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## Rwanda Scientists' visit to Bean IPM Farmer Communities in Hai District, Kilimanjaro Region, Northern Tanzania



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Farmer group activity reports for the DFID  
Crop Protection Programme (CPP) Bean  
IPM Promotion Project in eastern and  
southern Africa.

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For distribution to Village Information  
Centres (VICs) in bean growing areas in  
eastern, central and southern Africa.

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## Introduction

Beans are important for food and cash income to most farmers in Hai District, Kilimanjaro region in northern Tanzania. In recent years bean production has been declining and in most seasons the crop become stunted, yellow and dry up before maturity. Some farmers have been forced to abandon bean cultivation because it was a waste of their limited resources. In 1997/98 a delegation of farmer representatives from Sanya Juu village approached the district policy makers requesting for assistance in solving their bean production constraints. The district agricultural authority approached the Northern Zone Agricultural Research Institute at Selian (SARI) and International Center for Tropical Agriculture (CIAT) - Arusha to help in problem diagnosis. Among the constraints that were diagnosed were insect pests, especially bean foliage beetle (*Oothea* spp.) larvae and adults,

bean stem maggots (*Ophiomyia* spp.), aphids (*Aphis* spp.) and flower beetles (*Mylabris* sp. and *Coryna* sp.). Farmers were very cooperative in the process and they immediately organised themselves into a learning group that started its research activities in 1998. This group researched into the biology of the pests and tested both traditional and improved strategies for their control.



Bean foliage beetle



Aphids

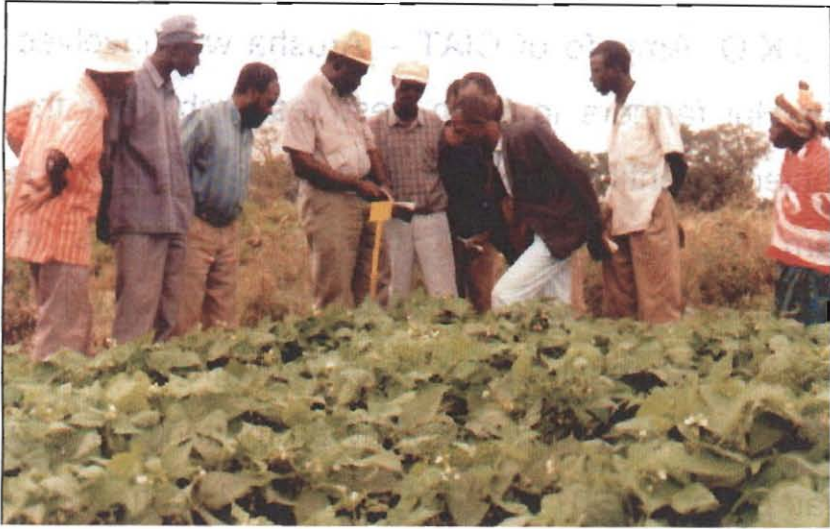


Bean fly



Bean flower beetle

Dr J.K.O. Ampofo of CIAT – Arusha was involved with Hai farmers in bean pest research from the problem identification stage in 1998. He led a team of research and extension scientists in Tanzania, Kenya and Malawi in developing a project proposal on bean integrated pest management (IPM) technology promotion. The 3-year project (2001 to 2004) with funding from the British Government is facilitating farmers in promoting and scaling up their traditional pest management strategies for beans in Hai district as well as exchanging their knowledge with bean farmer groups at other sites. Starting January 2002, Dr Ampofo is also leading the agricultural research development and technology transfer project for Rwanda. Two of his collaborating scientists were visiting Tanzania on other CIAT activities and through him they were facilitated to visit Hai IPM bean farmer communities.



Dr JKO Ampofo (fourth left) with Hai farmers and NARS scientists

The two research scientists, Speciose Kantengwa and Mary Rucibigano from the Institut des Sciences Agronomiques du Rwanda (ISAR) Agricultural Technology Development and Transfer Project (ATDT) in the Republic of Rwanda, visited Hai District bean integrated pest management (IPM) farmer learning groups. The objective of the visit was to familiarise with IPM development and dissemination activities that are carried out by Hai bean farmer communities.



The researchers also paid a visit to the Hai District Extension Services Office, the Northern Zone Research Director at the Selian Agricultural Research Institute, the National bean research coordinator, CIAT – Arusha office and two NGO representative offices (Adventist Development and Relief Agency - ADRA and World Vision International – Tanzania - WVI/Tz). These NGOs are involved in technology development and dissemination to farming communities in northern Tanzania.



Speciose (left) and Mary

Because the visit was made after the growing season in Hai District (March - August), farmers could not show field activities. However, they gave the historical background to their groups and narrated the field activities they were involved with during the season. Each farmer group displayed some of the materials they have been testing in bean IPM learning and promotion activities. The materials included good quality seed of improved bean genotypes harvested from IPM learning and variety demonstration plots, traditional pest control technologies (cow urine, cow shed slurry, kerosene and soap, wood ash, various herbs) and commercial neem products. Discussions were held with farmers and extension officers at each learning site. Over 50 farmer groups are involved with bean IPM learning activities in Hai district. Five most active groups were visited. These are Sanya Hoyee and Mshikamano group of Sanya Juu village,

2 groups at Magadini village and Kwa Nkya women farmer group of Mungushi village.

The visiting scientists were highly impressed by the modest process in which each farmer learning group was founded and the close participation of individual group members. They also noted the confidence and knowledge that each group member had acquired in bean pest biology and management and other group activities. The involvement of the various stakeholders was very new to the two scientists. They were convinced that it is a good approach in technology development and dissemination and they would adopt in Rwanda.

At the research institute, the visitors noted the linkage between the national research programme and CIAT, and discussed various issues related to beans and banana research and improvement.

## **Farmer communities visited**

### **1. Sanya Hoyee and Mshikamano farmer groups**

Sanya Hoyee is the mother learning group for all of Hai District Bean IPM farmer groups. The farmers at this village collaborated with researchers and extension personnel to study the bean crop in affected fields together and clearly identified and ascertained that among other causes, *Oothea* spp. larvae largely accounted for bean root damage and adults for foliar damage (bean foliage beetle - BFB). The team also monitored and confirmed that the life cycle of the pest lasted for one year with adults being stimulated by the first seasonal rains and also by exudes from bean plant roots. Farmers came up with options for management and the team agreed to participate in testing them at selected farmer fields. The participating farmers formed a learning group. The group organised field days

where non-participating farmers from the district were invited to visit. The visitors learned about the pest biology and management strategies from their hosts.

Visiting farmers went back to their villages and decided to form their own new learning groups. Hence the 52 existing bean farmer learning groups in the district. Most groups have other activities in addition to bean production. Mshikamano group is one of the nearest to Sanya Hoyee and the two have always organised learning activities together. The village extension officer for the two groups, Mama Amanda Koola who is also a farmer, is the founder member of the IPM village extension officers group in Hai District. Being an inspiring farmer, trainer and officer, she has been a trainer to many other extension officers and farmers within Hai District, other parts of Tanzania and also outside the country.



Mama Koola (right) and group farmers in a drama on the efficacy of traditional IPM strategies

**Activities:** Crop and livestock farming. Crops include maize, beans, coffee, bananas, sweet potatoes, sunflower, fruits and vegetables. Major bean insect pest problems are bean foliage beetle (BFB - *Oothecca* spp.), aphids, bean stem maggots (BSM - *Ophiomyia* spp.), pod borers (*Helicoverpa armigera*), thrips and flower beetles. Pest management technologies include the use of cow urine, kerosene + soap, wood ash, and commercial formulations of neem powder and neem oil.

## 2. Magadini farmer groups

The 2 Magadini village farmer groups were organised after a field day visit to the initial IPM activities at Sanya Hoyee where some of the farmers learned about the strategies that were being tested on beans. Because Magadini and Sanya Hoyee share similar crop pest problems, the Magadini farmers immediately embarked in testing some of the strategies.



Visitors discuss IPM strategies with farmer groups at Magadini village

**Activities:** Crop and livestock farming. Crops include maize, beans, sunflower, sweet potatoes, fruits and vegetables. Major bean insect pest problems are bean foliage beetle (BFB - *Oothea* spp.), aphids, pod borers (*Helicoverpa armigera*), cutworms and flower beetles.

### **3. Mungushi village - Kwa Nkya Women group**

Mungushi village is near the district offices and the main highway from Dar es Salaam-Moshi to Arusha. The village has four learning groups on different aspects of agricultural development. One of these groups, the Kwa Nkya Women Group is involved in crop and livestock farming as well as operating a sunflower oil-pressing mill within Hai town council. Except for advisors and a watchman at the group's town plot where the oil presser is operated, all group members are women. Initially these women adopted



sunflower production (in addition to maize, beans, sweet potatoes, bananas, vegetables and fruits) and were interested in pressing oil for domestic consumption and for sale to generate household cash income.

Individual women experienced problems in hiring transport and travelling far from home to press their sunflower seed for oil. These women decided to form a group, acquired a plot through the town council and developed it. They solicited their constituent's national parliamentary representative for help in completing the building and in acquiring a sunflower oil pressing plant. This move enabled them to officially register their group. The group continued with farming and pressing sunflower oil. The semi-refined oil is consumed at home and some is sold at the local market. The group has plans to purchase an oil filter/refiner to

improve the quality of their product. The seed cake from the oil press is sold as livestock feed to group members and the community.

When these women attended the first bean IPM field days at Sanya Juu, they also developed interest in testing some of the strategies in addition to conducting different crop variety demonstrations.

**Activities:** Crop and livestock farming. Crops include maize, beans, sunflower, sweet potatoes, fruits and vegetables. Major bean insect pest problems are bean foliage beetle (BFB - *Oothea* spp.), aphids, pod borers (*Helicoverpa armigera*), cutworms and flower beetles.



Mungushi women group farmers and visitors proudly displaying improved genotype bean seed samples from their IPM learning plots

This group has one of the best performing agro-enterprise activity in the district. Group members are keen to train, exchange and share their experience with other farmers. The background and activities of this group were highly valued by the visitors, who in turn were keenly interested in initiating the same in Rwanda.

## NOTES

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The Report on Rwanda Scientists' Visit to Bean IPM Farmer Communities in Hai District, Kilimanjaro Region, Northern Tanzania is produced by the International Centre for Tropical Agriculture (CIAT)

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