



**Facilitating large-scale
dissemination of Biological
Nitrogen Fixation technologies**

Milestones 4.4.2, 4.4.3, 4.4.4, 4.5.3, 5.3.2 and 5.4.1

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Submission date: November 2011

N2Africa

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



N2Africa is a project funded by The Bill & Melinda Gates Foundation by a grant to Plant Production Systems, Wageningen University who lead the project together with CIAT-TSBF, IITA and many partners in the Democratic Republic of Congo, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda and Zimbabwe.

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Turner, A.D., J.J. de Wolf, 2011. Facilitating large-scale dissemination of Biological Nitrogen Fixation technologies (Milestones 4.4.2, 4.4.3, 4.4.4, 4.5.3, 5.3.2 and 5.4.1), www.N2Africa.org, 33 pp.



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1 Introduction

This report addresses multiple milestones of the N2Africa project (see Table 1) that are interlinked. Overall, Activity 4 under Objective 4 is concerned with “Conduct collaborative legume and inoculant technology dissemination campaigns and create awareness in rural communities in all impact zones”. The Milestones 4.4.2 up to 4.4.4 are all concerned with large-scale dissemination efforts. Although 4.5.3 is part of Activity 5 under Objective 4 (‘Develop strategies for empowering women to benefit from the project products’), it is also part of overall dissemination efforts – although specifically targeting women. The last milestones in this report are related to capacity building that is aimed at facilitating large-scale dissemination. It was therefore concluded that presenting the milestones together in this report would make for a coherent report.

Table 1: Milestones addressed in the report

Milestone No.	Milestone
4.4.2	By month 6 of each year, large scale demonstration and dissemination campaigns launched in each impact zone.
4.4.3	By month 9 of each year, at least 3 extension events (e.g., field days, exchange visits) organized per season per country.
4.4.4	By month 12 of each year, at least 3 mass media events (e.g., radio programs, video documentaries) organized per hub.
4.5.3	By month 12 of each year, at least 2 special events on the role of legumes in household nutrition and value-added processing conducted per country.
5.3.2	By month 10 of years 2 and 3, at least 8 training-of-trainers workshops (2 workshops in each country), attended by at least 40 extension staff, conducted on inoculation technology (inoculant handling and storage, etc) and legume agronomy [resulting in 640 trainers by the end year 3].
5.4.1	By month 12 of year 2, 3 & 4, at least 1 grass-root training event organized by each of 51 trainers across all impact zones, with an expected attendance of 10 master farmers or community facilitators per event [resulting in 93,000 farmers trained by the end of Year 3].



2 Large scale demonstration and dissemination campaigns (Milestone 4.4.2)

2.1 Summary of progress up to month 18 of project

Milestone 4.4.2 reads 'By month 6 of each year, large scale demonstration and dissemination campaigns launched in each impact zone'. All activities under Objective 4 ultimately lead to enable effective collaborative legume and BNF technology D&D campaigns (Activity 4.4), thus creating awareness among rural communities and providing incentive for agricultural change. Although other milestones obviously also feed into being able to conduct effective dissemination campaigns, in the current report we discuss the milestones under Activity 4.4 as well as contributing activities under 4.5.3, 5.3.2 and 5.4.1.

It seems that overall the dissemination efforts have been rather successful: "The range of rural collaboration among grassroots, governmental and international organizations, the development of diverse D&D tools and very successful bulking of improved varieties of grain legumes suggest that these campaigns are performing above expectation in all countries" (N2Africa 18 month report to Bill and Melinda Gates Foundation, p. 21, see also reports on Milestones 4.2.1, 4.3.1 and 4.3.2).

Over Years 1 and 2, the project originally aimed to reach 51,500 farm households with legume enterprise and biological nitrogen fixation (BNF) technologies. Over the project's first 18 months, 57,673 households were reached (Table 2), exceeding that target by over 11%. The project defines reached as the use of two N2Africa components, of which one is tied directly to agronomic management with use of such 'improved legume cultivation' on a minimum surface of 100 m². The households reached display even geographic balance, with 45%, 30% and 25% in the West, East and Central (ECA) and Southern Hubs, respectively, by Month 18 of the project. Oftentimes, N2Africa country teams report achievements for example in terms of technology packages distributed. Therefore the following definition has been agreed upon:

Technology package is a set of inputs for a given legume (seed, fertilizer, inoculants, etc) plus management practices combined in various different ways towards the goal of increasing BNF; accompanied by extension guidelines to explain application of treatments as well as other recommended management practices. For a technology package to count towards a milestone, it must have been tested in at least one season's D&D trials in the country in question.

The project was awarded in late 2009. This means that co-operators in Southern Africa missed their first mono-modal growing season and had to combine the first two year's fieldwork into the 2010-11 season. East and Central Africa was rushed into its first growing season as funds arrived literally weeks before the 2010 long rains. In West Africa co-operators were afforded the opportunity to adequately plan for their first year's scheduled D&D activities, and it shows in their overall success. Of course in the longer run, D&D campaigns are best judged not only in terms of how many households are approached with new technologies, but more importantly if noteworthy benefits are accrued from farmers' subsequent efforts.



Table 2: N2Africa Impact zones, Action Sites, BNF technologies and farmer participation over the first 18 months (from 18 month report)

Country	Impact Zones identified	Action Sites established	Legume varieties evaluated	BNF technologies promoted	Households impacted
DR Congo	South Kivu	13	20	4 (R,P,I,E,Rt)	3025
Ghana	Northern region, Upper West, Upper East	16	13	2 (R,P)	12660 ^c
Kenya	West Kenya	25	29	5 (R,P,F,I,S,Rt)	9206
Malawi	Central Region	6	6	2 (R,P)	3432
Mozambique	Zambesia, Tete & Manica Province	9	6	2 (R,P)	8687
Nigeria	Central Northern (Kano & Kaduna State)	13	23	4 (R,P,RP,F)	13094 ^d
Rwanda	North, Eastern & southern Province	12	18	4 (R,P,L,Rt)	5304
Zimbabwe	Mashonaland Central, Mashonaland East, Manicaland	7	19	4 (R,P,F,L)	2215
Project-wide	8	101	134 ^a	8 ^b	57673

^a total variety x country combinations, some varieties were tested in more than one country. ^b BNF technologies include: R = rhizobium inoculation, Rt = rotational systems, P = phosphate fertilization, F = fertilizer blends, I = intercropping systems, S = staking systems, L = soil liming, RP = rock phosphate addition, E = seed bed establishment (broadcasting vs row planting). ^c includes the estimated 11,160 households planned for June 2011. ^d includes the 10,983 households planned for June 2011.

2.2 Rwanda

In Rwanda demonstration packages were implemented with 1000 new farmers in Season B (2010/11) and with 1500 new farmers in Season A (2010/11). The following packages were used in Rwanda: 4 on climbing bean in rotation with maize, 9 on bush bean intercropped with cassava, 9 on soybean in rotation/intercropped with maize. All dissemination activities conducted in Rwanda up until the end of Season B 2011 are summarized in Table 3.

Table 3: Summary of N2Africa dissemination activities, from 2010 to end of 2011, Rwanda

Outreach action	2010	2010-2011	2011
	Long rains	Short rains	Long Rains
Number of demonstrations	0	10	13
Number of new households reached	150	1500	1000
Inoculants deployed (kg)	2	5	10
Inoculants packets distributed (BIOFIX)	40	100	105
Soybean seed distributed (kg)	104	150	100
Climbing bean seed distributed (kg)	14	300	450
Bush bean seed distributed (kg)	16	500	350
Fertilizer distributed (kg)	300	1300	1200



Cassava cuttings distributed (number)	0	81,000	54,000
Maize seed distributed (kg)	0	150	470
Seed multiplication sites	0	20	20
Master farmers trained	45	170	100
Facilitators trained	4	0	11
Master farmer manuals distributed (188 pp)	45	50	50
Extension manuals distributed (20 pp)	0	450	600
Field books distributed to households	0	1500	1000
Radio shows conducted	0	1	3

For the 2011/12 Season A in Rwanda, dissemination packages were distributed to 1000 new beneficiaries (400 on climbing bean, 300 on bush bean and 300 on soybean) in September 2011. In addition, 2500 farmers who had previously benefitted from project assistance are undertaking cultivation of 200 m² of the legume crop for which they had received seed while they are using improved technologies such as planting in rows rather than broadcasting, using fertilizer and inoculants.

2.3 DR Congo

By the end of Season B (2010/11), three seasons worth of dissemination campaigns had been conducted in DR Congo, reaching a total number of 3025 households. The breakdown according to partner and location is given in Table 4.

Table 4: Total number of households reached by the end of Season B (2010/11), DRC

Partner	Site	Number of new households reached	Number of old households	Total number reached
PAD	Mulamba	70	120	190
	Walungu	70	120	190
	Birava	94	200	294
	Murhesa	70	110	180
	Kalehe	46	120	166
	<i>Sub-total</i>		<i>350</i>	<i>670</i>
SARCAF	Mumosho	92	178	270
	Ikoma	104	105	209
	Bwirembe	54	110	164
	Cagombe	118	142	260
	<i>Sub-total</i>		<i>368</i>	<i>535</i>
DIOBASS	Bugorhe	150	270	420
	Nyangezi	40	150	190
	Mushinga	100	200	300
	Burhinyi	60	132	192
	<i>Sub-total</i>		<i>350</i>	<i>752</i>
Total		1068	1957	3025



A total number of 24 demonstration trials, of which seven were managed by women, had been implemented by the end of Season B (2010/11). For the dissemination trials, 50% of lead farmers and 66% of all farmers were women.

Activities for the Season A (2011/12) campaign commenced in August with site identification, and by the end of October 2011, 1950 new households had been identified and registered; input distribution to these along with 3025 'intermediate' and 'first season' households had begun. The so-called 'first year' households are now being involved in seed multiplication under the IFAD-funded Integrated Soil Fertility Management project. Input packages were distributed as follows amongst the partner organisations: 1670 to PAD, 1553 to SARCAF and 1752 to DIOBASS. The packages included bean or soybean seed, in combination with either maize seed or cassava cuttings (for intercropping), fertilizer and soybean inoculants. Additionally, a total of 39 facilitators have undergone Training-of-Trainers covering all 13 intervention sites in DRC.

2.4 Kenya

By the end of June 2011, three seasons worth of dissemination campaigns had been implemented in Kenya, reaching a total number of 7910 farmers. For the 2011 Long Rains alone, the Kenyan outreach team provided 42 demonstration kits to 23 co-operators, distributed 4084 packets of inoculant, 3875 kg of soybean and climbing bean seed, 8200 kg of fertilizer and 3750 copies of extension materials (see Table 5, from Kenya Country Report June 2011).

Table 5: Summary of N2Africa outreach activities in west Kenya during the first 18 months of the project

Outreach action	2010 Long rains	2010-2011 Short rains	2011 Long Rains
Number of demonstrations	52	35	43
Number of satellite technology tests	1500	1910	4500
Number of new households reached	1500	815	4100
Inoculant deployed (kg)	12	28	122
Inoculants packets distributed (BIOFIX)	120	1168	4084
Soybean seed distributed (kg)	920	565	3790
Climbing bean seed distributed (kg)	58	98	85
Fertilizer distributed (t)	3.0	3.8	8.2
Seed multiplication sites	10	13	1 (+2 for 1) ^a
Master farmers trained	32	0	31
Master farmer manuals distributed (188 pp)	45	0	50
Extension manuals distributed (20 pp)	0	2100	3750
Radio shows conducted (West FM)	0	3	0 (to date)

^a The 2 for 1 means that if a farmer receives for example 1 kg of seed, she/he will have to return 2 kg of seed back so that it can be distributed to other farmers in the following season.

2.5 Malawi

In Malawi a total of 3229 farmers participated in the 2010/11 demonstrations on cowpea, groundnut, common bean and soybean technologies in Ntcheu, Dowa, Salima, Lilongwe, Dedza and Mchinji districts (see Table 6).



Table 6: Summary of Malawi dissemination trials conducted over the 2010/11 growing season

District	Partner	Groundnut (kg)	Soybean (kg)	Cowpea (kg)	Bean (kg)	Men	Women	Total
Dedza	DAES	291	62	0	305	304	354	658
Lilongwe	DARS, N2Africa	244	134	89	65	222	309	531
Mchinji	CDI	202	508	0	0	424	286	710
Ntcheu	CU	53	180	0	36	163	106	269
Dowa	WVM	182	283	0	196	273	388	661
Salima	DAES	64	438	101	0	288	315	603
Total		1036	1605	190	602	1674	1758	3432
						49%	51%	

DAES = Department of Agriculture Extension Services; DARS = Department of Agriculture Research Services; CDI = Clinton Development Initiative; CU = Concern Universal; WVM = World Vision Malawi

The demonstration and dissemination campaign for the 2011/12 season was launched in September, and partners, extension agents and lead farmers have been involved in Training-of-Trainers in four districts since mid-October 2011. Input procurement was completed mid-November, distribution will be completed by the end of November. This season's D&D trials will be implemented by three partners with whom the project worked with last year: World Vision Malawi (WVM), Concern Universal (CU) and Agricultural Extension Officers at district level, along with two new partners; National Association of Small-scale Farmers of Malawi (NASFAM) and Catholic Relief Services (CRS). In addition to the six districts covered last season, a seventh district (Kasungu) has been added.

2.6 Mozambique

In Mozambique a total of 68 soybean demonstrations were established across the Manica, Tete and Zambesia provinces during the 2010/2011 growing season. The project reached a total 8687 farmers of which 1499 were females (17.3%). The low percentage of women reached in the first season can perhaps be attributed to lack of awareness on the part of the partnering organization of N2Africa's goal of at least 50% female participation in all farmer-related activities. This will be addressed in the next growing season by strongly encouraging technicians involved in farmer selection to include as many women farmers as possible. In addition the technicians are encouraged to collaborate with existing women's organizations, to reach women, not only for cultivation of legume crops, but also with additional activities which more generally fall under their control (e.g. post-harvest handling, storage and value addition).

Table 7: Number of dissemination trials for the 2010/2011 season, Mozambique

Province	District	Male	Female	Total
Manica	Sussundenga	887	98	985
Tete	Angonia	1164	411	1575
	Macanga	1115	269	1384
	Tsangano	586	296	882
Zambesia	Gurue	3436	425	3861



Total	7188	1499	8687
	82.7%	17.3%	

In addition to the main N2Africa partner in Mozambique, TechnoServe, the farmer-owned company IKURU, will engage in N2Africa dissemination activities on groundnuts, mainly in the Gurue area. Detailed plans have been drawn up, farmers have been identified and inputs distributed. Training-of-Trainers began early November 2011.

2.7 Zimbabwe

In Zimbabwe a total of 2215 beneficiaries were reached by the project during the 2010/11 growing season. The beneficiaries were being led by lead farmers selected and trained in the N2Africa project on the new technologies that were being tested in the production of legume crops. Each lead farmer supported another 15 to 20 farmers. See Table 8 below for details of the 2010/11 dissemination campaign in Zimbabwe.

Table 8: Number of Lead Farmers and farmers in Zimbabwe in 2010/11 Dissemination Trials

Partner Organisation	District	Total numbers of farmers			Lead Farmers		
		Male	Female	Total	Male	Female	Total
CTDT	Murehwa	102	238	340	10	11	21
CTDT	Chegutu	110	190	300	10	8	18
AGRITEX	Makoni	83	217	300	8	12	20
AGRITEX	Hwedza	114	169	283	9	11	20
CADS	Mudzi	139	181	320	11	9	20
CADS	Goromonzi	118	250	368	11	12	23
CLUSA	Guruve	121	183	304	8	8	16
Total numbers		787	1428	2215	67	71	138
Total %		35.5%	64.5%	100%	49%	51%	100%

The demonstration plots for the 2010/11 season are given as below (Table 9). All demonstration plots were installed at the Lead Farmers' fields on a 30 x 20 meter plot, where other farmers could come and learn. For soybeans, common beans and cowpeas, three different varieties of each were used by farmers. For groundnuts only Natal Common was used.

Table 9: Number of D&D plots conducted with different grain legumes in the 2010-11 season, Zimbabwe

District:	No of demo plots per district				Total
	Soybean	Groundnut	Common bean	Cowpea	
Mudzi	2	10	0	9	21
Makoni	5	8	4	2	19
Hwedza	6	5	2	2	15
Goromonzi	10	4	7	2	23
Murehwa	5	4	6	2	17



Guruve	5	4	6	4	19
Chegutu	5	6	5	2	18
Total	38	41	30	23	132

The absence of a Farm Liaison Officer severely hindered the D&D operations in the first season of work in Zimbabwe. Partners implemented project activities to the best of their abilities, but did not receive sufficient back-up or support from the project. In addition, the rains came very early and hence the input distribution was considered to be late. With considerable efforts from everyone, most farmers were able to plant in time. Unfortunately, the mid-season drought which was longer than usual, had an adverse impact on crop productivity.

2.8 Ghana

About 1500 farmers from 16 communities in Ghana were mobilised for dissemination trials during the 2010 season. Two soybean technology packages and three each of cowpea and groundnut were developed and deployed during the season.

In 2011, the project targeted to work with about 1860 lead farmers in each of the six districts of the project's operation (Table 10), thus resulting in a total of 11,160 farmers across the three northern regions.

Table 10: Total number of demonstrations per crop per district for the 2011 season in Ghana

Crop type	Variety	No. of demonstrations	No. of Lead Farmers	No. of other farmers per Lead Farmer	Total No. of farmers per district
Soybean	Jenguma	35	35	≥30	1085
Cowpea	Songotura	10	10	≥30	310
Groundnut	Chinese & SAMNUT 22	5	5	≥30	155
	Chinese & SAMNUT 23	10	10	≥30	310
TOTAL		60	60		≥1860

In Ghana the strategy to increase the number of beneficiaries to be reached was to increase the number of farmers per demonstration from 10 in the first season in 2010, to 50 for soybean, 30 for cowpea and 20 for groundnut in the 2011 demonstrations. Furthermore, new communities were included in the districts where the N2Africa project operated in the 2010 season and in new districts. The new communities in the existing districts are given in Table 11. The partner organisation of N2Africa, UrbaNet, has been implementing in Karaga district and in Savelugu district.



Table 11: Locations of N2Africa activities, Ghana

Region	District	Old communities participating in 2010 season	New communities added for 2011 season
Northern	Cheroponi	Achuma, Andoyamanu, Ugando	Jakpa, Aderi
	Karaga	Nyong, Sung, Pishegu	Nyong
	Savelugu		Moglaa, Yong
Upper East	Kassena-Nankana East	Manyoro, Naaga, Pungu Wusungu	Pungu, Doba
	Bawku West	Apotdabogo, Tilli	Kobore, Tanga, Sapelliga
Upper West	Nadowli	Goriyiri, Daffiama, Zambogu	Kojokpere, Serekpere
	Wa East	Kpalworgu, Kpalinye	Bulenga, Goripie, Loggu

2.9 Nigeria

About 2000 farmers from 26 communities were mobilised for dissemination in 2010. Three soybean technologies, and 4 each of cowpea and groundnut were developed and deployed during the season. The summary of the number of household reached is presented in Table 12.

Table 12: Summary of 2010 dissemination activities in Nigeria: number of farmers reached

Crop	Kano	Kaduna	Total
Cowpea	560	368	928
Groundnut	256	176	432
Soybean	304	448	752
TOTAL	1,120	992	2,112

For the 2011 season, N2Africa's targets in Nigeria were to work directly with 13,200 farmers (4,580 farmers in Kaduna State, 8,620 in Kano State). A total of 578 demonstrations were established; 348 for soybean, 137 for cowpea and 118 for groundnut. Dissemination activities were implemented by groups or clusters of 20 farmers. The Lead Farmer in each group managed a demonstration plot of 30 m x 20 m, while the other 19 members (hereafter called satellite farmers) each had plots of 20 m x 10 m. The distribution of the demonstrations and locations are presented in Table 20.

Table 13: Distribution of demonstrations and farmers, 2011, Nigeria

Local Government Area	Satellite Farmers	Lead Farmers	Extension Agents	Communities	Farmers Total
Kaduna State					
Soba	1060	53	6	4	1113
Giwa	1120	56	6	4	1176
Igabi	800	40	6	4	840
Kachia	800	40	6	4	840
Z/Kataf	800	40	6	4	840
<i>Total</i>	<i>4580</i>	<i>229</i>	<i>30</i>	<i>20</i>	<i>4809</i>
Kano State					
Bichi	840	42	6	4	882



Garko	880	44	6	4	924
T/Wada	880	44	6	4	924
Wudil	980	49	7	4	1029
Bunkure	800	40	6	4	840
Warawa	880	44	5	4	924
Albassu	840	42	6	4	882
D/Kudu	880	44	5	4	924
Gaya	800	40	5	4	840
Ungogo	840	42	5	4	882
<i>Total</i>	<i>8620</i>	<i>431</i>	<i>57</i>	<i>40</i>	<i>9051</i>
Grand Total	13200	660	87	60	13860



3 Extension events (Milestone 4.4.3)

Extension events such as field days and exchange visits are an essential part of large-scale demonstrations and dissemination campaigns. Milestone 4.4.3 reads 'By month 9 of each year, at least 3 extension events (e.g., field days, exchange visits) organized per season per country'. Consequently, 24 events should be organised across the whole project per year. By month 18, project co-operators conducted 96 events, surpassing the target four-fold.

3.1 Rwanda

Around the demonstration plots during Season B 2010/11, 13 field days were organized to create awareness on these technologies among the local communities.

3.2 DR Congo

In both Seasons A and B 2010/11, exchange visits were organized by partners SARCAF, DIOBASS and PAD. An inter-partner exchange visit between SARCAF and PAD was also held in Murhesa, with 31 women and 24 men present. These visits were an opportunity for mutual reinforcement between households of different agro-ecological zones of the project.

Table 14: Exchange visits organized in DRC up to end of October 2011

Partner	Sites Involved	Number of exchange visits	Participants		
			Men	Women	Total
DIOBASS	Bugorhe – Burhinyi	2	59	71	130
	Burhinyi – Mushinga	1	15	7	22
	Bugorhe – Nyangezi	1	20	12	32
PAD	Mulamba – Birava – Kalehe	2	60	120	180
	Murhesa – Birava – Kalehe	1	57	70	127
SARCAF	Murhesa (with PAD)	1	24	41	65
	Ikoma – Mumosho – Bwirembe	2	6	52	58
	Ikoma – Mumosho	1	5	37	42
Total		11	246	410	656
			37.5%	62.5%	

In addition, each partner had organized one field day by the end of October 2011, in order to ensure a mass dissemination of N2Africa technologies as well as to evaluate the technologies together with the farmers. The participants came from several action sites, included staff of the partner organisations SARCAF, DIOBASS and PAD as well as guests from different state institutions (INERA, IPAPEL, police, ANR, etc.) and universities (UEA, ISDR, etc.).



Table 15: Field days organized by partners in DRC by end October 2011

Partner	Number of field days	Participants		
		Men	Women	Total
DI OBASS	1	42	37	79
PAD	1	201	255	456
SARCAF	1	25	132	157
Total No.	3	268	424	692
Total %		38.7	61.3	100

Table 16: Field visits and observations to end of Season B 2010/11, DRC

Trial	Demonstrated technologies	Observations and principal comments on the technologies, treatments and visible differences by visitors
Demonstration trial: maize-soybean intercropping	Maize-soybean intercropping using 2 varieties of soybean (SB24 & PK06), broadcasting method and planting on lines, application of inoculum and without.	Very good trial, visible differences between inoculated and non-inoculated plots. Plots sown on row looked healthier than those with broadcasting method. Visitors appreciate the planting on lines and the use of chemical fertilizers.
Inoculant and fertilizer trial	Use of 2 varieties of soybean (SB24 & PK06) with many treatments (NPK, urea, TSP + KCL) and inoculum. The response of soybean to the inoculum application was compared with the different fertilizer treatments. A control treatment without fertilizer and inoculum application was added.	Visible differences between plots with fertilizer application and plots without fertilizer application were observed by visitors. These clear differences convinced visitors on the use of fertilizers. The control treatment had poorly developed plants with chlorosis while plots with fertilizer application had very good plants and even better in the inoculated plots. This made visitors to agreed on the use of inoculum.
Adaptation trial	Cassava-soybean association	Visitors observed the number of soybean lines between 2 lines cassava. They also noticed that the technology allows the combination of two crops for two to three growing seasons without any inconvenience. They were convinced that soybean contributes to soil fertilization and increases cassava production. They agreed that this production is possible, thanks to the planting in rows.

3.3 Kenya

By the end of October 2011, a total of 52 extension events had been held at N2Africa sites in western Kenya, and 7850 extension manuals had been distributed to partners and affiliated farmers.



3.4 Malawi

In the 2010-2011 season, field days were conducted in all the six districts in which N2Africa operates in Malawi. The field days were on all four legume crops that are being promoted by N2Africa, namely, groundnut, soybean, bean and cowpea. The themes for the field days were as follows:

- Use of inoculants in soybean;
- The effectiveness of inoculants from different sources (Chitedze Research, Marondera/SPRL in Zimbabwe and MEA in Kenya);
- Varieties of bean, groundnut, soybean and cowpea;
- Planting method (sole versus inter-planting) in cowpea;
- Use of P-based fertilizers (TSP and D compound) in all legumes;
- Date of planting.

The table below shows the number of farmers that participated in the field days where an N2Africa staff also attended. However, some field days were conducted in the sites whose figures on attendance were not collected.

Table 17: Field days season 2010-11, Malawi

District	Dates	Crop	No. of field days	Participants			
				Male	Female	Youth (up to 18 yrs)	Total
Mchinji	Jan. - May 2011	Soybean, groundnut	3	228	225	147	600
Dowa	April 2011	Soybean, groundnut, common bean	3	52	58	48	158
Dedza	Febr.- April 2011	Soybean, groundnut, common bean	3	73	80	32	185
Lilongwe	April 2011	Groundnut	1	18	21	7	46
Ntcheu	March- April 2011	Soybean, groundnut, common bean	3	123	106	0	229
Salima	Jan. & April 2011	Soybean & cowpea	3	44	75	27	146
Total no.:			16	538	565	261	1364
Total %:				39%	41%	19%	

Due to late planting in most areas, most field days were also held late. Some farmers did not participate in field days due to long distances they would have to travel and lack/cost of transport. Better organization of outreach activities is needed to reach out to all farmers as well as to reach to extension officers and other stakeholders. This would enable farmers to gain more skills and knowledge through discussions held at field days.



3.5 Zimbabwe

In Zimbabwe at least 18 field days were organized by partner organisations, attended by over 4000 people (Table 19). Additional field days were also held, but no records of these were kept. It was challenging to ensure satisfactory dissemination of the N2Africa messages during the very many field days. In addition, there is need to facilitate the diversity of field days, i.e. from very large to small-scale field days and to capture all accordingly.

Table 18: Field days organized by partners, Zimbabwe (season 2010/11)

Partner Organisation	District	No.	Date	Attendance		
				Male	Female	Total
AGRITEX	Hwedza	3	March 2011	183	276	459
CADS	Goromonzi & Mudzi	8	Febr. & March 2011	1128	1887	3015
CLUSA	Guruve	5	April 2011	159	273	432
CTDT	Chegutu	2	March & May 2011	101	154	255
Total		18		1571	2590	4161
				38%	62%	100%

3.6 Ghana

In 2010, a field visit was made by the N2Africa project team to 8 communities in Ghana during which mini-field days were held. One additional field day each was organized in the Naaga and Manyoro operational areas of the Kassena-Nankana East district to share ideas with farmers. During the second season of N2Africa activities, twenty four field days were held by the end of October with a total of 4000 participants (Table 20). It is estimated that between 20 and 40 percent of the participants were women.

Table 19: Number of demonstrations, field days and participants, Ghana

District	Demonstrations	Field days	Participants
Wa East	60	2	260
Nadowli	53	5	559
Chereponi	60	5	935
Karaga	65	5	1195
Kasena-Kankana East	57	4	175
Bawku West	57	3	876
	352	24	4000

3.7 Nigeria

In 2010, a field visit was made by the N2Africa project team to 10 communities in Nigeria, during which mini field days were held. Additional field days were held in three action sites in Kaduna State, yielding a total number of 14 extension events in 2010. By the end of October 2011 an additional 17 extension events had taken place.



4 Mass media events (Milestone 4.4.4)

Milestone 4.4.4 is 'By month 12 of each year, at least 3 mass media events (e.g., radio programs, video documentaries) organized per hub', therefore in total nine mass media events should be conducted per year across the entire project. In reporting, account has been taken of all media events conducted, not necessarily mass media events only. On the other hand, there have been other smaller media events, eg with a local newspaper that have not been reported.

By month 18, 15 mass media events were held but not all countries participated in this effort (Table 20). Most media messages were conducted via radio broadcasts, but also included newspaper articles and television news coverage.

Table 20: Dissemination tools, extension events and media coverage of the project over the first 18 months of project activities

Country	Extension manuals	Technology packages	Extension events	Media messages	Total
DR Congo	1	2	2	3	5
Ghana	0	3	10	0	13
Kenya	2	6	23	3	33
Malawi	1	5	16	2	24
Mozambique	1	4	4	4	13
Nigeria	0	3	13	0	16
Rwanda	1	3	13	3	20
Zimbabwe	1	4	15	0	20
Total	7	30	96	15	144

Since August 2011, four radio broadcasts on the use of inoculants were aired in the DRC, two in French, one in Kiswahili and one in Mashi. Two additional radio programs, sponsored by the IFAD-funded ISFM project, were also aired, encouraging farmers to get organized for bulk marketing of the legumes.

In Rwanda, in July and August 2011, two radio broadcasts on soybean cultivation were aired. One covered the participatory evaluation of agronomic trials, and the second one was on soybean inoculation in general in an interview the Rwandan Farm Liaison Officer had with a journalist from a farmer radio station (Huguka Broadcasting from Muhanga District, Southern Province).

In Malawi, two radio programs were produced and aired with Farmer Voice Radio, which is supported by the Bill & Melinda Gates Foundation. The programs were in Chichewa and covered the following topics: N2Africa project, Environmental Degradation and Nitrogen in the Atmosphere, Legumes and Fertilizers and Tips-CCPs in Crop Production in Every Legume. One challenge encountered in Malawi, however, was that whenever a state function takes place, the broadcast time for the radio program is changed, and farmers are often not informed of the new schedule, thereby limiting their access to the broadcasted information.

In Mozambique, two radio programs were aired in Gurue district about better soybean crop management, one newspaper article on new soybean varieties was published (Noticias, 8 April 2011), and a 10-minute TV program on field day activities and soybean technologies was broadcasted on 20 May 2011 by TV Mozambique.



5 Special events on the role of legumes in household nutrition and value-added processing (Milestone 4.5.3)

5.1 Introduction

As outlined in the N2Africa Project proposal, local processing and utilization of legume crops is important to promoting uptake of legume crops and technologies by small-scale farmers. This is especially important for soybean which is a new or little known crop in some areas. Providing information on techniques for value-added processing of legumes, along with their importance in household nutrition should increase local demand for these crops, and provide benefits to rural livelihoods and well-being. At the time of the proposal development, it was acknowledged that women tend to dominate activities related to local processing and use of grain legumes, and project interventions concerned with training on nutrition as well as processing of all legume crops have consequently been tailored to reach women farmers and rural women's groups in particular.

As mentioned in the month 18 N2Africa Project Report, the original plan of conducting two nutrition and value-added processing events each year in every country was sidelined in Year 1 in favour of other Delivery and Dissemination (D&D) activities. By the end of September 2011, however, sufficient supplies of legume grain had been produced in most countries for these events to be held. An extension manual "Grain Legume Processing Handbook: Addition to Bean, Cowpea, Groundnut and Soybean by Small-Scale African farmers" was produced in 2011 and 2000 copies were printed to support the nutrition and processing activities in some countries.

Country-specific progress against Milestone 4.5.3 (By month 12 of each year, at least two special events on the role of legumes in household nutrition and value-added processing conducted per country) by the end of September 2011 is reported below.

5.2 Rwanda

In September 2011, a three-day training session was organized for 26 women, two from each of the Rwanda N2Africa action sites. The training was facilitated by the nutritionist and the president from N2Africa partner COCOF, which has a soybean processing plant in Kamonyi District. The N2Africa Farm Liaison Officer for Rwanda also facilitated the training. The objectives of this event were to assist the rural population, especially soybean farmers, by building their capacity in food preparation, to alleviate malnutrition among the community members, and also raise awareness of the range of processed soybean products which can be made, thereby creating greater market opportunities for soybean grain.

The training included hands-on processing of soybean so that every participant would master the production of different products using simple methods and local materials/equipment. They would in turn be capable of teaching other members of their community, especially women, to produce these products at household level.

The training event also aimed to create sustainable productive businesses in soybean processing, which could contribute to poverty alleviation through creation of employment, increased income levels and to alleviate malnutrition in rural areas of Rwanda. N2Africa and its partners will provide the support needed for the participants to conduct similar trainings at their respective action sites in October-November 2011.

5.3 DR Congo

Before the beginning of the 2011 Season B, the head of the national program on legumes at INERA/Mulungu gave a presentation with a special focus on bio-fortified varieties of beans rich in Zinc, Iron and other necessary micro-nutrients to improve human health. Several varieties were presented



and participants were encouraged to disseminate these varieties in their families and promote their consumption, by pregnant women in particular.

Another training on household nutrition and soybean processing was organized by N2Africa partner SARCAF for 17 women and three men, as a joint activity by CIALCA, N2Africa and IFAD Integrated Soil Fertility Management project. The participants learned how to conduct similar trainings at their respective action sites, including household level production of soybean milk. In between Season B 2011 and Season A 2012, 530 N2Africa women farmers from two districts participated in this year's "International Day of Rural Women" where the theme was "Women's right have access to good nutrition for themselves and their families".

5.4 Kenya

A workshop was hosted by N2Africa partner Kleen Home and Gardens in May 2011 in western Kenya wherein 18 participants were trained, including one from Malawi. The topics covered included information on grain legumes in African rural households, preparation and nutritional value of grain legumes, post harvest handling, suggested recipes and how to organize cooking contests. Each of the four western Kenya network nodes organized legume cooking contests later in the season, and copies of the manual on Grain Legume Processing were distributed to co-operators.

5.5 Malawi

A pilot training of 109 project farmers (73 women, 36 men) was conducted with assistance from N2Africa partner Department of Agricultural Extension Services in November 2010 on legume nutrition and processing. The course was conducted over a two day period and involved hands-on production of a range of legume-based foods, an activity in which both men and women were engaged. Following this, a series of similar trainings were conducted for 32 Extension Officers in three districts of Malawi from March up to May 2011. Due to the much higher proportion of male extension staff, only seven of the trainees were women.

5.6 Mozambique

In June 2011, N2Africa hired a consultant to conduct a series of Training-of-Trainers in six sites where the project is working in northern Mozambique on use of soybean in processed food products. A total number of 47 women and nine men underwent the training, after which they conducted training of farmers, with a focus on women, in their respective sites. Some of the trainees are attached to health centers, which enables them to provide pre- and ante-natal training of mothers on nutrition and the importance of heating soybean in processing in order to remove the compounds which inhibit digestion of the grain. By the end of September 2011, a total of 1498 female and 109 male farmers had been trained on how to produce soybean products for home consumption. A training on production of soybean products for commercialization is planned to be conducted for selected women groups in late October.

5.7 Zimbabwe

In the season 2010-11 only one partner conducted a training on food processing and preparation with a participation of 369 farmers. A district level food and products fair was held in Goromonzi in mid-June 2011 to promote information exchange on processed legume product. In July 2011, two partners participated in the ZAVSAP Processed Products Fair held in Harare.



5.8 Ghana

Plans are underway for the nutrition and processing unit of MoFA to conduct training later in the year, when all crops have been harvested and there is abundant material available for hands-on training for legume processing.

5.9 Nigeria

A one-day training on nutrition and processing of soybean and cowpea was conducted by the N2Africa Farm Liaison Officer in September 2011. Fifty seven participants, all women, learned how to prepare 12 different legume products.



6 Training-of-trainers workshops (Milestone 5.3.2)

Milestone 5.3.2 By month 10 of years 2 and 3, at least 8 training-of-trainers workshops (2 workshops in each country), attended by at least 40 extension staff, conducted on inoculation technology (inoculant handling and storage, etc) and legume agronomy [resulting in 640 trainers by the end year 3]. (CHECK: from 18 month report : Milestone 5.3.2 calls for at least one training-of-trainers workshop on inoculation technology and legume agronomy in each country attended by at least 40 farm liaison staff, resulting in at least 320 Lead Farmers commissioned by Month 10 Year 2.

6.1 Progress against milestones during first 18 months of project

The project continues to support farmer training. The target of this milestone was met in all countries and greatly exceeded in many (Table 22). Differences in the numbers of Lead Farmers largely reflect the intensity of their training. Countries that have longer more detailed trainings usually have lower numbers of lead farmers. For example, Lead Farmers receive only one day training in DR Congo and Nigeria but in Kenya they attend a three-day workshop consisting of lectures, grain laboratory practical and field diagnosis. During the past 18 months the project has also provided specialized training, particularly as short courses to Ministry of Agriculture Extension Agents (e.g. in Ghana, Nigeria and Zimbabwe) or through training in grain legume preparation and value-added processing (Kenya and Malawi). In some ways, the Specialized Trainers category in Table 21 serves as a catch-all for all farmer training outside of Lead Farmers and should be sub-divided through the M&E process (Milestone 5.3.2 By month 10 of years 2 and 3, at least 8 training-of-trainers workshops (2 workshops in each country), attended by at least 40 extension staff, conducted on inoculation technology (inoculant handling and storage, etc) and legume agronomy [resulting in 640 trainers by the end year 3]. Achieved and exceeded).

Table 21: Numbers of individual trained by the project's capacity building activities in eight countries by month 18 of project activities

Project Country	Graduate Students	Lead Farmers	Specialized Trainers
DR Congo	4	579	29
Ghana	2	60	98
Kenya	5	48	30
Malawi	3	180	141
Mozambique	3	150	na
Nigeria	3	347	57
Rwanda	3	na	na
Zimbabwe	3	190	50
Total	26	1554	355

This larger than expected numbers of Lead Farmers and an accelerated schedule for D&D activities during Year 2 (under Milestone 4.4.2) has resulted in the training of 57,673 farmers in BNF technologies (see Table 2), exceeding the target of 42,000 farmers in Year 2 by 37%.

6.2 Rwanda

So far, 170 master farmers have been trained on legume technology which is an average of 35 per mandate area. Apart from the training on the cultivation of legumes, other topics were included such as the use of fertilizer and pesticides. Training was also done for the facilitators and master farmers or



representatives of the associations/cooperatives. These people then trained the participating households. For the new partners, the NGO coordination staff were informed about N2Africa before engaging with staff more directly supervising field activities. The training sequence (Table 25) and training plan (Table 26) have been developed and training topics have been formulated. It is important that the number of trainees at a more advanced level is sufficient to train those at lower levels to ensure that all trainings are done effectively.

Table 22: Training sequence for facilitators, Rwanda

Time of joining	Sept 2010	Feb 2011	Sept 2011	Feb 2012
Facilitators joined in Sept 2010	Training on agronomy, inoculants, etc	Training on seed multiplication, etc [based on needs assessment and logic of the project]	Training on commercialisation and processing, etc [based on needs assessment and logic of the project]	Training on other issues [based on needs assessment and logic of the project]
Facilitators joined in Feb 2011	--	Training on agronomy, inoculants, etc	Training on seed multiplication, etc [based on needs assessment and logic of the project]	Training on commercialization and processing, etc [based on needs assessment and logic of the project]
Facilitators joined in Sept 2011	--	--	Training on agronomy, inoculants, etc	Training on seed multiplication, etc [based on needs assessment and logic of the project]
Facilitators joined in Feb 2012	--	--	--	Training on agronomy, inoculants, etc

Table 23: Logical training plan for Rwanda

Trainee group	Year						
	2010		2011		2012		2013
	Number trained	Number need to be trained	Number trained	Number need to be trained	Number trained	Number need to be trained	Number to be trained
Technical Agronomist	3	2	5	0	5	0	5
Facilitators	14	6	20	8	28	100	128
Master Famers	42	40	85	90	175	180	350
Households	700	1000	1750	1750	3500	3500	7000



6.3 DRC

Table 24 provides the details of the training-of-trainer conducted in DRC in the period December 2010 up to June 2011. In these trainings the following subjects were covered: Inoculum techniques, participatory evaluation of treatments by the method of pair criteria, cultivation practices.

Table 24: Training-of-Trainers in DRC over period December 2010 – June 2011

Partner	No. of Events	Master Farmers trained		Agronomists trained	
		Female	Male	Female	Male
PAD	13	111	129	2	9
SARCAF	11	56	1	5	3
DIOBASS	10	124	158	2	8
Total	34	291	288	9	20
		50.3%	49.7%	31%	69%

In preparation for Season A 2011/12 in the DRC, three facilitators at each of the 13 action sites underwent training, resulting in a total of 39 new trained-trainers by mid-October 2011.

6.4 Malawi

In Malawi, all partners received Training-of-Trainers (ToT) training for their extension officers. The training covered the following topics:

- Objectives and expectations of N2Africa
- Legumes, nitrogen and rhizobia
- Increasing legume productivities in cereal-legume cropping systems (including legume crop production practices; groundnut, bean, cowpea and soybean)
- Inoculants and inoculation (handling and use)
- Practical demonstration of inoculation (handling and use)
- Demo plot layouts and data collection (practical)
- Expectation from farmer groups and lead/master farmers
- Mid season and end of season evaluations
- The change of Lead Farmers from recipients of information to change agents (extension)
- Facilitation skills among the Lead Farmers

Table 25: Number of Extension Officers and Lead Farmers that attended the Training-of-Trainers in Malawi during the 2010/2011 growing season

District	Total	Lead Farmers	Extension Officers
Ntcheu	52	38	14
Dowa	47	33	14
Salima	18	12	6
Mchinji	18	12	6
Lilongwe	22	14	8
Total	157	109	48

Unfortunately, the time given for the training (one half day) was too short to cover all topics in detail, there was no follow-up to the ToT and not all Lead Farmers were included in the training, therefore, the impact might not have been as envisaged.



In preparation for the 2011/12 growing season in Malawi, four training of trainer workshops were conducted in September and the first half of October, for both Extension Agents and Lead Farmers. Total number of Extension Agents trained was 31 (four women) and Lead Farmers 170 (47 women).

6.5 Mozambique

In Mozambique four two-day training sessions were conducted for Lead Farmers, Technicians and Agribusiness-promoters; two were held in month 12 year 1, and two in month 3 year two. Topics covered, number of participants and breakdown of the latter by gender are in Table 18 below. Numbers of female participants were very small, therefore much stronger efforts will be made to include a significantly larger proportion of women during the 2011/12 season, including selection of more female Lead Farmers, and female participants for all project training activities.

Table 26: N2Africa trainings in conducted over the 2010/11 growing season by project partners, Mozambique

Date	Location	Duration (days)	Subject	Participants		
				Male	Female	Total
9-10 Nov 2010	Gurue	2	Field preparation, variety selection, weed control, seed treatment, demo plots and production cost	44	6	50
17-18 Nov 2010	Chimoio	2	Field preparation, variety selection, weed control, seed treatment, demo plots and production cost	40	5	45
10-11 Feb 2011	Gurue	2	Crop protection, scouting, crop management, harvesting and storage	23	7	30
15-16 Feb 2011	Chimoio	2	Crop protection, scouting, crop management, harvesting and storage	21	4	25
Total				128	22	150

6.6 Zimbabwe

In Zimbabwe, farmers were trained in different issues concerning the N2Africa project. It started of with a Training-of-Trainers conducted in each of the districts by two people trained in Kenya by the N2Africa project. The participants consisted of Lead Farmers, Agritex extension officers (government agricultural extension) and NGO staff. In total 50 staff were trained (27 male, 23 female) and 190 farmers (112 male, 78 female). Overall 56% of the trainees were men, while 44% were women.

The Lead Farmers trained in these trainings in turn trained their fellow farmers. In addition, the partner organisations organized further trainings according to the priorities they had set. Some partners had both trainings that specifically targeted N2Africa farmers as well as trainings that were part of their broader programme activities (such as Clusa-ZAPAD on Farming as a Business). In the latter case, the training course would be relevant to the N2Africa farmers e.g. course on group marketing or post harvest handling of legumes. Not every partner has been able to provide the details of the trainings they organised. The table below summarizes the information we managed to collect on the types and number of trainings conducted (Table 28).

Having only two Lead Trainers proved to be rather few to train the large number of Lead Farmers and extension staff necessary to reach the number of farmers targeted. More over there was time pressure and a tight budget that caused a rather hastily organization of the trainings and there has been no



follow-up from the 'Master Trainers' due to issues with MoAs and the absence of the Farm Liaison Officer for the N2Africa project.

Table 27: Training programs conducted in Zimbabwe over the 2010/11 growing season

Partner Organisation	District	Type of Training	Attendance			
			Male	Female	Unknown	Total
CADS	Goromonzi	7 Trainings: ToT, general legume production, land preparation; Identification of nodules & soil fertility; weed, pest and disease management; pre-harvest crop management; post-harvest handling training; value addition (soy and groundnuts processing)	961	1351	0	2312
CADS	Mudzi	4 trainings: ToT, agronomy of legumes; pest identification, calibration and scouting; identification of nodules, pod counting and inoculation	315	307	0	622
AGRITEX	Makoni	4 trainings: ToT, legume cultivation, land preparations, planting demo's, pest management, post-harvest handling of legume crops	351	524		875
CTDT	Chegutu	3 trainings: ToT, legume cultivation, pest identification	282	526		808
AGRITEX	Hwedza	5 trainings: ToT, legume cultivation, identification of nodules, fertilizers use in legume production, value addition	257	380		637
Clusa-Zapad	Guruve	12 trainings: ToT, common bean production; Farming as a Business (FaaB); lead farmer training in M&E; demo plot management; group marketing; post-harvest handling of legumes	195	250	255	700
CTDT (& Agritex)	Murehwa	5 trainings: ToT, legume agronomy; Biological Nitrogen Fixation and identification of nodules; judging fields for field days; pest management and spraying	222	412		634
			2583	3750	255	6588
			39.2%	56.9%	3.9%	100%

6.7 Ghana

Two Training-of-Trainers for lead farmers and extension agents were held for 41 lead farmers and extension agents (6 females and 35 males) in June 2010. In 2011, three trainings were held. The first training in May 2011, was given to the staff of ACDI/VOCA ADVANCE together with their nucleus farmers, out-growers and agro-input dealers on inoculants, inoculants technology and legume enterprise. Twenty-six males and four females participated in the training.

The second training (May 2011) was organised for Agricultural Extension Agents (AEAs) of Ministry of Food and Agriculture (MoFA) and farmers involved in the implementation of the project in northern Ghana. These people were drawn from the six target districts of the project, namely Karaga, Chereponi, Bawku West, Kassena-Nankana East, Nadowli and Wa East. The one-day training was on inoculants, inoculants technology and legume enterprise. Forty-nine people participated, all men.



In June, a third training was organized by IFDC (International Fertilizer Development Center) for the project's Farm Liaison Officer and the representatives of N2Africa dissemination partners on accessing the 'MFarm Platform'. The training focussed on the use of mobile telephones for:

- Linking farmers to markets on MFarm Platform
- Geo referencing of all farm sites with the out use of G.P.S equipment
- Generating a common data base for all farmers (common MFarms Platform for farmers)
- Communication using SMS

6.8 Nigeria

Two Training-of-Trainers for lead farmers and extension agents were held for 74 farmers (17 females and 57 males) in Nigeria in 2010. Four ToTs were held in Kano State and two in Kaduna State in preparation for the 2011 season. A total of 59 EAs and 251 lead farmers were trained in Kano, while 24 EAs and 96 lead farmers were trained in Kaduna State (Table 20). Of these numbers, women constituted 4% of the lead farmers in Kano and 11% in Kaduna State.

Table 28: Training program conducted in Nigeria over the 2011 growing season

Training Dates	LGAs in attendance	No. of EAs trained	No. of APC trained	No. of Lead Farmers trained	No. of resources persons	Total no. of participants
Kano State						
17/05/2011	Wudil, Warawa, Gaya	18	2	61	7	93
18/05/2011	Albasu and Garko	12	2	54	6	75
19/05/2011	Bichi and Ungogo	12	2	54	5	75
20/05/2011	Tudun Wada, Bunkure, Dawakin Kudu	17	3	74	5	104
Kaduna State						
23/05/2011	Kachia, Zangon Kataf	11	0	28	5	47
24/05/2011	Giwa, Soba, Igabi	13	0	68	5	91
Total		83	9	339	33	485



7 Grass-root training events (Milestone 5.4.1)

Milestone 5.4.1 reads 'By month 12 of year 2, 3&4, at least 1 grass-root training event organized by each of 51 trainers across all impact zones, with an expected attendance of 10 master farmers or community facilitators per event [resulting in 93,000 farmers trained by the end of year 3]'. The larger than expected numbers of Lead Farmers and an accelerated schedule for D&D activities during Year 2 (under Milestone 4.4.2) has resulted in the training of 57,673 farmers in BNF technologies (Table 2), exceeding the target of 42,000 farmers in Year 2 by 37%.

It is practically impossible to record all training that takes place between Lead Farmers and other beneficiary farmers in all eight project countries. It surely takes place at many occasions and besides somewhat more formalized learning, there is a lot of informal learning going on at that level. N2Africa staff and staff of partner organisations and government extension services has been following up on the people that participated in the Training-of-Trainers, i.e. extension staff as well as Lead Farmers or Master Farmers to ensure they are well equipped to assist farmers in the cultivation practices.



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 soybeans, 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



Partners involved in the N2Africa project



Caritas Rwanda



Diobass



Eglise Presbyterienne Rwanda



Resource Projects-Kenya



Université Catholique de Bukavu



University of Zimbabwe

