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## Visit by Kasungu Farmers to Bembeke EPA in Dedza District, Malawi

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Farmer group activity reports for the DFID  
Crop Protection Programme (CPP) Bean  
IPDM 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**

The Malawi national research programme, bean farmers, PLAN International (Malawi), Concern Universal (Malawi) and the International Centre for Tropical Agriculture (CIAT) are collaborating to promote initiatives/innovations aimed at enhancing rural livelihoods among smallholder farmers at two pilot villages (Bokosi Nyirenda and Chisewu) in Kasungu and eight others (Bembeke area) in Dedza districts. One of the outputs of this initiative is to enable farmers to identify research needs and be able to plan and undertake their own research to resolve their constraints.

During a community participatory diagnosis in Kasungu in November 2003, beans were mentioned to be one of their major food crops and source of protein in the two villages. Other crops included tobacco, maize, groundnuts, sunflower, soy beans, European potatoes, sweet potatoes,

onions, cassava, tomatoes and bananas. Bean production is however, hampered by a number of production constraints such as lack of improved high yielding bean varieties, poor agronomic practices and high incidences of insect pests and diseases.

To address the problems arising from insect pest and disease damage on beans, farmers expressed interest to test several control options for use in their crop fields. Before undertaking this programme, it was necessary to sensitise and improve farmers' awareness on important field pests in beans. Two major activities were therefore conducted in Kasungu as follows:

- 1. Informal insect pest survey in community farmer fields**
- 2. Field visit to Bembeke farmers participating in IPM activities**

# **1. Informal insect pest survey conducted in February 2004.**

## **Objectives**

- i) To identify the major insect pests of beans in the two villages.
- ii) To brief the farmers on the biology and ecology of the identified insect pests
- iii) To gather information on traditional control strategies used by farmers and which would later form the basis for developing control options for use by bean farmers

To achieve the above objectives, field visits were conducted in the two villages during bean flowering stage. Farmers were asked to collect and/or observe any insect pest and its damage. This was followed by a discussion panel, in which farmers were required to identify the pests by their local names, determine the damage they cause and prioritise their level of importance. Farmers were

also required to provide information on control measures for each insect pest. Table 1 highlights some of the pests and pest damage observed in the two villages.

**Table1.** Observed insect pests and bean crop damage symptoms at Bokosi Nyirenda and Chisewu village in Kasungu district, central Malawi

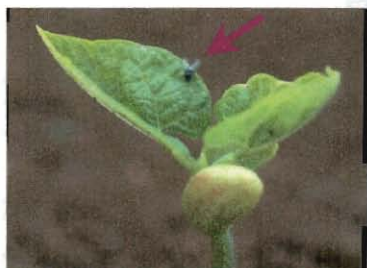
<b>Bokosi Nyirenda</b>	<b>Chisewu</b>
1. Beans drying and dying	1. Aphids (Nyinda)*
2. Aphids and ants	2. Ants (Nyerere)
3. Fly	3. Fly (Ntchetche)
4. Swollen and split bean stems	4. Pod bores (Vibungu)
5. Leaf yellowing and drying	5. Bean foliage beetles (Lwenya)
6. Small maggots in stems	6. Swollen and split bean stems
7. Bean foliage beetles	7. Elegant grasshoppers (Mnunkhadala)
8. Elegant grasshoppers	
9. Pod bores	

\*Local names are in brackets

Following discussions on the biology, life cycle, ecology and damage caused by the different insect pests, farmers prioritised the pests (Table 2).

**Table 2.** Farmers' ranking of bean insect pests based on the level of importance at Bokosi Nyirenda and Chisewu villages in Kasungu district, central Malawi

Bokosi Nyirenda	Chisewu
1. Bean fly and plant with swollen stem	1. Bean fly
2. Aphids	2. Aphids
3. Bean foliage beetle	3. Bean foliage beetle
4. Pod borers	4. Pod borers
5. Elegant grasshoppers	5. Elegant grasshoppers



Bean fly damage on beans



Bean foliage beetle damage on beans

Both villages seem to have similar pest problems. Farmers did not know bean fly damage and therefore, could not determine the cause of bean leaf yellowing, stem swelling and cracking in most of their fields. This was a major problem but they did not associate the damage to bean fly until this day. Because aphids were associated with the black ants, they felt the ants were as bad as the aphids and farmers from



Farmers search for bean pests



Aphids on bean plant

Chisewu village, a village close to Malawi/Zambia

boarder bought chemicals from Zambia and in general, they seem to use strategies that were learnt from Zambian farmers. Control strategies for the different pests in the two villages are listed in Table 3.



**Table 3.** Bean insect pest control options used by farmers at Bokosi Nyirenda and Chisewu villages in Kasungu district, central Malawi

Bokosi Nyirenda		Chisewu	
Insect pest	Control	Insect pest	Control
1. Bean fly	Nothing	1. Bean fly	Nothing/ avoid weeding during a dry spell
2. Aphids	DDT and Sevin	2. Aphids	<i>Tephrosia</i> ( <i>Local cultivar</i> )
3. Bean foliage beetle	Late planting	3. Bean foliage beetle	Late planting
4. Pod bores	Nothing	4. Pod borers	Decis, Solubar (Boron)
5. Elegant grasshoppers	Physical killing	5. Elegant grasshoppers	Physical killing

None of the farmers from Bokosi Nyirenda used botanicals to control bean pests. However, they believe believe that *Tephrosia* has the potential to

kill pests since it can kill fish. Similar botanicals like 'Chidindili (*Neuratanenia*)', 'Mulundu (to be identified)' and 'Muwamani (to be identified)' which also kill fish may possibly kill insect pests. The farmers therefore expressed interest in testing such botanicals for use as sources of pesticides for bean pest control. Unlike Bokosi Nyirenda, the farmers in Chisewu use *Tephrosia*. According to their experience, it is the local cultivar of *Tephrosia* that is more effective compared to the improved cultivar introduced into their community by different soil improvement projects.

## **2. Cross visit by Kasungu farmer representatives to Bembeke bean IPDM farmer groups in March 2004**

The farmers from Bokosi Nyirenda and Chisewu villages in Kasungu district expressed interest in developing and promoting the use of botanicals

and other sustainable, economic and environmentally friendly control options in beans and other crops. A cross site field visit was therefore organised for them by PLAN International Malawi office, national research and extension agents and CIAT to gain experience from their fellow farmers in Bembeke who have been experimenting with indigenous and improved strategies. Twelve farmers, 7 from Chisewu (2 women, 5 men) and 5 from Bokosi Nyirenda (3 men, 2 women) facilitated by PLAN International to visit Bembeke extension planning area (EPA) in Dedza district, central Malawi. It anticipated that these representative farmers would brief their community members on lessons gained from the Bembeke farmer groups.

In Bembeke, the farmers were first briefed on the history of the Bembeke IPDM group and highlights

on the reasons that lead Bembeke farmers to adopt participatory group approach.



The visiting Kasungu farmers toured two Bembeke villages (Simuka and Kamgultse) where group members had established the following demonstrations and learning plots:

1. Combining manure and *Vernonia* to control bean insect pests
2. Integrating time of planting and use of botanical (*Vernonia*) to reduce insect pest damage
3. Demonstration on use of botanical (*Tephrosia*) for the control of insect pests

in farmers' local cultivars

4. Demonstration on integrating resistant bean variety and botanical insecticide source (root tubers of *Neuratanenia mitis* -Teta)
5. Use of botanical crude leaf extract (*Vernonia*) for the control of cabbage insect pests
6. Evaluation of 5 climbing bean varieties (RWV 1042-2-2, CAB 19, RWV 1940-3, RWV 1036-1, Farmers' Local).



After the tour, the farmers were brought to Ngoononda Home Based Care centre, which also acts as a rural resource centre (i.e. Village

Information Centre- VICs) where the Group Village Headman (he participated in the whole tour) addressed the farmers before a group discussion on the issues raised during the tour.

The visiting Kasungu farmers were impressed with what their friends in Bembeke are doing to combat bean pest problems and raised the following questions:

1. What are the commonly used botanicals?

**Answer:** *Vernonia leaf extract (Futsa in Chichewa or Soyo mkulu in Tumbuka), Tephrosia leaf extract (Jerejere in Chichewa, Mtetezga in Tumbuka), Neuratanenia tuber (Teta in Chichewa, Chidindili in Tumbuka), Sisal leaf extract (Khonje in Chichewa and Tumbuka), Tithonia leaf extract (Delia in Chichewa)*

2. Where did you learn about the use of botanicals for crop pest control?

**Answer:** *This was passed to us from our parents*

*and grandparents (ancestors)*

3. How do you ensure that you have enough botanicals?

***Answer:*** *Botanicals such as Vernonia and Tithonia are found in the wild while most of the Tephrosia was provided for soil fertility improvement and is now readily grown by most households.*

4. Why do you apply manure in beans and what type of manure do you use?

***Answer:*** *Our soils respond to manure application. When we apply manure we have vigorous plants which for no reasons seem to withstand most pest attack. We usually use compost manure made from plant leaves or debris.*

5. How do you prepare the compost manure?

***Answer:*** *We dig a pit in which we throw all sorts of trash and waste. The trash and waste is applied as manure in the field when it is decomposed*

6. When do you start applying the botanicals and how often do you apply them in the field?

**Answer:** *We start applying botanicals immediately after 100% germination and continue to do so once every week until crop maturity.*

7. How do you prepare the botanicals?

**Answer:** *We pound leaves (if Tithonia or Vernonia) or root tuber (if Neuratanenia), soak the pounded material in water and leave the mixture to stand over night and apply the following day with the aid of a broom to sprinkle the mixture onto the plants.*

8. Since we use bean leaves as spinach, how long should we wait before plucking the leaves for consumption after applying the botanicals?

**Answer:** *We normally wait for a period of one week.*



## General comments

The visiting farmers were impressed with what their hosts/friends are doing. They expressed willingness to establish similar IPDM activities in their communities. To this effect, a planning meeting is to be organised some time in July or August where the Kasungu farmers are expected to come up with plans for IPDM activities to be implemented in their communities during winter cropping season.

## List of participants

Village	Name	Title
Bokosi Nyirenda	Ms E Soko	Farmer
	Ms B Mkwewu	„
	Mr A Tomoka	„
	Mr M Nyirenda	„
	Mr F Banda	„
Chisewu	Mr L Phiri	„
	Mr D Nyirenda	„
	Mr L Phiri	„

	Mr L Mtonga	„
	Mr G Phiri	„
	Ms F Phiri	„
	Ms C Phiri	„
	Mr K Nyirenda	„
Simuka	Mr M Chankhandwe	Farmer
	Mrs L Saiwa	„
	Mr N Jabesi	„
	Mrs R Kadeweke	„
	Mrs N Mwase	„
	Mrs S Kamwendo	„
	Mrs S Sitolo	„
	Mr H Photcho	Farmer & Village Headman
Kamgulitse	Mr B Mpale	Chairman, IPDM Farmer Group
	Mr E Kachigololo	Farmer & Village Headman
	Mr H Magombo	Farmer
Kuthindi	Mr C Kalimwayi	Farmer
	Ms F Banda	„
	Mr G Sinsamala	„
	Mr E Filipi	„
	Mrs M Kacheyo	„
	Mrs M Kadosa	„
	Mrs M Kadosa	„
	Mrs L Grevazio	„
	Mr F Kampita	„
	Mrs T Chakakata	„
	Mr G Mbendera	„

Kauye	Mrs O Sinsamala	Farmer
	Mrs I Makalitchi	„
	Mrs J Chakuka	„
	Mrs E Chilumba	„
	Mrs T Grevazio	„
	Mrs D Siyasiya	„
	Mrs M Mtokoma	„
	Mrs L Kizito	„
	Mr G Pio	Farmer & Village Headman
Research staff	Mr H Mlenga	Bembeke Res. Substation
	Mr P Mviha	Chitedze Res. Station
	Mr J Sipuni	Research Attendant
	Miss T Phiri	Research attendant
	Mr N Sangole	ERI Project, CIAT-Malawi
Extension Staff	Mr G Gamulani	Extension worker, Bembeke EPA
	Mrs L Soko	Nutritionist, Lilongwe ADD
NGO	Mr H Chidaya	PLAN International



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