Plant Production Systems
MSc Internship Report

N2Africa Project Review

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Introduction

This MSc Internship was undertaken from October 2016 to January 2017 with the Plant Production Systems (PPS) chair group at Wageningen University and N2Africa. N2Africa is a large scale, science-based "research-in-development" project focused on putting nitrogen fixation to work for smallholder farmers growing legume crops in Africa. The project's vision of success is to build sustainable, long-term partnerships to enable African smallholder farmers to benefit from symbiotic N_2-fixation by grain legumes through effective production technologies, including inoculants and fertilizers. In January 2014, with funding from the Bill & Melinda Gates Foundation, N2Africa began a second phase and three new countries were included in the project Tanzania, Uganda and Ethiopia which together with Ghana and Nigeria are now considered the project's Core countries. The remaining six countries, DR Congo, Rwanda, Kenya, Mozambique, Malawi and Zimbabwe consolidate the earlier achievements made during Phase I and make up the projects Tier- 1 countries. N2Africa aims to contribute to increasing biological nitrogen fixation and the productivity of grain legumes among African smallholder farmers; in turn this helps to enhance soil fertility, improve household nutrition, and increase the income of smallholder farmers.

The purpose of the MSc Internship was to review three aspects of the N2Africa project. Firstly the progress of Public-Private Partnership (PPP) development, secondly partner learning and mid-term evaluation and finally the development of survey tools for assessment of project impact and outcome indicators. Core country specific reports, written after the progress review workshops were not made available in time and the decision was made between my supervisors and myself to exclude the partner learning and mid-term evaluation task from my internship. Consequently the final review process included two studies, the Public- Private Partnership study and the Quick survey study. These two studies will feed into the N2Africa project's Annual Reporting for 2016. A reflection paper is also included in this final document.

Report I

N2Africa
Public-Private Partnership Study

Report I - Public-Private Partnership Study

Abstract

The overall purpose of this Public-Private Partnership (PPP) study was to obtain insight into the progress made related to the building and development of these partnerships and the results generated through them through the PPP approach across the eleven N2Africa countries.

A database of N2Africa PPPs, including information on collaborating partners and their activities was compiled, further referred to as the 'PPP Matrix'. Data was extracted and collated from partnership agreements, work plans and budgets to establish individual PPPs to enter into the PPP Matrix, each individual PPP was allocated a unique identification number for clarity purposes. Country-wide Monitoring and Evaluation (M&E) data was used for the analyses of total number of farmers reached and monetary value contributions of N2Africa and its partners. Data analysis of the PPPs was undertaken using excel and appropriate charts and tables were formulated. Missing data was identified and the limitations of the PPP Matrix database assessed. The creation of the PPP Matrix is a good start to the evaluation of the project's PPP strategy and its partner activities and outcomes. Further strengthening of data collection and management for PPPs is required to build upon this. I encountered challenges with missing or incomplete data from the agreements, work plans and budgets. Some documents were also duplicated in different formats, which initially caused duplication of PPP data. This was identified and rectified through the cross checking of information.
The formulation of the PPP Matrix and subsequent analysis of data identified the following opportunities for future partnership building and development under the PPP strategy.

- Improve PPP documentation and build upon the PPP Matrix.
- Review-Revise-Renew partnership agreements, work plans and budgets.
- Further research into individual PPP approaches and implementation strategies.
- Cross-checking of all country specific documentation to ensure standardisation of data and a thorough understanding of country specific and partnership specific strategies.
- Build upon partnership profiles for core countries and compile partnership profiles for Tier I countries to extend the data captured by the PPP Matrix (Appendix II).

Additional data that could be captured to build upon the PPP Matrix could include;

- Country specific legume crop species
- Specific geographic and climatic areas in which activities are being undertaken
- Characteristics of the farming targeted population (eg. age, gender, literacy level)
- How legume crops fit into common farming systems (e.g. major crops, such as cereals)
- Other project objectives, such as gender and nutrition
- Monetary values of partnership, contributions of N2Africa and partners.
- Develop PPPs to incorporate partners that create linkages between 'Last mile' partners and farmers; such as those being developed with Anno Agro Industry Plc. in Ethiopia.
- Add new targets related to individual PPP level, Country level and project level for assessment of partner activities and outcomes.
- Cost-Benefit analysis of monetary values of partnerships, to include also details of partnership activities to gauge value for money.
- Further qualitative research and utilisation of case study opportunities

Based on the results of further research recommendations can be made to N2Africa and other projects on the types of PPPs which best-fit specific circumstances and how PPPs can be supported for long-term linkages in order to ensure a successful exit-strategy for future sustainability.

Keywords
Partnership report, PPPs, progress, grain legumes, Nigeria, Borno State, Ghana, Tanzania, Ethiopia, Uganda, DR Congo, Rwanda, Kenya, Malawi, Zimbabwe, Mozambique.

Introduction

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The project's partnerships, their activities and outcomes are key to N2Africa's vision of success. Through their partnerships N2Africa activities are embedded at all levels of the legume value chain. The combination of public and private sector organisations support the project in providing, research and development expertise in grain legume production and N_2-fixation, technology dissemination and legume production support, sustainable supply of inputs and the creation of market linkages with farmer cooperatives and unions.

Building and developing PPPs

Sharing research-based knowledge and dissemination approaches is fundamental to the success of the N2Africa project. PPPs have played a key role in the dissemination of legume technologies in all countries. In general, PPPs are a form of collaboration in which organisations belonging to private and public sectors are jointly accountable for the implementation of project activities. The different parties involved use their pooled human and financial resources and share risks to carry out activities under their common objectives. By working together partners should be able to achieve something more than they would have been able to achieve alone, ideally, a PPPs output is more than the sum of its parts (Ferroni 2011).

Individually, partners within a PPP should have more or less the same objectives due to common goals, but their roles and responsibilities within the partnerships can and should be diverse. Diversity creates more holistic partnerships with a broader perspective on how to achieve common goals, with each partner bringing their individual specialism to the table. Research into PPPs suggests that partnerships that are tailored to the specific circumstances of the partnership and that take into account the willingness, ability, values and goals of all of the partners involved are more likely to be long lasting and productive (Rein 2008; Ferroni 2011). Through holding workshops with project partners a common vision of how best to move from the "proof-of-concept" focus of the first phase to a true "scaling up and out" of the second phase was established. Business Development Officers were employed to support the country coordinators and to assist in the implementation of the PPP strategy. Country-specific annual review and planning meetings were held with partners to tailor activities and to scale out best practices (N2Africa Podcaster 40).

The N2Africa annual report 2015 defines a partnership as developed and active if there is a partnership agreement with roles and responsibilities to implement project activities including, N2Africa technologies and with focus on at least one of the projects main areas of support, capacity building, input supply, market linkages and technology dissemination. Partnership support activities take into account, country specific legume crop species, specific geographic and climatic areas in which activities are being

undertaken and the characteristics of the farming targeted population (e.g. age, gender, literacy level). How legume crops fit into common farming systems (e.g. major crops, such as cereals) and other project objectives, such as gender and nutrition, are also incorporated into partnership activities. This is achieved by linking to existing interventions implemented by partners and or by engaging specialist partners. Project targets for partnership development are, at least four partnerships per country for the core countries and two per country for the Tier 1 countries by the end of the fourth year. In 2015, the N2Africa country teams have formed partnerships along the segments of the various value chains. Major partnerships are those with agricultural research institutes, universities, local governments, private input suppliers, legume buyers, processors, and other development partners. The number of partnership agreements that have been formalised increased from 22 in 2014 to 81 in 2015. An additional 16 partnerships are awaiting signature by various partners, although they have already started implementing some activities together with N2Africa.

The projects M&E approach for assessing the strengths of its PPPs is to look at the outcomes of partnership activities. The treatments and project interventions implemented through project partnerships provide farmers with improved technologies, improved input supply, access to markets, and research led capacity building, which can be linked to an expected change of behaviour. The expected behaviour change related to project intervention activities outlined in the project's Theory of Change (Figure 9). Evaluation of the project's partnership building and development through its PPP strategy is key to the final impact assessment of the project's interventions. Assessment of project intervention impact is a complex and contentious area, widely contested in the development sector. Tulder, et al. (2015) emphasizes the need for evidence-based impact assessment in cross-sector partnerships and out-lines the complexity and challenges such impact assessments present. Runde, (2013) suggests that although implementing a partnership-based approach many development systems are still designed for an earlier era and measuring impact and managing risk within partnerships continues to be challenging. Shared risk is one of the key benefits of a PPP strategy but risk management can be a delicate and complex task when multiple partners are involved. To aid such an evidence-based impact evaluation of project PPPs clear assessment indicators should be outlined at project level, country level and PPP level. The project Theory of Change outlines these indicators at project level and targets for PPP development per country and the number of farmers reached by partnership activities at both country and PPP level have been set. Further indicators should be developed to assess PPP performance based on the quality and quantity of support activities and outcomes, including value for money, utilisation of available resources and partnership longevity. Assessment of the duration of partnership agreements and cost-benefit analysis of partnership activities are important in determining the effectiveness and efficiency of partnerships at reaching project targets, achieving the expected change of behaviour over time and ensuring value for money.

It was identified in the N2Africa Annual Report 2015, that problems with monitoring and evaluation (M&E) and delayed reporting of partner activities by partners, needed to be addressed, for example; '*Extreme delays in data submissions by partners in Ethiopia. The availability of collected data from partners for immediate analysis and learning has become more difficult to obtain in time. Frequent complaints have emanated from partners on the detail of the data tools and their requirements in compiling information. Researchers and dissemination partners are overstretched in undertaking duties in their institutions'.* In a study of six cross-sector partnerships in Southern Africa, Rein (2008) found that the absence of partner M&E processes made the effectiveness of the partnerships difficult to assess. A delay in the signing of partnership agreements due to poor understanding of the proposed agreement by some partners in DR Congo and Uganda was also identified in the N2Africa Annual Report 2015. Ferroni (2011) states that, partners in successful PPPs repeatedly emphasize the vital importance of clear and detailed contracts.....Contracts must, amongst other matters, unambiguously determine the division of tasks, and the distribution and use of any commercial rights emerging in connection with the project.....Exclusivity, commercial exploitation and confidentiality are common hurdles....A formal Memorandum of Understanding (MoU) between parties can be very helpful in setting the framework for negotiations.

Research objectives

The overall purpose of this PPP study is to gain insight into the results and progress made related to the building and development of PPPs in the eleven N2Africa countries.

Methodology

Compilation of the PPP Matrix

The compilation of a centralised database, further referred to as the 'PPP Matrix' was achieved through the evaluation of partnership agreement documentation and the extraction and collation of partnership data. The analysis of the data captured by the PPP Matrix and the subsequent results were documented to compare the PPP-approaches that are being implemented across all of the N2Africa countries and to highlight the strengths, challenges and opportunities of N2Africa's PPP strategy. The PPP Matrix was compiled using partnership data from across all of the five Core countries and the six Tier I countries. Data was extracted and collated from partnership agreements to establish individual PPPs, individual PPPs were allocated a unique identification number for clarity. Signed partnership agreements include a work plan, which links to the projects results framework activities (N2Africa M&E and Data Management Master Plan) and a budget for implementing activities.

The PPP Matrix captured data in the following categories;

- N2Africa operational country
- Name(s) of N2Africa Lead partner(s)
- Contact details of Lead partner(s) technical and administrative personnel
- Name(s) of other collaborating or supporting partner(s)
- Type of organization of the Lead partner(s)
- Partnership agreement type, duration, signature dates and amendments
- Monetary value of partnership, contributions made by Lead partners and N2Africa (2014-2018)
- Geographical locations of partnership activities
- Main areas of partnership support
- Number of farmers reached through partnership activities
- Yearly targets for the number of farmers reached through partnership activities

N2Africa Lead partners are partners who are actively leading project activities and are signatories of partnership agreements. Other collaborating or supporting partners refers to all other organisations participating in the partnership's activities whether actively or passively as mentioned in the partnership work plan. The different types of partnership agreements are Cooperative-Collaboration agreements, *agreements made by consenting organisations to share resources to accomplish a mutual goal*. Sub-contract agreements, *agreements made between organisations where the sub-contracted organisation undertakes activities on the behalf of the other*. Grant agreements, *agreements made between organisations where money or something of value is transferred from one organisation to the other to accomplish a mutual goal*. Project support consultancy agreements, *agreements made between organisations where specific*

expertise is required to fulfil project activities and Material Transfer agreements, *agreements made where organisations agrees to the transfer of tangible research material for their individual research purposes*. Activities documented in the partnership work plans are categorised into four main areas of support, Capacity Building, Technology Dissemination, Input Supply and Market Linkages. The types of partner organisations are categorised into five groups covering both the public and private sectors, Governmental Organisations (GOs), Non-Governmental Organisations (NGOs), Research Institutions, Private Organisations and Farmer groups, cooperatives & unions. Although predominantly Research Institutions are governmental they are categorised as a separate group.

The initial input was carried out using ODK software. However, this was identified as being difficult to double check data entries. Therefore, data was uploaded into excel and finalisation of the PPP Matrix was carried out using excel.
Data analysis was undertaken using excel and appropriate charts and tables were formulated. Missing data was identified and the limitations of the PPP Matrix assessed.
Data analysis was completed at both country, and project level and included the following categories;

- Number of PPPs
- Partnership agreement types
- Duration of partnership agreements
- Partnership organisations
- Partnership provision of main areas of support
- Geographical locations of partnership activities
- Number of farmers reached, targets and actual
- Monetary value of partnership, total and per farmer reached

Country-wide Monitoring and Evaluation (M&E) data 2014-2016 was used for total numbers of farmers reached through partnership activities as individual data within partnership documents was inconsistent and difficult to extract.

For the five Core countries additional research into the other collaborating or supporting partner organisations through organisation websites and internet searches was completed. This enabled further profiling of the partners involved within the PPPs per country and gave an overview of the strengths and opportunities for developing existing PPPs and building new ones.

Results

Number of PPPs

In total, there are 81 formalised and documented PPPs currently under agreement across all eleven N2Africa countries. The total number of PPPs per country is variable, with the highest numbers in Nigeria. Zimbabwe has no formalised and documented PPPs under agreement. All countries have already achieved the project targets for Phase II partnership development with the exception of Zimbabwe. The average number of partners involved per PPP in Ethiopia is noticeably higher than in all other countries, an average of 13 Lead, collaborating and supporting partners per PPP. The documentation of PPPs in Ethiopia was more complete and detailed than other countries therefore this difference could be due in part to a lack of detailed documentation of other collaborating and supporting partners for other countries (Table 1).

Table 1. Phase II targets for PPP development, total number of developed and documented PPPs and average number of Lead, collaborating & supporting partners per PPP per country in 2016.

Country	Number of PPPs (Phase II Target)	Total number of PPPs	Av. Number of partners per PPP
DR Congo	2	6	1
Ethiopia	4	8	13
Ghana	4	11	1
Kenya	2	2	3
Malawi	2	2	2
Mozambique	2	2	1
Nigeria	4	19	3
Rwanda	2	4	1
Tanzania	4	14	2
Uganda	4	13	4
Zimbabwe	2	0	0
Total	**32**	**81**	**3**

Partnership agreement types

The partnership agreement types per country are most diverse in Tanzania, where they are utilising four of the five types of partnership agreement (Figure 1). The most commonly used agreement types across all countries are Cooperative-Collaboration agreements and Sub-Contract agreements. No Material Transfer agreements have been made in any of the current PPPs.

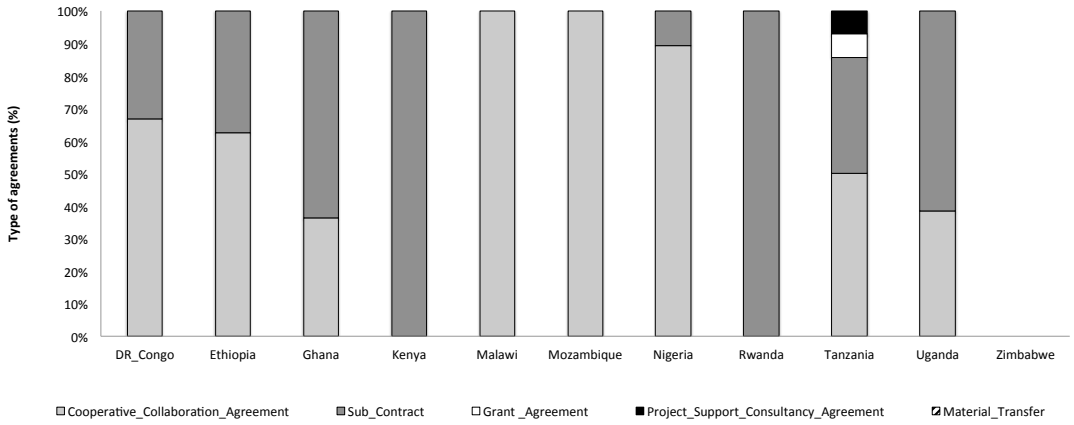


Figure 1. Percentages of partnership agreement types within countries.

Duration of the partnership agreements

The average duration of the signed partnership agreements with the Lead partners per country ranged from 1.5 years (Malawi) to 2.5 years (Ghana and Kenya) (Figure 2). Out of the 81 signed partnership agreements 37% have been amended or extended since their implementation and 50% are currently out of signed duration.

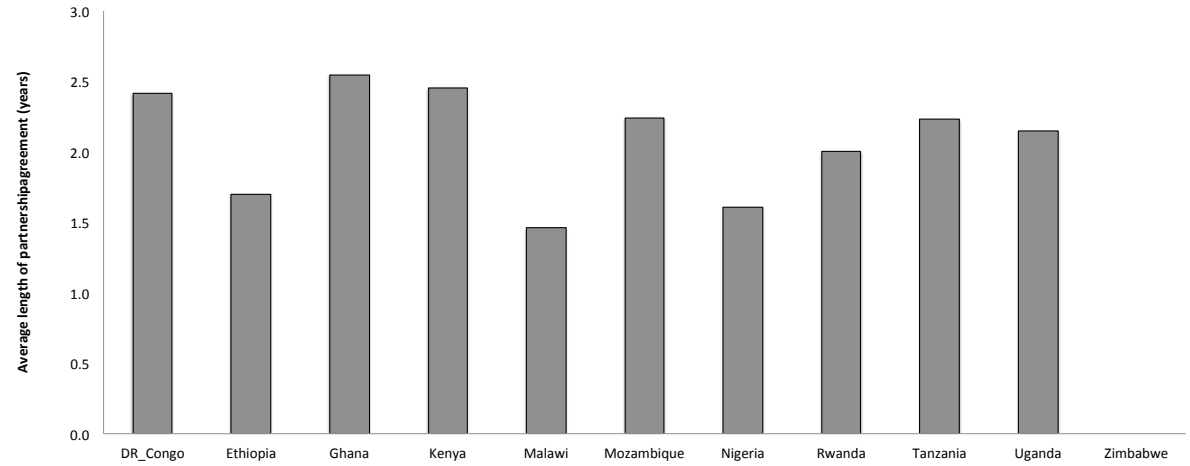


Figure 2 Average length of signed partnership agreement with Lead PPP partner per country.

Partnership provision of main areas of support

The four main areas of support, Capacity Building, Technology Dissemination, Input Supply and Market Linkages are covered by PPPs within most countries with the exceptions of DR Congo, Kenya and Mozambique (Figure 3).

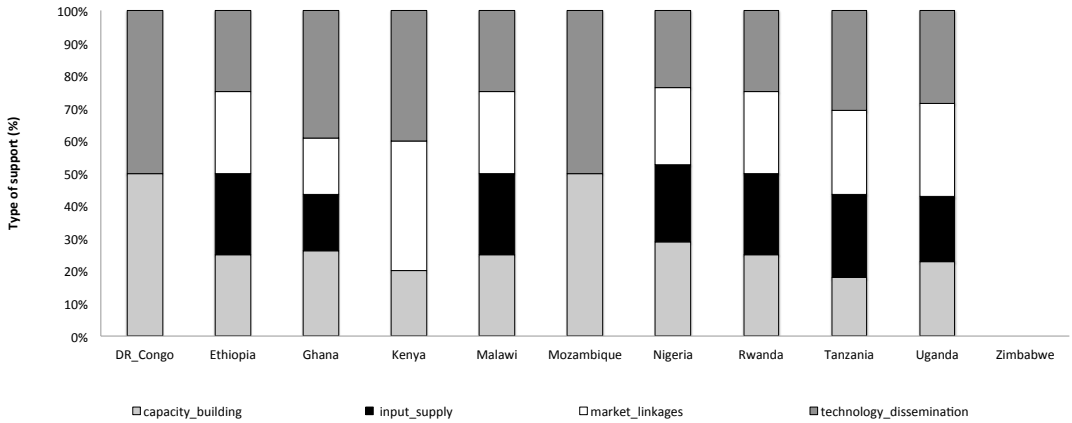


Figure 3. Percentage of PPPs providing main support types per country

In DR Congo and Mozambique, Input supply and Market linkages are not covered by any of the current documented PPPs and in Kenya the current PPPs do not cover Input supply. In Ethiopia, Malawi and Rwanda 100% of documented PPPs are combining all four main areas of support. All of Dr Congo and Mozambique's PPPs focus on capacity building and technology dissemination (Table 2).

Table 2. Combinations of main areas of support per country. (x indicates one PPP but multiple support areas are covered).

	Number of main areas of support combined				PPP coverage of main areas of support			
	1	2	3	4	Capacity building	Input supply	Market linkages	Technology dissemination
DR Congo								
Number of PPPs	0	3	0	0	xxx			xxx
% of total PPPs	0	50	0	0				
Ethiopia								
Number of PPPs	0	0	0	8	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
% of total PPPs	0	0	0	100				
Ghana								
Number of PPPs	7	0	0	4	xxxxxx	xxxx	xxxx	xxxxxxxx
% of total PPPs	64	0	0	36				
Kenya								
Number of PPPs	0	1	1	0	x		xx	xx
% of total PPPs	0	50	50	0				
Malawi								
Number of PPPs	0	0	0	2	xx	xx	xx	xx
% of total PPPs	0	0	0	100				
Mozambique								
Number of PPPs	2	0	0	0	xx			xx
% of total PPPs	100	0	0	0				
Nigeria								
Number of PPPs	2	3	0	14	xxxxxxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
% of total PPPs	10	16	0	74				
Rwanda								
Number of PPPs	0	0	0	4	xxxx	xxxx	xxxx	xxxx
% of total PPPs	0	0	0	100				
Tanzania								
Number of PPPs	2	4	3	5	xxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxxxx
% of total PPPs	14	29	21	36				
Uganda								
Number of PPPs	2	2	3	5	xxxxxxxx	xxxxxxx	xxxxxxxxx	xxxxxxxxx
% of total PPPs	15	15	23	38				

Organisations within PPPs

The PPP Matrix captures organisation data for the Lead partners, (Appendix I), but it does not capture organisational data for other collaborating and supporting partners. The analysis of types of partner organisations, Governmental Organisations (GOs), Non-Governmental Organisations (NGOs), Research Institutions, Private Organisations and Farmer groups, cooperatives & unions revealed that predominantly NGOs have the

major stake, Private Organisations and Research Institutions have a minor stake, GOs have a minimal stake and the Farmer groups, cooperatives & unions have no stake as PPP Lead partners. Results showed that Ethiopia, Ghana, Nigeria and Tanzania had the most diversity within the types of organisations of the PPP Lead partners per country and DR Congo, Kenya, Mozambique and Rwanda solely being led by NGOs. (Figure 4).

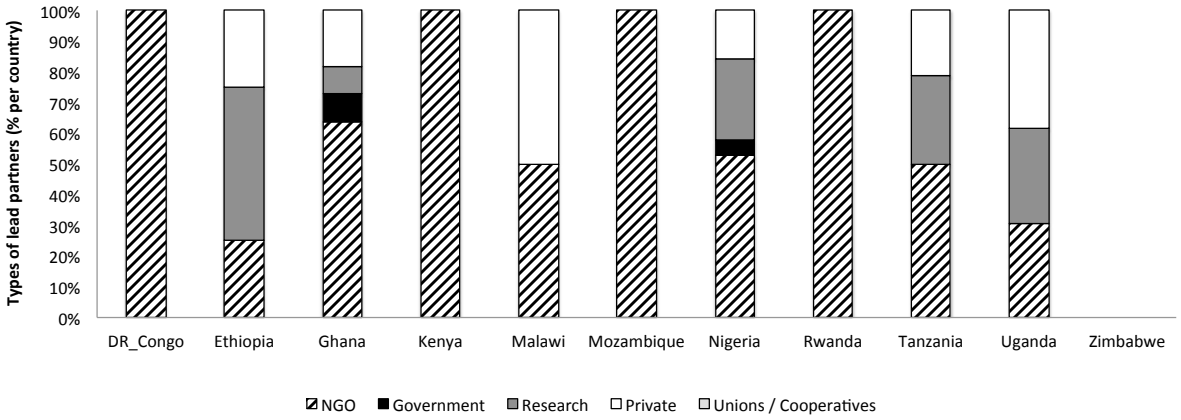
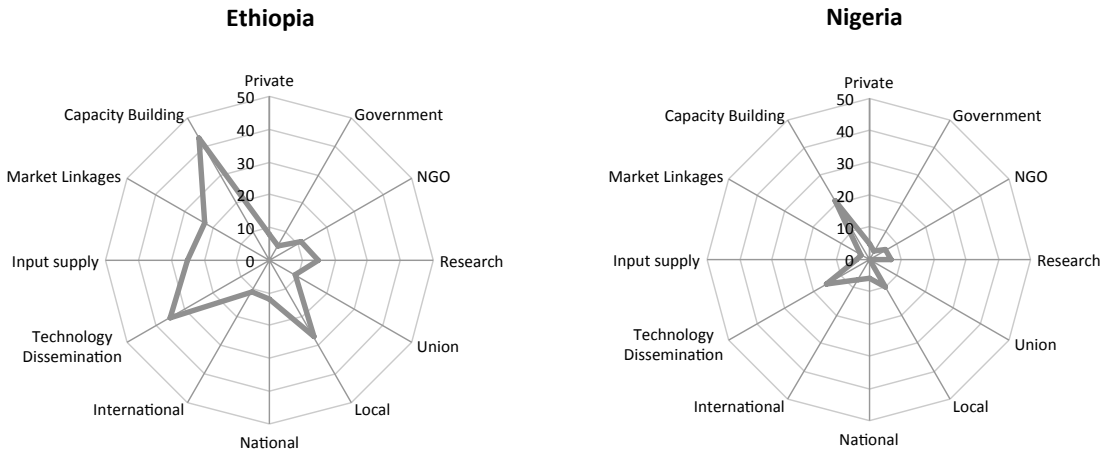


Figure 4. Percentage of different organisation types of PPP Lead partners per country.

The additional research into the other documented collaborating or supporting partner organisations through organisation websites and internet searches for the five Core countries enabled further profiling of the partners involved within the PPPs per country (Appendix II). Figure 5 illustrates an overview of these partner profiles per country.



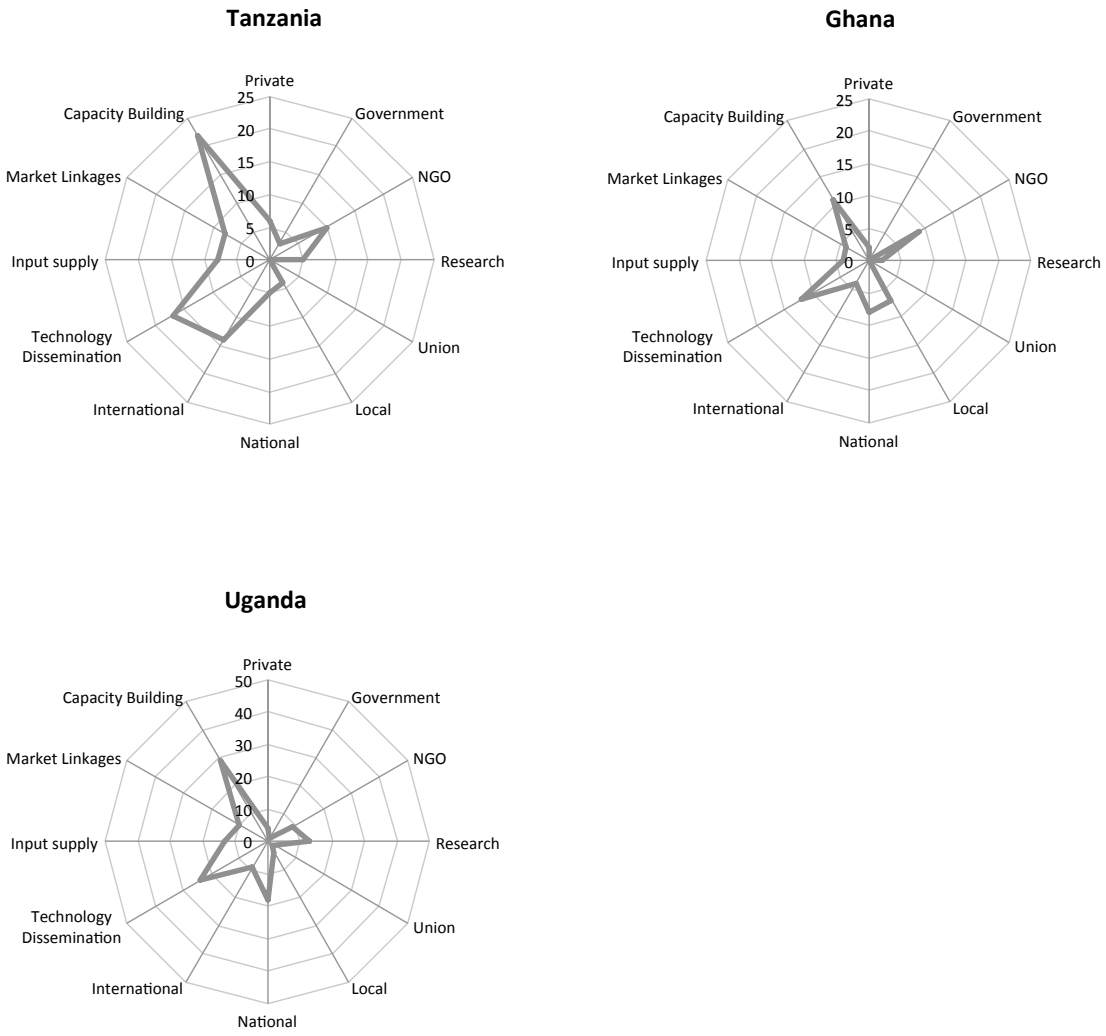


Figure 5. Overview of the other collaborating or supporting partner organisations profiles compiled per country, for the five core countries. Values indicate the number of partner organisations per country within each category, multiple categories for the four main support areas have been selected for applicable partner organisations.

The partner profile overviews demonstrate the opportunities for further engagement with partner organisations at local level, specifically with Farmer groups, cooperatives and unions within Nigeria, Tanzania, Ghana and Uganda. In all core countries capacity development and technology dissemination support areas are strong, whereas input supply and market linkages have opportunities for further development.

Number of farmers reached

Country-wide Monitoring and Evaluation (M&E) data 2014-2016 was used for total numbers of farmers reached through partnership activities as individual data within partnership documents was inconsistent and difficult to extract.

The number of farmers reached through partnership activities by the N2Africa project in 2014, 2015 and 2016 (Table 3) demonstrates that; between 2014 and 2015 there was an increase in the number of farmers reached per country in all but four countries, DR Congo, Kenya, Malawi and Rwanda. Between 2015 and 2016 the number of farmers reached showed an increase in Malawi and Rwanda, a decrease in Nigeria and Zimbabwe, and a continued decrease in DR Congo and Kenya (Table 3).

Table 3. Number of farmers reached through partnership activates in 2014, 2015 and 2016, including N2Africa Phase II targets and % of Phase II targets reached to date per country.

	Number of Farmers reached					
Country	**2014**	**2015**	**2016**	**Total**	**Phase II Targets**	**% Target achieved**
DR Congo	9,226	8,953	4,794	22,973	25,000	92%
Ethiopia	4,008	18,992		23,000	65,000	35%
Ghana	10,556	22,650	25,209	58,415	105,000	56%
Kenya	32,603	18,875	4,960	56,438	25,000	226%
Malawi	9,211	5,362	6,474	21,047	25,000	84%
Mozambique	1,139	2,970		4,109	25,000	16%
Nigeria	16,132	33,670	29,485	79,287	105,000	76%
Rwanda	5,000	3,752	7,746	16,498	25,000	66%
Tanzania	2,394	24,259	26,113	52,766	65,000	81%
Uganda	2,547	10,344		12,891	65,000	20%
Zimbabwe	5,000	7,000	6,500	18,500	25,000	74%
Total	97,816	156,827	111,281	**365,924**	**555,000**	**66%**

All countries have achieved more than 50% of their Phase II targets for the numbers of farmers reached with the exception of Ethiopia, Mozambique and Uganda. Kenya has well exceeded its Phase II targets with an achievement of 226% to date and despite having only two PPPs under agreement. (Table 3).

Kenya also shows the highest number of farmers reached by partnership activities per PPP, 9,438 farmers per PPP in 2015, but this reduced to 2,480 in 2016 (Figure 6). An average of 2,252 farmers were reached across all countries per PPP in 2015, which decreased to an average of 2,023 farmers reached per PPP in 2016. A further 189,076 farmers need to be reached in total to achieve the Phase II target of 555,000 farmers.

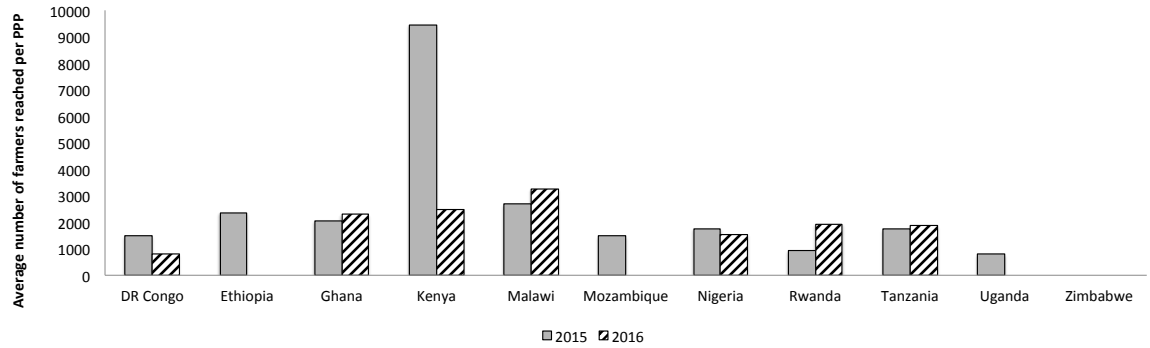


Figure 6. Average number of farmers reached by partnership activities per PPP in 2015 and 2016, per country.

Monetary value of partnerships

Although monetary contributions (USD) are captured to some extent by the PPP Matrix, the partnership agreements and budget data is not sufficient to analyse and compare the monetary values of partnerships.

Geographical locations of partnership activities

The PPP Matrix for all countries did not capture geographical data for partnership activities consistently, however Ethiopia's documentation did capture partnership activities at a local level and geographical overlap can be observed (Table 4).

Table 4. Geographical overlap between PPP partner activities in Ethiopia, cities and woredas highlighted in the same colour illustrate overlap between PPPs. PPP number ETH-PPP001 showed no overlap with any other PPP.

Geographical overlap between PPP partner activities						
ETH-PPP004	ETH-PPP005	ETH-PPP006	ETH-PPP008	ETH-PPP002	ETH-PPP007	ETH-PPP003
Boricha	Boricha			Bako Tibe	Bako Tibe	
Damote Gale	Damote Gale		Damot Gale	Chewaka	Chewaqa	
Halaba		Halaba		Dano	Dano	
Jimma		Jimma		Gobu Sayo	Gobu Sayo	
Kersa		Kersa		Ilu Galan	Ilu Gelan	
Shalla		Shalla			Agarfa	Agarfa
Sodo Zuria		Sodo Zuria	Soddo Zuria		Ginar	Ginir
Tiro Afeta		Tiro Afeta			Goba	Goba
Ziway		Ziway			Sinana	Sinana

Discussion

The results of this report demonstrate that the PPP Matrix does not capture the full extent of N2Africa's PPP strategies relating to the building and development of partnerships and their subsequent results across the eleven N2Africa countries. Thus although this study gives a good indication into the current status of the projects PPPs it does not provide the full picture.

Strengths, challenges and opportunities

To enable assessment of the strengths of a PPP the quality and quantity of support activities and outcomes, including value for money, utilisation of available resources and partnership longevity should be addressed. This study demonstrates that from a quantitative perspective overall the PPPs that have been developed within the N2Africa project show strength, partners are engaging in activities and project targets are being achieved. All countries have embraced the PPP strategy with the exception of Zimbabwe and achieved the project targets for PPP development. Opportunities for improving PPP documentation are presented, with 50% of partnership agreements up for renewal in 2017 and new partnerships being developed. Opportunities for the use of additional agreement types could also be developed to document the engagement of other collaborating and supporting partners, which would involve and connect key actors at local level. An example of how this could work is highlighted in the 2016 project work plan activities agreement with Anno Agro Industry Plc. in Ethiopia (Figure 7). Capturing and formalising these 'Last mile' partnership agreements would strengthen the projects PPP strategy and potentially lead to the sustainability and longevity of such partnerships beyond the project timeframe.

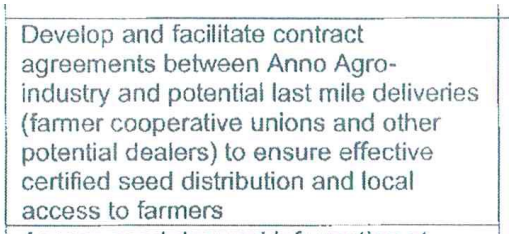

Develop and facilitate contract agreements between Anno Agro-industry and potential last mile deliveries (farmer cooperative unions and other potential dealers) to ensure effective certified seed distribution and local access to farmers

Figure 7. Project work plan activities agreement with Anno Agro Industry Plc. in Ethiopia

It is unclear from the results of this study whether there is more benefit to a PPP focusing on one targeted support area and engaging with other partners to expand the reach of support provided or for a PPP to work with other partners to extend the areas of support provided, the quality of support provision is not included, further research into this is required to establish the quality and value of N2Africa's PPPs.

The value for money of a PPP is difficult to assess, attributing monetary values to contributions can be a contentious issue when contributions are in the form of resources or personnel hours. This makes it hard to estimate the full cost of such

partnerships yet cost-benefit analysis remains a key method in analysing the usefulness of creating and maintaining such partnerships. The data available for partner and N2Africa contributions as a monetary value is incomplete and not captured by the PPP Matrix. Further research and collection of monetary value data is required to ensure that the value for money of PPPs can be assessed.

Although geographical location data of partner activities was incomplete and not fully captured by the PPP Matrix, this study demonstrates that overlap between partner activities is occurring. Mapping of the Lead partners in Nigeria and Tanzania (Appendix III) demonstrates how the future mapping of PPPs could be carried out. If the PPP Matrix could be linked to the mapping system the geographical support areas could be captured per PPP and the PPP Matrix would show which partners are operational within that geographical area as part of the individual PPPs. The PPP Matrix would also identify, which areas of support are covered by the individual PPP partners and overlap could be identified. Where overlap is identified further collaboration between PPP partners could be established to ensure utilisation of available resources is maximised. Data for individual partners specific activities and contributions to the areas of support would need to be captured by the PPP Matrix to identify overlap at activity level however.

Key findings

The creation of the PPP Matrix is a good start to strengthening the documentation of project PPPs but further strengthening of data collection and management for PPPs is required to build upon this. The project has 81 PPPs currently under agreement of which 37% of agreements have been amended or extended since their implementation and 50% are currently out of signed duration. Most Countries have already achieved the project targets for PPP development with the exception of Zimbabwe. The average duration of the signed partnership agreements with the Lead partners per country ranged from 1.5 years to 2.5 years and partnership agreement types per country are most diverse in Tanzania. PPPs cover all main areas of support in all countries with the exception of DR Congo, Kenya and Mozambique. Most of the current PPP Lead partners are NGOs. All countries have achieved more than 50% of their Phase II targets for the numbers of farmers reached, a further 189,076 farmers need to be reached in total to achieve the Phase II target of 555,000 farmers.

Lessons learned

Extracting and collating the data from the agreements, work plans and budgets was challenging. Information was inconsistent and incomplete in many cases. Where multiple agreements are in place within PPPs it was difficult to differentiate amendments and duplications. Cross-checking data across all the available documents was also difficult. By adding a unique ID to each PPP within the PPP Matrix hopefully

this issue can be over-come in the future. Although the creation of the PPP Matrix is a good start further strengthening of data collection and management for PPPs is required. This would enable cost-benefit analysis to be carried out which would assist partners to assess financial risk and constraints and provide valuable information for final project impact assessment.

Recommendations

i. Improve PPP documentation and build upon the PPP Matrix.
ii. Review-Revise-Renew partnership agreements, work plans and budgets.
iii. Further research into individual PPPs approaches and implementation strategies.
iv. Cross-check all country specific documentation to ensure standardisation of data and a thorough understanding of country specific and partnership specific strategies.
v. Build upon partnership profiles for core countries and compile partnership profiles for Tier I countries to extend the data captured by the PPP Matrix (Appendix II).
vi. Additional data that could be captured to build upon the PPP Matrix could include;
    a. Country specific legume crop species
    b. Specific geographic and climatic areas in which activities are being undertaken
    c. Characteristics of the farming targeted population (e.g. age, gender, literacy level)
    d. How legume crops fit into common farming systems (e.g. major crops, such as cereals)
    e. Other project objectives, such as gender and nutrition
    f. Monetary values of partnership, contributions of N2Africa and partners.
vii. Develop PPPs to incorporate partners that create linkages between 'Last mile' partners and farmers; such as those being developed with Anno Agro Industry Plc. in Ethiopia.
viii. Add new targets related to individual PPP level, Country level and project level for assessment of partner activities and outcomes.
ix. Cost-Benefit analysis of monetary values of partnerships, to include also details of partnership activities to gauge value for money.
x. Further qualitative research and utilisation of case study opportunities

Report II

N2Africa
Quick Survey study

Report II - Quick Survey study

Abstract

Now in the third year of the second phase of the project, the N2Africa Monitoring and Evaluation (M&E) team is working on the Mid-term project review with the objective of gaining insight into the progress of the project. Evaluation of project intervention impact is a complex and contentious area, widely contested in the development sector, yet it remains a fundamental area in proving the relative success of a project. Although the data from the Baseline and Early Impact surveys can be utilised to some degree for impact assessment, the variation between questions and countries, makes direct comparison of the results difficult. Therefore, additional evaluation tools need to be considered and implemented to bridge the gaps and provide supporting evidence for final impact assessment. This study evaluates the Quick Survey and Computer Aided Telephone Interview technology (CATI) approaches for supportive impact evaluation data collection. The main aim of the Quick Survey approach is to assess whether change can be observed in farmers participating in the N2Africa project compared to non-participating farmers and whether any change observed can be related to the Outcomes and Impact indicators of the project Theory of Change (ToC). The Quick Survey was implemented as a Pilot study in Nigeria and Tanzania using the CATI approach.

Key findings
Initial Pre-Pilot test results in Nigeria are promising. Differences were observed between N2Africa farmers and non-N2Africa farmers. Data can be directly compared to Baseline and Early impact survey data in some cases and other data can be used to support results. The Quick Survey approach has potential to provide good results and the CATI approach is a valuable tool in this type of survey data collection.
Lessons learned
A thorough understanding of the project is required to facilitate the formulation of relevant and relatable survey questions. It is worthwhile spending time and effort to formulate questions and input from the project team is vital to gain different perspectives and feedback on the formulation of questions. The Quick Survey and CATI approaches demonstrated valuable potential for this type of survey data collection.
Recommendations
Full analysis of survey results should be carried out once available so that more concrete evidence can be established into the effectiveness of the Quick Survey and CATI approaches in obtaining sufficient measurement of the projects Outcomes and Impact indicators.

Keywords
N2Africa, farmers, farming, legumes, crops, Cowpea, Groundnut, Soya bean, impact assessment, survey, Baseline study, household.

Introduction

In the first phase of N2Africa, Monitoring and Evaluation (M&E) activities were aimed at facilitating learning within the project through feedback loops. Experiences from dissemination activities were monitored and assessed and findings fed back into research as well as planning for next season dissemination activities. One of the characteristics outlined for the second phase M&E system, based upon the lessons learned from Phase I was to create more diverse 'feedback' targeting various audiences including farmers and to explore the use of Information and Communication Technologies (ICT) in data collection (Ampadu-Boakye et al 2016). The M&E and Data Management Master Plan consists of four clusters; 1) Project M&E, 2) Learning M&E, 3) Impact Assessment and 4) Database and Data Management. Cluster 3, mainly deals with the assessment of changes affected by the project through its interventions. The four clusters are linked to the project results framework, which outlines the activities and outputs to be undertaken to create the desired outcomes of the project. Through the project Theory of Change (ToC) (Figure 9) these outcomes are linked to the project's Impact indicators and thus project impact assessment.
Now in the third year of the second phase of the project, the N2Africa M&E team is working on the Mid-term project review with the objective of gaining insight into the progress of the project. Part of this mid-term review is to evaluate the project Outcomes and Impact indicators with regard to project impact evaluation. Project impact evaluation was previously been carried out in the Early Impact study in 2013 and along with Baseline survey data can be used as guidance for further project impact evaluation studies, however the data resulting from both the Baseline surveys and Early Impact surveys has its pitfalls.

N2Africa Baseline and Early Impact surveys

The Baseline survey in Nigeria was conducted among 781 households in Kaduna and Kano State in 2011 (Franke et al. 2011). The Baseline survey in Tanzania was first carried out among 398 households in the northern zone in September 2013. In March/ April 2014, a second survey was carried out among in total 800 households in the northern, central, southern and southern highland zones. Note that due to oversampling in the northern zone, the means at country level are biased. The two surveys slightly differed. In general, the first survey contained fewer questions (Stadler et al. 2015). The aim of the Early Impact study was to see whether the farmers who had received a demonstration package continued to use, or expanded the use of the N2Africa technology. The interviews for the Early Impact study in Nigeria were held from February to July in 2013. Tanzania was introduced as a core country in Phase II of the project and was not part of the Early Impact study. Recall methodology was used for the Early Impact study where farmers were asked questions on how they cultivated legumes four years ago, and how they currently cultivated legumes.

The surveys undertaken for the Baseline study varied between countries, making direct comparison of the resulting data difficult. The Baseline studies were undertaken prior to the compilation of the project ToC and Results Framework and therefore the questions are very broad and do not directly relate to the Outcomes and Impact indicators. Farmers interviewed in the Baseline survey were a random sample within

the target areas, whereas farmers interviewed for the Early Impact survey were intentionally selected as a sample of farmers who had participated in the N2Africa project. Consequently, farmers who participated in the N2Africa project had a different background in legume cultivation than the random sample surveyed in the Baseline. Therefore, farmers in the Baseline survey cannot serve as counterfactuals for the farmers in the Early Impact survey and the results cannot be extrapolated to the wider population (Stadler et al. 2016).

Mid-term review and the Quick survey approach

As part of the mid-term review process, a Quick Survey approach has been developed with the aim to capture an overview of legume farming activities and farming households within N2Africa operational areas of both participating and non-participating farmers. This approach has the potential to bridge the gap of the missing counterfactuals and contribute to the end of project impact assessment methodology.
Evaluation of project intervention impact is a complex and contentious area, widely contested in the development sector, yet it remains a fundamental area in proving the relative success of a project and is often linked to securing project funding for future activities. As with the N2Africa project, baseline data is often missing or difficult to draw comparisons with and time and budget restraints often confine evaluation activities further. Based on the lessons learned from the N2Africa Baseline and Early Impact studies aspects of Bamberger's 'Shoestring' approach (Bamberger, 2004) can be utilised to gauge the opportunities for addressing the projects impact assessment challenges.

The development of the Quick Survey approach incorporates ways in which such constraints can be worked with by trying to establish a control group and provide the missing links to the selected Outcomes and Impact indicators. The Quick Survey study was implemented as a Pilot in Tanzania and Nigeria and based on successful results of the Pilot similar exercises may be carried out in other N2Africa countries for a "Bigger Picture" perspective. If the Quick Survey approach is successful in obtaining basic quantitative data relating observed change to the Outcomes and Impact indicators of the project ToC it can be combined with comparable data from the Baseline and Early Impact surveys and qualitative data, such as case-studies to create an overall triangulation approach for the end of project impact assessment.
Objectives

The main objective of the Quick Survey approach is to assess whether change can be observed in farmers participating in the N2Africa project compared to non-participating farmers and whether any change observed can be related to the Outcomes and Impact indicators of the project ToC. The secondary objective is to observe how the Quick survey and CATI approaches perform and whether they are suitable tools for impact evaluation data collection.

Methodology

The Quick survey approach

The development of the Quick Survey approach incorporates ways in which the project's impact assessment challenges and constraints can be worked with. It is based upon rapid evaluation data collection and analysis techniques such as those defined by Bamberger's six step Shoestring approach (Bamberger, 2004) (Figure 8).

The aim of the Quick survey study is not to undertake project evaluation at this stage however but to evaluate the Quick survey and CATI approaches as tools for collecting project evaluation data. Therefore steps one, two, three and four of Bamberger's six-step approach are most applicable to the Quick survey study. The evaluation of these steps identified opportunities that could be utilised in the development of the Quick survey approach, including;

Step 1,
B – Defining the program theory model

The project Theory of Change (ToC) model is key to enable project impact evaluation and assessment. The N2Africa ToC model (Figure 9) has been developed and is presented in the M&E and Data management master plan. Through the selection of relevant Outcomes and Impact indicators the main areas in which to focus time and effort for evaluation activities can be identified. The relevant indicators for this study are those relating directly to expected change within farmer legume production and household characteristics.

Step 2,
B - Modify sample

The use of available telephone numbers limits the sampling pool but designing the survey with multiple choice answers limits variation in the responses creating the opportunity to gauge effect using smaller treatment groups.

C – Rationalise data needs

By selecting questions, which can be directly linked to the outcome and impact indicators unnecessary data collection is achieved. Using multiple-choice questions also limit respondents answers and limit variation within data.

D – Economical data collection methods

Using the CATI approach and limiting the survey to 10-15 questions reduces the cost of survey implementation, compared to 'in-person' field surveys, which are time consuming and costly.

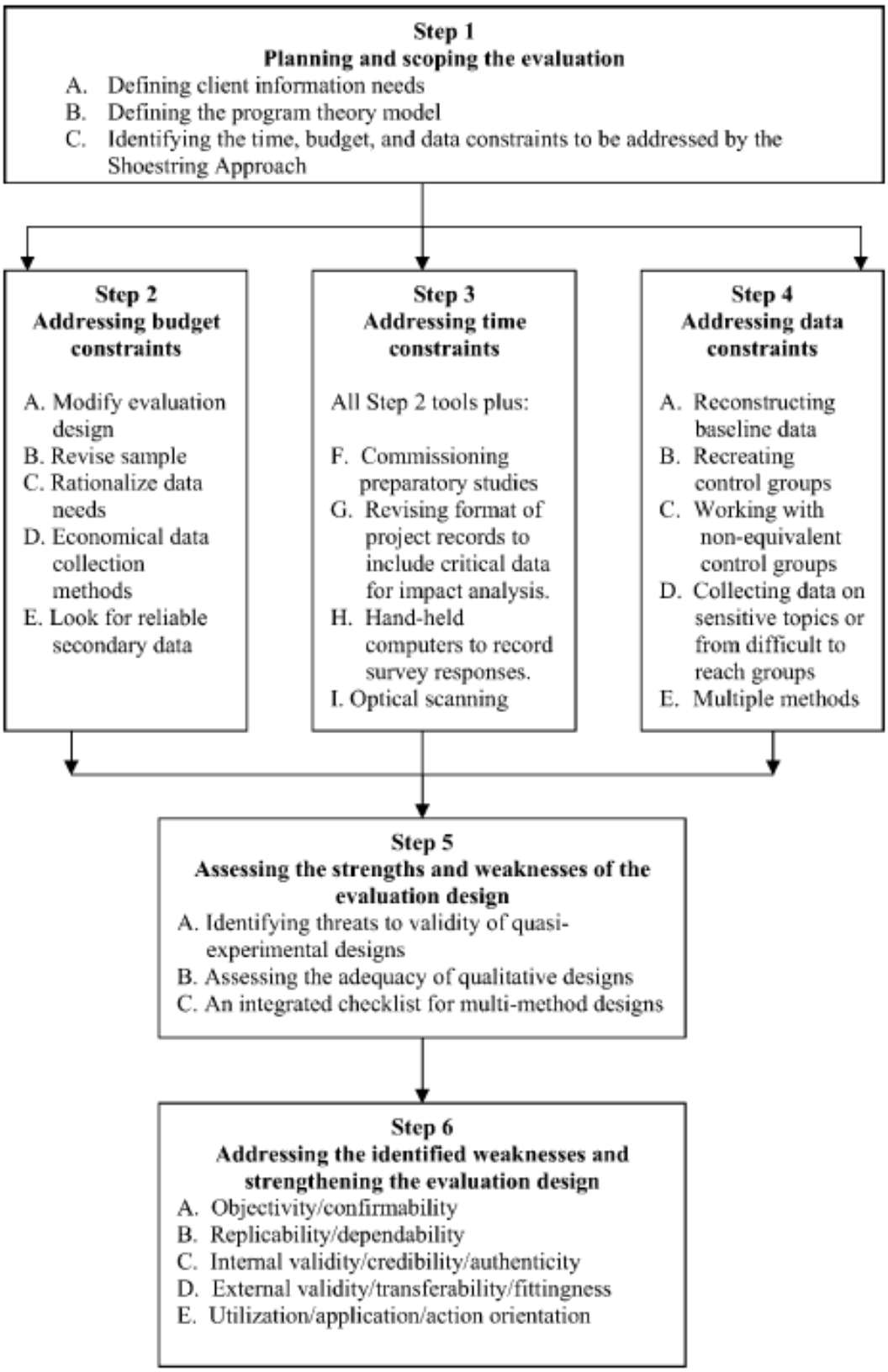


Figure 8. The Shoestring Evaluation approach (Bamberger, 2004).

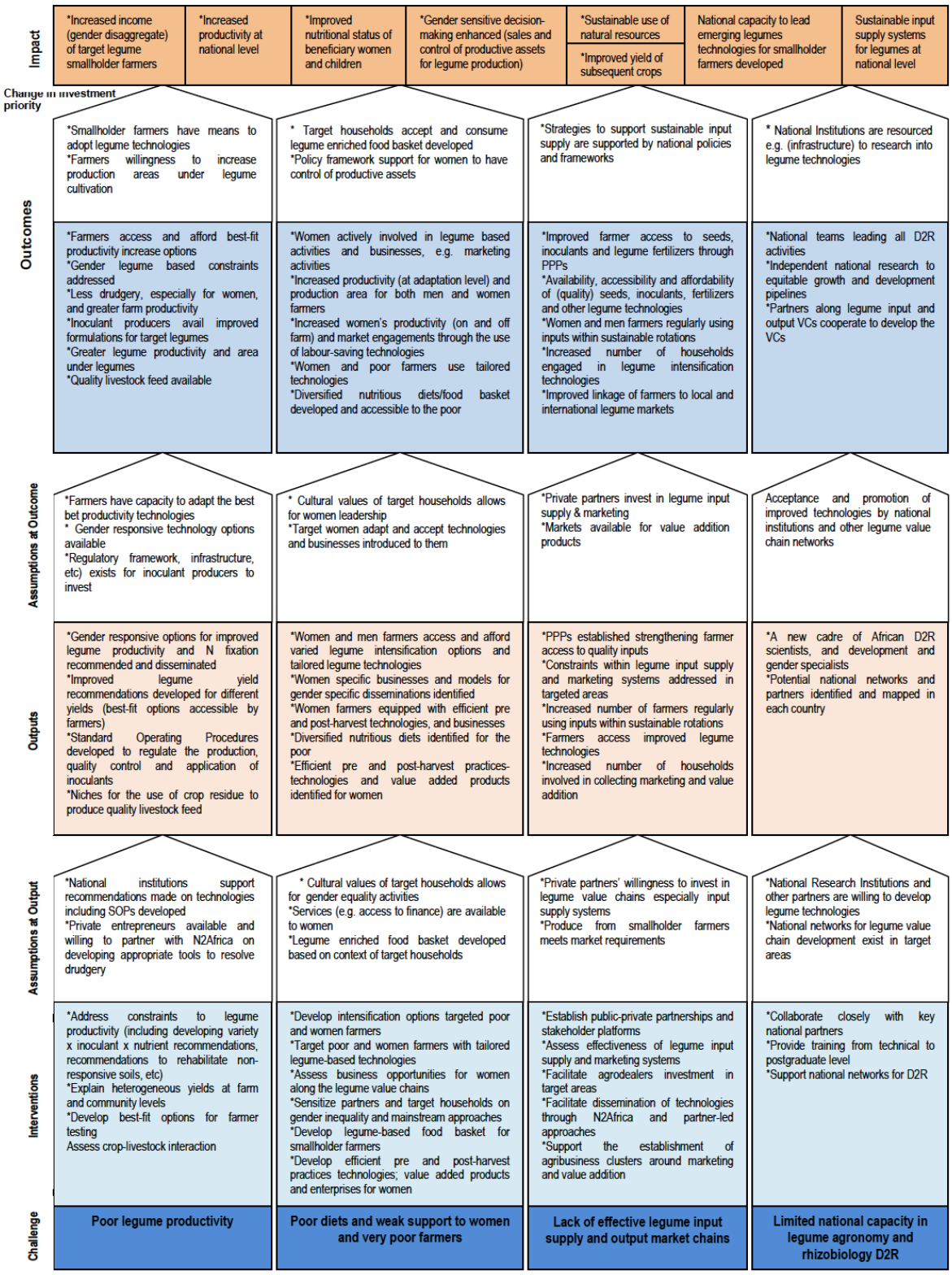


Figure 9. N2Africa project Theory of Change (ToC) model.

Step 3,
H – Hand-held computer to record survey responses

The use of ODK software for survey programming and data collection enables the use of tablets for implementing the survey. This also enables data to be downloaded and analysed quickly and accurately.

Step 4,
A – Reconstructing baseline data

Recall methods were used in the Early impact study to try to re-establish baseline data, by relating the Quick survey questions back to the Early impact survey where possible this can be utilised.

B – Recreating control groups

The utilisation of partner telephone databases of non-N2Africa farmers located within N2Africa operational areas allows for the construction of an 'internal' control group.

C – Working with non-equivalent control groups

The selection of farmers to be used in the control group through the telephone databases creates a non-equivalent control group. By incorporating questions into the Quick survey relating to specific household characteristics, such as number of household members, education level and household income it can be possible to strengthen the analytical value of the available control group.

Formulation and implementation of the Quick survey approach

Identification of the opportunities available for rapid evaluation data collection and analysis methods that could be incorporated into the Quick survey study led to the final development of a twelve stage survey formulation and implementation process.

The twelve stages of the Quick survey approach

Stage 1. Identification and selection of applicable Outcomes and Impact Indicators from the project ToC.

The project ToC was reviewed to identify the relevant Outcomes and Impact indicators to be selected and how these could be linked to the Quick Survey questions. The applicable indicators for this study are those relating to expected change within farmer legume production activities and household characteristics. Table 4, shows the Outcomes and Impact indicators selected.

Table 4. Selected Outcomes (highlighted in orange) and Impact indicators (highlighted in pink) from the project ToC.

IMPACT Indicators
Increased income (gender disagregate) of target legume smallholder farmers
Increased productivity at national level
Improved nutritional status of beneficiary women and children
Gender sensitive decision-making enhanced (sales and control of productive assets for legume production)
Sustainable use of natural resources
Improved yield of subsequent crops
National capacity to lead emerging legumes technologies for smallholder farmers developed
Sustainable input supply systems for legumes at national level
Outcomes
Farmers access and afford best-fit productivity increase options
Gender legume based constraints addressed
Less drudgery, especially for women and greater farm productivity
Inoculant producers avail improved formulations for target legumes
Greater legume productivity and area under legumes
Quality livestock feed avaliable
Women actively involved in legume based activities and businesses eg. Marketing activities
Increased productivity (at adaption level) and production area for both men and women farmers
Increased womens productivity (on and off farm) and market engagements through the use of labour-saving technologies
Women and poor farmers use tailored technologies
Diversified nutritious diets/food basket developed and accessible to the poor
Improved farmer access to seeds, inoculants and legume fertilisers through PPPs
Avaliability, accessibility and affordability of (quality) seeds, inculants, fertilisers and other legume technologies
Improved linkage of farmers to local and international legume markets
National teams leading all D2R activities
Independent national research to equitable growth and development pipeleines
Partners along legume input and output VCs cooperate to develop the VCs

Stage 2. Evaluation of previous Baseline and Early impact studies.

Analysis of the Baseline and Early impact survey questions was carried out to determine how these relate to the selected Outcomes and Impact indicators and how comparable questions can be formulated in the Quick survey.

Stage 3. Formulation and development of Quick survey questions.

Comparable questions from the Baseline and Early impact surveys, such as, what species of legumes are farmed? and total number of people living in household, were carried forward into the Quick Survey (Appendix IV). Additional questions were compiled to address gaps and form links to the selected Outcomes and Impact indicators (Figure 10). The Quick Survey questions are split into two sections, Section A are questions relating to legume production activities and Section B are questions relating to farmer household dynamics.

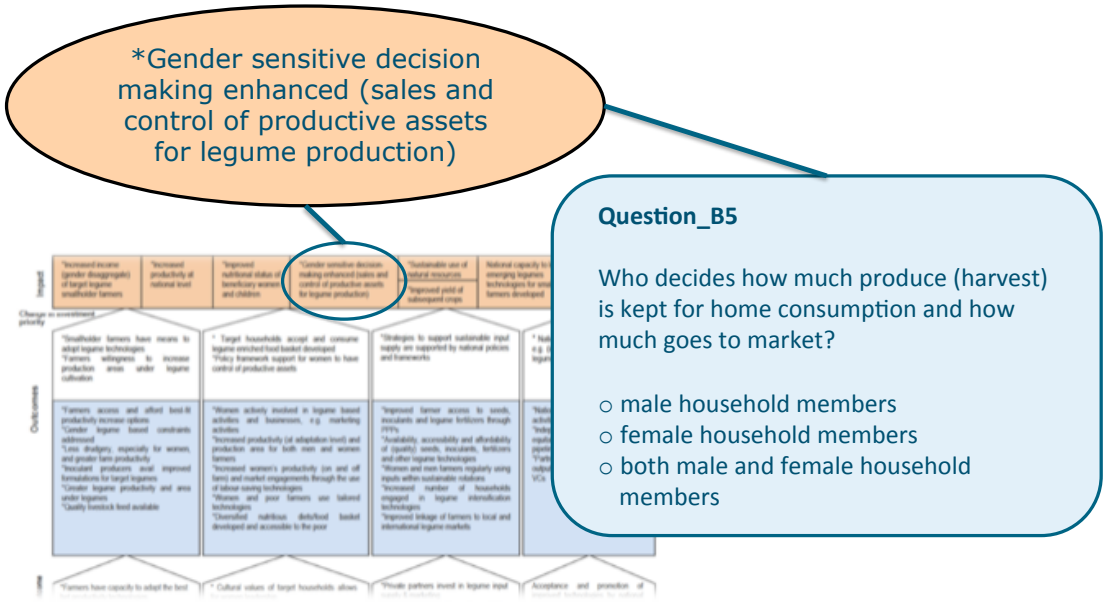


Figure 10. An example of how the selected Impact indicators from the project ToC are linked to the Quick survey questions.

Stage 4. Identification and selection of comparative sampling groups.

Two N2Africa Core Countries were chosen to partake in the Quick Survey study, Nigeria in West Africa and Tanzania in East Africa. Telephone number databases were collated and analysed to identify N2Africa farmers for treatment groups and non-N2Africa farmers for control groups, within comparable N2Africa operational communities. Telephone numbers for the treatment groups were compiled from N2Africa and AGRA databases of farmers who participated in demo and focal adaption trials. Control group farmer telephone numbers were compiled from databases provided by Cellcore and Notore in Nigeria and Farm Radio International (FRI) in Tanzania.

Stage 5. Programming of Quick survey using ODK software.

The Quick survey was programmed using Microsoft Excel and ODK software so that electronic data collection could be utilised through mobile devices and tablets.

Stage 6. Utilisation of the Computer Aided Telephone Interview (CATI) approach.

The Quick Survey was conducted using CATI technology to observe how this method performs and whether it is a suitable tool for this type of survey data collection. The CATI approach uses ODK Collect software to upload the survey to a mobile device or tablet where the respondent's answers can be entered directly. Once completed the survey answers can be uploaded to ODK Aggregate online and exported directly into Microsoft excel for analysis.
This approach is one of the ICT tools proposed for M&E data collection in the M&E and Data Management Master Plan (Figure 11).

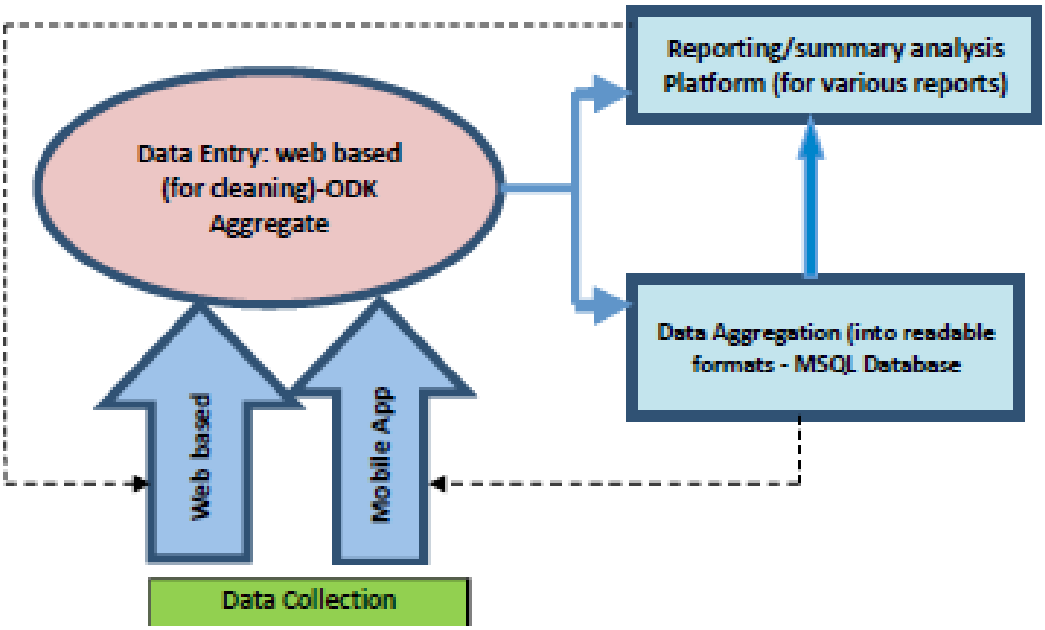


Figure 11. Sketch of ICT tool for data collection, analysis and feedback (M&E and Data Management Master Plan 2016).

Stage 7. Pre-Pilot testing of the Quick survey in Nigeria.

Once programmed in to ODK the Quick Survey was tested in Nigeria, to identify any issues with the Quick survey questions or programming. The test sample telephone numbers were selected from the telephone databases at random. A total sample of 40 farmers were selected, 20 N2Africa telephone numbers and 20 non-N2Africa telephone numbers.

Stage 8. Analysis of Pre-Pilot test results.

The resulting data from the Pre-Pilot testing was analysed using Microsoft Excel to assess any initial trends.

Stage 9. Further improvement and development of the Quick survey based on Pre-Pilot test results.

Improvements to the formatting of the survey were proposed and the survey was amended to facilitate easier implementation and data entry.

Stage 10. Implementation of the Quick survey Pilot in Nigeria and Tanzania.

This stage was not reached in the time frame of this study.

Stage 11. Analysis of Pilot test results.

Results are not yet available for analysis.

Stage 12. Evaluation of the Quick survey approach, reporting of results and formulate recommendations.

Although the full Pilot of the Quick survey is still underway, this report evaluates the Quick survey approach and presents the results and observations made from the Pre-Pilot testing in Nigeria.

Data analysis

Basic data analysis was carried out using Microsoft Excel to identify trends within the survey data.

Mean Effect size calculations were undertaken using the T-statistic (Equation 1) to estimate adequate sample sizes in the development of the sampling strategy.

Calculating Mean Effect size using the T statistic and non-centrality parameter

Total group size = Ntotal = N1 + N0
Proportion of subjects in Group 1 = q1 = N1 / Ntotal
Proportion of subjects in Group 0 = q0 = 1 - q1
Degrees of freedom = DoF = Ntotal - 2
The standard T value (with DoF degrees of freedom) corresponding to $\alpha = T\alpha$
$k = \sqrt{1/N1 + 1/N0} =$
Non-centrality parameter = δ
$E/S = k * \delta$

Equation 1. Calculating Mean Effect size using the T statistic and non-centrality parameter (Hulley et al. 2013 and Chow et al. 2008).

For example, to look at differences in crop yield, measured in bags per ha.

Scenario 1: The standard deviation of yield per ha is 10 bags. It is required to be able to detect a difference in yield of 5 bags per ha and to be able to detect a difference that is significant at the 5% level at least 80% of the time. To achieve this a sample of 60 people in each of the two sampling groups, a total sample of 120 people is required.

Scenario 2: Same as Scenario 1, but standard deviation of yield per ha is 20 bags. Now 250 people in each sampling group, a total sample of 500 people is required. This is because a larger standard deviation means there is more noise in the outcomes, so you need a bigger sample to reliably distinguish the noise from real impact.

Results and Discussion

Sampling strategy

Analysis of the telephone databases identified that sampling within N2Africa operational areas was not possible at community level and would need to be carried out at a higher geographical area level to provide a large enough sample size. For Tanzania this was identified to be possible in two districts both treatment and control groups could be sampled in Lushoto and Moshi. For Nigeria a larger geographical area had to be looked at and three districts in Kano state with similar climatic, geographical and population profiles were selected, Bagwai and Gwarzo for the treatment group and Bichi for the control group (Table 5).

Table 5. Number of available telephone numbers per district, for N2Africa and non-N2Africa farmers in Nigeria and Tanzania.

	Number of telephone numbers available	
	N2Africa Farmers	non-N2Africa farmers
Tanzania		
Lushoto	146	98
Moshi	90	138
Total	236	236
Nigeria		
Bichi		169
Bagwai	122	
Gwarzo	119	
Total	241	169

Mean Effect size is dependent upon the amount of variation within data, where data has high variation large sample groups are required. Variation within the Baseline survey and Early Impact survey data was high in order to limit the data variation and allow for smaller sampling groups, yet still be able to detect significant effects most questions in the Quick Survey were formulated to be multiple-choice questions.

Quick survey results

Unfortunately due to the time constraints of Internship reporting full Pilot survey results were not available for analysis prior to completion of this report. However initial analysis of the Pre-Pilot survey testing in Nigeria was completed and the results follow.

Pre-Pilot Quick survey testing in Nigeria

General information

A total of seventeen interviews were completed. Interviews took on average fifteen minutes to complete. 41% of respondents were N2Africa farmers, 59% were non-N2Africa farmers and 100% of respondents were male.

Section A - Legume Production

100% of respondents farmed legumes. All respondents farmed a combination of cowpea and or groundnut and or soya bean (Figure 12).

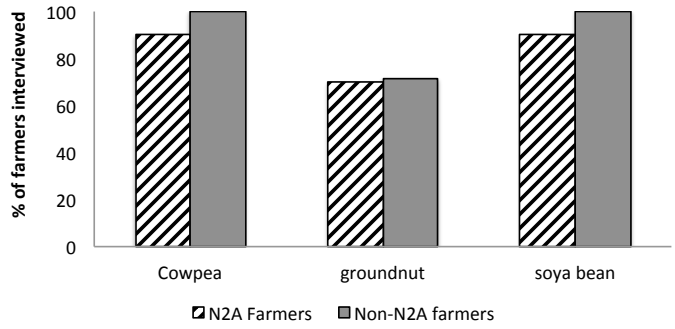


Figure 12. Percentage of respondents farming different species of legumes.

Soya bean was the most common crop farmed as a mono-crop, which was more often the case for non-N2Africa farmers (Figure 13).

29% of N2Africa farmers farm legumes as their main crop (most prominent crop farmed, covering largest farm area) and 40% of non-N2Africa farmers farm legumes as their main crop. 57% of all farmers farm maize as their main crop and 14% of N2Africa farmers and 43% of non-N2Africa farmer farm rice as their main crop. 14% of N2Africa farmers farm vegetables as their main crop.

86% of N2Africa farmers and 89% of non-N2Africa farmers farming cowpea farm over 1ha of cowpea. Average cowpea yields were 2257kg per $Farm^{-1}$ and 2490kg per $Farm^{-1}$ for N2Africa farmers and non-N2Africa farmers consecutively.

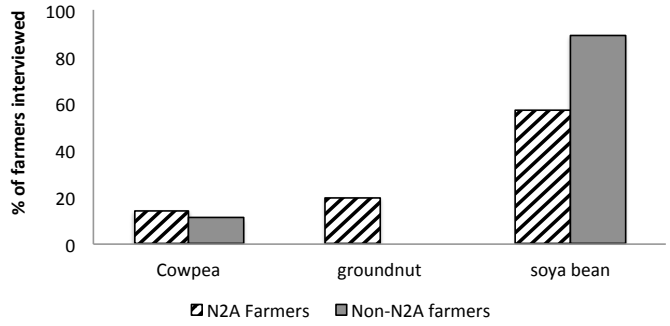


Figure 13. Percentage of respondents farming legume species as a mono-crop.

80% of N2Africa farmers and 71% of non-N2Africa farmers farming groundnut farm over 1ha of groundnut. Average groundnut yields were 1286kg per Farm^{-1} and 1433kg per Farm^{-1} for N2Africa farmers and non-N2Africa farmers consecutively.

86% of N2Africa farmers and 67% of non-N2Africa farmers farming soya bean farm over 1ha of soya bean. Average soya bean yields were 1829kg per Farm^{-1} and 1720kg per Farm^{-1} for N2Africa farmers and non-N2Africa farmers consecutively.

100% of N2Africa farmers and 90% of non-N2Africa farmers stated that they had changed the way in which they farm their legumes in the last five years. This change was most often in cowpea and soya bean production for N2Africa farmers and for soya bean for non-N2Africa farmers (Figure 14) and most often allocated to an increase in yield by all farmers (Figure 15).

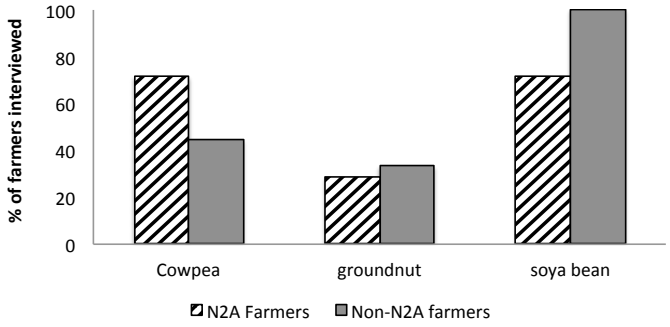


Figure 14. Percentage of farmers stating that they have implemented change in their legume farming activities or observed change in yields, per species.

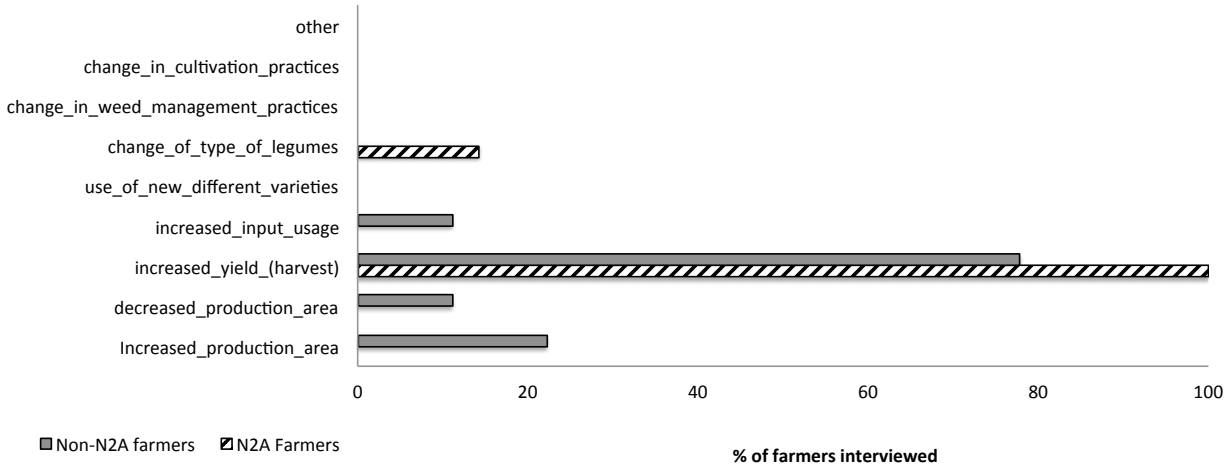


Figure 15. Percentage of farming stating different types of change to the way in which they farm legumes.

100% of N2Africa farmers and 90% of non-N2Africa farmers used fertiliser on their legumes in the last season. NPK and Urea were the most commonly used fertilisers by all farmers (Figure 16). Fertiliser was used most often on soya bean by all farmers (Figure 17).

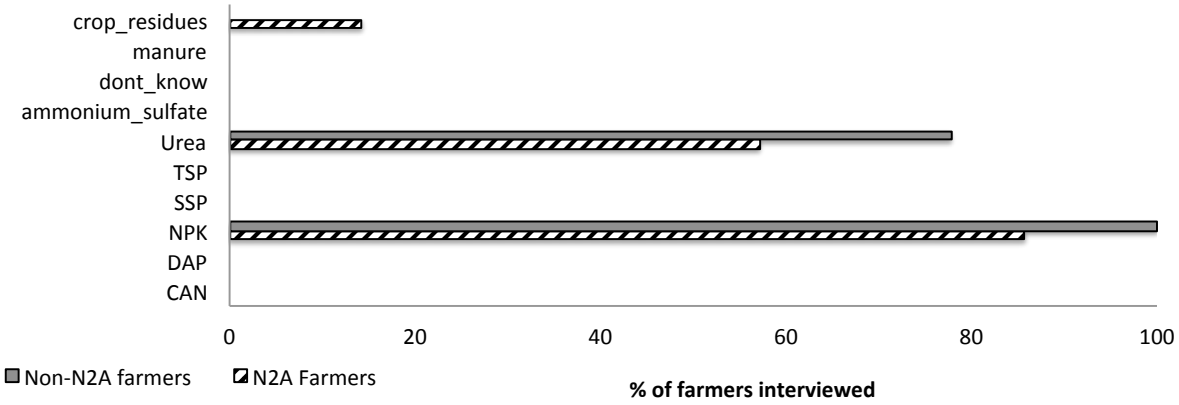


Figure 16. Percentage of farmers using different types of fertiliser on their legumes.

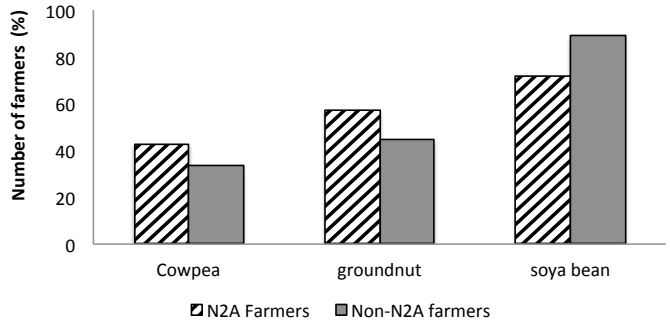


Figure 17. Percentage of farmers using fertiliser on their legumes per species.

100% of all farmers using fertiliser stated agro-input dealers as the source of their fertiliser. Fertiliser sources were stated to be between ten minutes (walking) to over 60 minutes from the farmer farm (Figure 18).

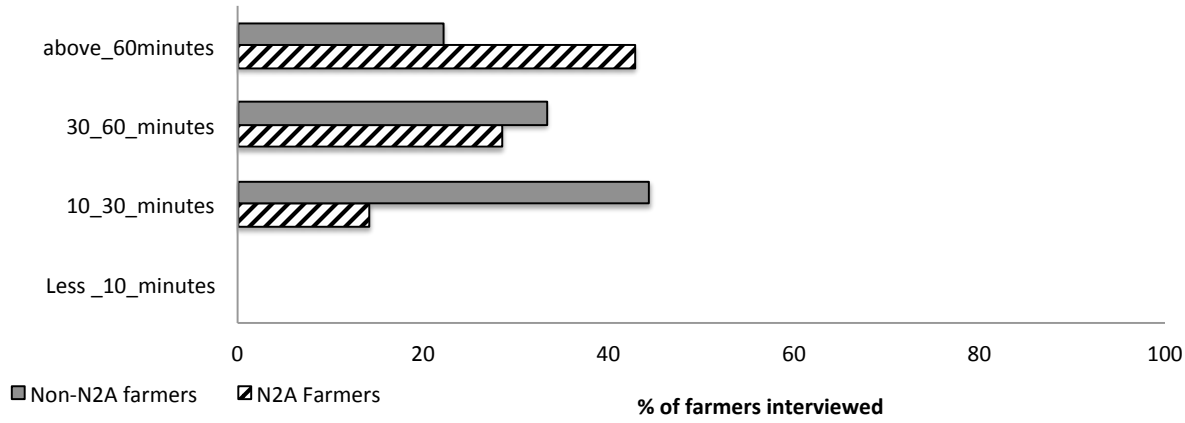


Figure 18. Percentage of farmers stating different walking distances (minutes) of fertiliser sources from their farm.

Agro-input dealers and own-harvest were stated as being the most common sources of seed by all farmers. Seed sources were stated to be between ten minutes (walking) to over 60 minutes from the farmer's farm, results demonstrate a very similar trend to that for fertiliser sources (Figure 18).

43% of N2Africa farmers stated that they used legume inoculants on their soya beans. 67% sourced the legume inoculant from agro-input dealers and the other 33% stated an 'other' (not specified) source all sources were stated to be 30-60 minutes (walking) from the farmers farm. None of the non-N2Africa farmers reported the use of legume inoculants on their legumes.

Only 29% of N2Africa farmers stated they had received training or assistance in legume farming in the last five years, 50% in Agronomic practices and 50% in Access to inputs, 50% from Union / farmer coop and 50% from an 'other' (not specified) source. 10% of

non-N2Africa farmers stated they had received training or assistance in legume farming in the last five years, 100% in Agronomic practices, 100% from Union / farmer coop.

An overview of the legume production results (Appendix V) shows that notable differences between N2Africa farmers and non-N2Africa farmers were observed for legume production activities. N2Africa farmers stated the use of crop residues (14% of farmers) and inoculants (43% of farmers) whereas non-N2Africa farmers did not state there use. Soya bean grown as a mono-crop by non-N2Africa farmers (89% of farmers) is also higher than for N2Africa farmers (57% of farmers).

Section B - Farmer Household

On average household members was, thirteen for N2Africa farmers, an average of six males and six females and ten for non-N2africa farmers, an average of four males and six females.

Consumption of legumes was slightly higher for N2Africa farmers than non-N2Africa farmers (Figure 19) and legumes were consumed more times per week by N2Africa farmers than non-N2Africa farmers (Figure 20). 100% of N2Africa farmers and 90% of non-N2Africa farmers stated that the whole family eats legumes in their diet.

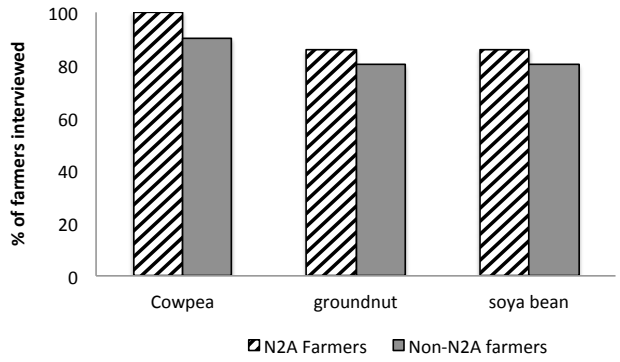


Figure 19. Percentage of farmers stating their household eats different species of legume.

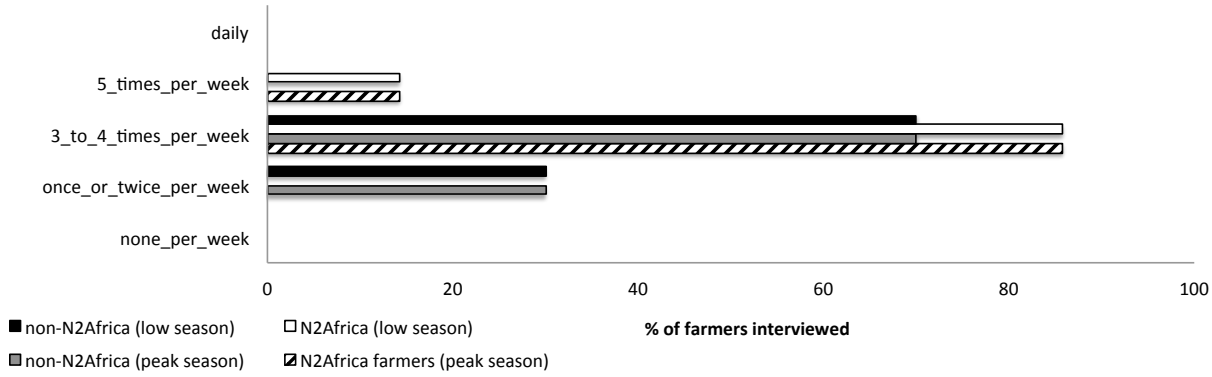


Figure 20. Percentage of farmers eating legumes and the number of times per week in the peak season and low season.

100% of all farmers stated that most or all of their household income comes from farming activities.

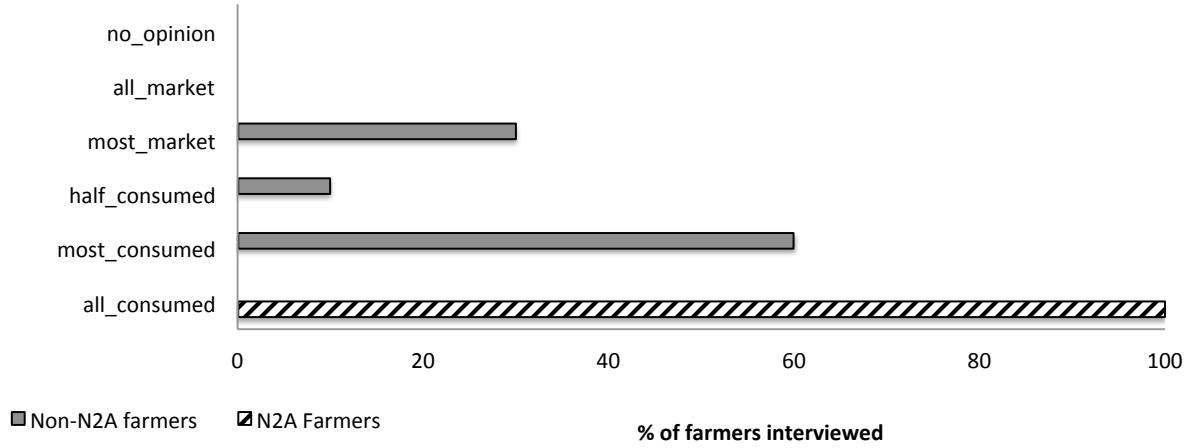


Figure 21. Percentage of farmers and their different harvest allocation decisions.

100% of N2Africa farmers stated that all of their harvest was consumed by the household, whereas all non-N2Africa farmers reported selling some of their harvest at the market (Figure 21). Although N2Africa farmers stated that all of their harvest is consumed it seems to be unlikely that a household would consume almost two tons of soya bean. 86% of N2Africa farmers and 100% of non-N2Africa farmers stated that the harvest allocation decisions were made solely by male household members.

All farmers interviewed stated that their household income had increased in the last 5 years. With 86% of N2Africa farmers and 100% of non-N2Africa farmers attributing this to a change in their farm production.

71% of N2Africa farmers and 100% of non-N2Africa farmers stated that all of the household income was brought in my male household members.

An overview of the farmer household characteristics results (Appendix VI) shows that notable differences between N2Africa farmers and non-N2Africa farmers were observed. Allocation of harvest showed that 100% of N2Africa farmers stated that all of their produced was allocated for home consumption whereas non-N2Africa farmers stated some of their produce was sold at market. The decision of the harvest allocation showed that in 14% of N2Africa households the decision was made by both male and female household members, whereas non-N2Africa farmers reported that the decision was made exclusively by male household members. Also the number of times per week legumes are eaten within N2Africa farmer households is higher in than non-N2Africa farmers.

Relationship with the Project Theory of Change

Results demonstrate that N2Africa farmers use inoculants whereas non-N2Africa farmers do not, and 67% of farmers using inoculants stating Agro-input dealers as the source. This relates to Outcomes, ***Improved farmer access to seeds, inoculants and legume fertilisers through PPPs and Availability, accessibility and affordability of (quality) seeds, inoculants, fertilisers and other legume technologies*** and Impact Indicator, ***Sustainable input supply systems for legumes at national level.*** A difference between N2Africa farmers and non-N2Africa farmers in gender decision making of the allocation of harvest, which relates to the Outcome, ***Women actively involved in legume based activities and businesses eg. Marketing activities and*** **Impact Indicator,** ***Gender sensitive decision-making enhanced (sales and control of productive assets for legume production)*** was also observed. Legume consumption was higher for N2Africa farmers than non-N2Africa farmers and legumes were consumed by the whole family for all of the N2Africa farmers surveyed, which links to the Impact Indicator, ***Improved nutritional status of beneficiary women and children.***

Comparison with Baseline and Early impact surveys

An overview of directly comparable data from the Baseline and Early Impact surveys (Appendix) suggest that there has been a notable increase in soya bean production and that farming soya bean as a mono-crop has also increased. Maize continues to be the main crop of around 60% of farmers interviewed. The source stated for inoculants is very interesting moving from 88% of farmers stating that the source was an NGO or project in the Early impact survey to 67% of N2Africa farmers stating it was sourced from Agro-input dealers. Soya bean household consumption also demonstrations an increase from 25% in the Baseline survey to over 80% of farmers interviewed in the Quick Survey testing. Other data from Baseline and Early Impact surveys although cannot be directly quantitatively compared can be used in support of final Quick survey results where questions are comparable. This will aid a triangulated approach for final project impact assessment.

Evaluation of the Quick Survey and CATI approaches

The development of the Quick Survey was limited to fifteen questions and much debate within the N2Africa team surrounded the selection and formatting of suitable questions. Relating questions back to the Project ToC was a complex task, the Outcomes and Impact indicators are very broad, covering all aspects of the projects interventions and thus formulating a simplistic line of questioning was taxing. From the initial responses collected during the survey testing in Nigeria the results suggest that it is worthwhile taking time to formulate the survey questions and with good questions simple data analysis can be carried out with relative ease. The strengths of the Quick Survey approach are that the questions can be formulated in a way as to provide an overview of legume farming activities and farming households within N2Africa operational areas of both participating and non-participating farmers without vast variation in data, so that smaller sampling groups can be used. Simple multiple choice questions also enable fast data entry of respondent's answers. The simplicity of the data collection is also a weakness of this approach however as it limits the responses of the farmers and could to some degree lead the farmer and create bias. As a basic tool for initial quantitative data collection, which can be supported by additional quantitative data and further more in depth qualitative data, the Quick Survey approach has shown good potential as a method for impact evaluation data collection.

The CATI approach worked well proving to be a suitable tool for this type of data collection and has potential to enable quick data collection and analysis.
The negative aspects of the CATI approach however are that it created a selection bias of farmers who own / have access to a mobile phone and whose telephone numbers were captured by the available databases. The available telephone numbers also limited the sampling strategy, to provide enough respondents for large enough sampling group's geographical locations had to be compromised. Input of respondent's answers to survey questions is also subject to bias and the accuracy and discretion of the telephone operator.

Conclusions

Although the results of the main Pilot surveys are not yet available the Pre-Pilot survey testing in Nigeria has shown some interesting data and enabled good insight into the Quick Survey and CATI approach. Sample sizes were too limited however to draw any concrete conclusions but his can be built upon once final survey results are fully analysed.

Key findings

Initial Pre-Pilot test results are promising. Differences were observed between N2Africa farmers and non-N2Africa farmers. Data can be directly compared to Baseline and Early impact survey data in some cases. The Quick Survey approach has potential to provide good results. The CATI system approach is a valuable tool in this type of survey data collection but the potential for selection bias must be taken into account.

Lessons learned

A thorough understanding of the project is required to facilitate the formulation of relevant and relatable survey questions. It is well worth spending time and effort to formulate questions and input from the project team is vital to gain different perspectives and feedback on the formulation of questions.

Recommendations

Full analysis of Pilot survey results should be carried out once available so that more concrete evidence can be established into the effectiveness of the Quick Survey and CATI system approaches in obtaining sufficient measurement of the projects Outcomes and Impact indicators.

Report III

Reflection Paper

Report III - Reflection Paper

Introduction

This report reflects upon my internship experience working on the N2Africa project at Wageningen University, including how the experience has aided my personal development, enabled me to achieve personal development goals and to identify further goals for my future development.

Reflection is an important aspect of learning, to build upon experiences and to alter behaviour in order to improve our future actions. As a guide to aid the reflection process I use the six steps of the Gibbs Reflective Cycle (Fig. 22).

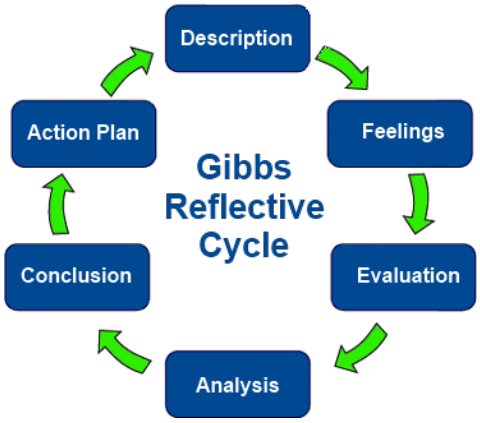


Figure 22. Gibbs Reflective Cycle (Gibbs, 1988).

Learning Goals

The following personal development goals were outlined to be achieved during my MSc Internship;

- Improve data collection and analysis skills
- Improve data presentation skills
- Improve independent and collaborative working skills

Aim of Internship

The purpose of my MSc Internship was to review various aspects of the N2Africa project including;

- The progress of Public-Private Partnership (PPP) development.

- The development and assessment of survey tools for assessment of project impact and outcome indicators.
- Evaluation of Partner learning.

The review process included the compilation of three reports, which would be included in the project's Annual Reporting for 2016.

Reflection of tasks

Compiling the PPP Matrix, data analysis and writing of Report 1

Description

This task was to consolidate available partnership data from partnership agreements, work plans and budgets to formulate the PPP Matrix for all eleven N2Africa operational countries together with Lorraine Odhiambo at IITA. Once the PPP Matrix was formulated, my further tasks were to analyse the data and write the findings in the N2Africa Partnership Report 2016. Without thorough knowledge of the project and formulation of documentation, extrapolating data from the relevant documents proved to be quite challenging, information was unclear, inconsistent and duplicated in some cases. Close contact via Skype with Lorraine at IITA was invaluable at this stage. Initial input of data for the formulation of the PPP Matrix was undertaken using ODK software but this proved difficult to cross check entries. The decision was made to upload the entered data into excel and finalise the PPP Matrix in excel. Once the PPP Matrix had been finalised missing data was identified, data was analysed, research questions were addressed and the report was written.

Feelings

Initially this task was quite overwhelming and I was quite frustrated with my lack of understanding of the project documentation and systems. As my knowledge of the project grew things became clearer and my frustration subsided. Once the data was analysed and I started writing the report I felt a sense of achievement, although I was unable to answer all of the research questions I think the final report gives a good overview of the current status of the projects PPP development.

Evaluation

Getting frustrated with the task was demotivating but with the support of the N2Africa team both at Wageningen and IITA in Kenya I was able to get to grips with the project, their enthusiasm and knowledge of the project was invaluable.

Analysis

Coming in to a well established large project as an outsider is difficult and it takes time to gain insight into how things are setup and organised. In the case of such large

projects it would be helpful if the presentation of information were formatted to enable an inexperienced reader to gain better understanding of project activities. This can, however, also be an advantage as it allows for critical analysis of project systems and documentation.

Conclusion

Some of the missing data could have been found in alternative documentation or through communication with Country Coordinators but with the time constraints of this task this was not possible.

Action Plan

If I were to undertake such a task again I would spend longer gaining in-depth knowledge and understanding of the project, its systems and documentation prior to starting the evaluation process, this would lead to less frustration and demotivation.

Quick Survey formulation, data analysis and writing of Report 2

Description

This task was to develop and formulate a Quick Survey (10-15 questions) to measure the impact and outcomes of the project based on selected impact and outcome indicators of the Project Theory of Change. The proposal of a sampling method to select farmers in Tanzania and Nigeria to be surveyed and analysis of survey data. Assessment of the appropriateness of the Quick Survey and CATI approaches for impact evaluation data collection and finally to present the results in a written report to be included in the 2016 Annual Reporting. The development and formulation of the Quick Survey questions was a more complex and time-consuming task than anticipated. Gaining consensus on which questions to ask and how to formulate them gave rise to some impassioned discussion within the N2Africa team. Proposing a sampling method based on the availability of telephone numbers was difficult as there was little geographical overlap between the N2Africa telephone database and the non-N2Africa telephone database. Learning how to program the survey into ODK, finalising the survey, testing it and finally getting it out to the call centres in Nigeria and Tanzania also took much longer than expected. Final survey results were not available within the timeframe of my internship and could not be included in my final report.

Feelings

I am a doer by nature and like to get stuck into a task, therefore I was frustrated by the lengthy process and was very disappointed that I was unable to get final survey results back in time to analyse them and include the results in my report. The observations from the Pre-Pilot Quick Survey testing however are encouraging and I look forward to seeing the final results.

Evaluation

Despite the lack time to include the final survey results I was able to evaluate the Quick Survey and CATI system approach in my final report. Learning how to program the survey into ODK was a valuable experience and the support, input and feedback from the N2Africa team was key to the process.

Analysis

Although this task provided some valuable learning experiences, not having time to incorporate the final survey analysis and results in my report left me feeling that the task is not yet finished, which leaves me a sense of non-achievement.

Conclusion

If I had gained a more thorough understanding of the project and the objectives of the task prior to the endeavour of developing the Quick Survey I could have facilitated the discussions and gained consensus on which questions to ask and how to formulate them in a more timely manner with the N2Africa team.

Action Plan

If I were to undertake such a task again I would do so with a longer timeframe, to allow for thorough understanding of the project and allow plenty of time for the important steps involved in the formulation of questions and survey development. I think having a longer timeframe would have also reduced my frustration as I would not have felt so pressured and it would also have allowed time to incorporate the survey analysis and results in my final report.

Partner learning and mid-term evaluation review and writing of Report 3

Core country specific reports, written after the progress review workshops with partners by country coordinators and Coordination teams were not made available in time, and in light of the other tasks being more complex and time-consuming than expected the decision was made between myself and my supervisors to exclude this task from my internship.

Reflection of Learning Goals

Improve data collection and analysis skills

My objective with this learning goal was to gain knowledge and utilise tools to enable me to improve my data collection and analysis skills. Through the undertaking of the tasks of my internship I have improved my skills in extrapolating data from various sources and utilised various tools including ODK software to collect data. Analysis of the PPP Matrix data gave me opportunity to improve my analysis skills, however although I carried out some basic analysis of the test survey data I was unable to analyse the final

Quick Survey data and therefore this did not support the achievement of this learning goal.

Improve data presentation skills

My objective with this learning goal was to explore and utilise various ways in which to capture and present data. The development and evaluation of the PPP Matrix enabled me to assess whether this was an appropriate way to capture and present this type of data. By questioning the appropriateness of the PPP Matrix I was forced to think about different ways in which such data can be captured and presented to create a usable database. Analysing the PPP data and presenting it in appropriate charts and tables in my report also created a learning experience to achieve this goal.

Improve independent and collaborative working skills

My objective with this learning goal was to enable me to develop not just how I work independently or collaboratively but also to allow me to assess the different aspects of a task and identify which areas require independent or collaborative work. I have a tendency to be very independent and avoid asking for assistance therefore this for me is an important lesson to learn. To achieve the tasks of my internship I worked both independently and collaboratively with the N2Africa team members (PPS, Wageningen University and IITA Kenya). The support, knowledge and expertise of the N2Africa team was vital to the achievement of my tasks. Through creating an overview of my tasks I was able to identify which aspects of the tasks I could complete alone and which aspects I needed help with. I developed my independent working skills by planning and organising; creating a timeline for completing various aspects of my tasks; problem solving and understanding when to ask for help. I developed my collaborative working skills by, communicating my activities to both the PPS chair group and the N2Africa team during weekly meetings and through feedback and discussion of tasks, face-to-face, via Skype and email with my supervisors and the N2Africa team.

Summary

Overall I feel that my internship experience working on the N2Africa project at Wageningen University has aided my personal development and enabled me to achieve my learning goals. In addition, it has given me further insight into working in a research for development context and the complexity and challenges that arise from working on such a large-scale project. I will use my experience and the reflection of it to aid in the decision making process for my future career development beyond my MSc.

This reflection of my experience has led me to identify some additional personal development areas and outline some new personal development goals for the future.

Personal development Goals for the future

- To improve my patience during planning, organising and proposal processes of a task or project.

- Enable me to recognise that it is worthwhile to spend time formulating the 'right' questions so that good results can be achieved.
- Allow myself time to not understand things and improve my ability to question things I don't understand to gain further knowledge and understanding of systems and processes.

References

Ampadu-Boakye, T, Heerwaarden, van, T, Giller, K, Kanampiu, F and Stadler, M, 2016. M&E and Data Management Master Plan, www.N2Africa.org, 69 pp.

Bamberger, M, 2004. Shoestring evaluation: Designing impact evaluation under budget, time and data constraints. American Journal of Evaluation, Vol. 25, No. 1, 2004, pp. 5–37.

Barnier, M, 2003, Guidelines for Successful Public – Private Partnerships, http://europa.eu.int/comm/regional_policy/sources/docgener/guides/PPPguide.htm, 100 pp.

Chow S-C, Shao J, Wang H. Sample size calculations in clinical research. 2nd ed. Boca Raton: Chapman & Hall/CRC; 2008. Section 3.2.1, page 58.

Edward Baars and Minke Stadler, (2016), N2Africa Master plan – Dissemination, version 2.1, www.N2Africa.org,12 pp.

Ferroni, M., and Castle, P, (2011), PPPs and Sustainable Agricultural Development, *Sustainability, 3*, pp. 1064-1073; doi: 10.3390/su3071064.

Franke A.C. & J.J. de Wolf, 2011. N2Africa Baseline Report, Report N2Africa project, www.N2Africa.org, 127 pp.

Gibbs, G. (1988) Learning by Doing: A guide to teaching and learning methods. Oxford: Oxford Polytechnic Further Education Unit.

http://www.N2Africa.org

Hulley SB, Cummings SR, Browner WS, Grady D, Newman TB. Designing clinical research : an epidemiologic approach. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2013. Appendix 6A, page 73.

Minke Stadler, Greta van den Brand and Esther Ronner, 2016. N2Africa Early Impact Survey, Phase I, www.N2Africa.org, pp 61.

Minke Stadler, Tijmen Kerstens and Esther Ronner, 2016. N2Africa Baseline Report II: Ethiopia, Tanzania, Uganda, Report N2Africa project, www.N2Africa.org, 111 pp.

Rein, M. and Stott, L., (2008), Working Together: Critical Perspectives on Six Crooss-Sector Partnerships in Southern Africa, *Journal of Business Ethics, 90*, pp.79-89; doi: 10.1007/s10551-008-9915-9.

Runde, D, F, (2013), The future of PPPs: Strengthening a Powerful Instrument for Global Development, https://www.csis.org/analysis/future-public-private-partnerships-strengthening-powerful-instrument-global-development.

Theresa Ampadu-Boakye, Minke Stadler, Greta van den Brand, Fred Kanampiu, (2016), N2Africa Annual Report 2015, www.N2Africa.org, 53 pp.

Tulder, R, van, Seitanidi, M, Crane, A and Brammer, S, (2015), Enhancing the Impact of Cross-Sector Partnerships: Four Impact Loops for Channeling Partnership Studies, *Journal of Business Ethics, 135*, pp.1-17; doi: 10.1007/s10551-015-2756-4

Appendix I – N2Africa Lead partner organisations

PPP REF. NO.	Country	Name N2africa Lead partner
COD-PPP001	DR_Congo	Aventist Development and Relief Agency
COD-PPP002	DR_Congo	Programme d'appui au development durable (PAD)
COD-PPP003	DR_Congo	Plantations NDAGANO
COD-PPP004	DR_Congo	Women for Women International
COD-PPP005	DR_Congo	World Vision International
COD-PPP006	DR_Congo	Zuid-Oost Azie (ZOA)
ETH-PPP001	Ethiopia	Amahara Regional Agricultural Research Institute (ARARI)
ETH-PPP002	Ethiopia	Anno Agro Industry Plc
ETH-PPP003	Ethiopia	Balegreen Spices and Grains Development Plc
ETH-PPP004	Ethiopia	Ethiopian Institute of Agricultural Research (EIAR)
ETH-PPP005	Ethiopia	Facilitator for Change (FC)
ETH-PPP006	Ethiopia	Hawassa Universty (HwU)
ETH-PPP007	Ethiopia	Oromia Agricultural Research Institute (OARI)
ETH-PPP008	Ethiopia	Sodo Catholic Secretariat (SCS)
GHA-PPP001	Ghana	ACDI/VOCA - Agricultural Development and Value Chain Enhancement Programe (ADVANCE)
GHA-PPP002	Ghana	AgDevCo Ghana Ltd
GHA-PPP003	Ghana	BUSAKA Agribusiness Company Ltd
GHA-PPP004	Ghana	CSIR-Savanna Agricultural Research Institute (SARI)
GHA-PPP005	Ghana	Evangelical Presbyterian Development and Relief Agency (EPDRA - CHEREPONI)
GHA-PPP006	Ghana	Evangelical Presbyterian Development and Relief Agency (EPDRA - YENDI)
GHA-PPP007	Ghana	Kwame Nkrumah University of Science and Technology (KNUST)
GHA-PPP008	Ghana	SEND-GHANA
GHA-PPP009	Ghana	Sungbawiera Foundation, Upper West Region
GHA-PPP010	Ghana	URBANET
GHA-PPP011	Ghana	Youth Advocacy on Rights and Opportunities (YARO)
KEN-PPP0001	Kenya	Annapolis Wonder Enterprises
KEN-PPP0002	Kenya	The Western Region Agriculture Technology Evaluation (WeRATE)

MWI-PPP001	Malawi	Agro-Inputs Suppliers Limited (AISL)
MWI-PPP002	Malawi	The International Cocoa Organisation (ICCO)
MOZ-PPP001	Mozambique	National Cooporative Business Association (NCBA) -The Cooperative League of the USA (CLUSA)
MOZ-PPP002	Mozambique	USAID AgriFUTURO
NGA-PPP001	Nigeria	Abednego Youth Development Foundation (AYDF)
NGA-PPP002	Nigeria	Bayero University Kano (BUK)
NGA-PPP003	Nigeria	Borno State Agricultural Development Project (BOSADP)
NGA-PPP004	Nigeria	Catholic Relief Services (CRS)
NGA-PPP005	Nigeria	Catholic Relief Services (CRS)
NGA-PPP006	Nigeria	EGALF Ventures Limited
NGA-PPP007	Nigeria	Federal University of Technology Minna (FUT)
NGA-PPP008	Nigeria	Hybrid Agro-business Consultant Limited (HABC)
NGA-PPP009	Nigeria	Intrio Synergy Limited (ISL) Borno
NGA-PPP010	Nigeria	Intrio Synergy Limited (ISL) Nigeria
NGA-PPP011	Nigeria	Institute for Agricultural Research (IAR)
NGA-PPP012	Nigeria	Kaduna State Agricultural Development Project (KADP)
NGA-PPP013	Nigeria	Niger State Agricultural and Mechanization Development Authority (NAMDA)
NGA-PPP014	Nigeria	Palm Valley Nigeria Limited (PVNL)
NGA-PPP015	Nigeria	SASAKAWA Global 2000 (SG2000) - (Sasakawa African Association)
NGA-PPP016	Nigeria	SASAKAWA Global 2000 (SG2000) - (Sasakawa African Association)
NGA-PPP017	Nigeria	SASAKAWA Global 2000 (SG2000) - (Sasakawa African Association)
NGA-PPP018	Nigeria	The Inventive Minds (TIM)
NGA-PPP019	Nigeria	United States Agency for International Development (USAID)
RWA-PPP001	Rwanda	Caritas Rwanda (CARITAS)
RWA-PPP002	Rwanda	Conseil Consultatif des Femmes (COCOF)
RWA-PPP003	Rwanda	Development Rural Durable (DRD)
RWA-PPP004	Rwanda	Eglise Presbyterienne au Rwanda (EPR)

TZA-PPP001	Tanzania	Agricultural Research Institute - Makutupora (ARI-Makutupora)
TZA-PPP002	Tanzania	Agricultural Research Institute - Uyole (ARI-Uyole)
TZA-PPP003	Tanzania	BRAC Maendeleo Tanzania
TZA-PPP004	Tanzania	Centre for Agriculture and Biosciences International (CABI)
TZA-PPP005	Tanzania	Centre for Agriculture and Biosciences International (CABI)
TZA-PPP006	Tanzania	Centre for Agriculture and Biosciences International (CABI)
TZA-PPP007	Tanzania	Catholic Relief Services (CRS)
TZA-PPP008	Tanzania	Export Trading Group (ETG)
TZA-PPP009	Tanzania	FAIDA Market Link (FAIDA)
TZA-PPP010	Tanzania	Nelson Mandela African Institution of Science and Technology (NMA-IST)
TZA-PPP011	Tanzania	Rural Urban Development Initiative (RUDI)
TZA-PPP012	Tanzania	Selian Agricultural Research Institute (ARI-Selian)
TZA-PPP013	Tanzania	SNV Netherlands Development Organization
TZA-PPP014	Tanzania	The Clinton Foundation / Clinton Development Initiative (CDI)
UGA-PPP001	Uganda	Africa 2000 Network
UGA-PPP002	Uganda	Agricultural Innovation Systems Brokerage Association Limited (AGINSBA)
UGA-PPP003	Uganda	Churches Action in Relief and Development (CARD) - Uganda Agribusiness Development Solutions
UGA-PPP004	Uganda	Enterprise Development and Management (EDM LTD)
UGA-PPP005	Uganda	Jay Fortune
UGA-PPP006	Uganda	Makerere University (MAK)
UGA-PPP007	Uganda	National Agriculture and Food Research Organisation (NARO) - National Crops Resources Research Institute (NaCRRI)
UGA-PPP008	Uganda	National Agricultural Research Laboratories (NARL)
UGA-PPP009	Uganda	National Agricultural Research Organization (NARO) - Natural Semi Arid Resources Institute (NaSARRI)
UGA-PPP010	Uganda	Simlaw Seeds Company Uganda Ltd
UGA-PPP011	Uganda	SNV Netherlands Development Organization/Oil Seed Subsector Uganda Platform (OSSUP)
UGA-PPP012	Uganda	World Vision
UGA-PPP013	Uganda	World Vision Uganda

Appendix II – Profiling of Lead, Collaborating and supporting partners.

Ethiopia

Contractual	PPP	Collaborating						Participating partners	Private	Government	NGO	Research	Union	Local	National	International	dt	is	ml	cb
	ETH-PPP001							Adet Agricultural Research Center (AARC)				1			1			1		1
	ETH-PPP003							Agarfa Kajewa Federal Credit Union (FCU)			1		1		1					1
	ETH-PPP003	ETH-PPP004	ETH-PPP006	ETH-PPP007	ETH-PPP008			Agricultural Commodity Supply (ACOS)	1								1		1	1
	ETH-PPP003							Agri-service and Oromia seed enterprise	1					1				1		1
	ETH-PPP001							Agritera			1						1	1	1	1	1
	ETH-PPP004							Alema Koudijs Feed Plc. (AKF)	1								1		1	1
ETH-PPP001								Amahara Regional Agricultural Research Institute (ARARI)				1		1				1		
ETH-PPP002	ETH-PPP007							Anno Agro Industry Plc	1						1				1	1
	ETH-PPP002	ETH-PPP007						Bako Agricultural Research Centre (BARC)				1		1				1		1
ETH-PPP003	ETH-PPP003	ETH-PPP007						Bale Green Spice and Development Plc. (BSGD)				1			1			1	1	1
ETH-PPP001	ETH-PPP002	ETH-PPP003	ETH-PPP004	ETH-PPP005	ETH-PPP006			Bank of America (BoA)		1							1			1
	ETH-PPP006	ETH-PPP008						Catholic Relief Services (CRS)			1						1	1	1	1	1
	ETH-PPP002							Clinton Foundation - The Clinton Health Access Initiative, Inc. (CHAI)			1						1				1
	ETH-PPP002							Cooperative promotion offices		1				1				1			
	ETH-PPP004							Cooporatives					1	1				1	1	1	1
	ETH-PPP004							Debrezeit Agricultural Research Centre (DZARC)				1		1				1			1
	ETH-PPP004							Diguai Farm Development Plc.	1					1							1
	ETH-PPP004	ETH-PPP006						Ethiopian Catholic Church Social and Development Coordinating Office (ECC-SDCO/S)			1				1						1
ETH-PPP004	ETH-PPP005	ETH-PPP006						Ethiopian Institute of Agricultural Research (EIAR)				1			1			1	1	1	1
ETH-PPP005	ETH-PPP004							Facilitator for Change (FC)			1						1	1	1	1	1
	ETH-PPP002							Farmer representatives					1	1				1			1
	ETH-PPP004	ETH-PPP005						FMOs													
	ETH-PPP001							Gondar Agricultural Research Centre (GARC)				1		1				1			1
	ETH-PPP007							Guts Agro Industry Plc.	1						1				1		1
ETH-PPP006	ETH-PPP008							Hawassa University (HwU)				1		1				1	1	1	1
	ETH-PPP004							Holetta Agricultural Research Center (HARC).				1		1				1			1
	ETH-PPP002	ETH-PPP007						International Fertilizer Development Centre (IFDC)			1						1	1	1	1	1
	ETH-PPP004	ETH-PPP005	ETH-PPP007					Jimma Agricultural Mechanization Research Center (JAMRC)				1		1				1			1
	ETH-PPP004	ETH-PPP005						Jimma Agricultural Research Centre (JARC)						1				1			1
	ETH-PPP004	ETH-PPP006						Lay Volunteers International Association (LVIA)			1						1				1
	ETH-PPP004							Mekonen Farms Plc.	1						1				1	1	
	ETH-PPP004	ETH-PPP006						Melkassa Agricultural Research Centre (MARC)				1		1				1			1
	ETH-PPP001	ETH-PPP002	ETH-PPP003	ETH-PPP004	ETH-PPP005	ETH-PPP006	ETH-PPP007	ETH-PPP008	Menagesha Biotechnology Industry Plc (MBI)				1		1				1	1	1	1
	ETH-PPP002							Menschen für Menschen (MfM)			1						1	1	1	1	1
	ETH-PPP003	ETH-PPP004	ETH-PPP005	ETH-PPP006				MSEs													
ETH-PPP007	ETH-PPP002	ETH-PPP003	ETH-PPP005					Oromia Agricultural Research Institute (OARI)				1		1				1			1
	ETH-PPP004							Pawe Agricultural Research Centre (PARC)				1		1				1			
	ETH-PPP004	ETH-PPP005						Radio?			1				1			1			1
	ETH-PPP004	ETH-PPP006						Seed enterprises	1					1					1		
	ETH-PPP003							Siko Mendo Farmer's Cooperative Union					1	1				1	1	1	1
	ETH-PPP003	ETH-PPP007						Sinana Agricultural Research Centre (SARC)				1		1				1			1
	ETH-PPP001	ETH-PPP004						SNV Netherlands Development Organisation			1						1	1	1	1	1
ETH-PPP008								Sodo Catholic Secretariat (SCS)			1				1			1	1	1	1
	ETH-PPP003							Sof Umer and Oda Roba Unions					1	1				1	1	1	1
	ETH-PPP004	ETH-PPP006						TL3													
	ETH-PPP001							Tsehay Multipurpose Cooperative Union					1	1				1	1	1	1
	ETH-PPP002	ETH-PPP004	ETH-PPP005					Unions					1	1				1	1	1	1
	ETH-PPP006							Unions and Cooperatives					1	1				1	1	1	1
	ETH-PPP004	ETH-PPP005						Womens self help groups (SHGs)					1	1				1	1	1	1
	ETH-PPP003	ETH-PPP006						Woreda Health, Agricultural services and cooportive promotion		1				1	1			1	1	1	1
	ETH-PPP004	ETH-PPP005						Woreda Health, extension and cooporative promotion		1				1	1			1	1	1	1
								Total	**8**	**5**	**11**	**15**	**9**	**27**	**12**	**11**	**35**	**25**	**23**	**43**

Ghana

Contractual	PPP Collaborating	Participating partners	Private	Government	NGO	Research	Union	Local	National	International	dt	is	ml	cb
GHA-PPP001		ACDI/VOCA - Agricultural Development and Value Chain Enhancement Programe (ADVANCE)			1					1				1
GHA-PPP002		AgDevCo Ghana Ltd			1				1	1	1	1	1	1
GHA-PPP003		BUSAKA Agribusiness Company Ltd	1					1						1
GHA-PPP004		CSIR-Savanna Agricultural Research Institute (SARI)				1		1			1			1
GHA-PPP005		Evangelical Presbyterian Development and Relief Agency (EPDRA - CHEREPONI)			1			1	1		1			1
GHA-PPP006		Evangelical Presbyterian Development and Relief Agency (EPDRA - YENDI)			1			1	1		1			1
GHA-PPP007		Kwame Nkrumah University of Science and Technology (KNUST)				1		1	1		1			1
	GHA-PPP001	PaB Consult	1						1		1	1	1	1
GHA-PPP008		SEND-GHANA			1				1		1			1
GHA-PPP009		Sungbawiera Foundation, Upper West Region			1			1			1			
	GHA-PPP001	Techno Serve			1					1	1	1	1	1
	GHA-PPP001	The Association of Church-based Development NGOs (ACDEP)			1			1			1	1	1	1
GHA-PPP010		URBANET			1				1	1	1			
GHA-PPP011		Youth Advocacy on Rights and Opportunities (YARO)			1				1		1			
		Total	**2**	**0**	**9**	**2**	**0**	**7**	**8**	**4**	**12**	**4**	**4**	**11**

Nigeria

Contractual	PPP Collaborating	Participating partners	Private	Government	NGO	Research	Union	Local	National	International	dt	is	ml	cb
NGA-PPP001		Abednego Youth Development Foundation (AYDF)			1			1			1			
	NGA-PPP009 NGA-PPP010	African Technology Development Forum (ATDF)				1					1	1		1
	NGA-PPP009 NGA-PPP011	Anchor Borrowers Program (ABP)		1						1				1
NGA-PPP002		Bayero University Kano (BUK)				1		1			1			1
NGA-PPP003		Borno State Agricultural Development Project (BOSADP)				1		1			1			1
NGA-PPP004 NGA-PPP005	NGA-PPP009 NGA-PPP010	Catholic Relief Services (CRS)			1						1	1	1	1
	NGA-PPP009 NGA-PPP011 NGA-PPP019	Diamond Development Initiative (DDI)			1						1			1
NGA-PPP006	NGA-PPP009 NGA-PPP012 NGA-PPP019	EGALF Ventures Limited	1						1					1
NGA-PPP007		Federal University of Technology Minna (FUT)				1			1		1			1
	NGA-PPP009 NGA-PPP010	Gbaoko												
NGA-PPP008	NGA-PPP009 NGA-PPP011	Hybrid Agro-business Consultant Limited (HABC)	1						1		1			1
NGA-PPP011		Institute for Agricultural Research (IAR)				1				1	1			1
NGA-PPP008	NGA-PPP001 NGA-PPP009 NGA-PPP010 NGA-PPP014 NGA-PPP018	International Fertilizer Development Centre (IFDC)									1	1	1	1
NGA-PPP009		Intrio Synergy Limited (ISL) Borno	1						1					1
NGA-PPP010		Intrio Synergy Limited (ISL) Nigeria	1						1					1
NGA-PPP012		Kaduna State Agricultural Development Project (KADP)				1			1		1	1	1	1
	NGA-PPP009 NGA-PPP010	Makurdi												
NGA-PPP013	NGA-PPP009 NGA-PPP011 NGA-PPP019	Niger State Agricultural and Mechanization Development Authority (NAMDA)		1						1	1			1
NGA-PPP014	NGA-PPP009 NGA-PPP012	Palm Valley Nigeria Ltd (PVNL)	1							1	1			1
NGA-PPP015 NGA-PPP016 NGA-PPP017	NGA-PPP009 NGA-PPP013	SASAKAWA Global 2000 (SG2000) - (Sasakawa African Association)			1				1		1			1
	NGA-PPP009 NGA-PPP014	The Central Bank of Nigeria (CBN)		1						1				1
	NGA-PPP005	The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)					1				1	1		1
NGA-PPP018	NGA-PPP009 NGA-PPP010	The Inventive Minds (TIM)			1					1		1		1
NGA-PPP019	NGA-PPP006	United States Agency for International Development - Maximizing Agricultural Revenue and Key Enterprises In Targeted Sites II Project (USAID- MARKETS II)			1						1	1	1	1
					1									
		Total	**5**	**3**	**6**	**7**	**0**	**10**	**6**	**7**	**15**	**4**	**3**	**21**

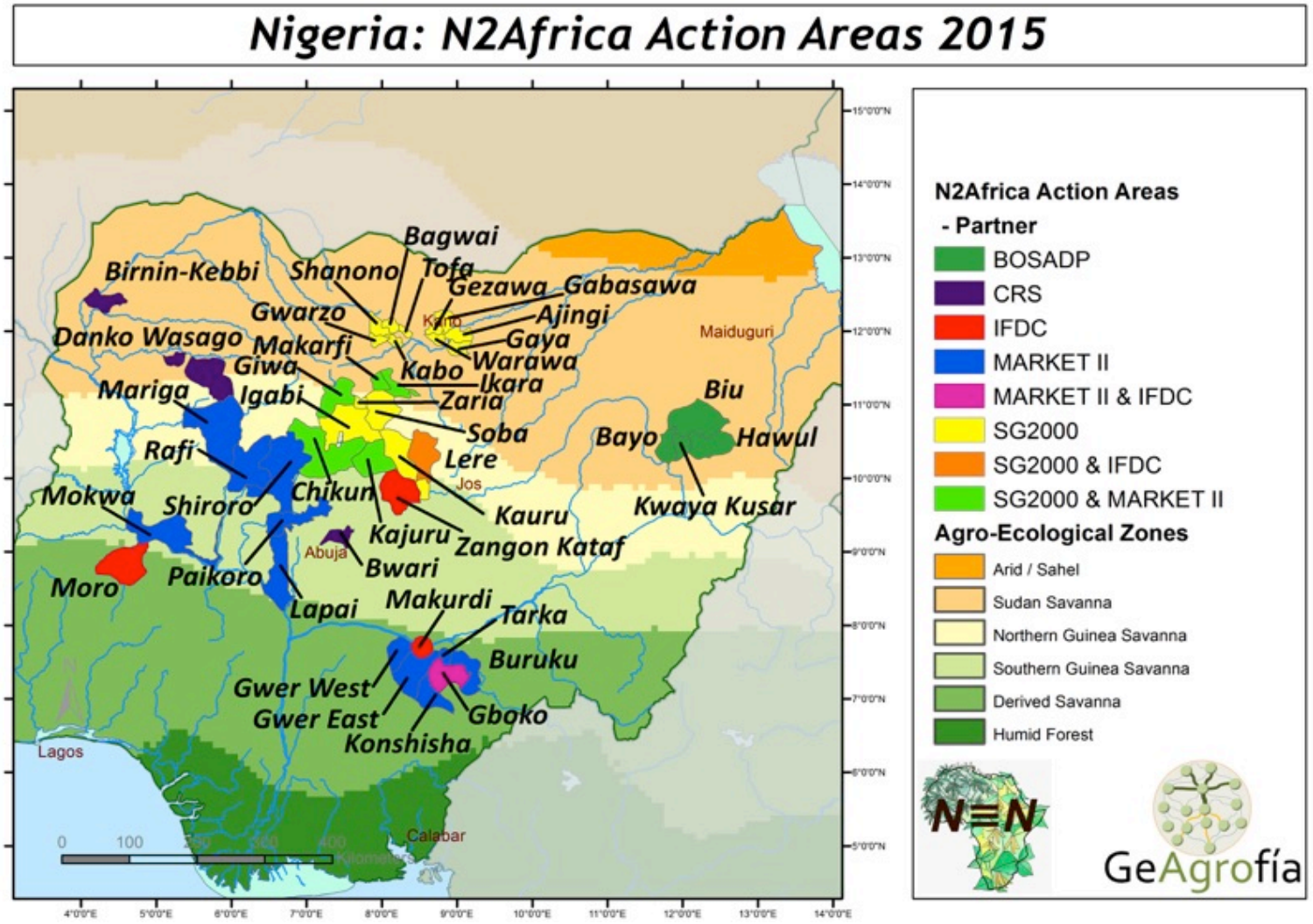
Uganda

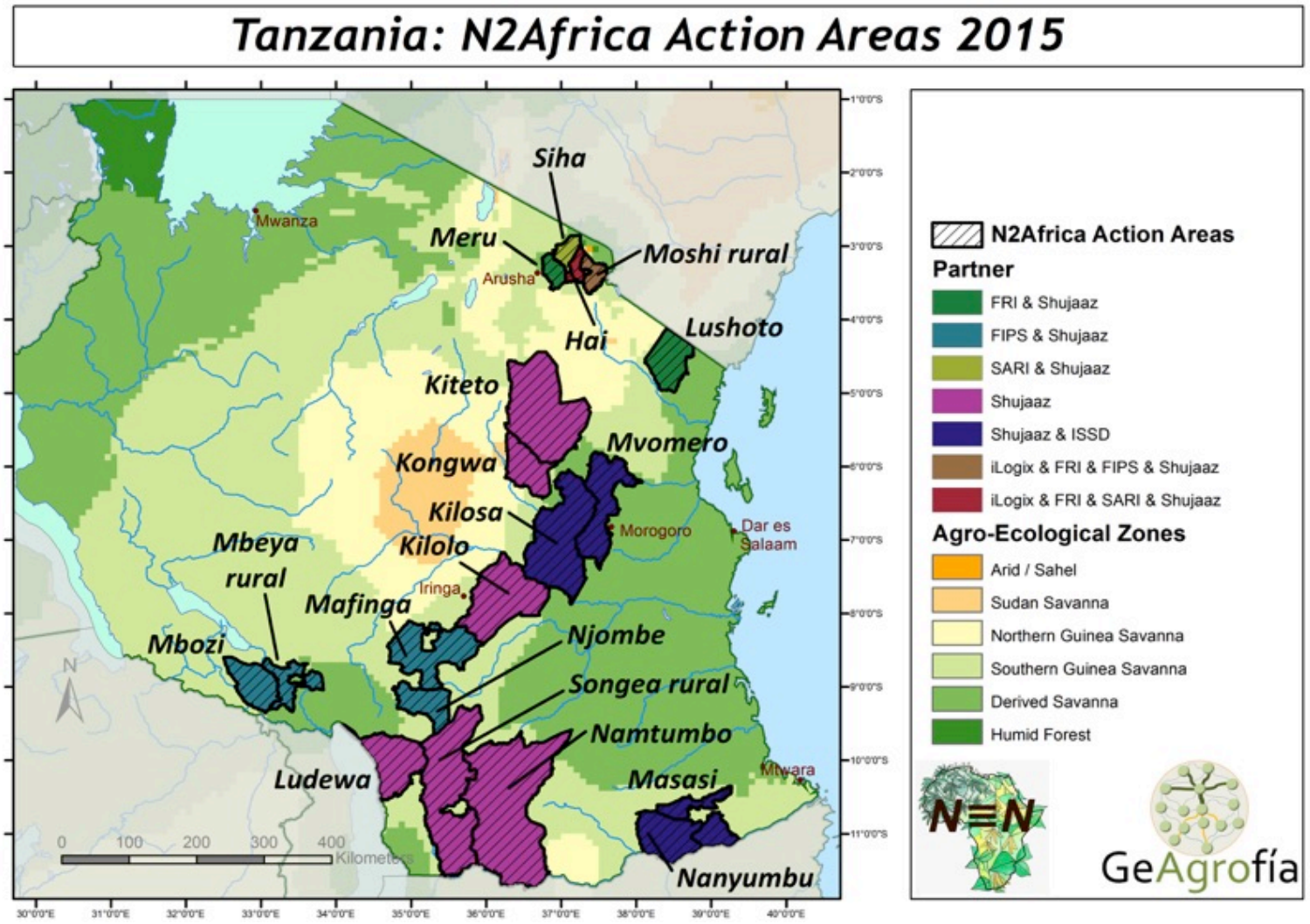
Contractual	PPP	Collaborating		Participating partners	Private	Government	NGO	Research	Union	Local	National	International	dt	is	ml	cb
	UGA-PPP001			Abi Zonal Agricultural Research and Development Institute (AZARDI)				1		1			1			1
UGA-PPP001	UGA-PPP007	UGA-PPP008		AFRICA 2000 NETWORK (A2N)			1				1		1	1	1	1
	UGA-PPP001	UGA-PPP003		Agricultural Engineering and Appropriate Technology Research Centre (AEATREC)				1			1		1			1
UGA-PPP002				Agricultural Innovation Systems Brokerage Association Limited (AGINSBA)	1						1		1		1	1
UGA-PPP013	UGA-PPP012			AgriNet			1				1			1	1	1
	UGA-PPP003			Buginyanya Zonal Agricultural Research and Development Institute (ZARDI)				1		1			1			1
	UGA-PPP013			Centre for Agriculture and Biosciences International (CABI) - Plantwise			1						1	1		1
UGA-PPP003	UGA-PPP005			Churches Action in Relief and Development (CARD) - Uganda Agribusiness Development Solutions			1						1	1		1
	UGA-PPP012			DLG												
UGA-PPP004				Enterprise Development and Management (EDM LTD)	1					1				1		1
	UGA-PPP001	UGA-PPP008		HarvestPlus			1						1	1	1	1
	UGA-PPP012	UGA-PPP013		Integrated Seed Systems Development (ISSD)				1			1		1		1	1
UGA-PPP005				Jay Fortune Ltd	1						1				1	1
	UGA-PPP001			LLG												
UGA-PPP006	UGA-PPP008	UGA-PPP012		Makerere University (MAK)				1		1			1			1
	UGA-PPP012	UGA-PPP013		Ministry of Agriculture animal Industry and Fisheries (MAAIF)		1					1		1	1	1	1
UGA-PPP008	UGA-PPP001			National Agricultural Research Laboratories (NARL).				1			1		1			1
	UGA-PPP003	UGA-PPP006	UGA-PPP012	National Agriculture and Food Research Organisation (NARO)				1			1		1			1
	UGA-PPP009	UGA-PPP013		National Agricultural Research Organization (NARO) - National Agricultural Research Laboratories (NaRL)				1			1		1			1
UGA-PPP009				National Agricultural Research Organization (NARO) - Natural Semi Arid Resources Institute (NaSARRI)				1			1		1			1
UGA-PPP007				National Agriculture and Food Research Organisation (NARO) - National Crops Resources Research Institute (NaCRRI)				1			1		1			1
	UGA-PPP001	UGA-PPP003		National Crops Resources Research Institute (NaCRRI)				1			1		1			1
	UGA-PPP008			Natural Semi Arid Resources Institute (NaSARRI)				1			1		1			1
UGA-PPP010	UGA-PPP001	UGA-PPP012		Simlaw Seeds	1								1		1	1
UGA-PPP011				SNV Netherlands Development Organization/Oil Seed Subsector Uganda Platform (OSSUP)			1				1		1	1	1	1
	UGA-PPP009			The International Center for Tropical Agriculture (CIAT)				1					1	1		1
	UGA-PPP012			Uganda Cooperative Alliance (UCA) Ltd					1		1		1	1	1	1
	UGA-PPP001	UGA-PPP012		Uganda National Agro-Input Dealers Association (UNADA)					1		1		1	1		1
	UGA-PPP007	UGA-PPP008	UGA-PPP009	VredesEilanden Country Offices (VECO)			1						1	1	1	1
UGA-PPP012				World Vision			1					1		1	1	1
UGA-PPP013	UGA-PPP001	UGA-PPP008		World Vision Uganda			1				1			1	1	1
				Total	**4**	**1**	**9**	**13**	**2**	**4**	**18**		**9**	**24**	**13**	**10**	**29**

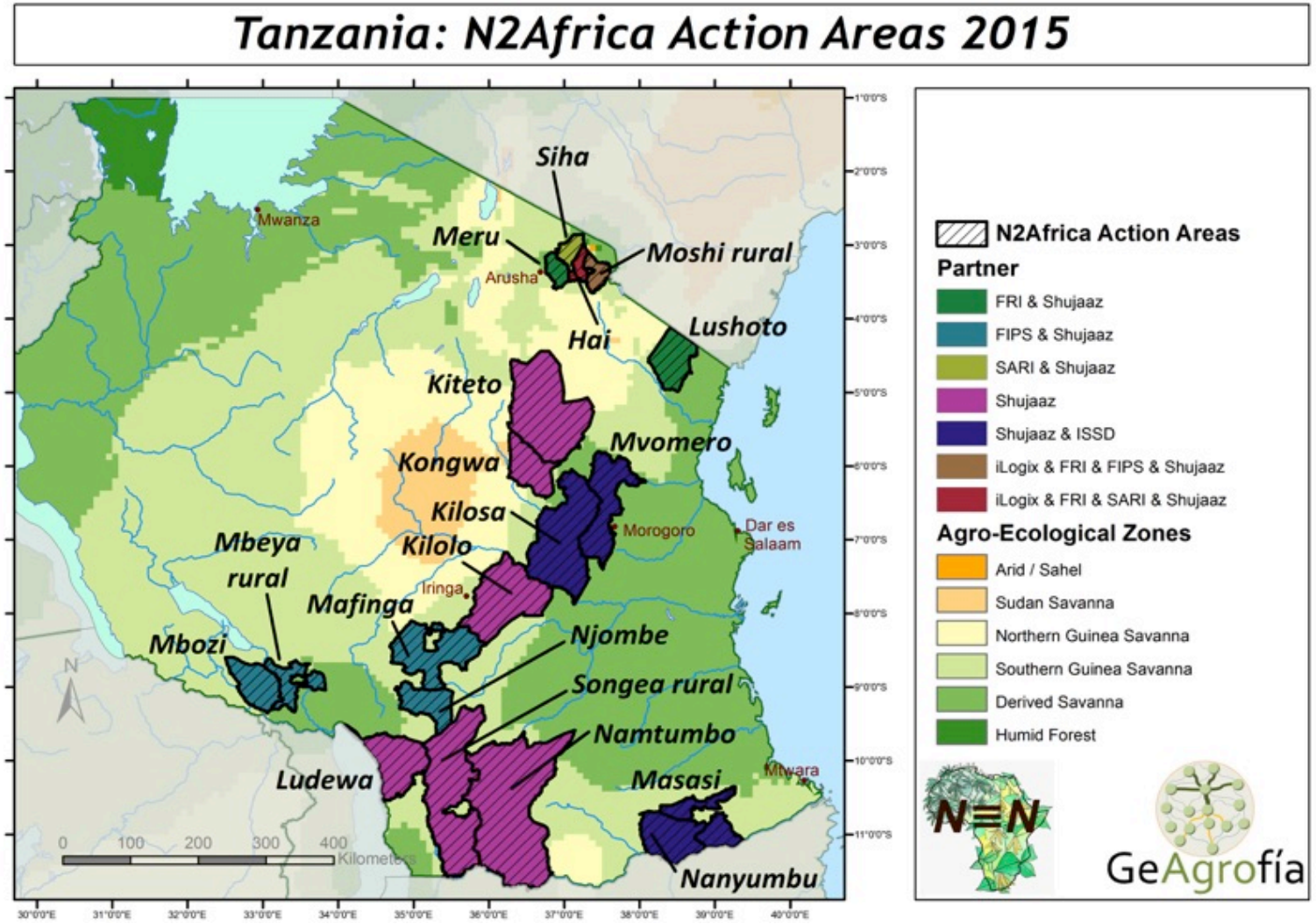
Tanzania

PPP Contractual			Collaborating		Participating partners	Private	Government	NGO	Research	Union	Local	National	International	dt	is	ml	cb
			TZA-PPP011		African Conservation Tillage Network (ACTN)			1						1	1		1
			TZA-PPP004	TZA-PPP005	African Fertiliser and Agribusiness Partnership (AFAP)			1						1	1	1	1
TZA-PPP001					Agricultural Research Institute - Makutupora (ARI-Makutupora)				1		1				1		1
TZA-PPP002					Agricultural Research Institute - Uyole (ARI-Uyole)				1		1				1		1
			TZA-PPP005		Agricultural Seeds Agency (ASA)		1					1			1	1	1
TZA-PPP003					BRAC Maendeleo Tanzania			1						1	1	1	1	1
			TZA-PPP011		Building Rural Incomes Through Enterprises (BRiTEN)			1										
TZA-PPP007					Catholic Relief Services (CRS)			1						1	1	1	1	1
TZA-PPP004	TZA-PPP005	TZA-PPP006			Centre for Agriculture and Biosciences International (CABI)			1						1	1			1
			TZA-PPP011		CRDB Bank - Microfinance unit		1					1						1
			TZA-PPP004		Esoko	1												
TZA-PPP008					Export Trading Group (ETG)	1								1			1	1
TZA-PPP009					FAIDA Market Link (FAIDA)	1						1					1	1
			TZA-PPP004	TZA-PPP005	Farm Radio International (FRI)			1						1	1			1
			TZA-PPP004		ILOGIX	1								1	1			1
			TZA-PPP004	TZA-PPP006	Koninklijke Instituut voor de Tropen (KIT)				1					1	1			1
			TZA-PPP008		Legume Technology UK	1								1		1		1
			TZA-PPP009		LGA Extension Staff in each district		1				1				1	1	1	1
TZA-PPP010					Nelson Mandela African Institution of Science and Technology (NMA-IST)				1					1	1			1
TZA-PPP011					Rural Urban Development Initiative (RUDI)			1			1		1				1	1
TZA-PPP012					Selian Agricultural Research Institute (ARI-Selian)				1				1		1			1
TZA-PPP013					SNV Netherlands Development Organization			1						1	1	1	1	1
					The Clinton Foundation / Clinton Development Initiative (CDI)			1						1	1	1	1	1
			TZA-PPP004		Well Told Story	1								1	1			1
					Total	**6**	**3**	**10**	**5**	**0**	**4**	**5**	**14**	**17**	**8**	**8**	**22**

Appendix III – N2Africa Action area maps




Tanzania: N2Africa Action Areas 2015
Siha
Meru
Moshi rural
Arusha
Hai
Lushoto
Kiteto
Mvomero
Kongwa
Kilosa
Kilolo
Mbeya rural
Mafinga
Iringa
Njombe
Mbozi
Songea rural
Namtumbo
Ludewa
Masasi
Mtwara
Nanyumbu
Mwanza
Morogoro
Dar es Salaam
0 100 200 300 400 Kilometers
N2Africa Action Areas
Partner
FRI & Shujaaz
FIPS & Shujaaz
SARI & Shujaaz
Shujaaz
Shujaaz & ISSD
iLogix & FRI & FIPS & Shujaaz
iLogix & FRI & SARI & Shujaaz
Agro-Ecological Zones
Arid / Sahel
Sudan Savanna
Northern Guinea Savanna
Southern Guinea Savanna
Derived Savanna
Humid Forest
GeAgrofía


Tanzania: N2Africa Action Areas 2015
Siha
Meru
Moshi rural
Arusha
Hai
Lushoto
Kiteto
Mvomero
Kongwa
Kilosa
Kilolo
Morogoro
Dar es Salaam
Mbeya rural
Iringa
Mafinga
Njombe
Mbozi
Songea rural
Namtumbo
Ludewa
Masasi
Mtwara
Nanyumbu
Mwanza
0 100 200 300 400 Kilometers
N2Africa Action Areas
Partner
FRI & Shujaaz
FIPS & Shujaaz
SARI & Shujaaz
Shujaaz
Shujaaz & ISSD
iLogix & FRI & FIPS & Shujaaz
iLogix & FRI & SARI & Shujaaz
Agro-Ecological Zones
Arid / Sahel
Sudan Savanna
Northern Guinea Savanna
Southern Guinea Savanna
Derived Savanna
Humid Forest
N≡N
GeAgrofía

Appendix IV- Quick survey

N2Africa Quick survey – January 2017

Introduction

Introduce yourself and explain that you are carrying out a survey on behalf of the N2Africa project. Explain that the N2Africa project is working to help farmers growing legumes, explain that legumes are beans, peas and non-tree nuts grown as grain or vegetables.
Ensure that the person is at ease and is willing to participate in the survey.
Work through the questions, answering as many questions fully to the best of the knowledge / willingness of the participant, ensure that they understand that the information will not be used by any other parties and is confidential.
Where units are required please ensure this is given and the conversion section is also completed. Try to assist the farmer with estimating land area and yield using local knowledge if they are unsure.

Survey Questions

Administration data

Interviewer name:

To be completed before call, Data to be entered from telephone list.

Country:
Farmer telephone number:

State:
LGA/District:
Village/Community:
Name of Farmer
Sex of farmer:
N2Africa farmer? Yes/No

Start call

Interview status start of call

Respondent willing to participate
Respondent NOT willing to participate
wrong number
invalid number
no answer
call back

Respondent name (*If different from name listed):*_____

Note: Use this space to add a convenient call back time and date, information on incorrect numbers or any other relevant comments.

_____
_____

Section A – Legume production

Note: For questions where 'other' is selected swipe right then left to reload page for text entry field.
When 'other legume' is selected further questions will ask about 'other legume' so make a note of the legume entered in the text field so you can use it for your questioning.

Question_A1

Question_A1 a) Do you farm legumes*? Yes / No
** Legumes include all, peas, beans and non-tree nuts grown as grain or vegetables.*

Question_A1 b) What types of legumes do you farm?

bush bean
climbing bean
cowpea
groundnut
soya bean
other _____

Question_A1 c) Which of your legumes are farmed as mono-crops*?
**Mono-crop is a single crop type grown per field.*

bush bean
climbing bean
cowpea
groundnut
soya bean
other _____

Question_A1 d) Are legumes farmed as your main crop? Yes / No

Question_A1 e) If legumes are not your main crop, what is your main crop?

Banana
Cassava
Coffee
Ensete
green gram
Irish potato
Khat
Maize
Millet
Plantain
Rice
Sorghum
Sunflower
Sweet potato
teff
vegetables
Yam
fallow
Other
none

Question_A2

Question_A2 a) What is the approximate farm area of your production?

0-0.25 ha (0-0.6 acres)
0.25-0.5 ha (0.6-1.25 acres)
0.5-1.0 ha (1.25-2.5 acres)
More than 1.0 ha (> 2.5 acres)

Question_A2 b) How much do you harvest from your production? _____

Units yield:

Kilogram
Pounds
Bags
bunches
buckets
other

Please specify how many Kg fit in one unit (as used for yield): _____

Question_A3

Question_A3 a) Has the way that you farm legumes changed in the past 5 years (Nigeria) 3 years (Tanzania)? Yes / No

Question_A3 b) If yes which type of legumes?

bush bean
climbing bean
cowpea
groundnut
soya bean
other _____

Question_A3 c) If yes, in what way has your farming of legumes changed?

Increased production area
decreased production area
increased yield (harvest)
increased input usage
use of new / different varieties
change of type of legumes
change in weed management practices
change in cultivation practices
Other _____

Question_A4

Question_A4 a) Did you use fertilizer on your legumes in the last season? Yes/ No

Question_A4 b)If yes; which type of fertiliser?

- CAN
- DAP
- NPK
- SSP
- TSP
- Urea
- Ammonium sulphate
- Don't know
- manure
- crop residues
- other

Question_A4 c) If yes, on which legumes?

bush bean
climbing bean
cowpea
groundnut
soya bean
other _____

Question_A4 d) What is the source of the fertiliser you apply to your legumes*?
(Linked to previous question, so will ask for each type of legume answered in A4 c).

Agro-input-dealer
NGO / Project
Union / farmer co-op
Family / friends
Government
Other _____

Question_A4 e) How far (when walking) is this from your farm?
(Linked to previous question, so will ask for each type of legume answered in A4 c).

Less than 10 minutes
10-30 minutes
30-60 minutes
More than 60 minutes
Question_A4 f) For the legumes that you do not apply fertilizer, what is the reason that you did not apply fertilizer?
_____
_____

Question_A5

Question_A5 a) What is the source of your legume seed*?
(Linked to previous questions, so will ask for each type of legume answered in A4 c).

Own harvest
Agro-input-dealer
Local Market
NGO/ Project
Union / farmer co-op
Family / friends
Government
Other _____

Question_A5 b) How far (when walking) is this from your farm?
(Linked to previous question, so will ask for each type of legume answered in A4 c).

Less than 10 minutes
10-30 minutes
30-60 minutes
More than 60 minutes

Question_A6

Question_A6 a) Did you use legume inoculants in the last season? Yes / No

Question_A6 b) If yes on which crops?

bush bean
climbing bean
cowpea
groundnut
soya bean
other _____

Question_A6 c) What is the source of your legume* inoculants?
(Linked to previous question, so will ask for each type of legume answered in A6 b).

Agro-input-dealer
NGO / Project
Union / farmer co-op
Family / friends
Government
Other _____

Question_A6 d) How far (when walking) is this from your farm?
(Linked to previous question, so will ask for each type of legume answered in A6 b).

Less than 10 minutes
10-30 minutes
30-60 minutes
More than 60 minutes

Question_A7

Question_A7 a) Have you received training or assistance in farming legumes in the last 5 years (Nigeria) 3 years (Tanzania)? Yes / No

Question_A7 b) *(If yes)*, what type of training or assistance?

Agronomic practices
Access to inputs
Marketing
Processing and value addition
Nutrition
Other _____

Question_A7 c) *(If yes)*, Where / how did you receive the training or assistance?

NGO / Project
Union / farmer co-op
Other farmers
Family / friends
Government
Other _____

Question_A7 d) *(If yes)*, when did you receive the training or assistance? _____

Section B - Farmer household

Question_B1

Question_B1 a) Total number of people in the household*? _____

Question_B1 b) How many males? _____

Question_B1 c) How many females? _____

Question_B2

Question_B2 a) What types of legumes are eaten in your household?

bush bean
climbing bean
cowpea
groundnut
soya bean
other _____

Question_B2 b) How often do you eat legume during peak season?

none
once or twice per week
3 to 4 times per week
5 times per week
more than 5 times per week
daily

Question_B2 c) How often do you eat legume during low season?

none
once or twice per week
3 to 4 times per week
5 times per week
more than 5 times per week
daily

Question_B2 d) Who in the household eats legumes?

whole family
men
women
children

Question_B3

Question_B3 Estimate the portion of income in your household coming from farming activities and the portion from off-farm sources?

All the income comes from our own farm
Most of the income comes from our own farm, a small part from off-farm sources
About half of the income comes from our farm, the other from off-farm sources
Most of the income comes from off-farm sources, a small part from our farm
All the income comes from off-farm sources

Question_B4

Question_B4 Indicate what best describes your households' situation in terms of production orientation?

All our produce is used for home consumption, we do not sell any
Most of our produce is used for home consumption, and we sell some
Half of our produce is used for home consumption and we sell half
Most of our produce is sold, and we keep some for home consumption
All our produce is sold, and we keep nothing for home consumption
No opinion / Don't know

Question_B5

Question_B5 Who decides how much produce (harvest) is kept for home consumption and how much goes to market?

male household members
female household members
both male and female household members

Question_B6

Question_B6 a) Has your household income increased or decreased in the past 5 (Nigeria) years 3 years (Tanzania)? Increased / decreased

Question_B6 b) Why has it increased or decreased?

Change in farm production / yields
Improved market for produce
Change in off-farm activities
Change in household members (births / deaths / marriages)
Other

Question_B7

Question_B7 How much of the household income is brought in by male members of the household and how much from female members of the household?

All male
Most male
Half male half female
Most female
All female

Complete if respondents details are different to telephone data list.

State:
LGA/District:
Village/Community:
Name of Farmer:
Sex of farmer:

Additional Info / notes / comments at end of call:
Use this space to add any other relevant comments, such as alternative telephone number, call back time etc.
_____
_____

Interview status end of call

complete
not complete hangup
not complete disconnected

The End

Thank the participant for taking the time to answer the questions.

Appendix V – Overview of Pre-Pilot test results in Nigeria for legume production.

Respondents	Total	Males	Females
N2Africa farmers	41	100	0
non-N2Africa farmers	59	100	0

Note: All figures quoted are number of farmers (% of total).

Legume production	Legumes farmed	Farmed as main crop	Change due to increased yields	Fertiliser Use	Inoculants Use
N2Africa farmers	100	29	100	100	43
non-N2Africa farmers	100	40	78	90	0

	Fertiliser Use	NPK	Urea	Crop residues	Source Agro-input dealer	Distance 10_30_minutes	30_60_minutes	above_60minutes
N2Africa farmers	100	86	57	14	100	14	29	43
non-N2Africa farmers	90	100	78	0	100	44	33	22

	Seed Source Agro-input dealer	Own harvest	Distance 10_30_minutes	30_60_minutes	above_60minutes
N2Africa farmers	43	57	14	29	43
non-N2Africa farmers	60	40	40	0	30

	Inoculants Use	Source Agro-input dealer	Other (not specified)	Distance 30_60_minutes
N2Africa farmers	43	67	33	100
non-N2Africa farmers	0	0	0	0

	Cowpea Farmed	Mono-crop	Area over 1ha	Av. Yield (kg)	Change in farming	Fertiliser use	Inoculant use
N2Africa farmers	100	14	86	2257	71	43	0
non-N2Africa farmers	90	11	89	2490	44	33	0

	Groundnut Farmed	Mono-crop	Area over 1ha	Av. Yield (kg)	Change in farming	Fertiliser use	Inoculant use
N2Africa farmers	71	20	80	1286	29	57	0
non-N2Africa farmers	70	0	71	1433	33	44	0

	Soya bean Farmed	Mono-crop	Area over 1ha	Av. Yield (kg)	Change in farming	Fertiliser use	Inoculant use
N2Africa farmers	100	57	86	1829	71	71	43
non-N2Africa farmers	90	89	67	1720	100	89	0

	Training Received	Type Agronomic practices	Access to inputs	From Union / farmer coop	Other (not specified)
N2Africa farmers	29	50	50	50	50
non-N2Africa farmers	10	100	0	100	0

Note: All figures quoted are number of farmers (% of total) except for Av. Yield which is in kg.

Appendix VI- Overview of Nigeria test results for Farmer Household data.

Household			
	Household memebers		
	Av. Total	Av. Male	Av. Female
N2Africa farmers	13	6	6
non-N2Africa farmers	10	4	6

	Legumes eaten			How often						
	Type			Peak season			Low season			Eaten by
	Cowpea	groundnut	soya bean	once_or_twice_per_week	3_to_4_times_per_week	5_times_per_week	once_or_twice_per_week	3_to_4_times_per_week	5_times_per_week	Whole family
N2Africa farmers	100	86	86	0	86	14	0	86	14	100
non-N2Africa farmers	90	80	80	30	70	0	30	70	0	90

	Income			Reason for increase		Income brought in by	
	All Farming	Most Farming	Increased	farm_production_change	household_members_change	all_male	most_male
N2Africa farmers	86	14	100	86	14	71	29
non-N2Africa farmers	50	50	100	100	0	100	0

	Harvest						
	Allocation				Decision		
	all_consumed	most_consumed	half_consumed	most_market	Male	Female	Both male and female
N2Africa farmers	100	0	0	0	86	0	14
non-N2Africa farmers	0	60	10	30	100	0	0

Note: All figures quoted are number of farmers (% of total) except for household members which is number of people.

Appendix VII – Comparison of Quick survey data with Baseline and Early impact results

Legume production

	Legumes farmed			
	Cowpea	**Groundnut**	**Soya bean**	
N2Africa	100	71	100	
non-N2Africa	90	70	90	
Baseline	94	77	28	
Early Impact	84	53	58	
	Mono-crop			
	Cowpea	**Groundnut**	**Soya bean**	
N2Africa	14	20	57	
non-N2Africa	11	0	89	
Baseline				
Early Impact	5	9	5	
	Main crop		**Inoculant Source**	
	Maize	**Rice**	**Agro_input_dealer**	**NGO_Project**
N2Africa	57	14	67	0
non-N2Africa	57	43		
Baseline	61	37		
Early Impact			0	88

Note: All figures quoted are number of farmers (% of total)

Farmer Household

	Average number	Legume eaten in household		
	people in household	**Cowpea**	**Groundnut**	**Soya bean**
N2Africa	13	100	86	86
non-N2Africa	10	90	80	80
Baseline	15	97	41	25
Early Impact	13			

Note: All figures quoted are number of farmers (% of total) except for household members which is number of people.