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COLECCION HISTORICA

Visit by Kakamega and Kabale farmers to Kisii IDPM site in Kenya



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African Highlands Initiative
P.O. Box 293
Kabale, Uganda



KARI - Kisii
Regional Research Centre
P.O. Box 523
Kisii, Kenya



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
northern Tanzania

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Introduction

Cross visits between farmers enable them to learn, share information and exchange experiences. Dissemination of technologies is also facilitated in the process. Farmer learning processes during the course of project activities have revealed that farmers learn faster and adopt technologies from their farmer colleagues than from researchers and extension agents.

Objective

To enable farmers from Kakamega and Kabale learn, share information and exchange experiences with Kisii farmers on integrated disease and insect pest management (IDPM) and integrated nutrient management (INM).

Participants

The visit was organised by Bototo bean IDPM farmer group in collaboration with KARI – Kisii on 9th December 2003. The participants were 15

hosting farmers (9 women, 6 men) out of the Bototo group of 30 (15 women, 15 men), 4 farmers (men) from Uyugi division and 12 farmers from Hamisi and Vihiga districts in Western Province, Kenya (9 women, 3 men), bean IPM project site collaborator and his field assistant and a research assistant from CIAT-Arusha. Coincidentally, 2 farmers (1 woman, 1 man) and 2 research assistants from Kabale - Western Uganda who were facilitated by the African Highlands Initiative (AHI), were also visiting Bototo farmers on the same day. They actively contributed to the discussions.

Activities

Bototo farmers grow maize, beans (bush and climbing beans), bananas, sweet potatoes, exotic and local vegetables and some keep livestock. Farmers have recently observed that their crop yields were declining in each season. Some of

these farmers approached KARI with their problem and collaborative efforts helped them identify the main constraints to be low yielding crop varieties, infertile soils, insect pests and diseases, and parasitic weeds (especially *Striga* spp.). Continued collaboration with KARI Kisii researchers, enabled them to develop strategies for management of the different constraints. Among the strategies that were tested and found to be effective are:

1. Production of improved high yielding bean seed

Bototo bean IPM farmer group is also involved in the production of improved pest tolerant bean seeds for distribution to other farmers. Mr Robert Maragia informed the visitors that the group received and planted 33 bush bean genotypes and 16 climbing bean genotypes from the Eastern and Central Africa Bean Research Network

(ECABREN) through KARI- Kisii. During the visit, beans were at maturity stage and the farmer group requested participants to contribute their views in the evaluation of their field performance. The top three genotypes (bush types) selected in the field by participating farmers were BAO 4-4/9, BAO 1-5/25 and BAO 5-7/51.



During discussions that followed by the evaluation a question was raised by visiting farmers

- Q. How many farmers have already received bean seeds from the group?
- R. More than 500 farmers from Bogake, Bonyaganyi, Bosamo and Nyandiba sub -

divisions have already received bean seeds (of KK 8, KK 15 and KK 22) from Bototo group.

2. Village Information Centre

The secretary for the village information centre (VIC), Mr John Ogori stated that the VIC was set up by Bototo bean IPM farmer group and officially inaugurated on 6th June 2003. The VIC was established by farmers in collaboration with the Ministry of Health for use by farmers, students and the rest of the community. It will enable them access information more easily and quickly to widen their knowledge.

Reading materials were obtained from KARI-Centres, Ministries of Health and Education and some were contributed by individual farmers from their home libraries. The group had arranged some days in a week for farmers, students and other villagers to access the library. The library secretary is responsible for keeping attendance records. Thursday was reserved as a special

day for farmers and other villagers and Saturday for students.

Visiting farmers raised questions and Bototo farmers responded as follows:

Q. How did you construct the centre?

R. The materials for building our centre were contributed by bean IPM group members (the plot for the building was a contribution from a group member), assistance was also received from the Local Area Chief and Ministry of Health

Q. Up to now, how many farmers have accessed the library?

R. More than 200 farmers have already accessed the library.

3. Soil fertility improvement in maize and soybean production

One of the IDPM participating farmers (Mr John Ogori) informed the participants that Bototo farmers are using farmyard manure, Minjingu

phosphate (MRP), Diammonium phosphate(DAP) and Triple super phosphate (TSP) to improve soil fertility in maize and soybean production. One handful of well - decomposed farmyard manure



was mixed with 1 spoonful of either MRP, DAP or TSP and applied to planting hole. This increased yields of

maize and soybean compared to farmyard manure, MRP, DAP or TSP alone.

4. Preparation of compost manure

Mrs Basifika Barongo informed the participants that most farmers in Bototo have access to farmyard manure. However, they did not have adequate knowledge on the appropriate methods for preparation and field application. Some farmers were applying un-decomposed manure and others did not even use it for crop production.

When Bototo bean IPM farmer group members became aware that the use of quality manure improves crop productivity, they were keen to acquire knowledge on the preparation and application of compost manure and other fertilizers.

Preparation of compost manure

- Select an area close to where farmyard manure is stored. The area should be shaded and protected from surface run off e.g. under the tree
- Excavate a shallow pit
- Collect animal bedding materials, feed remains e. g. napier, maize stover or other residues from zero grazing units or where animals are tethered in homesteads. Sprinkle wood ash on every heap collected to enhance decomposition
- Sprinkle some water on top

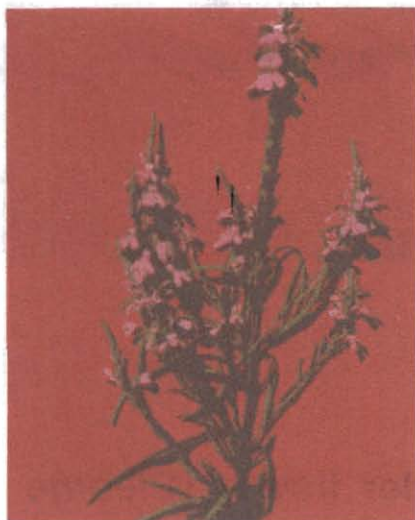
- Continue sprinkling wood ash on each layer collected until the heap is 1.5m high
- Turn the heap after 3 weeks for uniform decomposition
- Continue turning the heap every 3 weeks until the manure is decomposed. This will take about 2 months
- Well-decomposed farmyard manure should be dark and loose.



5. Control of parasitic weed (*Striga* spp.) using *Mucuna* sp. and *Clotolaria* spp.

A hosting farmer (Mr Francis Lendieki) pointed out that witch weed- *Striga* spp. (Kayongo in Kisii) is a parasitic weed that affects a range of

cereal crops in semi arid tropics of Africa. It can reduce crop yields by 29 to 100%, thereby affecting the livelihoods of the smallholder farmers. The weed has become a major problem in maize and sorghum production in most of western Kenya including Kisii and Kakamega. Researchers have observed that, farmers themselves enhance the spread of



Striga hermonthica

Striga unknowingly by spreading the mature weeded plants on roadsides from where pedestrians, vehicles and animals peak and transfer the seed to clean areas. To

control this dangerous weed, farmers in Bototo practice crop rotation whereby maize is followed by non host legumes (e.g. *Mucuna* and *Crotalaria* spp.). Farmers explained that they prefer to use *Mucuna* and

Crotalaria because both of them are legumes that have the potential to improve soil fertility and structure when ploughed in and also conserve soil moisture if used as a cover crop. The two are valuable sources of livestock forage.



Mucuna sp.



Crotalaria sp.

6. Production of Spider flower (*Cleome* spp.)

Mrs Helen Ondieki stated that Spider flower (Chinziga in Kisii) is a local and nutritious vegetable that contains more protein, calcium,

iron, vitamin A and C compared to other vegetables (e.g. cabbage). In previous years the



Cleome spp.

crop was commonly grown by women and in most areas it was harvested from fields as a volunteer crop. Recently

however, men and women have engaged in the production of this crop both for home consumption and for the local market.

(a) Land preparation

Select a well-drained fertile soil for the crop to grow well

Prepare land before the on-set of rains

Plough deeply and harrow to obtain a fine tilth similar to finger millet.

(b) Source of seed

Seeds can be obtained from KARI Centres (Kisii, Kakamega, and Kitale), Kenya Seed Company

and local markets. Ensure seeds are clean and free of disease and pest damage.

(c) Planting and fertilizer application

- Plant early at the on-set of rains. Irrigation facilities can be used to plant at any time of the year
- Make furrows of not more than 5 cm deep at a spacing of 45 cm apart
- Apply farmyard manure at a rate 2 handfuls for each 1 m furrow.
- Add to the same furrow 2 Coca-Cola bottle tops of DAP
- Mix the two fertilizers thoroughly with soil
- Mix seed and soil at the rate of 2 parts of soil to one part of seed, then drill. Cover the seeds with a thin layer of fine soil to ensure uniform germination.

(d) Weeding and thinning

Thin to 15 –20 cm between the plants when the seedlings are 6 cm high. Keep the field constantly free from weeds.

(e) Top dressing

- Top dress one week after thinning and 1 month later to prolong the harvesting period
- Top dressing with 2 Coca-cola bottle tops of Calcium ammonium nitrate (CAN) in 1m long furrow.

(f) Topping

Topping is the removal of the growing tips to encourage branching for high leaf production. This is done 2 weeks after top dressing or when the crop is 20 cm high.

(g) Pest management

Flea beetles usually attack spider flower and perforate bigger leaves. Farmers use botanical extracts to control the pest. Use similar strategies applicable to *Oothea* spp. management.

(h) Harvesting

Harvest the leaves and shoots weekly one-month after germination. Harvesting time may vary depending on growth conditions especially moisture availability.

Benefits from the project

- Increased crop yields in small pieces of land
- Increased income—used in the purchase/to hire more land, used in paying school fees and household supplies
- Access improved bean seeds from KARI - Kisii
- Acquire knowledge on IDPM, INM, commercial production of local vegetable (Spider flower) and soil erosion control
- Train students from Maseno University on how to produce local vegetable (Spider flower)
Tours to Kakamega and ICRAF Maseno to acquire knowledge on INM, IDPM, Striga and soil erosion control
- Train other farmers on IPM, INM, commercial production of local vegetable (Spider flower) and soil erosion control
- New farmers have been sensitised and some are gradually joining the group
- Group members have been receiving invitation

from various other farmer groups to train them on IPM, INM and soil erosion control

Future plans

- To acquire training on production of local vegetable seeds
- To train more farmers on IPM, INM, commercial production of local vegetable (Spider flower) and soil erosion control
- To apply the knowledge in our own individual fields

List of participants

Name	Title	Address
Mr Francis Lendieki	Bean IPM farmer group Chairman	P O Box 3654 Kisii
Mr Robert Maragia	Bean IPM farmer group Secretary	-do-
Mr Joseph Mososi	Member	
Mr John Ogori	Member, VIC Secretary	-do-
Mr Michael Moruye	Member	-do-

Mrs Florence Oeri	Member	-do-
Mrs Beatrice Gesare	Member	-do-
M/s Naomi Mwango	Member	-do-
M/s Anna Onchangu	Member	-do-
Mrs Marioni Nyamwegu	Member	-do-
Mrs Evaline Ombese	Member	-do-
Mrs Basifika Barongo	Member	-do-
Mrs Lidya Mososi	Member	-do-
Mrs Hellen Ondieki	Member	-do-
Mr Enocent Makori	Member	-do-
Kakamega farmers		
Mrs Roselyne Juma	Farmer	P O Box 169, Kakamega
Mrs Regina Munialo	Farmer	P O Box 169, Kakamega
Mrs Eunice Changirwa	Farmer	P O Box 212, Kakamega
Mrs Melisa Onyango	Farmer	P O Box 300, Kakamega
Mrs Gladys Luseno	Farmer	P O Box 212, Kakamega
Mrs Evaelyne Odari	Farmer	P O Box 2003, Kakamega

Mrs Selina Ajega	Farmer	P O Box 34, Kakamega
Mrs Evalyne Nakhumicha	Farmer	P O Box 34, Kakamega
Mrs Marcella Maraa	Farmer	P O Box 169, Kakamega
Mr John Alwiga	Farmer	P O Box 203, Maragoli
J. Mwihami	Farmer	P O Box 169, Kakamega
Mr Gidion Rachaiar	Researcher (Agronomist)	P O Box 169, Kakamega
Kabale farmers		
Mr Edvida Mugisha	Farmer	C/o AHI, P O Box 293, Kabale Uganda
M/s Marcy Saturday	Farmer	C/o AHI, P O Box 293, Kabale Uganda
Mr Robert Muzira	Research assistant	C/o AHI, P O Box 293, Kabale Uganda
Mr Rick Kamugisha	Research assistant	C/o AHI, P O Box 293, Kabale Uganda

KARI- Kisii		
Mr John Ogecha	Entomologist	KARI- Kisii P O Box 523, Kisii Kenya
Miss Janet Obanyi	Field assistant	KARI- Kisii P O Box 523, Kisii Kenya
CIAT Arusha		
Mr Hendry A Mziray	Research assistant	CIAT- Arusha P O Box 2704, Arusha Tanzania

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