



**Borno State, Nigeria, Annual
Report 2018**

(January-November 2018)

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N2Africa

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



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Table of contents

Acronyms	5
1 Introduction.....	6
2 Results Achieved per Project Objective	7
2.1 Project strategy, coordination and implementation and capacity strengthening	7
2.1.1 Strategy for implementation and coordination	7
2.2 Delivery and dissemination, sustainable input supply, and market access	12
2.2.1 Farmers reached	12
2.2.2 Sustainable Input supply	14
2.2.3 Access to Output market	15
2.3 Empower women to increase benefits from legume production	16
2.3.1 Participation of women in activities.....	16
2.3.2 Women specific businesses established	17
2.3.3 Legume processing	18
2.4 Tailor and adapt legume technologies to close yield gaps and expand the area of legume production within the farm	20
2.4.1 Diagnostic, demonstration and adaptations trials.....	20
2.5 Enable learning and assess impacts at scale through strategic M&E.....	20
2.5.1 Strategic M&E for Project implementation at Country level	20
2.5.2 Effectiveness of dissemination approaches	21
2.5.3 Impact assessment.....	21
3 Achievements in relation to Specific Project Milestones.....	22
4 Lessons Learned	35
List of project reports	36
Partners involved in the N2Africa project.....	40

Table of tables

Table 1. N2Africa Borno work with a number of the following PPPs to deliver on its goals and milestones in 2018	7
Table 2. Overview of PhD students involved in N2Africa Phase II.....	9
Table 3. Overview of MSc students involved in N2Africa Phase II	10
Table 4. Source and quantity of fertilizer supplied in the project area	14
Table 5. Quantity of seeds produced and sold in the project area	14
Table 6. Number of trials (per type, legume and input/treatment)	20
Table 7. Achievements with related Milestone Targets.....	22



Table of figures

Figure 1. Map of Nigeria showing N2Africa operating locations.	6
Figure 2. Map showing the four Local Government Areas (LGAs)	9
Figure 3. Types of Non-degree trainings.....	12
Figure 4. Number of farmers reached	13
Figure 5. Cumulative farmers reached and targets	13
Figure 6. Volume of grain legume produced and sold	15



Acronyms

ABP	Anchor Borrowers Program
BOSADP	Borno State Agricultural Development Programme
BYAP	BYAP: Borno Youth Agri-Preueres
IDPs	Internally Displaced Persons
IITA	International Institute of tropical Agriculture
LGA	Local Government Authority/Area
N2Africa	Putting Nitrogen Fixation to Work for Small Holder Farmers
NAIC	National Agricultural Insurance Corporation
NIRSAL	Nigeria Incentive-Based Risk Sharing System for Agricultural Lending
SSP	Single Superphosphate
ToT	Training of Trainers
VSL	Village Savings Loan



1 Introduction

The reporting period is 1st January 2018 – 15th December, 2018.

N2Africa in Borno State is mainly operating in Bayo, Biu, Hawul and Kwaya Kusar local government areas (LGAs), with BOSADP as the implementing partner. The youth component covers all the 27 LGAs of the state (Figure 1).

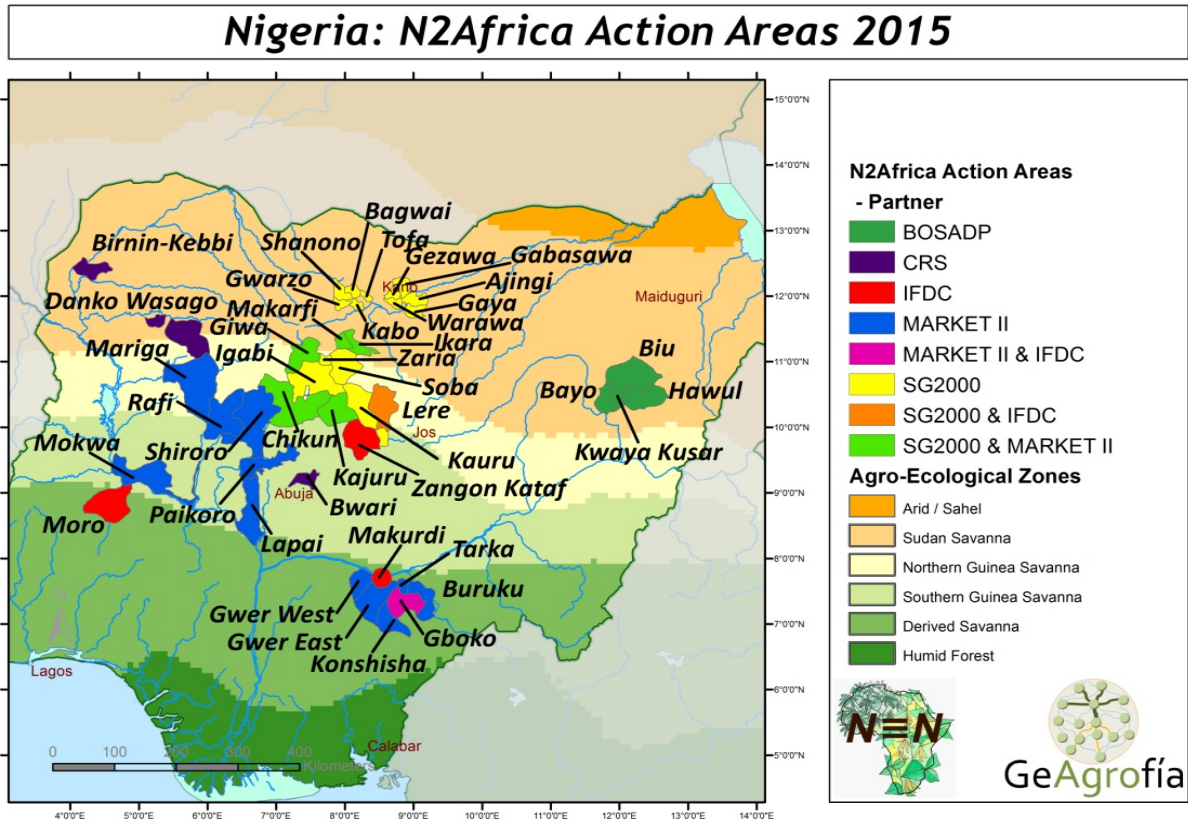


Figure 1. Map of Nigeria showing N2Africa operating locations.



2 Results Achieved per Project Objective

2.1 Project strategy, coordination and implementation and capacity strengthening

2.1.1 Strategy for implementation and coordination

a. Public private partnerships (PPPs)

Table 1. N2Africa Borno work with a number of the following PPPs to deliver on its goals and milestones in 2018

Types of Partner	Partner Name	Operational Areas- State Names	Type of Agreement
Dissemination	BOSADP	Borno state	Sub contract
Input	Jirkur Seed Cooperative Society	Bayo, Biu, Hawul and Kwayakusar	Sub contract
Input/ Output	Intrio Synergy Limited (ISL)	Bayo, Biu, Hawul and Kwayakusar	Sub contract

I coordinated the N2Africa Project 2018 Annual Country Review and Planning Meeting, held from 24th – 25th May 2018, Bristol Palace Hotel, Kano, Nigeria. The N2Africa Phase II project is being implemented in Borno by BOSADP and private sector partners following distinct models and approaches. In December 4-6, 2017, a review took place of progresses towards results, business, development and dissemination models used to achieve the results, sustainability of such models and recommendations to ensure the sustainability required to enable the smooth exit of the project. For the 2018 season, lessons learnt and recommendations obtained in 2017 formed the basis for planning N2Africa-Borno's last year of implementation. In this regard, a two-day workshop was convened with the regional project coordination team and national partners. The objective of the workshop was to have an update on the partnerships and project achievements to date and to develop work plan for 2018 focusing on sustainable exit strategies. Project progress and achievements against targets set for 2017 were presented and reviewed and the PPPs evaluated and further synthesized to maximize impact and achieve the intended results in the remaining one cropping season of the project. Also, partnership experiences and lessons learnt were shared among the different partners, challenges and opportunities were identified and discussed and new ideas for locally-tailored approaches were explored. Clear directions for exit strategies and project impact assessment were agreed including focusing on key partners to take on the multiple roles of N2Africa, and concrete activities for 2018 were developed. Presentations, focused meetings and group discussions between partners and within each partnership resulted in highlights and issues that stimulated discussions, i.e. progresses with implementation of activities in 2017, synergies with stakeholders, initiatives/plans to pull together efforts; undertakings within the legume value chain, challenges and suggested solutions, future directions for a sustainable exit, etc.



Participants at the N2Africa Project Borno State 2018 Annual Country Review and planning meeting held from 24th – 25th May 2018, Bristol Palace Hotel, Kano, Nigeria

A formidable PPP on youth agripreneurship at scale involving IITA/N2Africa, OLAM Grains International, Central Bank of Nigeria/NIRSAL, Anchor Borrowers Programme (ABP), National Agricultural Insurance Corporation (NAIC), and Keystone bank was initiated early 2018. This partnership was specifically targeted at guaranteed input and output market operations, and the institutionalization of N2Africa technologies at scale, domiciled in the private sector as an exit strategy. Good as the strategy looks with the solid commitment of stakeholders; it was cancelled at the last minute by IITA for policy reasons, given the work was to be done in a politically challenging area.

b. Effectiveness of the PPPs

I coordinated the 2018 community social mobilization exercise which was organized and conducted successfully in 40 new communities within the four LGAs of the project's operational areas between 30th May, 2018 to 10th June, 2018. A total of **3,278** (1,987 M: 1,291 F) people participated. That is **952** (547M: 405F) at Biu LGA clusters, **909** (469 M: 440F) at Hawul LGA clusters and **1,417** (971M: 446F) at Kwaya Kusar and Bayo LGAs cluster communities. A total of **440** farmers were selected for various trials and seed multiplication at their different communities: **80** farmers for demonstrations (39 groundnut, 41 cowpea), **160** for adaptation trials (80 groundnut, 80 cowpea) and **200** seed producers (80 groundnut and 120 cowpea).



Participants at the 2018 community social mobilization in Borno State

c. Coverage of interventions

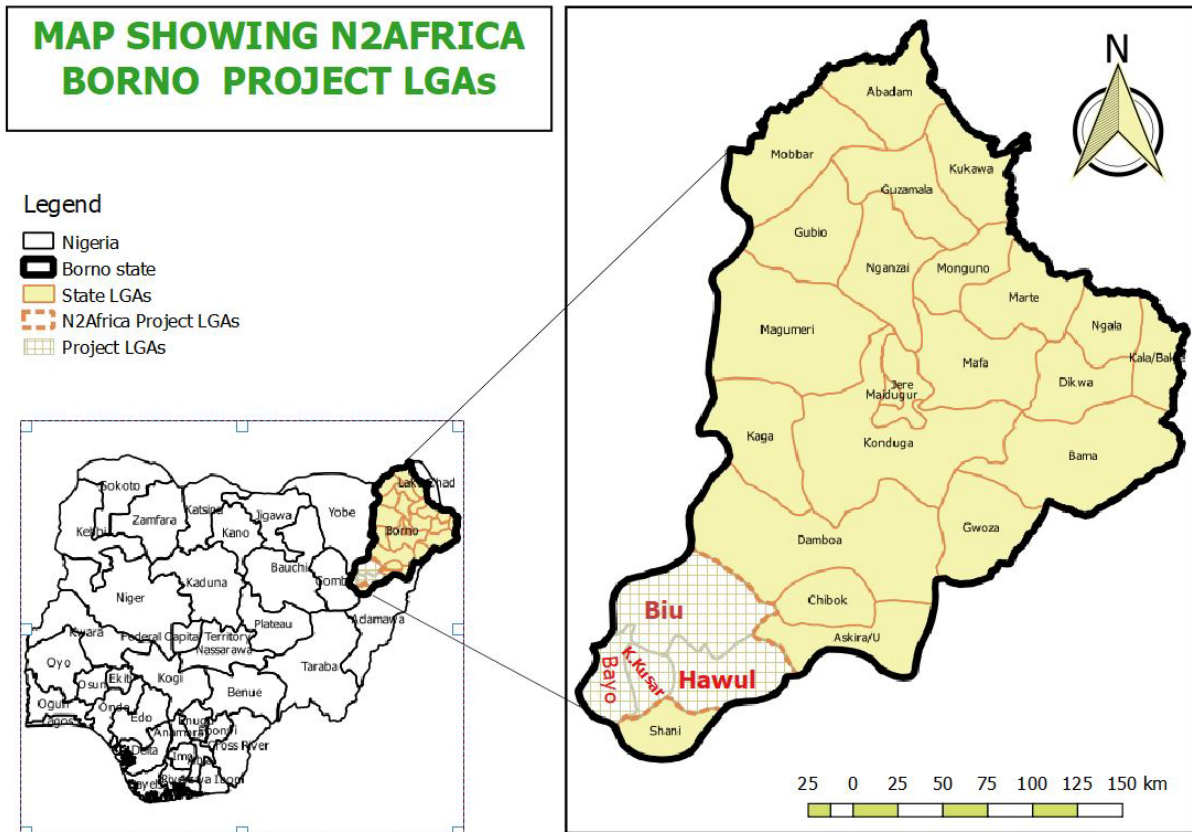


Figure 2. Map showing the four Local Government Areas (LGAs) i.e. Bayo, Biu, Hawul and Kwaya Kusar where the project is implemented; the Youth programme covers all the 27 LGAs of Borno State. N2Africa project Borno State, Nigeria is implemented by BOSADP as the main partner.

d. Degree training

Table 2. Overview of PhD students involved in N2Africa Phase II

S/No	Country	Name	Gender	University	Research topic	Current status
	Borno State, Nigeria	Faruk Galadanchi Umar	M	BUK	Response of Groundnut Varieties to <i>Rhizobia</i> Inoculation in the Sudan and Northern Guinea Savannas of Nigeria.	Terminated
	Borno State-Nigeria	Binta Ali Zongoma	F	UNIMAID	Impact of Improved Cowpea Technology on Women Farmers in Southern Part of Borno State, Nigeria.	Completed
	Borno State-Nigeria	Jenneh Fatima Bebeley	F	BUK	Evaluation of the productivity and profitability of high and low input soyabean production systems in northern Guinea and Sudan savanna of Nigeria	In the process of data entry.



Table 3. Overview of MSc students involved in N2Africa Phase II

S/No	Country	Name	Gender	University	Research topic	Current status
1	Borno State, Nigeria	Muhammad Nurudeen ISA	M	ABU	Characterization and evaluation of indigenous <i>Rhizobia</i> of cowpea for biological nitrogen fixation and improved crop yield in the Nigerian savanna.	He is waiting for external examiner.
2	Borno State, Nigeria	Hauwa Mohammed Alkali	F	UNIMAID	Analysis of Market Participation by Women Soyabean Farmers in Kwaya Kusar Local Government Area, Borno State, Nigeria.	Completed
3	Borno State, Nigeria	Maryam Baba Kyari	F	UNIMAID	Analysis of Cowpea Marketing in Biu Local Government Area, Borno State, Nigeria.	Completed
4	Borno State, Nigeria	Muhammad Sheriff ALI	M	UNIMAID	Effect of different single superphosphate (SSP) rates and plant spacing on yield of groundnut in Sudan savanna zone of Borno State, Nigeria.	He is waiting for external examiner.
5	Borno State, Nigeria	Sahbong Lucy Kamsang	F	BUK	Gender difference in the adoption and impact of improved soyabean varieties in Southern Borno State, Nigeria.	She is waiting for internal seminar.
6	Borno State, Nigeria	Altine Rubeun Betty	F	BUK	Analysis of adoption of soyabeans technologies among smallholder farmers in Kaduna State.	She is finalizing the write-up of her dissertation.

e. Non-degree training

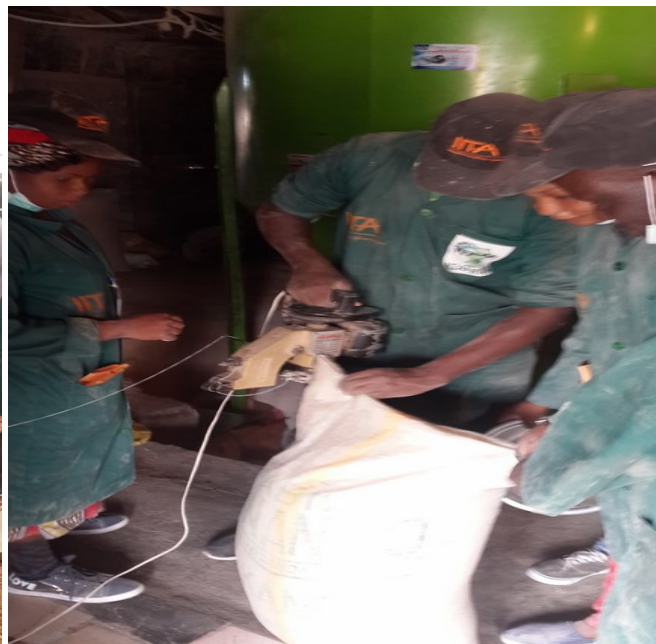
A pre-season training was conducted for extension agents, farmers and local agro-dealers on good agronomic practices of grain legume production, safe use of herbicide and handling and application of inoculants. The main objectives of the training were that farmers and local agro-dealers were expected to produce good quality grain legumes and that they were able to spray their cowpea as and when due (three spraying regimes). Other objectives were to select herbicide either pre- or post-emergence, to correctly spray pesticides and to protect themselves while spraying, to store legume grains correctly using non-chemical methods e.g. PICS bags and to handle and apply inoculants correctly.

Another training conducted was Cowpea Pest Management and IPM training for farmers and local agro-dealers with the specific objectives to educate farmers on the IPM options to protect their crop against pest and disease infestation and to build the capacities of contract sprayers on the techniques of spraying, safe use of pesticide, handling, calibration of sprayers and hazards involved. Also, for input dealers to supply genuine products to farmers and awareness creation among women groups on pesticide usage and handling.



Participants at one of the non-degree trainings sessions in Borno State

An industrial training opportunity (internship) on livestock feed milling was offered to six youth agripreneurs (3 –M, 3 –F) in Kaduna at Kabfat livestock feeds, Hybrid feeds Ltd and Olam grains international. This capacity boost has been very useful in the production and sales of poultry feeds among the youth entrepreneurs and their host communities. It has increased production efficiency in broiler production by cutting costs and increasing profitability and business sustainability.



Participants at the industrial training opportunity (internship) on livestock feed milling



A total of 11,035 participants were trained in two categories: Training of Trainers (ToT) and General Trainings. The TOT was conducted to thirty extension agents on Nodumax application, while the stepdown trainings constitute 11,005 farmers. Trainings included preseason training, cowpea pest management, legume production, NoduMax application and IPM training (Figure 3).

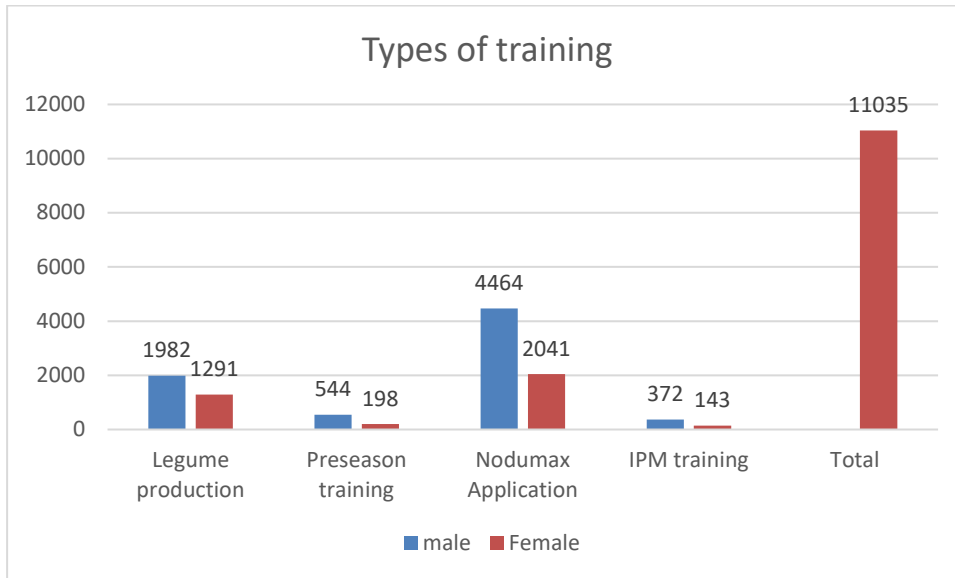


Figure 3. Types of Non-degree trainings

The training on Nodumax application on soyabean grain production recorded the highest number of participant (6505 participants). This could be due to the nature of the training, as it involves all categories of smallholder farmers. The Integrated pest Management (IPM) training recorded the lowest number of participants (515).

2.2 Delivery and dissemination, sustainable input supply, and market access

2.2.1 Farmers reached

A total of 19,592 farmers were reached in the new communities presented in Figure 2. Most of the farmers were reached through trainings (7362 males and 3673 females), followed by demonstrations (3816 males and 2184 females), adaptation trials (1506 males and 494 females) (Figure 4). Field days recorded the lowest numbers of farmers reached with 334 males and 223 females.

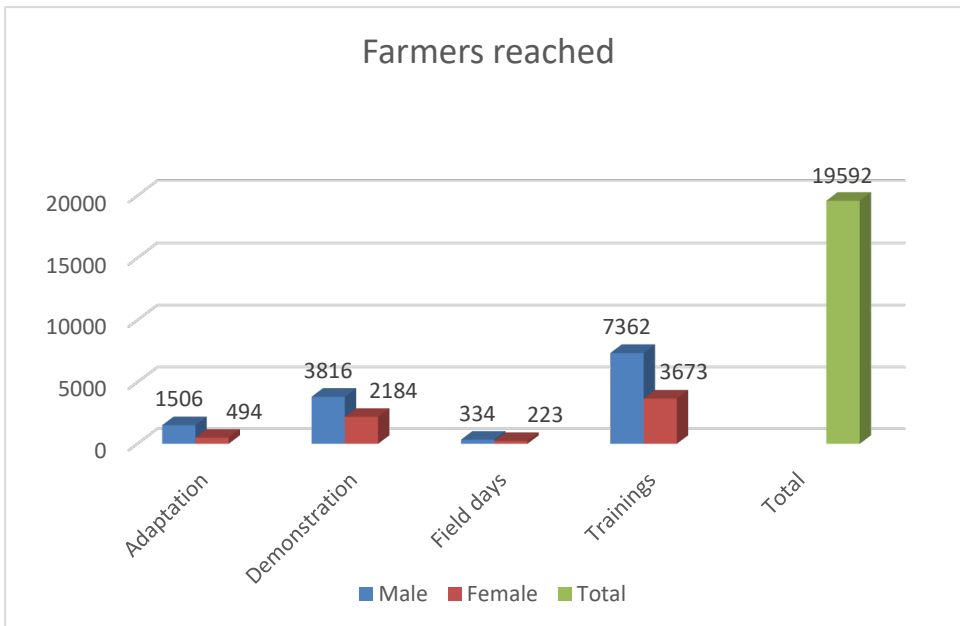


Figure 4. Number of farmers reached

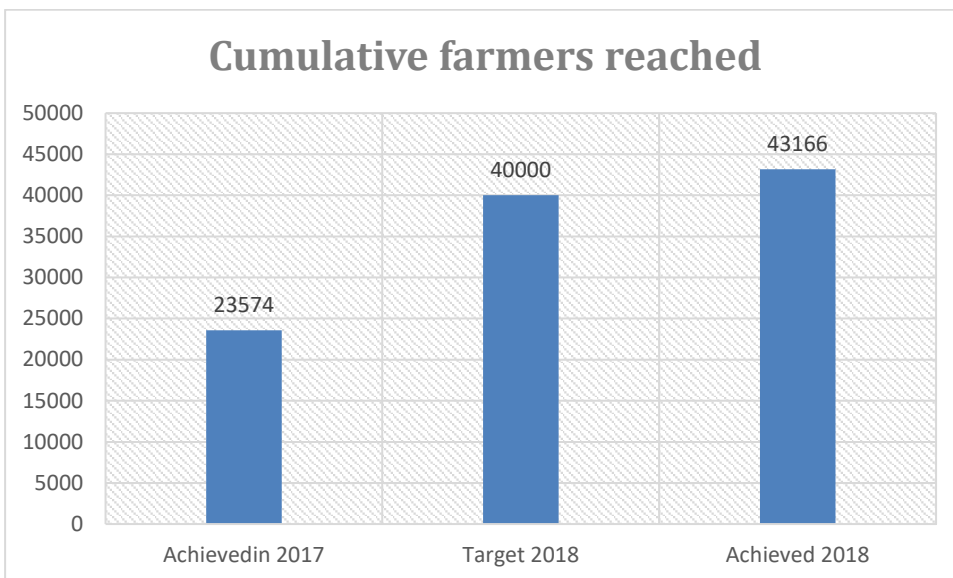


Figure 5. Cumulative farmers reached and targets

The expected number of farmers to be reached at this reporting period is 40,000, while what was achieved is 43,166 farmers (Figure 5). The additional number of farmers reached can be attributed to the extension of N2Africa activities to new communities.

Farmers reached through other N2Africa spillover activities

An FAO project, in collaboration with BOSADP and N2Africa, established 120 demonstrations on improved soyabean and cowpea cultivation and will continue to engage in capacity building and field days on grain legume production in the project area. This project introduced new varieties of cowpea and will intensify the use of improved soyabean and groundnut varieties introduced by N2Africa.



The existence of the FAO project and other projects from e.g. USAID, AFDB and CRS which are likely to kick-start early next year will work in collaboration with the old partner (BOSADP) to sustain the project outcomes and impacts.

A challenge related to the continuous dissemination of technologies is that the objectives of the new projects may not be in line with N2Africa and may not concentrate on legume interventions strictly.

2.2.2 Sustainable Input supply

a. Quantities of inputs sold

Table 4 indicates the source and quantity of fertilizer supplied in the project area. Dibal investment supplied 78.340 tons of SSP, 59.70 tons of NPK and 47.56 tons of Urea fertilizers to community-based organizations (CBOs) directly at subsidized rates. The investment benefited from economies of scale. The 36 trained village promoters supplied a total of 124.320, 199.23 and 84.31 tons of SSP, NPK and Urea fertilizers, respectively, as well as 882,503 liters of assorted pesticides (herbicides and insecticides) to individual farmers across the project area.

Table 4. Source and quantity of fertilizer supplied in the project area

Source	SSP	NPK	UREA	Pesticides (Litres)
Dibal investment	78.340	59.70	47.56	0
Agro-dealers	124.320	199.23	84.31	882503
Total	202.66	258.93	131.87	882503

The volume of seeds produced and sold in the project area is presented in Table 5. The largest volume of seeds (107.28 tons) was supplied by 36 trained village promoters, followed by community-based seed producers (105.39 tons) and Jirkur seed cooperative (64.36 tons). The majority of the seeds were produced by community seed producers and Jirkur seed out-growers within the project area.

Table 5. Quantity of seeds produced and sold in the project area

Source	Soyabean		Cowpea		Groundnut		Total	
	Qty prod	Qty sold	Qty prod	Qty sold	Qty prod	Qty sold	Total prod	Total sold
Jirkur seed	43.7	39.3	17.4	18.16	7.12	6.9	68.22	64.36
CBSP	31.59	29.5	49.23	42.44	34.3	33.45	115.12	105.39
Agro dealers	17	37.5	12.8	32	19.64	37.78	49.44	107.28
Total	92.29	106.3	79.43	92.6	61.06	78.13	232.78	277.03

b. Strategies used to improve access to inputs

Different strategies are adopted to ensure farmers to have access to inputs. Sources of seed are Jirkur Seed Cooperative Society, Community Based Seed Producers and 36 trained agro-dealers in the project area. Fertilizer can be obtained through Dibal Investment and through agro-dealers.



c. Strategies used to ensure continuous access to inputs and key challenges related to sustainability

To ensure sustainability, all the community-based seed producers were linked to Jirkur seed cooperative as well as the agro-dealers' network for upward delivery to farmers. A major challenge is the actual quantification of input demand from farmers.

2.2.3 Access to Output market

a. Farmers participating in collective marketing

In an effort to increase income for smallholder farmers, the project provided a sustainable output market strategy for groundnut, cowpea and soyabean. This is done through the formation of cluster markets, through the pre-financing of collective marketing and through the identification of major off-takers and links with farmer CBOs for bulk purchase from farmers. This method provides a platform for collective marketing for producers.

b. Volume of legumes produced and sold

A total of 3,045 tons of legume grain was produced and sold in the project area, with soyabean being the highest with about 1,635 tons produced and 1,623 tons sold (Figure 6). This could be attributed to the high demand of the product. Cowpea followed with about 768 tons produced and 697 tons sold, and 642 tons of groundnut were produced and 596 tons sold.

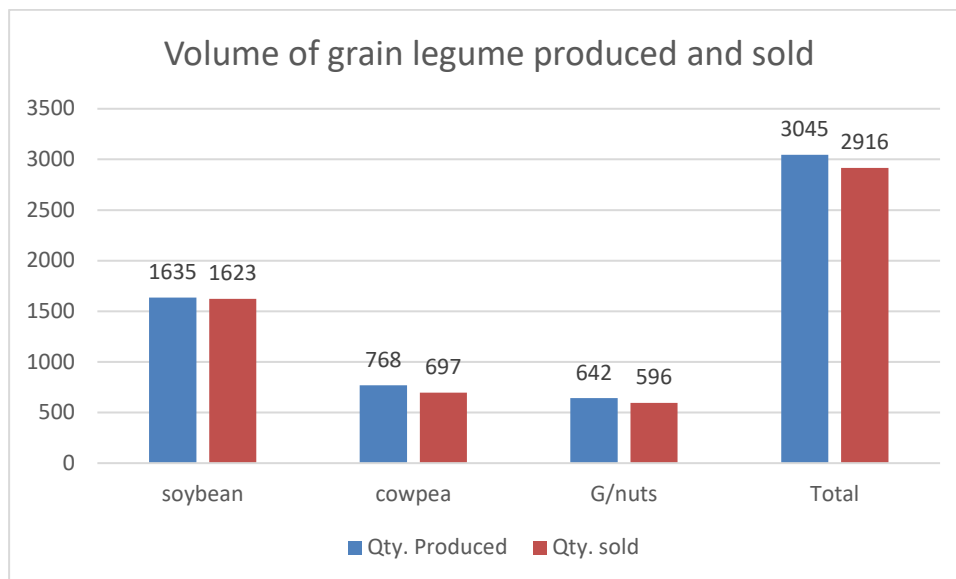


Figure 6. Volume of grain legume produced and sold

c. Strategies used to ensure continuous access to output markets and key challenges related to sustainability

The project will leverage on existing projects like FAO and USAID which are also collaborating with BOSADP to sustain the N2Africa activities in the project area. The major challenge of the output market is the insecurity, which sometimes prevents the major buyers from coming to the project area.



2.3 Empower women to increase benefits from legume production

2.3.1 Participation of women in activities

a. Percentage of women involved in N2Africa activities and new roles women have taken up since N2Africa interventions

Since the N2Africa intervention, women engage in other activities aside from crop production and participating in trials. Women have now taken up alternative means of economic empowerment like the savings and loan scheme (VSL). The objectives of this activity are to provide an alternative source of income to marginalized women, who can tap into the contributed savings of the associations by taking loans and investing in other income generating activities like agribusiness among others, and also to provide a readily available source of credit for the poor and marginalized groups in rural areas (mostly women) who would not be eligible for loans from financial lending institutions like banks. The activities started with 10 women groups in 8 communities of the four N2Africa implementing LGAs (Bayo, Biu, Hawul and Kwaya Kusar) with 257 women. As part of capacity building, the groups were trained on the concept of VSL, the difference between loans types and savings and the development of a constitution on how to run VSL at group level, among others.

Mercy Wakawa (youth agripreneur) is the founder and Managing Director of Confianza Global Resources that is processing groundnuts into oil, sludge and cake for livestock feed. Mercy says groundnut processing is a profitable business as a ton of good groundnut seeds gives an average of 450 litres of oil and 400 kg of groundnut cake which is a major raw material for animal feed mills. Confianza Global Resources is currently employing four youth from the host community. The business has also created downstream livelihood opportunities for many women in sludge processing and marketing in the host community.

Business has been good for Mercy except for seasonal price fluctuation of raw materials (groundnut seeds). The average total cost of processing 1 ton of seed including overheads is US\$583, while the average total revenue from oil, cake and sludge is US\$889. All things being equal, the factory can process an average of 3-5 tons of seed per week. Her business was recently evaluated by the Bank of Industry (BOI), Nigeria; and based on performance and prospects was offered a term loan of \$6,319 to be disbursed towards the acquisition of more equipment for edible oil milling as well as working capital. This gives an indication that Confianza Global Resources is gradually being integrated into the mainstream private sector. In the words of Saleh, the factory technician, "the establishment of Mercy's company provided a life line for me, because I have been rendered jobless for months by my former employer in Kaduna".

b. Strategies used to engage more women

The gender component uses messages like "is time to move on", "leave no one behind" and "be a giver not a beggar" as an entry point for women participation in project activities. These messages are being tied to the North Eastern Nigeria context where women are left with children to cater for because the husbands are either abducted or killed in the insurgency. The campaign involved supporting women to realize their potentials in various sectors of the economy e.g. crop production, business engagement with legumes and input marketing as well as diversification of marketing activities with cottage products like detergents, perfumes, antiseptics (Dettol), room freshener etc.

c. Other gender interventions implemented

To address gender inequality, the communities were being sensitized on gender mainstreaming and its importance taking into consideration the context of North Eastern Nigeria and the need to support women, male and female youth to participate in project activities especially business entrepreneurship for better living conditions.



A section of sensitization with women for VSL



A section of women at VSL training

2.3.2 Women specific businesses established

a. Types and number of businesses, number of women involved

As part of mainstreaming gender into business activities, N2Africa mobilized and sensitized women on engaging in agribusiness activities. The sensitization led to identification of 10 women groups at Kayamda, Jauro Garga, Kayamda, Kyawa Kusar, Marama and Biu communities who indicated interest in grain legume marketing. Since the engagement of women in grain legume marketing, women have diversified into cottage production (vaseline, room freshener, mentholated balm etc.). The total number of women involved in the business activities are now at 257.

b. Profitability/added value of the established businesses

Business establishment has provided economic empowerment for women in the rural communities. Women were able to pay back the loans and have diversified into other marketing activities like cottage production. The business activities have also made women imbibe a savings culture using the Esusu/ Adashe (periodic contributions) method. This also encouraged other women's and men's groups to develop interest in business activities.

c. Strategies used to support businesses establishments

The business establishment by women was supported through various strategies, amongst which were advocacy with women and youth, sensitization and awareness sessions with men to support women and youth realizing their dreams, capacity building for women on business management, sharing of case studies of how women from other states started and are now successful in business, linkage with financial institutions for loans and recently the involvement in savings and loan scheme for capital mobilization to support women who want to engage in business activities but do not have the starting capital, and also to save women from the bureaucratic bank process of acquiring a loan.

d. Opportunities and challenges for the sustainability of the strategies

An opportunity for sustainability is the adoption of an alternative means of acquiring capital to fund business activities through the establishment of savings and loan schemes. Women can easily draw from these schemes without having to go through the bank loan procedure, which is associated with high charges and interest rates.

A challenge associated with women's engagement in business activities is the lack of a capital base. Women don't have collateral to secure a loan from the bank. Where the loans are available, the interest rates and services charges are so high that women cannot afford them.

Case study of Bayo women group:

This is a group who could not secure loans from the banks but decided amongst themselves to mobilize funds and to engage in cereal and legume marketing. Today, they are doing well. The group decided that since they indicated their interest to be involved in business activities, even though they could not secure a loan from the bank, they adopted the option of contributions from each member of the group to start marketing business. The group realized the sum of N100,000, as a starting capital. At the time of visit, the group had a capital base of over N300,000 from grain legume marketing and diversified into cottage production and selling of toiletries and households cleaning agents which they sell in their community to as far as neighbouring state of Gombe.



Displayed Products from women business diversification A section of women at experience sharing visit

2.3.3 Legume processing

a. Integration of legumes into household diets

As part of integrating legumes into household/school diets and to generate income through legume processing, N2Africa Borno embarked on community mobilization and sensitization on the nutritional value of soyabean as well as how nutrition is linked to health. This was followed by practical demonstrations on recipe development from leguminous crops supported by N2Africa project. The objective of the exercise was to build the productive skills of the communities and households through ToTs on soyabean processing and utilization along the value chain, and to improve household nutritional intake using grain legumes. The step-down training has helped to improve household nutrition as well as the value of processed soyabean product for commercial sales, and the school feeding program in the project area now incorporates soyabean in students' meals. N2Africa, in its effort to reach out to some wider communities within and outside the project area and for sustainability of the tool, developed and published a recipe used by the farming families in Borno State. Women were also encouraged to accord the importance to soyabean production alongside other crops.

A challenge with the sustainability of the legume products' integration into household diets is the preference of cash over the nutritional improvement of the family.

b. Most successful technologies - Youth Agripreneur activity

The strong focus on "youth engagement for profitable agribusiness and sustainable livelihood" led to the evolution of the **starter pack approach** under the N2Africa project. Experience has since shown that the provision of a tangible starting grant in cash and kind soon after training is critical to business take-off, while access to finance/bank credit is important to growing the established businesses. Consequent upon the provision of about US\$2000 per youth agripreneur to kick-start their businesses,

the top 30 businesses have been able to operate with an average Cost –benefit ratio (CBR) of 1:1.5 in the last 24 months of business activities.

This support has also assisted a few of them to become credit worthy to financial institutions like the Bank of Agriculture (BOA) and Bank of Industry (BOI). A good case in point is the business expansion credit offered by BOI to the groundnut oil processing mill established by a female beneficiary under the project. While another group of 20 have had their loan applications approved by BOA; Keystone bank, UBA and FCMB are also initiating business relationships with some of the youth agripreneurs. A significant rider to these developments is that the young agripreneurs are most importantly creating job opportunities for other young men and women in Borno State and environs.

It is important to stress the fact that the provision of start-up grants to young entrepreneurs is a critical success factor. It is in consonance with the FAO's focal areas for investment in sustainable livelihoods, such as deliberate efforts at increasing access to assets and building resilience and recovery capacities in especially traumatised societies like Borno State, Nigeria. This is equally reflected in the special enterprise infrastructural/equipment support (such as multipurpose grain flour milling machine, groundnut oil processing mill, livestock feed mill and grain threshers) to unique enterprises/entrepreneurs. These approaches combined with appropriate internship opportunities proved to be an effective package of business booster as well as strategic N2Africa legacies.



A section of students getting school training on soyabean cheese



Women frying soyabean cake during demonstration



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

2.4.1 Diagnostic, demonstration and adaptations trials

Table 6. Number of trials

	Number of farmers (trials established in 2018)		
	Gender		
Adaptation trials (total number of Adaptation trials proposed for 2018 is 200).	Male	Female	Total
Crop			
Groundnut	48	52	100
Cowpea	62	38	100
Sub Total	110	90	200
Effect of plant population on the yield of cowpea (<i>Vigna unguiculata</i> (L.) Walp.) in Sudan savanna zone of Borno State Nigeria.	62	38	100
Effect of plant population on the yield of groundnut in the Sudan savanna agro-ecological zone of Borno State, Nigeria.	48	52	100
Subtotal	110	90	200
Demonstration trials (total number of Demonstration trials proposed for 2018 is 80)			
To show-case the yield advantage of increasing cowpea plant population from the current one row per ridge to two rows per ridge and the application of P in farmers' fields in Borno State.	22	18	40
To demonstrate 'best bet' technologies (groundnut plant population and improved groundnut variety and P application) in farmers' fields in Borno State.	14	26	40
Subtotal	36	44	80

2.5 Enable learning and assess impacts at scale through strategic M&E

2.5.1 Strategic M&E for Project implementation at Country level

Reports and studies that have contributed to the project implementation success.

Mbavai, J.J., N. Kamai, F. Kanampiu, A. Yaya Kamara. 2018. Cowpea early adoption study. IITA, Ibadan, Nigeria. 24 pp. Printed in Nigeria by IITA.

Kamara, A.Y., N. Kamai, F. Kanampiu, L. Kamsang, A.Y. Kamara. 2018. Gender analysis of soybean adoption and impact. IITA, Ibadan, Nigeria. 57pp. Printed in Nigeria by IITA.

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H. Pindar, N. Kamai, F. Kanampiu, A.Yaya Kamara. 2018. Value addition to grain legume processing of cowpea, groundnut, and soybean to smallholder farmers in Borno State. International Institute of Tropical Agriculture, Kano, Nigeria. 27 pp. Printed in Nigeria by IITA.

2.5.2 Effectiveness of dissemination approaches

Mini field days were organized and conducted by N2Africa/BOSADP in 10 locations between 27th October to 6th November 2018. Farmer's Field days plays a vital role for information sharing and dissemination among stakeholders of the project and also avail the stakeholders on the various technologies and techniques being pushed to farmers as baskets of options. The overall objectives are to create awareness and build trust among stakeholders for the availability of technology options and performances. The specific objective is to bring all the participating farmers to the trial field for information sharing and validation of technologies for subsequent adoption on their fields, to show farmers the potential of the new technologies over their conventional practices, to have farmer-to-farmer sharing of knowledge and experience and to capture their opinions, perceptions and preferred characteristics of the varieties promoted. It provides relevant feedback to researchers, project managers and is a good forum for a farmer-to-farmer information dissemination system.



Participants at the mini field days organized and conducted by N2Africa/BOSADP

2.5.3 Impact assessment

The impact assessment in Borno state focuses on soyabean, cowpea and groundnut. The key areas of the assessment are Awareness, Adoption, Income, Impact, Nutrition and productivity.

Soyabean was selected in Biu and Hawul LGAs in order to assess the popularity of the existing soyabean variety (TGX1951-3F) after repeated interventions from former projects, to identify the popularity of inoculant (NoduMax) and SSP fertilizer in new communities and to determine farmers using the technologies plus agronomic practices. The assessment also aimed to examine farmers' access to seed through community based seed producers, seed companies, access to SSP fertilizer through agro-dealers, the access to inoculants – though limited – and the access to output markets through aggregation and open markets.

Groundnut was selected in Kwaya Kusar LGA in order to determine the adoption of the introduced three new varieties (SAMNUT 22 and SAMNUT 23, SAMNUT 24), SSP fertilizer, and agronomic practices. We also wanted to know whether farmers have access to fertilizer through agro-dealers, and access to seed through community seed producers and seed companies (JIRKUR SEED).



3 Achievements in relation to Specific Project Milestones

Table 7. Achievements with related Milestone Targets

Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
Objective 1						
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	3	3	3	
	1.3.1. By Q2 of year 1, potential partners operating within priority legume value chains mapped	# partners within N2Africa legume value chains mapped	3	3	4	
	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	1	1	4	
1.5. Develop country-specific research and dissemination implementation plans, including a sustainable exit strategy	1.5.1. By Q4 of year 1, country-specific research and dissemination implementation plans formalized, including an exit strategy.	# of specific research and dissemination plans formalized	1	1	2	
	1.5.2. By Q4 of each year, implementation plans are updated based on M&E feedback	# implementation plans updated with M&E feedback	1	1	2	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
1.6. Organize seasonal/yearly project-wide and country-specific planning workshops	1.6 Scientists and other stakeholder groups are empowered to further the N2Africa research and development	# Scientist and stakeholder groups leading implementation of activities in N2Africa yearly plans	1	1	3	
	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	3	
1.7. Develop and implement a degree (PhD and MSc)-related research plan	1.7.1. By Q4 of year 1, a research plan, engaging at least 5 PhD and 10 MSc candidates, developed	# of Project wide research plans to engage PhD and MSc students developed & # of PhD and MSc students (men/women) engaged	3 PhD (1 Male: 2 Female); 6 MSc (2 Male: 4 Female)	3 PhD (1 Male: 2 Female); 6 MSc (2 Male: 4 Female)	3 PhD (1 Male: 2 Female); 6 MSc (2 Male: 4 Female)	
1.8. Develop and implement a non-degree-related capacity strengthening plan for relevant	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	0	0	0	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
partners working within legume value chains	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. <i>(Note: Count the total number of persons trained from the collaborating partners for dissemination. Disaggregate data by gender, topics and ToT level i.e. the type of or the capacity within the trainer is operating like extension officer, partner-M&E officer, agronomist etc.)</i>	11,000	11,035	15,202	
Objective 2						
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	
	2.1.1. By Q2 of year 1, N2Africa stakeholder platforms operationalize	# N2Africa stakeholder platforms operational	4	4	4	
	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	4	4	4	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
2.2. Facilitate <u>N2Africa-led</u> dissemination campaigns in the context of development-to-research learning cycles with specific attention to gender	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 participating in dissemination activities</i>)	19,000	19592	41,993	
	2.2.1. By Q1 of years 1-4, specific dissemination guidelines for legume intensification assembled	Document indicating specific dissemination guidelines for legume intensification.	5	5	7	
	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))	Field days=557 Adaptation trials =2,000 Demo trials=6,000	Field days=557 Adaptation trials =2,000 Demo trials=6,000	Field days=1,192 Adaptation trials =50,000 Demo trials=8,400	
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	277.0: 250: 5.0	277.3: 202.66: 0.0	569.3: 859.4: 0.7	ABP was not successful to sell inoculant
	2.3.1. By Q4 of years 1-4, at least 2 media events (e.g., radio,	# of media events implemented	8	12	24	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
	newspaper articles, field days, etc) per country implemented					
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	10,000	357	7,122	
	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	0	0	
	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	0	0	0	
2.5. Facilitate private-public partnerships towards the	2.5.1. By Q4 of years 1-4, inoculants available through public-private partnerships, through importation and/or local production, the latter facilitated	# of inoculant outlets in the target areas Volume of inoculants imported and /or produced with the identified outlets	0	0	0	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
sustainable supply of inoculants and fertilizer	by the inoculant production pilot plant					
	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	0	0	0	
		Volume of legume-specific fertilizer at the retail shops	0	0	0	
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.	1	1	1	
		Volume of legume foundation seed produced by private enterprises & government intuitions in the target countries	200 tons	232.78 tons	836.61 tons	
	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	200 tons	232.78 tons	836.61 tons	
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	5,000	6,505	6,661	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
	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	100	150	306	
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	10	10	20	
2.9 Assess the effectiveness and efficiency of various input delivery and marketing systems especially for women	2.9.1. By Q4 of year 2, inventory and analysis of input supply and marketing systems conducted across all countries	Report of inventory and Analysis of the input supply & marketing systems in target countries	20	20	50	
Objective 3						
3.1. Sensitize partners, farmer associations, and farming households and mainstream approaches to address gender inequity in farming and decision-making	3.1. Female farmers increasingly lead N2Africa promotion and dissemination activities	# Female farmers leading N2Africa promotion and dissemination activities	2000	2,678	2,828	
	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	1	1	1	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
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	3	5	11	
	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	2	4	6	
3.3. Conduct dissemination campaigns targeting women farmers	3.3. Better knowledge of and access to household-level legume processing tools improves the nutritional status of women and children in at least 2 target countries	# of women using household level-legume processing technologies	10	10	20	
	3.3.1. By Q4 of years 1-4, themes and models for women-specific dissemination campaigns identified	# and types of women specific dissemination campaign themes and models identified.	-	-	-	
	3.3.2. By Q4 of years 2-5, at least 25% of the female farmers participating in the overall N2Africa dissemination activities are also actively engaged in the women-specific dissemination campaigns	% female farmers participating in women specific dissemination campaigns	45	38	40	
3.4. Develop labour-saving pre- and post-harvest legume tools for female farmers	3.4. Women use pre- and post-harvest labour-saving tools, resulting in higher net profits from legume production and processing	# of women using pre- and post-harvest labour-saving tools	-	-	-	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
	3.4.1. By Q4 of year 2, prototype labour-saving pre- and post-harvest tools for female farmers validated	# and type of prototype labour-saving pre- and post-harvest tools for female farmers validated	-	-	-	
	3.4.2. By Q4 of years 2-4, labour-saving tools included in the various dissemination campaigns	# pre and post-labour saving tools included in dissemination campaigns	-	-	-	
3.5. Evaluate the impact of environment (E) and management (M) on nutritional quality of legume grain	3.5.1. By Q4 of year 3, relationships between grain nutritional quality and management / environmental conditions quantified	# of relationship equations quantified	-	-	-	
Objective 4						
4.1. Develop variety x inoculant x nutrient management recommendations for the target legumes and legume production areas based on yield gap analysis	4.1. Recommendations for the intensification of legume production result in at least 50% increase in legume productivity	% change in legume productivity among target households participating in adaptation trials (early adoption instead of adaptation trials. Can look at progressive farmers). # of target households (men/women headed) with 50% increased productivity through adaptation trials				
	4.1.1. By Q4 of years 1-4, seasonal research campaigns towards legume intensification and yield gap closure implemented	# and type of Diagnostic trials conducted by N2Africa				



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
	4.1.2. By Q4 of years 2-4, improved legume production recommendations integrated in the dissemination campaigns	# of improved legume production recommendations (based on diagnostic trials) integrated in dissemination campaigns				
4.2. Develop recommendations for rehabilitation of non-responsive soils for legume production	4.2. Inoculant producers avail improved inoculant formulations for the target legumes resulting in at least 10% increase in legume productivity and BNF	# of inoculant formulations applied/used by inoculant producers for target legumes in core countries (Productivity will be measured by milestone 4.1)				
	4.2.1. By Q4 of year 2, major mechanisms leading to non-responsiveness understood	Major mechanisms contributing to non-responsiveness identified, analysed & documented				
	4.2.2. By Q4 of years 3-4, prototype rehabilitation measures for non-responsive soils validated	Validated measures(Prototype) for non-responsive soils				
4.3. Intensify crop-livestock interactions through enhancing feed availability of legume crop residues	4.3.1. By Q4 of year 2, niches for use of legume crop residues within and between farms identified	# niches for use of legume crop residues documented				
	4.3.2. By Q4 of years 3-4, feed availability and quality enhanced through appropriate use of grain legume residues	% of livestock feed quality dependent on appropriate use of legume residues				



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
4.4. Evaluate the medium- to long-term impact of legumes on overall farming system productivity and natural resource conditions	4.4. Overall farming system productivity and soil fertility status is improved through increased legume productivity	% increase in overall productivity and soil fertility of various farming systems as a function of increased legume productivity				
	4.4.1. By Q4 of year 2, at least 1 long term legume monitoring site established per priority region/country approaches	# long term monitoring sites established				
	4.4.2. By Q4 of year 5, the medium- to long-term impact of legumes on overall system productivity and natural resource conditions evaluated using time series analysis and modelling	% contribution of legumes production on overall productivity and natural resources evaluated				
4.5. Isolate, authenticate, and evaluate new strains of rhizobia for the target legumes for high symbiotic effectiveness	4.5.1. By Q4 of years 2-4, at least 50 new strains of effective rhizobia genetically characterized using molecular techniques	# candidate strain evaluated # New rhizobia strains collected				
	4.5.2. By Q4 of year 5, newly identified effective rhizobium strains for common bean, cowpea, groundnut conserved in a rhizobium gene bank and at least 5% of these used for inoculant	# Newly identified rhizobium strains conserved in a gene bank. % of identified effective rhizobium strains used for inoculant production				



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
4.6. Identify elite rhizobium strains and inoculant formulations for beans, groundnut, and cowpea	4.6.1. By Q4 of year 3, at least 5 new effective and elite rhizobia for beans, groundnut, and/or cowpea identified	# new effective and elite rhizobia identified				
	4.6.2. By Q4 of year 5, elite strains used for inoculant production for beans, groundnut, and/or cowpea	# of elite strains used for inoculant production				
4.7. Evaluate competitiveness and survival of introduced rhizobium strains as affected by M x E	4.7.1. By Q4 of year 4, environmental and management conditions affecting the competitiveness and survival of introduced rhizobia elucidated	Documented explanation of M x E on introduced rhizobium strains				
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				
Objective 5						
5.1. Develop an innovative framework for strategic M&E, allowing for timely feedback loops	5.1. National system scientists use the G _L x G _R x E x M framework and the obtained information to advance legume research for development within their countries	# of national institutions partnering N2Africa in D2R activities (Also # of participating scientists in those institutions) # of national institutions in target countries using G _L x G _R x E x M for research	3	3	5	



Activity per Objective	Milestone	Indicator	Milestone Target 2018	Achieved 2018	Achieved so far- Cumulative (2017+ 2018)	Reasons for Variance with Planned Target (if any)
	5.1.1. Throughout the project, a strategic M&E framework provides timely feedback to learning and future planning	Existence of M&E framework that outlines the types of feedback for planning, and provides timely data.	1	1	1	
5.2. Set-up data collection, management, and analysis infrastructure	5.2. Dissemination partners integrate effective and efficient dissemination approaches for legume technologies in their future development initiatives	# of dissemination partners integrating effective and efficient dissemination approaches in their programmes across target countries. (Effectiveness and efficiency of dissemination approaches will be measured by activity 5.6)	1	1	1	
	5.2.1. By Q4 of year 1, data management infrastructure is in place and data population initiated	Data Management system established with all project data	1	1	1	
5.5. Unravel $G_L \times G_R \times E \times M$ interactions for legume production towards the development of best-fit recommendations	5.5.1. By Q4 of year 4, the relative important of G_L , G_R , E , and M understood for specific legumes and production environments and integrated in improved recommendations	# of quantified relationships integrated in improved recommendations. Best-fit recommendations available to all target legumes in each country	4	4	6	



4 Lessons Learned

1. Demand uncertainty is a major bottleneck in linking producers with input and output markets
2. Provision of a tangible starter pack, soon after training, is critical for business take-off, while access to bank credit is important to enable growth of the businesses of the youths.
3. Women are good entrepreneurs and enterprise leaders, if adequately mobilized.
4. Youths of non-agricultural background could be productive and earn good income and livelihood in agriculture, if properly trained and motivated.



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 soyabean, common bean, cowpea, and groundnut varieties with proven high BNF potential and sufficient seed availability in target impact zones of N2Africa Project
10. Project launching 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 seeds 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 seeds 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. 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
67. Launching 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 Launching 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
87. Contract Sprayer in Borno State, Nigeria
88. N2Africa Baseline Report II Ethiopia, Tanzania, Uganda, version 2.1
89. N2Africa rhizobial isolates in Kenya
90. N2Africa Early Impact Survey, Rwanda
91. N2Africa Early Impact Survey, Ghana
92. Tracing seed diffusion from introduced legume seeds through N2Africa demonstration trials and seed-input packages
93. The role of legumes in sustainable intensification – priority areas for research in northern Ghana
94. The role of legumes in sustainable intensification – priority areas for research in western Kenya
95. N2Africa Early Impact Survey, Phase I
96. Legumes in sustainable intensification – case study report PROIntensAfrica
97. N2Africa Annual Report 2016
98. OSSOM Launch and Planning Meeting for the west Kenya Long Rains 2017
99. Tailoring and adaptation in N2Africa demonstration trials
100. N2Africa Project DR Congo Exit Strategy



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101. N2Africa Project Kenya Exit Strategy
 102. N2Africa Project Malawi Exit Strategy
 103. N2Africa Project Mozambique Exit Strategy
 104. N2Africa Project Rwanda Exit Strategy
 105. N2Africa Project Zimbabwe Exit Strategy
 106. N2Africa Annual Report 2017
 107. N2Africa review of policies relating to legume intensification in the N2Africa countries
 108. Stakeholder Consultations report
 109. Dissemination survey Tanzania
 110. Climbing bean x highland banana intercropping in the Ugandan highlands
 111. N2Africa Annual Report 2018
 112. N2Africa Annual Report 2018 Ethiopia
 113. N2Africa Annual Report 2018 Ghana
 114. N2Africa Annual Report 2018, Nigeria Borno State



Partners involved in the N2Africa project

