase II of N2Africa
  69. Report on the milestones in the Supplementary N2Africa grant
  70. N2Africa Phase II Launch in Tanzania
  71. N2Africa Phase II 6 months report
  72. Involvement of women in at least 50% of all farmer related activities
  73. N2Africa Final Report of the First Phase: 2009-2013
  74. Managing factors that affect the adoption of grain legumes in Uganda in the N2Africa project
  75. Managing factors that affect the adoption of grain legumes in Ethiopia in the N2Africa project
  76. Managing factors that affect the adoption of grain legumes in Tanzania in the N2Africa project
  77. N2Africa Action Areas in Ethiopia, Ghana, Nigeria, Tanzania and Uganda in 2014
  78. N2Africa Annual report Phase II Year 1
  79. N2Africa: Taking Stock and Moving Forward. Workshop report
  80. N2Africa Kenya Country Report 2015
  81. N2Africa Annual Report 2015
  82. Value Chain Analysis of Grain Legumes in Borno State, Nigeria
  83. Baseline report Borno State
  84. N2Africa Annual Report 2015 DR Congo
  85. N2Africa Annual Report 2015 Rwanda
  86. N2Africa Annual Report 2015 Malawi



## Partners involved in the N2Africa project

