



MSc and PhD status report 2011

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N2Africa

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



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1. MSc. Status Report (Sept 2011)

The project is providing M.Sc. training in legume agronomy, rhizobiology and technology dissemination. Nineteen M.Sc. students from eight countries are attending ten African Universities and Wageningen University (Table 1). This exceeds the target of 14 set in Milestone 5.2.1 by 93% while only the enrollment of two students is delayed. The delayed students may be enrolled either in October 2011 or January 2012. The intended M.Sc. research topics are well distributed among legume agronomy (55%), rhizobiology (30%) and technology dissemination (15%). Five of these students completed their research and reported. Nine students have started the research phase of their program and the remainder will do so in Year 3. Several of these students are being trained to guarantee that all countries have capacity to evaluate inoculant quality by project's end. Three of students actively participated in an inoculum production and quality control training held at MIRCEN, University of Nairobi in the month of July.

Table 1. Research topics and status of M.Sc. students participating in the N2Africa Project as of Year 2 Month 9.

Country	Recruited (no)	Research Topic ¹ and Status ²			University
		Agronomy	Rhizobiology	Dissemination	
DR Congo	4	2 (C,C)	1(T)	1(C)	University of Nairobi, Kenyatta University
Ghana	2	1 (E)	1 (E)		Kwame Nkrumah University of Science and Technology
Kenya	3	1 (T)	2(C,T)		University of Nairobi, Egerton University, Moi University
Malawi	4	3 (E R,R)	1(E)		Bunda College of Agriculture Wageningen University
Mozambi- que	2	2 (D)			Bunda College of Agriculture
Nigeria	3	1 (T)	1(C)	1(C)	Ahmadu Bello University, BUK Kano Wageningen University
Rwanda	5	3 (R,R,T)	1(T)	1(C)	National University of Rwanda, University of Nairobi Wageningen University
Zimbabwe	4	2 (R,T)	1(T)	1(T)	University of Zimbabwe Wageningen University
Project- wide	27	15	8	4	10 African universities Wageningen University

¹ Research topics primarily related to Legume Agronomy (Objective 2), Rhizobiology and Inoculant Production (Objective 3) and BNF Technology Dissemination (Objective 4). ² Graduate student status: E = enrolled, R = reported, C = undertaking coursework, T = undertaking research topic, D = delayed.

Please see Annex 1 for more details on MSc students (MSc update status).



2. PhD Status Report (Sept 2011)

The project is providing PhD training in legume agronomy, rhizobiology and technology dissemination. It was envisaged that seven PhD students from seven countries will attend either a foreign university, an African university or both in a sandwich arrangement (Table 2). However, the enrollment of most of the students is delayed. The intended PhD research topics are distributed among legume rhizobiology and technology dissemination.

Table 2. Research topics and status of PhD students participating in the N2Africa Project as of Year 2 Month 9.

Country	Recruited (no)	Research Topic ¹ and Status ²			University
		Agronomy	Rhizobiology	Dissemination	
Ghana	1		1 (D)		Kwame Nkrumah University of Science and Technology/WU
Kenya	1		1(D)		Murdoch university
Malawi	1			1(C)	Wageningen University (WU)
Mozambique	1		1(D)		To be confirmed
Nigeria	1		1(D)		Murdoch university
Rwanda	1		1(E)		Wageningen University (WU)
Zimbabwe	1		1(D)		Murdoch university
Project-wide	7	0	6	1	1 African university, 2 foreign universities

¹ Research topics primarily related to Legume Agronomy (Objective 2), Rhizobiology and Inoculant Production (Objective 3) and BNF Technology Dissemination (Objective 4). ² Graduate student status: E = enrolled, R = reported, C = undertaking coursework, T = undertaking research topic, D = delayed.

As indicated in Table 2, two students (from Malawi and Rwanda) have been admitted at Wageningen University one of whom will commence at the end of October. The student from Kenya sent all the required documents to Murdoch and should receive a response by mid November on the status of his application. The student from Zimbabwe was delayed in gaining admission because she had not acquired her MSc Certificate and transcripts on time. She finally was able to get her transcripts from her former university and has now submitted her full application to Murdoch and is awaiting a response. Likewise, the Nigerian student sent his application to Murdoch and is still awaiting a response. In Mozambique, it was necessary to replace the selected student due to a lack of action on the part of the student. The new student has been informed on the fellowship and instructed to commence his admission process. The issue of his research topic was also discussed and he will focus on cropping systems (use of legumes to enhance system productivity). So far no student has been identified in Ghana. Please see Annex 2 for more details. Out of 18 students 10 are female and 8 are male.



Annex 1: MSc status update

Country	Name	Gender	Qualification	Research topic	University	Supervisor	Status
DRC	Bintu Ndusha Nabintu	Female	Bachelor in Agronomy	Inventory and characterisation of Rhizobia strains in East Congo and assessment of their capacity to nodulate with bean and soybean	University of Nairobi	Prof Nancy Karanja, Dr. Paul Woomer	Doing coursework
	Eric Sika Torroma	Male	Diploma in Agronomy	Enhancement of legume productivity and N fixation in highly degraded soils	Kenyatta University	Prof Daniel Mugendi, Dr. Freddy Baijukya	Doing coursework
	Fidel Barhebwa Bnagaliza	Male	BSc Agronomy	Socio-economics	Kenyatta University	Judith De Wolf	Doing coursework
	Balume Kayani Isaac	Male	Bsc Agronomy & Crop Sciences	Rhizobiology	University of Nairobi	Prof Nancy Karanja	Admitted
Ghana	Jacob Ulzen	Male	BSc. Agricultural Technology	Agronomy	Kwame Nkrumah University of Science and Technology	Prof. RC Abaidoo	Admitted
	Abdul-Aziz Abdul-Latif	Male	BSc. Agricultural Technology		Kwame Nkrumah University of Science and Technology		Admitted
Kenya	Maureen Waswa	Female	Bsc Horticulture	Evaluation of symbiotic effectiveness of Rhizobia isolates from western Kenya	University of Nairobi	Prof Nancy Karanja, Dr. Freddy Baijukya	Preparing for fieldwork
	Anne Wekesa	Female	Bsc Microbiology	Isolation, identification, characterization and quality control of Rhizobia using molecular techniques	University of Nairobi	Prof Ochanda- UoN Dr Paul Woomer	Doing coursework
	John Okoth Omondi	Male	Bsc Agriculture	Effect of tillage on mid season drought on soybean varieties in western Kenya	Egerton University	Dr Nancy Mungai, Dr Freddy Baijukya	Started fieldwork
Malawi	Esnart Nyirenda	Female	BSc Forestry	Local adaptation (Agronomy)	Bunda College		Admitted
	Donald Siyeni	Male	BSc Forestry	Farming system (Rhizobiology)	Bunda College		Admitted
	Greta van den Brand	Female	MSc	Farm characterisations in Malawi	Wageningen University	Daniel van Vugt, Linus Franke, Ken Giller,	Completed
	Khonje Kondwani		Internship	Collection of data in D&D trials in Malawi	Wageningen University	Anne Turner, Linus Franke, Ken Giller,	Completed



Mozambique	Mônea Lina Adelino Mucavêa	Female	BSc Agricultural Science				Admission in process
	Fernando João Sualei	Male					Admission in process
Nigeria	Fatima Jibrin Abubakar	Female	BSc Microbiology	Isolation, Identification and Characterization of rhizobia nodulating promiscuous soybean genotype in the savannas of Nigeria.	Ahmadu Bello University	Dr Ado Yusuf/Dr Abdullahi Bala	Doing coursework
	Vida Peter	Female		Socio-economics	BUK Kano	Dr Aminu Suleiman, Dr Judith de Wolf	Doing coursework
	Samson Kofi Foli	Male	MSc and Internship	Farm characterisations and BNF measurements in Nigeria + missing nutrient pot trials	Wageningen University	Abdullahi Bala, Freddy Bajukya, Linus Franke, Ken Giller	On-going fieldwork
Rwanda	Domitile Mukankubana	Female	BSc Devt Studies	Assesment of different dissemination and training approaches used by agriculture extension institutions in Rwanda	National University of Rwanda	XXXXX; Dr Judith de Wolf	Doing coursework
	Alfred Rumonge Tabaro	Male	Bachelor Degree in Economics and Management Sciences	The quality control of legume inoculants in Rwanda	University of Nairobi	Prof Nancy Karanja, Dr. Paul Woomer	Doing coursework
	Moritz Reckling	Male	BSc and Internship	Characterisation of bean farming systems in Rwanda	Wageningen University	Bernard Vanlauwe, Ken Giller, Linus Franke	Completed both MSc and Internship
	Lotte Klapwijk	Female	Internship	Staking qualities of climbing bean systems in Rwanda	Wageningen University	Linus, Franke, Ken Giller	Completed
	Myriam Mujawamarya	Female	MSc and internship	Characterisation of soybean production systems in Rwanda	Wageningen University	Linus, Franke, Ken Giller	On-going fieldwork
Zimbabwe	Kainga Tatenda	Female	BSc Agriculture (Soil Science)	Symbiotic effectiveness of indigenous rhizobial isolates and effect on smallholder soyabean productivity in Zimbabwe	University of Zimbabwe	Prof S Mpepereki; Prof PL Mafongoya	Doing coursework



	Sibonginkosi Dunjana	Female	Bsc Sociology	A socio-economic analysis of the determinants of legume production among smallholder farmers in Zimbabwe.	University of Zimbabwe	Prof PL Mafongoya; Dr J Mtambara; Dr. Judith De Wolf	Doing coursework
	Brenda Manenji	Female	MSc	Farm characterisations in Zimbabwe	Wageningen University	Judith de Wolf, Linus Franke, Ken Giller	Completed
	Wietske van der Starre	Female	MSc	Missing nutrient pot trials in Zimbabwe	Wageningen University	Linus Franke, Ken Giller	On-going fieldwork



Annex 2: PhD status update

Country	Candidate	Topic	Partner University	University Admission Status	University Supervisor	N2Africa Supervisor	Fellowship Status	Action Needed
Kenya	George Mwenda	Abundance, diversity and nitrogen fixing potential of legume nodulating rhizobia in soils of Western Kenya	Murdoch University	Pending	John Howieson/ Nancy Karanja	Freddy	Fellowship conditional on acceptance Murdoch is co-funding	Prof O'Hara currently fast tracking admission process
Rwanda	Edouard Rurangwa	Unpacking $(G_L \times G_R) \times E \times M$ (Agronomy)	WU	Admitted	Not yet identified	Bernard/Ken /Freddy	Fellowship conditional on acceptance	Academic credentials and visa approved. Joined Wageningen October 2011
Ghana	Candidate to be identified from AGRA sponsored students at KNUST	Unpacking $(G_L \times G_R) \times E \times M$	WU	Admitted at KNUST pending admission to WU	Not yet identified	Robert/Ken	PhD Scholarship expected from AGRA grant to University of Kumasi	R. Abaidoo to identify candidates
Nigeria	Aliyu Abdullahi Anchau	Soybean genotype x Rhizobium strain compatibility	Murdoch University	Pending	John Howieson/ Graham O'Hara	Abdullahi	Fellowship conditional on acceptance Murdoch is co-funding	Prof O'Hara currently fast tracking admission process
Malawi	Admire Katunga	Analyzing Economic Efficiency of Soybean Marketing System in Malawi	WU	Admitted	Prof Erwin Bulte/Ken Giller	Judith/Arega	Co-funding N2Africa and WU	Started in Wageningen in August 2011
Mozambique	Amaral Chibeba	Rhizobium genotype x strain compatibility	To be confirmed	Pending	To be confirmed	Steve/ Abdullahi	Fellowship conditional on acceptance	New candidate to send academic credentials to Mariangela



Zimbabwe	Mazvita Murwira	Inoculant quality control and formulations	Murdoch University	Pending	John Howieson/ Graham O'Hara	Abdullahi	Confirmation of fellowship delayed Graham O'Hara confirmed to co-fund with N2Africa providing maximum US\$ 50,000	Prof O'Hara currently fast track ing admission process
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Notes:

- No PhD candidate for DRC. The PhD slot was converted to 2 MSc.
- All candidates to receive official confirmation of fellowship upon admission to the respective universities and assurance of co-funding where applicable
- George has sent all the required documents to Murdoch and should receive a response by mid November on the status of his application.
- Admire and Edouard are admitted at Wageningen University. Edouard will commence at the end of October after attending CIALCA conference.
- Mazvita is to be admitted at Murdoch but there were delays in acquisition of MSc transcripts. She finally was able to get her transcripts from her former university and has now submitted her full application to Murdoch and is awaiting a response.
- Aliyu sent his application to Murdoch and is still awaiting a response.
- In Mozambique, Fecilidade was replaced by Amaral. The new student has been informed on the fellowship and instructed to send credentials to Mariaangela to finalize his admission process. The issue of research topic was also discussed and he will focus on cropping systems (use of legumes to enhance system productivity).
- So far no student has been identified in Ghana. Abaidoo is to finalize on this and give the way forward.



List of project reports

1. N2Africa Steering Committee Terms of Reference
2. Policy on advanced training grants
3. Rhizobia Strain Isolation and Characterisation Protocol
4. Detailed country-by-country access plan for P and other agro-minerals
5. Workshop Report: Training of Master Trainers on Legume and Inoculant Technologies (Kisumu Hotel, Kisumu, Kenya-24-28 May 2010)
6. Plans for interaction with the Tropical Legumes II project (TLII) and for seed increase on a country-by-country basis
7. Implementation Plan for collaboration between N2Africa and the Soil Health and Market Access Programs of the Alliance for a Green Revolution in Africa (AGRA) plan
8. General approaches and country specific dissemination plans
9. Selected soybeans, common beans, cowpeas and groundnuts varieties with proven high BNF potential and sufficient seed availability in target impact zones of N2Africa Project
10. Project launch and workshop report
11. Advancing technical skills in rhizobiology: training report
12. Characterisation of the impact zones and mandate areas in the N2Africa project
13. Production and use of Rhizobial inoculants in Africa
18. Adaptive research in N2Africa impact zones: Principles, guidelines and implemented research campaigns
19. Quality assurance (QA) protocols based on African capacities and international existing standards developed
20. Collection and maintenance of elite rhizobial strains
21. MSc and PhD status report



Partners involved in the N2Africa project



Caritas Rwanda



Diobass



Eglise Presbiterienne Rwanda



Resource Projects-Kenya



Université Catholique de Bukavu



University of Zimbabwe

