



## **N2Africa Project Rwanda Exit Strategy**

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## **N2Africa**

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



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## 1. Project Background

The project started in February 2010 as the first phase of the project with one government partner in charge of technology research related tasks (Rwanda Agriculture Board- RAB), and three partners at grass root level – national NGOS, in charge of disseminating technologies to farmer beneficiaries. Capacity building of partners at different levels was a key to achieve N2Africa mandate. The project sponsored two MSc students and one PhD student, all the 3 from RAB. Short training sessions were organized for local facilitators from partner organizations in dissemination, and more than 1000 master farmers were capacitated to train other beneficiaries.

The project covers five administrative districts, two in high altitude of the Northern province working on climbing beans, one district in the southern province, and two districts in the Eastern province. Both the Southern and Eastern provinces work on soyabean and bush bean crops. In total the project covers 13 action sites from the five districts. To date, the project has reached more than 30,000 households directly with BNF technologies. These beneficiaries were reached with direct dissemination package and/or a demonstration plot hosted by farmers' groups/cooperative.

Technologies introduced are around biological nitrogen fixation (BNF). In Rwanda, partners worked with two major legume species: Soyabean and Common Bean. The dissemination package was composed of:

1. High yielding improved variety of bean seed plus mineral fertilizer plus cassava cuttings plus a field book with protocol on how to install the plot and technical message on how to manage the crop. This package was for intercropping bush bean with cassava
2. High yielding improved variety of climbing bean seed plus mineral fertilizer plus a field book and maize seed for rotation
3. Soyabean seed plus mineral fertilizer plus inoculant plus maize seed ( rotation after harvesting soyabean) plus a field book

The technical message was about increasing crop productivity and improving soil fertility through biological nitrogen fixation with legume crops

## 2. Purpose of Documenting the Exit Strategies

The N2Africa proposal document describes in broader terms how the project will exit and still sustain its impacts, i.e., the exit strategy is **to ensure the sustainability of N2Africa impacts after it ends**. The purpose of documenting the exit strategies and their status is to know **how each country intends to withdraw its resources or has withdrawn its resources while ensuring that achievement of the project objectives is not risked** and that progress towards the vision of success will continue.

The key focal areas of N2Africa exit strategy are:

- a) to ensure that activities to enhance production and productivity of legume crops are fully integrated into the national structures (continuous dissemination/introduction of technologies to enhance awareness and knowledge)
- b) to ensure sustainable input supply (essential agro-inputs (seed, legume fertilizer, inoculants) in this context are available to farmers and stakeholders); this includes evidence that private sector (or governmental sector agents, as relevant) actually do avail legume inputs, on commercial or subsidized basis.
- c) to support information and knowledge sharing platform among partners (ensuring that farmers and stakeholders have information on N2Africa best practices); this includes tools (variety tool which will be meta-data of various demonstration and adaptation trials, showing average responses for certain areas and risks related to such responses (including economic data), guidelines, technical briefs that stakeholders can use.

In broad terms, farmers will have access to quality inoculants, sufficient seed of improved varieties, and fertilizers that are required for the production of legume crops.



### 3. Objective of Documenting Exit Strategies

The objective of this document is to indicate to what extent the above exit strategy drivers have been pursued and the remaining gaps to be addressed. Specifically to:

- 1) Ascertain what has been done regarding exit strategies:
  - a. To fully integrate activities into national (Private, NGO, Government) structures;
  - b. To ensure sustainable input supply; (this can have different pathways i.e. CBO, ICT-Platform based, outgrower to information brokering, market-research with feedback loops, etc); and
- 2) To support information and knowledge sharing platform among partners
- 3) To know where we are in terms of exiting and what are the exit strategy scenarios for gaps identified

### 4. Assumptions and risks associated with N2Africa sustainability and scale

One major assumption was that the private sector would take up – invest in smallholder supply chains for improved legume seeds, bio- and legume chemical fertilizers. N2Africa would further confirm these technologies are effective – cost beneficial for the farmers, create awareness with farmers and extension services, create a pull demand, train agro-dealers how to handle – store them.

N2Africa and Partners (through PPPs) would furthermore remove possible bottlenecks in output market – supply chain performance, women labour shortage, household and SME level processing capacities.

### 5. Description of exit strategy Status

#### 5.1. Exit Strategy: to ensure that activities to enhance production and productivity of legume crops are fully integrated into the national structures

*The main goal of Tier 1 countries within Phase II was to disseminate outcomes from Phase I at scale, particularly by institutionalizing legume expertise within national systems and backstopping commercial interests in N<sub>2</sub>-fixation technologies and legume enterprise. Tier 1 country actions were not be reaching farmers directly, but relied on indirect dissemination. This had two thrusts, (i) a focus on building both input and output market connections, and (ii) indirect dissemination through development partners, for which the foundations had been laid during Phase I. (Ken, G., 2013 P.13)*

In Rwanda, BNF technologies promoted in Phase I were around Soyabean and common Bean (bush and climbing types). New varieties were introduced, agronomic practices, seed rate, combination of organic and mineral fertilizer, use of inoculants, alternative technics of staking climbing beans, post-harvest handling, storage and processing. In order to scale up and out the above technologies, the strategy was to have a strong and sustainable input distribution system, and practical capacity building for farmers using these technologies to reach ownership through adaptation/adoption of disseminated technologies. Table 1 shows the direct partners of N2Africa.



## 1. Build national/local organizational and human capacities

**Table 1 Direct partners of N2Africa in Rwanda (2010-2017)**

Serial number	Name of partner organization	Type of organization
1.	Rwanda Agriculture Board ( RAB)	Government research institution
2.	CARITAS Rwanda	National NGO
3.	Conseil Consultatif des Femmes ( COCOF)	Local NGO
4.	Developpement Rural Durable ( DRD)	Local NGO
5.	Eglise Presbyterienne au Rwanda ( EPR)	National NGO

In Phase I, national and local NGOs had the mandate to mobilize communities/ beneficiaries and disseminate BNF technologies generated by N2Africa under the collaboration with the national research institution RAB which mandate was to conduct Agronomy and Rhizobiology research around common Beans and Soyabeans legume crops for the sake of best bets in BNF.

- *Building and strengthening local capacities in BNF*

In Rwanda, the project supported two MSc and 1 PhD studies, to strengthen the national capacity in Rhizobiology and markets for RAB partner. Short training sessions were organized at different stages for dissemination partners and beneficiaries at large, to build and strengthen local capacity on BNF Technologies. Topics covered were mainly on legumes inoculation system, seed multiplication and dissemination approaches, Demonstration plots, participatory evaluation, (Capacity building of Master Trainer, Master farmer, farmers, agro-dealers), postharvest handling, marketing and local soyabean transformation at household level. Training sessions were organized around these topics for both lead farmers and farmers in general participating in project activities at various levels, being direct beneficiary or indirect. With these capacities, partners organized and implemented project related activities mostly without technical support from the project. Lead farmers provide trainings to other farmers in their communities and some are now used as farmer promoters to implement the TWIGIRE MUHINZI (input supply model at community level). The second phase, extension messages were developed for large scale dissemination to farmers.

- *Integration of N2Africa technologies and ideas*

From the beginning of the second phase of the project (2014), N2Africa technologies were embedded in partners' own dissemination activities, integrating BNF technologies in their rural development programs and /or projects, with a minimum or no financial support from N2Africa. This was done through scaling out technologies which had been successful in phase 1 to other parts of the country where partners have activities outside the action sites of N2Africa. No new introductions of technologies was done in phase 2. In such way, this has constituted our exit strategy to create ownership of project interventions by partner organizations and beneficiaries at large, for sustainability and durability of BNF technologies after N2Africa.

Partner organizations used their own approaches to reach farmers rather than being advised by N2Africa. N2Africa best practices were adjusted to better accommodate partner and farmers interests. Partners with projects on nutrition from other donors integrated soyabean products to address nutritional issues using the training modules and women trained by N2Africa in phase I (the case of CARITAS Rwanda ), where activities were expanded in other districts outside N2Africa action sites. Others (COCOF and DRD) with projects on food security, used BNF technologies to boost the productivity of major crops in rotation with legumes (mainly maize).

- *Activities that can be handled/taken over by national organizations*

National organizations can undertake all activities which were carried out during the life span of the project, from agronomic /Rhizobiology trials, seed multiplication to dissemination of technologies generated. Partners were fully engaged in activities at ground level from the beginning.

Nevertheless, there are still gaps in inoculants supply, no formal supply chain of inoculants exists yet, the same producer (RAB) produces, distributes, and does quality control on the product.



## 2. Other capacities still needed to sustain N2Africa interventions

Despite the proven benefits of inoculation and basal P fertilizers on legumes, their use remains hindered by both low demand and poorly organized supply chains (Ken, G., 2013).

- The production and distribution of inoculants at large scale needs more technical and financial support. Therefore, there is need to mobilize national and external resources to continue the implementation. The local inoculant produced by RAB is good, and there is a comparative advantage to produce it locally because peat deposit suitable as a carrier material is abundant in the country, compared to what is produced in the region.
- Another area where there is still need for resources mobilization and technology development and transfer, is in labor saving tools for legumes planting, weeding, harvesting, and processing.
- The seed system in general is weak for legume crops, since private seed companies have little interest in legume crops which have a long cycle to renew seeds (self-pollinated).

- *National resources committed to keep ongoing activities*

At government level, national policies are favorable to support seeds and fertilizers on subsidy scheme for major crops including legumes (Soyabean and common Bean), under the Crop Intensification Program (CIP) of the ministry of agriculture and animal resources (MINAGRI). In addition to this, the agro dealer network is well-structured to ensure input supply chain, especially for mineral fertilizers and seeds of priority crops, is functional with a direct financial support from the Government, and private sector. Some of the project partners like CARITAS and EPR, have their own resources to continue key activities which fit in their own rural development programs.

- *External resources to support continuation of activities*

There are external resources from donor community under different projects with local and international NGOs as well. For example, AGRA has been supporting the agro dealer network to ensure the distribution of mineral fertilizer through a grant to AGRIFOP to reinforce the capacity of agro dealers. All formal partners of N2Africa have external support from donor community to ensure continuation of activities when the project ends (COCOF has a support from OXFAM, CARITAS Rwanda supported by CARITAS international).

- *Holistic partnerships to achieve sustainability of project impacts*

Development actors at district level are organized in the Joint Action Development Forum (JADF) which helps the local authorities to know the specific actions of every NGO that works in the district and their partners for a better collaboration among them and avoid overlapping of same interventions in the same place. Members of the forum meet on seasonal basis to plan for activities and monitor ongoing interventions. This helps to know who is doing what and where, constraints, success and/or failure, leading to sustainability of interventions. JADF has a permanent secretary who is a district staff in charge of coordinating field activities and liaising with partners. N2Africa dissemination partners are registered and active members in JADF of their respective districts of operations, where the work plans are submitted at the beginning of the year and activities evaluated toward the end of the year (June-July). In that way, N2Africa activities are documented through the local partners work plans and annual reports. JADFs organize open days, in which all district partners exhibit their activities, at least one open day is organized per year in each district.

## 5.2. Exit Strategy: to ensure sustainable input supply

### 1. Develop partnerships and local linkages to sustain input supply

In Rwanda, there is a national extension model TWIGIRE MUHINZI, in which most of N2Africa former master farmers were recruited as farmer promoters in their respective villages.

The Twigire Muhinzi model is a 'home-grown solution' that has been developed and implemented by Rwanda Agricultural Board (RAB), under the responsibility of the Ministry of Agriculture and Animal Resources (MINAGRI), in close collaboration with Districts and Sectors, which are under supervision of the Ministry of Local Government (MINALOC). It is a decentralized extension model which gives a key role to farmer extension agents: Farmer Field School (FFS) Facilitators and Farmer Promoters



- *Specific input supply strategies within the partnerships*

In the approach of TWIGIRE MUHINZI, each village has identified one farmer promoter through a participatory exercise. Farmer Promoters ensure that eligible farmers in the village are included in the input Requirement lists of the subsidy program of MINAGRI (CIP). MINAGRI has identified priority crops which are supported by CIP, and these crops are mapped per district to be part of the subsidy scheme for inputs (seed and fertilizer especially). Unfortunately, legumes inoculants are not part of CIP, this need a lobbying from RAB legumes program to MINAGRI, especially for Soyabean as a key input to boost the productivity.

- *Sustainability of the approach of TWIGIRE MUHINZI with farmer promoters at village level*

The farmer promoters mobilize the farmers to consolidate land, plant in time and use the inputs appropriately. They promote the use of both organic and inorganic fertilizer. An important tool to convince the farmers in the village is the demonstration plots in which the farmer promoter shows the potential of using good inputs combined with agronomic practices. To facilitate the work of the farmer promoters, farmers are organized in groups of about 20 farmers. The groups visit the demonstration plots at least 3 times during the season.

## **2. Build local business networks with the private sector to ensure input supply**

At national level, there are 11 private companies which have a contract with RAB to import mineral fertilizers into the country under the subsidy scheme, from there another private company – Agro processing Trust Corporation Ltd (APTC) - facilitates and monitors the distribution of fertilizers at district level through local agro dealers operating at sector level. In such way, fertilizers reach all farmers countrywide. Seeds of priority crops under government subsidy follow the same channels, there 6 private companies which have a contract with RAB to procure and sell seeds through local agro dealers. Soyabean and common Bean are part of priority crops which benefit government subsidy on seeds and fertilizer. A ministerial decision document is produced each year by MINAGRI, with a list of these private companies agreed to import and/or distribute agricultural inputs, with prices for each inputs and rate of subsidy from the government. Some Agro dealers engaged by the project are part of this system and helps to make inputs such as seed and fertilizers available at community level.

In districts where N2Africa (in collaboration) with local partners established one stop shop centers, fertilizers, seeds and inoculants are sold to farmers, with a technical message (leaflet) on how to use them, ( e.g. in Musenyi with Celestin). There is sustainability of this inputs value chain, since the government has pulled out from importing fertilizers, private companies are engaged, local agro dealers get bank loans to supply their small shops and run their business. The input supply system is locally adapted.

The information brokerage in the supply chains is done among the agro dealer network, a software installed in their mobile phone and centralized by MINAGRI helps to monitor business movement of each agro dealer in the network.

The challenge in this supply chain for agricultural inputs is the lack of legumes inoculants as an important inputs for Soyabean productivity. There is an urgent need to integrate legumes inoculants in the supply chain of inputs. RAB as a producer and promoter of legumes inoculants should take the lead in writing a policy brief on the role of inoculants to boost crop productivity through biological nitrogen fixation and soil health in the long run.



### 5.3. Exit Strategy: N2Africa as a Pan-African information sharing platform

Information developed which can be shared with broader stakeholders and used without N2Africa presences

Type of information developed	Extent of the information packaged and format	Existing platforms for sharing packaged information and strategies used
1. Master Farmer training in Biological Nitrogen Fixation and Grain Legume Enterprise	Training manure developed at the beginning of the project intended to local facilitators from dissemination partners, a booklet with 9 modules	The manual initially in English was translated in Kinyarwanda, with both soft and copy to each partner organization engaged in technology dissemination
2. Biological Nitrogen Fixation and Grain Legume Enterprise: Guidelines for N2Africa Master Farmers	Guidelines booklet for master farmers as a handout given to them after initial training as master farmers for knowledge empowerment in BNF for them to be able to facilitate dissemination activities to project beneficiaries	The booklet was translated in Kinyarwanda and each master farmer received a copy, at the end of phase I more copies were availed in the one stop shop center to reach larger audience of farmers visiting these shops
3. Farmer's field book	Booklet with technical information on how to use the dissemination package given to each beneficiary receiving the package, with sections on beneficiary identification and feedback on the performance of the package given at the end of the season	Each master farmer had 10-15 beneficiaries to follow up and assist to collect feedback information. In each action site, a demo plot with all dissemination packages distributed to beneficiaries, was installed and managed by a farmers group under the supervision of the master farmer and a technician of the dissemination partner, the demo plot was used as a learning plot on how the dissemination plot should be installed and monitored
4. Legumes pests and diseases booklet	Booklet with major pests and diseases on Soyabean and common Bean in Rwanda, developed for master farmers to share with other farmers at large	The manual is in Kinyarwanda, used to train all master farmers, each received a copy, as a teaching tool to other farmers
5. Legumes inoculation technique, 1 on Soyabean and 1 on common bean	Leaflets produced in Kinyarwanda	Distributed to public audience during agriculture shows at national level, open days launched at district level, available in agro-dealers shops selling legume inoculants
6. Catalog of new varieties of Soyabean and their performance	Booklet produced in English for public audience	Distributed to public audience, available in one stop shop centers where Soyabean seeds are sold



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7. List of new varieties of Soyabean and their performance	Outdoor poster in Kinyarwanda with the list of new varieties of Soyabean and their performance, awareness creation to farmers to grow soyabean	Public audience
8. Legumes inoculation technique and its benefit	2 Outdoor poster in Kinyarwanda, awareness creation to farmers on how to inoculate Soyabean and common Bean	Public audience
9. Best Agronomic practices for high productivity and yield in Soyabean crop	Outdoor poster in Kinyarwanda, increase farmers' knowledge on soyabean cultivation	Public audience



## 6. Status of exit strategies: Sustainability matrix

Below matrix gives summary of the status of the 3 main exit strategy drives and in relation to now and post project/sustainability. **Key: 1=achieved/will be; 0= not achieved/will not be; - not applicable**

**Table 2 Summary of Exit Strategy status**

Item	RAB	CARITAS	COCOF	DRD	EPR
	<b>Project time</b>				
Dissemination of technologies: Use of packaged information (tools, guidelines, technical briefs) on legume best practices promoted by N2Africa	NA	1	1	1	1
Dissemination of technologies: Use of knowledge (direct capacity building) on legume best practices promoted by N2Africa	NA	1	1	1	1
Inoculant availability <sup>1</sup>	1	1	1	1	1
Seed availability	1	1	1	1	1
Fertilizer availability	1	1	1	1	1
Inoculant Usage	1	1	1	1	1
Seed Usage	1	1	1	1	1
Fertilizer Usage	1	1	1	1	1
Inoculant Supply (supply chain Champion)	0	0	0	0	0
Seed Supply (supply chain Champion)	1	1	1	1	1
Fertilizer Supply (supply chain Champion)	1	1	1	1	1
Input Supply Information	1	1	1	1	1
Output Supply Information	1	1	1	1	1
Inoculant Quality control	1	NA	NA	NA	NA
Inoculant R4D/Research to adapt	1	NA	NA	NA	NA
<b>Sustainability / post project</b>					
Dissemination of technologies: Use of packaged information (tools, guidelines, technical briefs) on legume best practices promoted by N2Africa	NA	1	1	1	1
Dissemination of technologies: Use of knowledge (direct capacity building) on legume best practices promoted by N2Africa	NA	1	1	1	1
Inoculant availability <sup>2</sup>	1	1	1	1	1
Seed availability	1	1	1	1	1
Fertilizer availability	1	1	1	1	1
Inoculant Usage	1	1	1	1	1
Seed Usage	1	1	1	1	1
Fertilizer Usage	1	1	1	1	1
Inoculant Supply (supply chain Champion)	1	0	0	0	0
Seed Supply (supply chain Champion)	1	1	1	1	1
Fertilizer Supply (supply chain Champion)	1	1	1	1	1
Input Supply Information	1	1	1	1	1
Output Supply Information	1	1	1	1	1
Inoculant Quality control	1	NA	NA	NA	NA
Inoculant R4D/Research to adapt	1	NA	NA	NA	NA

<sup>1</sup> Availability means registered and sold

<sup>2</sup> Availability means registered and sold



## 7. Way forward: Strategic scenarios to close the gaps identified

Exit strategy drive	What remains to be done	Strategic scenario to use
Inoculant Supply (supply chain Champion)	To clearly define channel to distribute inoculants to farmers	A policy brief has to be produced by RAB to show the importance of inoculants as a key inputs for legumes, particularly for Soyabean and climbing bean
Inoculant Quality control	Conflicting situation where the producer is at the same time the product controller	Identify a national partner who can do commercial component of inoculants produced, and in the long run hand over commercial production to that partner, RAB remaining with supply of good strain and quality control of product
Inoculant R4D/Research to adapt	Local strains collected not evaluated in field	RAB has to find financial means to test trains evaluated in the green house, and test them in local conditions on farm
Labour saving tools for planting and harvesting Soyabean to alleviate drudgery to women and youth	Thresher machine tested but not adopted yet by farmers, no planter identified yet	Develop proposal for potential new grant to ensure continuity and achievement of what was started under N2Africa
Sustainable Seed system for soyabean cropping (which seeds- both soyabean and common beans?)	Strong community based seed production and commercialization within communities to ensure availability of quality seed locally	Develop proposal for potential new grant to reinforce seed production and availability to local farmers



## ANNEX I: List and addresses of key contact persons continuing project activities

Specific e-mail addresses and phone numbers can be obtained via [n2africa.office@wur.nl](mailto:n2africa.office@wur.nl) as publishing privacy sensitive contact information in a public report is forbidden by law.

### EPR (Presbyterian Church in Rwanda)

Names of farmers who practice the N2Africa technologies in RAMBA Sector

Name of Farmer	TEL	Cell	Village
Nkurikiyimana	-		Kageyo
Haburore Jean	available	Muramba	Kavumu
Gasigwa	-	Rugeshi	Kavumu
Rurinda Reverien	available	Nyamugeyo	Kavumu
Musabyimana Baptiste	available	Nyamugeyo	Kavumu
Banzekuriva Claudine	available	Nyamugeyo	Kageyo
Mbarushimana Damascene	available	Muramba	Kavumu
Shyiragahinda Jean Claude	-	Nyamugeyo	Kageyo
Bazyakaremye Theophile	available	Muramba	Kageyo
Maniriho Jean Damascene	available	Muramba	Kageyo

### CARITAS Rwanda in Bugesera district

#### Coopérative KOPABJ

Location : Village Rwimpysi, Cellule Rwinume, Sector Juru.

N°	Name of Farmer	Gender	Contacts
1	Kankesha Agnes	M	
2	Munyaneza Jean Baptiste	M	
3	Mukabadege Meleciana	F	
4	Mukangeneye Jeanette	F	
5	Nyirarugenda Melanie	F	
6	Nzavugankize Evariste	M	
7	Uwamariya Francine	F	available
8	Nkurunziza Celestin	M	
9	Nzabanita Didas	M	
10	Mugemangango Alfred	M	
11	Mugarukira Bernard	M	
12	Murekatete Emmanuel	M	
13	Hakizimana Noel	M	
14	Mukabadege Thaciana	F	
15	Mukaneza Annuarita	F	



N°	Name of Farmer	Gender	Contacts
16	Mukantaganda Epiphanie	F	
17	Sekamana Benoit	M	
18	Shyirahayo Violeta	F	
19	Mukakalisa Donatille	F	
20	Uwimana Devotha	F	
21	Nyirabahire Donatha	F	
22	Nsanzimana Emmanuel	M	
23	Havugimana Donat	M	
24	Nsengimana Barthazal	M	
25	Arengana Ildephonse	M	
26	Ayirwanda Annonciata	F	
27	Rutaburingoga Faustin	M	
28	Kaberuka Dorothee	F	
29	Musengamana Eliyasi	M	

### Coopérative IZMGM

Location : Village Rugarama, Cellule Rugarama, Sector Mareba.

N°	Name of Farmer	Gender	Contacts
1	Nyirangirinshuti Marie	F	available
2	Ntabanganyimana Beyata	F	
3	Mukamusoni Felicité	F	
4	Buregeya Francois	M	
5	Ndikuryayo Milton	M	
6	Twagirumukiza Claver	M	
7	Hakizimana Emmanuel	M	
8	Bakundukize Joseph	M	
9	Mbonigaba Venuste	M	
10	Bamporiki Edouard	M	available
11	Bigirimana Jean Pierre	M	
12	Pendeki Donata	F	
13	Niyodusaba Beyata	F	
14	Ntahobavukira Augustin	M	
15	Habimana Jean de Dieu	M	
16	Habumukiza Jacques	M	
17	Uwimana Alexiya	F	
18	Mukamusoni Eureneki	F	
19	Mukarukera Parasidiya	F	
20	Muhayimana Marie	F	
21	Mukantabana Rosalie	F	
22	Batamuriza Viviyana	F	
23	Mukarutesi Solange	F	
24	Mukankubana Meresiyana	F	
25	Nyiramatama Daphrose	F	
26	Dusabe Mariya	F	
27	Ntahirajya Jean Bosco	M	



N°	Name of Farmer	Gender	Contacts
28	Kayitesi Visensiya	F	
29	Nyirakomeza Chantal	F	
30	Mukamana Annonciatha	F	
31	Mukagasana Francine	F	
32	Ndahimana Edouard	M	
33	Habubwira Juvenal	M	
34	Mushimiyimana Francine	F	
35	Uwizeyimana Estarike	M	

### Coopérative KAJU

Location: Village Uwimpunga, Cellule Rwinume, Sector Juru

N°	Name of Farmer	Gender	Contacts
1	Bavugirije Seraphine	F	available
2	Nyirandirima Daphroza	F	
3	Mukantagara Everiyana	F	available
4	Mukakakbano Suzane	F	
5	Kambibi seraphine	F	
6	Nikuze Patricie	F	
7	Ntawunozino Damarisi	F	
8	Nyirahategeka Venansiya	F	
9	Uwimana Theresa	F	
10	Mushengezi Vedaste	M	
11	Muhire Christophe	M	available
12	Ndindiriyimana Daniel	M	
13	Fatukubonye Schadrack	M	
14	Kubwimana Annonciatha	F	
15	Ndacyayisenga Marita	F	
16	Kageruka Jean Damascene	M	
17	Mukantabana Daphroza	F	
18	Nyiransengimana Thacianna	F	
19	Nyirakarebero Perouth	F	
20	Gato Beyata	F	
21	Mukeshimana Gatalina	F	
22	Murekatete Valentine	F	
23	Nyirambaruramyé Epaphrodette	F	
24	Mukakizima Daphroza	F	
25	Mukarwego Bonifrida	F	
26	Mukantumwa Annonciatha	F	
27	Mukarugamba Alvera	F	
28	Nyirahakuzinyange Angelique	F	
29	Mudahunga Sylvestre	M	
30	Bucyana Jean Damascene	M	
31	Uwabakurikiza Jeanette	F	
32	Ndekezi Aloys	M	
33	Serugenda Martin	M	
34	Songa Francois	M	
35	Niyitegeka servilien	M	
36	Nkurikiyimana Froduald	M	
37	Munyaneza Francois	M	
38	Kamberuka Dorothee	M	
39	Mukakananga Esperance	F	



40	Uwimana Perouth	F	
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### Group TWISUNGANE

Location: Village Kagirazina, Cellule Kanazi, Sector Nyamata

N°	Name of Farmer	Gender	Contacts
1	Nzabamwita Faustin	M	available
2	Bazatsinda Jean Claude	M	available
3	Bagirigomwa Octave	M	available
4	Bizimungu Celestin	M	available
5	Balinda Francois	M	available
6	Sebushumba Jean Bosco	M	available
7	Munyaruhimbi Pascal	M	available
8	Ruremesha Claver	M	-
9	Mubiligi Anastase	M	available
10	Urayenzeza Pascal	M	-
11	Nyirakamana Alphonsine	F	-
12	Tugirimana Feston	M	available
13	Nsanzabazungu Samuel	M	available
14	Kayitesi Vestine	F	available
15	Habumugisha Theogene	M	available
16	Nkurunziza Fulgence	M	available
17	Rwigema Vincent	M	-
18	Ntawugashira Straton	M	-
19	Mfashwenimana Yoweri	M	available
20	Munyemana Gaspard	M	available
21	Mugabonake Jean Damascene	M	available
22	Majyambere Simiyoni	M	available
23	Ndekezi James	M	available
24	Ndahimana Tadeyo	M	
25	Manizanye Eugenie	F	available
26	Ndorubwabo Ezechias	M	-
27	Ndayambaje Yesaya	M	available
28	Habyarimana Celestin	M	-
29	Murego Vincent	M	available
30	Mukarugwiza Anysie	F	available
31	Turatsinze Juvenal	M	-
32	Nyiramihari Laurence	F	-
33	Yabaragiye Alphonsine	F	available
34	Ntagara Dismas	M	-
35	Rwubusisi Gaspard	M	available
36	Habanabashaka Callixte	M	-
37	Ntibashoboka	M	-
38	Mulinzi	M	available
39	Bizimungu Emmanuel	M	available

### Group TWITEZIMBERE

Location: Cellule Nemba, Sector Rweru

N°	Name of Farmer	Gender	Contacts
1	Hategekimana Antoine	M	-
2	Nsengimana Matayo	M	-
3	Uwimana Mariya	F	available
4	Usabyimana Laurence	F	-
5	Musanabera Alphonsine	F	-
6	Nyirakamana Clementine	F	-



7	Mujawimana Clementine	F	-
8	Nteziryayo Etienne	M	-
9	Mbatuyimana Emmanuel	M	available
10	Habiyakare Damascene	M	-
11	Musabirema Clementine	F	-
12	Nibagwire Venansiya	F	-
13	Nsabimana Pascal	M	-
14	Ntibazwa Consolata	F	-
15	Maniraguha Marc	M	available
16	Muhayimana Zacharie	M	available
17	Nyirabavakure Clementine	F	available
	Mukandayisenga Pelagie	F	available

### Group TWITEGANYIRIZE

Location: Village Ruyenzi, Cellule Nyamigina Sector Mareba

N°	Name of farmer	Gender	Contacts
1	Nyirahategekimana Laurence	F	available
2	Habiyaremye Assiel	M	available
3	Nyiransabimana Jacqueline	F	available
4	Nikuze Mariya	F	available
5	Numuhire Celestin	M	available
6	Mugiraneza Rose	F	-
7	Mukandinda Esperance	F	-
8	Ayinkamiye Vestine	F	-
9	Nyiransabimana Mariya	F	
10	Mukakayonde Claudine	F	available
11	Nyiramana Cesarie	F	-
12	Dufashwanimana Gerardine	F	-
13	Ntanganzwa Janvier	M	-
14	Nzayisenga Rachele	F	-
15	Nyiraneza Verene	F	-
16	Nyirabusizoli Julienne	F	-
17	Minani Manasseh	M	available
18	NIYONIZEYE Pascasie		available
19	HAVUGIMANA Augustin		available

### Group TWIZERANE

Location: village Mbonwa Cellule Nyagihunika, Sector Musenyi.

N°	Name of farmer	Gender	Contacts
1	Gashirabake Celestin	M	available
2	Nsabyamahoro Celestin	M	available
3	Habimana Emmanuel	M	available
4	Ntaganzwa Theogene	M	available
5	Nakabonye Jeannette	F	-
6	Mukandanga Speciose	F	-
7	Uwimana Anastasie	F	-
8	Yamuragiye Esperance	F	-

### N2AFRICA Lead farmers with DRD in the Northern Province

N°	Names	Gender	District	Sector	Telephone
01	NDAYISHIMYE Dative	F	MUSANZE	RWAZA	available
02	BANYANGIYIKI Christophore	M		RWAZA	available
03	MUKESHIMANA Vestine	F		RWAZA	available



N°	Names	Gender	District	Sector	Telephone
04	KARIMWABO Donat	M		RWAZA	
05	NANTEZA Pascasie			RWAZA	
06	N.MANZA Espérance	F		RWAZA	available
07	MUKESHIMANA Venerenda	F		RWAZA	available
08	HABIMANA Wellars	M		MUKO	available
09	N.HAGUMIMANA Agnès	F		MUKO	available
10	N.BANZI Immaculée	F		MUKO	available
11	N.BARENZI Gasilida	F		MUKO	-
12	SERUGENDO Léonidas	M		MUKO	
13	NTIBUSANGANWA Léonie	F		MUKO	-
14	MUREKATETE Appolinarie	F		MUKO	available
15	UWASE Clémentine	F		CYUVE	available
16	SINGIRANKABO Théogène	F		CYUVE	available
17	MUSHASHI Jacqueline	F		CYUVE	available
18	BIGILIMANA J.Damascène	M		CYUVE	available
19	KARANGWA Cassien	M		GACACA	available
20	UWAYEZU Damien	M		GACACA	available
21	N.HIRWA Consolée	F	BURERA	NEMBA	available
22	N.NDAYAMBAJE Fébronie	F		NEMBA	available
23	MBONIGABA Phocas	M		NEMBA	available
24	HABUMUREMYI Frédéric	M		NEMBA	available
25	N.BAGESERA Spéciose	F		NEMBA	-
26	GAHUTU Evariste	M		NEMBA	available
27	NGOYI Chantal	F		NEMBA	available
29	BAKOMEZA Albert	M		KINONI	available
30	DUSABIMANA Etienne	M		KINONI	available
31	KARABAYINGA Samuel	M		KINONI	available
32	M.KIMENYI Eugénie	F		KINONI	available
33	NIYONSABA Léonard	M		KINONI	available
34	KAMPIRE Astérie	F		KINONI	available
35	HARELIMANA Euphrasie	F		KINONI	
36	SEZIBERA Berchmans	M		KINONI	
37	MBARUBUKEYE Innocent	M		KINONI	
38	MUKARUHIRWA Madeleine	F		KINONI	
39	NTAMAKERO Benjamin	M		KINONI	
40	HABIMANA Evariste	M		KINONI	
41	NDAGIMANA Daniel	M		KINONI	
42	HABIYAMBERE Théogène	M	GAKENKE	CYABINGO	available
43	N.NDIKUBWIMANA Virginie	F		CYABINGO	available
44	UWURUKUNDO Fulgence	F		CYABINGO	available
45	MUKAKIBIBI Christine	F		CYABINGO	available
46	N.TEGERA Honorée	F		CYABINGO	available
47	MUKANZASABA Justine	F		KIVURUGA	available
48	UWIMANA Innocent	M		KIVURUGA	available
49	UFITUMUGISHA J.B	M		KIVURUGA	-
50	MANIRAHU Gaspard	M		KIVURUGA	-
51	MUJAWIMANA Césarie	F		KIVURUGA	available



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<b>N°</b>	<b>Names</b>	<b>Gender</b>	<b>District</b>	<b>Sector</b>	<b>Telephone</b>
52	BENEYEZU Florance	F	NGORORERO	MUHANDA	available

### COCOF in Kamonyi district

<b>Name of Cooperative or farmer</b>	<b>Sector</b>	<b>Contacts</b>
KOPABASONYA	NYAMIYAGA	available
KOPASONYA	NYARUBAKA	available
NYIRAMISAGO ODETTE	NYARUBAKA	available
NTUNGIYEHE Xavier	Musambira	available
MUNYEMBUZI joseph	Musambira	available



## References

- Giller, Ken E., 2013, N2Africa Phase II- Putting Nitrogen Fixation to work for Smallholder farmers in Africa, Grant Proposal, revised version of 16/09/2013.
- Kantengwa, S., 2016, Putting Nitrogen Fixation to work for Smallholder farmers in Africa, Annual Country Report 2016.
- Ministry of Agriculture and Animal Resources of the Republic of Rwanda & The Belgian Development Agency, 2016, Twigire Muhinzi Reflection Paper.
- Ministry of Agriculture and Animal Resources of the Republic of Rwanda, 2017, Ministerial Decision no 0003 of 1<sup>st</sup> of July 2017, distribution of agriculture inputs under government subsidy for 2018A and B agricultural seasons



## 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
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
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
101. N2Africa Project Kenya Exit Strategy
102. N2Africa Project Malawi Exit Strategy
103. N2Africa Project Mozambique Exit Strategy



#### 104. N2Africa Project Rwanda Exit Strategy



## Partners involved in the N2Africa project

