



## N2Africa Podcaster no. 5

March 2011

### Annual N2Africa Planning Meeting in Harare

The annual N2Africa planning meeting took place in Harare from 14-18 February. This meeting focused on exchanging information on progress in the different countries, on bottlenecks encountered during the first year and on planning for the rapid scaling up of activities that is now taking place in the second year of the project. The meeting was facilitated by Alastair Simmons of Taskscape Ltd, and focused on moving the project from working around objectives to focusing on work-streams and tasks. A clear structure of these work-streams and their inter-relationships enabled a common understanding to be developed across the eight partner countries. This will ensure that the work conducted in the different countries will be comparable and allow us to learn the maximum from what works well under different circumstances across the project. The focus on forward planning and signalling and avoiding risks that may be encountered will increase the effectiveness of the project. The Steering Committee endorsed the new plans made during this week and agreed to take on responsibilities to ensure that the new plans were implemented under the leadership of Kenton Dashiell. The major focus for the next months is on getting Development and Dissemination (D&D) and Monitoring and Evaluation (M&E) working optimally for all countries.



Part of the workshop was a field visit to farmers in the Goromonzi area, where small groups visited fields with groundnut, soyabean and sugar beans. The farmers were questioned about their activities using M&E tools developed by N2Africa. It was interesting to see how the different participants in the project did this and the strong interaction with the farmers. This field visit ended with a convening in the Goromonzi Primary School. (photo)

Charlotte Schilt and Ken Giller

### Rhizobiology Manual Almost Ready

A writeshop was held in March as part of the collaboration between SIMLESA (Sustainable Intensification of Maize-Legume Cropping Systems For Food Security In Eastern And Southern Africa), the ACIAR funded project and N2Africa. An international team of nitrogen fixation experts met to write a state-of-the-art manual on Rottnest Island, off Fremantle, West Australia. Participants were John Howieson, Mariangela Hungria, Ken Giller (N2Africa Steering Committee), David Herridge, Ros Deaker (University of Sydney), Graham O'Hara, Ron Yates, Wayne Reeve, Vanessa Melino (Murdoch University) and Phil Poole (John Innes Institute). Abdullahi Bala was unable to get a visa to attend but contributed two outline chapters for the manual. At the end of the week more than 95% of thirteen chapters was ready for review and polishing. It is hoped that the manual will be printed within a few months so that it can become the standard laboratory text for N2Africa.

Ken Giller





## Results from the N2Africa baseline survey in East and Central Africa

The N2Africa baseline survey targeting 1200 households in Kenya, Rwanda and DR Congo has been completed and analysed. A comprehensive report on the results will soon be published on the N2Africa website. Here are already some results.

### *Farmers' choice of legumes*

Common (bush) bean and climbing bean (in high altitude areas) were the most popular grain legumes in all three countries (Table 1). Common bean was often grown in combination with maize (Kenya) or cassava (DRC). Climbing bean was usually cultivated as a sole crop. The adoption of soybean and groundnut by farmers varied a lot between regions within the countries, depending on altitude, rainfall, and other agro-ecological and market conditions. Cowpea was only commonly grown in Kenya. Minor legume crops were bambara nut, green gram, garden pea and fodder legumes.

Table 1. Legumes GROWN by households in regions of DR Congo, Kenya and Rwanda (% of households growing the relevant legume).

| Legume type   | DR Congo        |                 | Kenya           |             | Rwanda            |                             |
|---------------|-----------------|-----------------|-----------------|-------------|-------------------|-----------------------------|
|               | North of Bukavu | South of Bukavu | Kanyamkago area | Kisumu area | Northern Province | Eastern & Southern Province |
| Common bean   | 86              | 79              | 92              | 88          | 32                | 93                          |
| Climbing bean | 39              | 46              | 11              | 61          | 77                | 15                          |
| Soybean       | 26              | 6               | 16              | 24          | 4                 | 37                          |
| Groundnut     | 23              | 5               | 47              | 34          | 0                 | 43                          |
| Cowpea        | 1               | 1               | 43              | 62          | 0                 | 0                           |
| Bambara nut   | 2               | 0               | 5               | 0           | 0                 | 0                           |
| Garden pea    | 0               | 0               | 0               | 0           | 3                 | 7                           |
| Green gram    | 0               | 0               | 0               | 10          | 0                 | 0                           |
| Fodder legume | 1               | 1               | 0               | 0           | 2                 | 4                           |

### *Use of inputs in legumes*

Organic inputs were widely used on legume crops (Table 2). The organic inputs consisted of manure, compost, household waste and ashes. The vast majority of households had access to manure through the livestock they took care of. Cattle was the most important livestock type in Kenya and Rwanda, while small livestock species like goats, guinea pigs and chicken were more dominant in DRC. Only in Kenya, the use of mineral fertilizer, especially DAP, in legumes (often intercropped with maize) was common. None of the farmers in Rwanda and DRC and 1% of the farmers in Kenya applied inoculants RPIOR TO n2Africa starting activities. Given that soybean often gives a strong response to inoculant application in this region, the N2Africa project can contribute a lot to increasing yields by promoting the use of appropriate inoculants in soybean.

Table 2. Use of organic inputs and mineral fertilisers in legume crops (% of fields receiving the input).

| Legume type   | DR Congo       |                    | Kenya          |                    | Rwanda         |                    |
|---------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|
|               | Organic inputs | Mineral fertiliser | Organic inputs | Mineral fertiliser | Organic inputs | Mineral fertiliser |
| Common bean   | 92             | 0                  | 23             | 51                 | 72             | 2                  |
| Climbing bean | 93             | 0                  | 29             | 49                 | 81             | 9                  |
| Soybean       | 84             | 0                  | 22             | 46                 | 78             | 5                  |
| Groundnut     | 74             | 0                  | 7              | 33                 | 41             | 1                  |
| Cowpea        | 100            | 0                  | 15             | 49                 |                |                    |

### *Sale of legume products*

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



In all three countries, legume grains, especially beans, were a main component of the household nutrition. The products of the main grain legumes were also sold on local markets, but in most cases less than half the growers sold produce of the legumes they cultivated (Table 3). Thus, most of the legumes were cultivated for home consumption.

Table 3. Sale of legume products (% of growers involved in the sale of the relevant legume).

|               | DR Congo | Kenya | Rwanda |
|---------------|----------|-------|--------|
| Common bean   | 22       | 34    | 40     |
| Climbing bean | 29       | 24    | 7      |
| Soybean       | 43       | 32    | 38     |
| Groundnut     | 56       | 47    | 31     |
| Cowpea        |          | 33    |        |

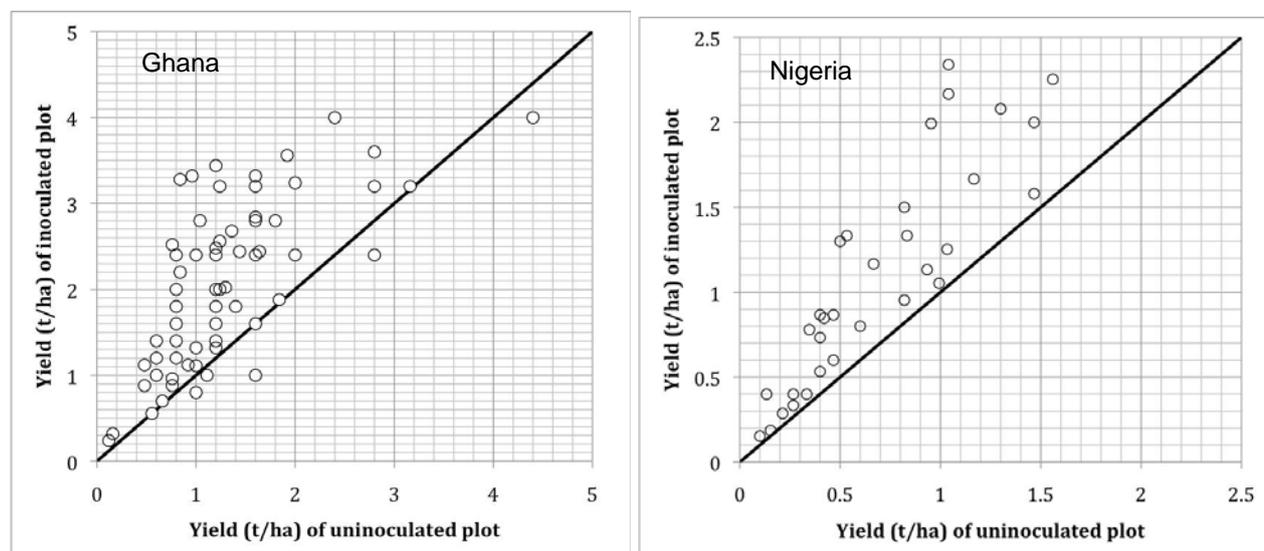
#### Baseline in other countries

The baseline data from Ghana and Malawi are currently being analysed. In Nigeria, Mozambique and Zimbabwe, the data have been collected and is currently being entered in electronic files. In many countries, the baseline survey data will be complemented by farm characterisations, providing detailed information on yields, areas, farm lay-out, resource flows and farmers' production orientation, allowing the N2Africa team to identify niches for N2Africa's legume technologies.

Linus Franke

### Soyabean inoculation responses from the 2010 season in West Africa

We are currently collating results from the first year's research and demonstration trials across the eight countries. Here is a preview of results from Ghana and Nigeria where strong responses to inoculation with soyabean were found in farmers' fields. In Ghana where the rainy season ended very late many of the soyabean crops yielded more than 3 t/ha, whereas in Nigeria the top yields were around 2 t/ha. Strong responses to inoculation were observed in many cases.



Abdullahi Bala and Ken Giller



## Ensuring of understanding the status of value chains of our four major crops

One of the important objectives of N2Africa is to work with partners in all of our eight countries to ensure that we understand the status of value chains of our four major crops soybean, cowpea, groundnut and common bean. This knowledge will be used to help plan, for example where market linkages need to be improved or where agro dealers need to be encouraged to stock specific inputs and receive training on their storage and use. The person leading this study is Joseph Rusike, on the photo. Joseph will be visiting all eight countries.

Kenton Dashiell



## Zimbabwe farmers growing soybean



During February professor Paramu Mafongoya lead a group of N2Africa team members to several different project sites in Zimbabwe to meet farm families that are participating in our project. Many families were growing soybean for the first time even though they had seen it produced by other farmers. Most were very impressed with the excellent growth and lack of disease and insect problems. The main concern of farmers in Zimbabwe is to have an accessible market for their soya produce. In addition, farmers want to know how to use soybean for consumption in their households.

Kenton Dashiell, Judith de Wolf

## TL-II and improved bean varieties

One of the most important components of the production packages being disseminated to farmers by N2Africa are improved varieties of soybean, common bean, groundnut and cowpea. Many of these improved varieties have been developed and tested by the Tropical Legumes II (TL-II) project. For example there are numerous soybean varieties that are being introduced to farmers that were developed by TL- II. In March the N2Africa project leader, Kenton Dashiell was in Malawi and met with Hailu Tefera (pictured) the scientist leading the TL-II soybean breeding project. Hailu indicated that in the next few years we should expect to have new soybean varieties that have improved resistance to soybean rust and higher grain and fodder yields.

Kenton Dashiell



**CIALCA and the CGIAR Consortium Research Programme (CRP) on the Humid Tropics have the pleasure of announcing an international conference on the 'Challenges and Opportunities for Agricultural Intensification of the Humid Highland Systems of sub-Saharan Africa', to be convened in Kigali, Rwanda from 24-27 October 2011**

Please see the conference flyer (added at the end of the Podcaster) for more details, including registration information and how to submit a paper or poster for presentation.

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



From now on the Podcaster will come out each month – and we look forward to receiving news and contributions – particularly from partners. Please send in contributions by the third week of each month. Contact address for this newsletter is: [N2Africa.office@wur.nl](mailto:N2Africa.office@wur.nl)

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