

N2Africa enhancing laboratory capacity in Africa

Laboratory and greenhouse facilities in African countries are undergoing upgrade and complete makeover – thanks to the substantial investment in state-of-the-art facilities being made by N2Africa to enhance the capacity of NARS to carry out research in rhizobiology and general soil microbiology. The intervention includes the refurbishment of laboratories and purchase or repair of laboratory equipment. New greenhouses are also being built and existing ones renovated.

Objective 3 of the N2Africa project (*Objective 3: Select superior rhizobia strains for enhanced BNF and develop inoculum production capacity in sub-Saharan Africa through collaboration with private sector partners*) focuses on rhizobiology activities and includes the isolation of rhizobia from indigenous populations in African soils from which elite strains are selected for use in the production of rhizobial inoculants. These require the intensive use of laboratory and greenhouse facilities. Activities under this objective had initially been planned to commence using existing facilities at the various NARS partner institutes in the 8 countries where the project is operational. It soon became evident that virtually all the selected institutes had limited capacity to carry out the activities as initially envisaged. The relevant equipment and facilities were completely absent, obsolete, or in a state of disrepair. This situation has severely impacted on the pace of rhizobiology activities, and delayed some milestones.

In Kenya, a new greenhouse is under construction for MIRCEN (Microbiological Resources Centre), University of Nairobi. This centre serves as the project's hub for East and Southern Africa (ECA) and some equipment and reagents had earlier been supplied for use during the ECA technicians' training in basic rhizobiology skills which took place in September 2010. Laboratories in Rwanda and the Democratic Republic of Congo (DRC) received assorted reagents, glassware and laboratory equipment, including laminar flow hoods, ovens and electric balances. N2Africa is also processing the renovation of a greenhouse at ISAR (Institut des Sciences Agronomique du Rwanda) and the purchase of rhizobiology equipment, including an autoclave, to support the institute's effort at jump-starting inoculant production, which was disrupted by the 1994 genocide in that country.

Zimbabwe is also benefitting from N2Africa's intervention, with over USD\$ 74,000 already



A laminar flow cabinet purchased by N2Africa for the Institute of Agricultural Research (IAR), Zaria, Nigeria

committed for the procurement of equipment and reagents to be used at the Soil Productivity Research Laboratory (SPRL), Marondera. As the Rhizobiology hub for Southern Africa, additional funds are available in support of inoculant production at the laboratory. Already, a procurement process has been initiated for the renovation of a greenhouse there. N2Africa and AGRA are partnering to upgrade the laboratory at the Chitedze Research Station in Malawi. The Ministry has refurbished the laboratory, with

N2Africa contributing towards the completion of the electrical works. AGRA has approved some funds for the purchase of equipment in the laboratory and N2Africa is providing a counterpart funding for the procurement of core rhizobiology equipment.

The two partner laboratories in the West African Hub are the Soil Research Institute (SRI), Kumasi, Ghana, and the Institute of Agricultural Research (IAR), Samaru-Zaria, Nigeria. Both institutes have immensely benefitted from the project's laboratory upgrade. SRI Ghana has refurbished a laboratory for rhizobiology activities and have received delivery of assorted equipment worth over UD\$ 17,000. The purchased equipment included an incubator, orbital shaker, vacuum pump, hot plate stirrer and water deioniser. In Nigeria, IAR Zaria received the delivery of equipment and reagents valued at more than UD\$ 33,000. The consignment included an autoclave, incubator, and a laminar flow cabinet. Receiving the equipment, the Director IAR, Professor Balarabe Tanimu, noted that N2Africa's intervention would not only help to facilitate the execution of the on-going N2Africa project being led by the institute, but also accelerate microbiological research activities. Given IAR's status as the Hub for West Africa, there are plans to invest a further UD\$100,000 in the installation of a pilot rhizobial inoculant production facility at the institute.

This investment in facilities has no doubt given rhizobiology activities a shot in the arm, resulting in a flurry of activities across the various countries. MPNs and strain isolations have commenced in many countries; some have gone far in isolate characterisation and strain evaluation. It is evident that the surge in rhizobiology activities is closely linked to the arrival of these new facilities.

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