Trip Report
Malawi and Mozambique
May 30 – June 14, 2003

Bean/Cowpea CRSP

Prepared by
Dr. Jess Lowenberg-DeBoer
& Manuel Duarte Filipe
Purdue University
Department of Agricultural Economics

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Executive Summary

The general objective of this trip was to create the basis for starting a data collection process for the Bean/Cowpea CRSP research work in Malawi and Mozambique and for the doctoral thesis research for Manuel Filipe. Below the specific objectives are listed, along with the information collected in response to that objective:

1) Develop a preliminary description of the bean and cowpea market structure in Malawi and Mozambique – Beans are widely traded in and between Malawi and Mozambique (Figure 1). Within Malawi beans from the Dedza (e.g. markets in, Ntcheu and Dedza districts at Lizulu, Chimbiya markets respectively) tend to go to Lilongwe and Blantyre, while those from the southern part of the Dedza area (e.g. Tsangano Turnoff) and from Mulanje strictly go to southern Malawi city of Blantyre. Within Mozambique beans from Gorué tend to go to Maputo, while those from Alto Molocue go to Nampula. There is indication that Maputo (and Beira) also draw beans from Gorongosa, Tete (Angonia) and Niassa. Both countries import and export some beans, with the largest flow currently being exports of beans from Milange and Angonia Districts of Mozambique to Malawi. There is some indication that these flows are substantial. For example, in an interview with one of 20 or 30 bean wholesale traders in Milange it was revealed that he sends about 500 MT over the border each year. If this trader is average, this means that 10,000 to 15,000 MT of beans cross the border at Milange alone. Small quantities of high quality dry pack and canned beans come to both countries from South Africa. Some bulk beans, apparently from South Africa or Swaziland, are sold in Maputo informal markets.

Consumers in central Malawi seem to prefer khaki or "sugar beans" (tan with brown, black or red speckles). Those in southern Malawi tend to prefer red beans. Most of the beans flowing over the border at Milange seem to be red beans produced as a cash crop by Mozambican growers because the preferred bean in most of Mozambique seems to be the khaki or sugar bean. There is evidence of a premium for red beans on the Milange market because of demand from southern Malawi. There is little evidence khaki or sugar beans from Milange or adjacent areas of Mozambique reaching Lilongwe. Some khakis or sugar beans from Angonia reach Lilongwe via Ntcheu and Dedza area markets.

It should be noted that other than dry pack in Malawi, there appears to be very little bean or cowpea processing in Malawi or Mozambique, either at the industrial or artisanal levels. Contrary to belief in some CRSP circles, common beans are not used in the commercial versions of the locally produced infant food, Ljkuni Phala. Apparently, soybeans are the main protein source, with milk powder in some versions of the infant food. Contrary to rumors in Malawi cowpeas are not being processed into dahl. Cowpea fritters (badjia) are produced and sold in some Mozambican cities, but the scale of production and number of producers is small compared to production and sales of the comparable West African product (kosai or akara).

2) Identify information needs for bean and cowpea market structure - The interviews and discussion indicate strong interest in bean markets in the region. In spite of several consultant

studies (e.g. Dixie, 2000; Jooste and Smith, 2003; ICC, 2002; Muendane, 2002) numerous questions remain about the competitiveness of countries in the region in bean production and the dynamics of regional markets. The consultant studies tend to be narrowly focused on short run demands and the needs of specific South African firms. There is an urgent need for a study with a broader perspective that looks at longer run trends in bean supply and demand relative to the competitiveness of each country (and regions within countries). This type of study is well suited to being implemented within the context of PhD dissertation research.

The Bean/Cowpea CRSP Eastern and Southern Africa economics and marketing team should respond to intermediate term information demands by regularly updating USAID, NGOs and relevant government agencies on research results. One of the methods discussed with stakeholders during this trip is a one-page summary circulated by email at the time of the annual report (October & November each year). Stakeholders with a particular interest in some results could request more information. Groups that have requested this information include: USAID missions in Malawi and Mozambique, WV in Quelimane, Maputo and Zomba (Chingale), NASFAM, and GPSCA.

In the next few years while Filipe is doing required course work at Purdue, gaps in bean market information should be filled by research trips during summer or holiday periods. These missions need to be timed and planned to allow for time in Maputo to acquire a US visa for return. Within Malawi and Mozambique areas for which more information on supply and marketing practices are needed include:

- Rumphi area of northern Malawi
- Ntchisi area in central Malawi near Lilongwe city,
- The Gorongosa area of Sofala, Mozambique,
- The area of Tete province, Mozambique, across the border from the Dedza area of Malawi, and
- Niassa province of Mozambique.

Beyond Malawi and Mozambique, a regional perspective requires data on demand trends for beans in South Africa, Botswana and Namibia; and on potential supply and demand in Zimbabwe, Zambia, Tanzania and Angola. The current plan is to work with the University of the Free State, Bloemfontein, SA, on demand in South Africa, Botswana and Namibia. Collecting information in Zimbabwe, Zambia, Tanzania and Angola will depend on collaboration with CIAT and on interpretation of human subjects regulations at Purdue.

3) Assist in the setting up pilot bean price and quality data collection – Initial results from two months of price and quality data collection in Malawi were discussed. Suggestions were made for adapting the protocol to the characteristics of the Malawi market. Kambewa developed a plan to include data collection in the Milange, Mozambique market. Filipe and Lowenberg-DeBoer discussed price and quality data collection in Maputo and Beira with INIA leadership.

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I) Introduction:

The 2002-2007 proposal for the Bean/Cowpea CRSP Eastern and Southern Africa Region outlines a plan to study bean and cowpea marketing in the region. The 2002-2003 work plan specifies that an initial step in that study will be to describe bean and cowpea market structure in the area where Malawi and Mozambique share borders. To carryout that work plan Dr. Jess Lowenberg-DeBoer and Manuel Filipe visited Malawi and Mozambique in early June 2003. In Malawi they were joined by Dr. Patrick Kambewa, Chancellor College, Zomba. The general objective of this trip was to create the basis for starting a data collection process for the Bean/Cowpea CRSP research work in Malawi and Mozambique and for the doctoral thesis research for Manuel Filipe. The specific objectives of this team will be to:

1) develop a preliminary description of the bean and cowpea market structure in Malawi and Mozambique,
2) identify information needs for bean and cowpea market structure, and
3) assist in the setting up pilot bean price and quality data collection.

The initial market structure description is based primarily on interviews with key informants in southern Malawi and the province of Zambezia in Mozambique. Markets for both raw beans and cowpeas, as well as processed products were investigated. A detailed protocol for this data collection can be found in Appendix A. A list of official contacts is in Appendix B.

II) Logistics

Lowenberg-DeBoer and Filipe left West Lafayette at about 11:00 a.m. on Friday, 30 May. They traveled via Indianapolis, Detroit, Amsterdam, and Johannesburg to arrive in Blantyre, Malawi, about 14:00 on Sunday, 1 June. In Blantyre they were met by Patrick Kambewa at the airport. All three lodged in the Nali Lodge, for the nights of June 1, 2 & 3. On Wednesday, June 4, they traveled to Lilongwe by road, stopping at the Lizulu and Chimbiya Markets. In Lilongwe they lodged at the Agricultural Policy Research Unit (APRU) guest house. On Friday, June 6, they traveled to Zomba. Lowenberg-DeBoer and Filipe lodged in a guesthouse, while Kambewa went to his home. On Saturday, June 7 they traveled by road to Mulanje and lodged in the Mulanje View Motel.

On Sunday, June 8, they crossed the border to Mozambique on foot, were met by Sergio Nhemba, World Vision (WV), and stayed in the Pensao Lili, in Milange. On Monday, June 9, they were joined by Brian Hilton, WV Quelmene, visited the Milange market in the morning and with the Air Serv plane flew to Gorué in the afternoon. They lodged in the WV guest house in Gorué. On Tuesday, June 10, they visited the Gorué market early in the morning and flew on to Alto Moloco. In the afternoon, they dropped Kambewa at the Milange air strip, where he was met by Nhemba and taken to the Malawi border crossing. Hilton, Filipe and Lowenberg-DeBoer continued on to Quelemane.

On Wednesday, June 11, Filipe and Lowenberg-DeBoer flew to Maputo. On Saturday, June 14, Lowenberg-DeBoer left Maputo, to return to the US, via Germany. On Saturday, June 21, Filipe left Maputo for the US.

III) Malawi

In Blantyre on Monday, June 2, the first visit by Kambewa, Filipe and Lowenberg-DeBoer was to the Blantyre Central Market. This is a formal market built in 1972. It was at one time the busiest market in Blantyre, but activity has diminished as markets grew in the neighborhoods (also called locations or townships). The market seems to be functioning at about half capacity. Many stalls were empty.

Blantyre Central Market Merchant #1 - The first interview was with a female merchant with red, white, red speckled (Kalima type) and sugar beans, as well as cowpea, soybeans and millet displayed on circular woven trays with low sides (about 1 inch). She said that she charged 5K for the smallest plate (a disk about 3 inches in diameter) and 10K for the so called "coffee plate" (see Figure 1 in Appendix D), which probably held less than a standard cup. All beans and cowpea were sold at the same price. The merchant said that many consumers buy 10 of the small plates. She said that they prefer the dark red kidney beans. She was sorting beans as the interview was conducted.

This merchant said that she travels to Lilzulu and Tsangano Turnoff to buy beans. These markets are on the road to Llongwe and close to the Mozambican border. She said that many of the beans that she buys are from Mozambique.

Blantyre Central Market Merchant #2 – This man said that he paid 350K for one way transport to Dedza area on a mini-bus or truck. On the way back he paid 50K to 75K/bag for transport. All the beans that he bought were from Mozambique. He said that he buys as much as his capital allows, usually 1 or 2 bags (50 kg bags). He stock was composed of red, white, red speckled and sugar beans, as well as millet and dried cowpea leaves. Beans, cowpeas and cowpea leaves all 5K/plate. He said that the red and sugar beans sell first.

Ndirande market – Ndirande is an outlying neighborhood or township. This market is composed of rough stalls and tables. It is not a formal market, though a market tax is collected per stall. Many bean merchants here sell both by volume and by weight.

Ndirande Merchant #1 – This woman was selling all beans for 5K/plate (the small one about 3 inches in diameter) or 60K/kg. She said that many consumers preferred to buy by weight, but all the purchases made during the interview were by volume. She had red, white, red speckled, sugar beans and cowpea in stock, in addition to millet and soybean. The cowpea were 3K/plate or 50K/kg. She said that consumers prefer the dark red kidney beans. She was sorting beans as the interview was conducted because she said consumers prefer to buy pure type beans, not mixtures.

She said that she buys her stock in Lizulu or the Tsangano Turnoff. She said that the transport fare is 200K to 250K one way, with freight being 100K to 150K/bag. She said that she usually buys 2 to 3 bags. Depending on demand she said that she goes to buy 2 to 4 times per month.

Ndirande Merchant #2 – The vendor had a tray of white and off-type white beans which sold for 50K/kg, compared to 60K/kg for her other beans. She had red, white, yellow, red speckled beans and a mix of khaki and nanyati beans. She said that consumers prefer larger seed size and red color.

She said that she goes either to the Dedza area or the Mulanje area to buy beans. This year she has been going to Mulanje because the harvest in the Dedza area has been poor. The fare to Dedza area is 180K to 220K one way, with the freight for one bag transported back is 100K. The fare to the Mulanje area is 180K, with freight being 50K to 80K per bag. She said that this year she is paying 40K/kg at Lizulu and 43K/kg at Mulanje.

She also noted that business was slow this time of year because fresh peas were in season. In another section of the market, Kambewa, Filipe and Lowenberg-DeBoer observed fresh peas being sold in the pod or shelled. The shelled peas were being sold for 5K/plate. The peas are grown in the area of Blantyre and have a short season.

Ndirande PTC Kwiksave Store – Kwiksave stores are part of the Peoples Trading Company (PTC) chain. The PTC is parastatal, and has the Spartan look of a government run retail outlet. This store stocked no dry pack beans

Later Kambewa, Filipe and Lowenberg-DeBoer visited the larger PTC “main shop” in central Blantyre. The only dry pack beans on the shelf in this store were some 500g bags of sugar beans for 85K. These sugar beans were packed in South Africa. These bags looked like they had been on the shelf for a very long. The plastic packaging was scuffed and cloudy, possibly a case of dumping.

The Blantyre Shoprite also had no dry pack beans. It did stock dry pack lentils form South Africa. The Shoprite was full of customers. The shop is around two years old.

The grocery store in the IPONGA Shopping Mall sold bulk beans (red, sugar beans and red speckled) at 80K/kg. Though this store is privately owned and operated, it has the Spartan look of a government owned facility. It is characterized by large store stocking a narrow range of products. All the shelves were full, but shelf after shelf is filled with the same product. In contrast to Shoprite, there were no other shoppers in the store at the time of the visit by Kambewa, Filipe and Lowenberg-DeBoer.

Street Food – Kambewa, Filipe and Lowenberg-DeBoer observed street food at several locations. The most common street food seemed to be deep fried potatoes (so called “chips”), often associated with some grilled meat (e.g. chicken, sausage, tripe, occasionally beef). Some vendors were also selling boiled sweet potatoes.

The only evidence of beans as part of street food were plates of rice and stew being sold in an industrial area. The stew was mainly composed of either meat and beans, or vegetables and beans.

Kambewa said that a product like "badjeia" is sold some places in Malawi, but it is made of maize flour, not bean or cowpea flour.

Tambala Foods – In the afternoon, Kambewa, Filipe and Lowenberg-DeBoer visited Tambala foods. They spoke with Mr. Sherry Munthali. Tambala provides a wide range of products to the Malawi consumer market, including beans, salt, rice, peanuts and juice drinks. He said that Tambala does not handle cowpea.

He said that the market for dry pack beans in Malawi was about 200 metric tons annually. He said that Tambala served about 80% of that market, with another Blantyre firm, Countryside, handling the rest. He said that 90% of their product was red kidney beans, with the remainder being sugar beans. He said that Tambala provided dry pack beans for Shoprite, PTC and other shops (e.g. Superettes).

Lowenberg-DeBoer noted that Shoprite was currently not stocking dry pack beans. Munthali said that this was probably because Tambala had not purchased any new crop beans because of the high asking price. He said that 60K/kg was being asked by producers and rural assemblers, compared to 28K to 30K/kg last year. He said that they were planning to wait to buy; perhaps the price would come down. Munthali said that sometimes Tambala purchased directly from farmers, and in other cases it bought through assemblers, the trading companies, or the farmer associations organized by the National Association of Smallholder Farmers of Malawi (NASFAM). He said they often purchased beans in the Mulanje area, where most of the beans on the market were from Mozambique.

He also noted that Malawian consumers preferred beans from the most recent harvest. Old crop beans cold be sold only at a deep discount. He said that perhaps this was because of the longer cooking time of old crop beans.

He said that the Tambala criteria for purchasing beans was grain size and cooking time. The cooking time was tested in an ordinary cooking pot. They expected all beans in a batch to be cooked within one hour.

Munthali said that the main consumer benefit of dry pack beans was convenience. He said that another benefit of their beans is that they are well cleaned. Instead of making a separate stop at a traditional market, they would buy beans when they stopped to buy bread. As a consequence, most of their dry pack beans sold in urban areas. Tambala sells some beans to institutions in bulk. These institutions include: schools, hospitals, World Food Program (WFP). He said there had also been inquiries about buying beans from South Africa and Zimbabwe.

When asked what bean varieties farmers should grow to facilitate marketing, he said either red kidney or sugar beans.

When Kambewa asked about other firms in the bean business in Malawi he noted that Countryside also dry packed beans. Several Indian owned companies (e.g. Rab, HMS, and Universal Trading) handled pulses for export, mainly pigeon pea for dahl.

Tuesday, June 3 – In the morning Kambewa, Filipe and Lowenberg-DeBoer visited Rab Processors and met with Mohamed Najeeb, Business Development Manager. Rab Processors is owned by the Jakhura family whose business activities in Malawi date back to 1922. Rab Processors was created in 1983. It specializes in processing and export of Malawian agricultural products, and imports of farm inputs (particularly fertilizer). Its consumer items include: roasted groundnuts (Malawi Nuts), Rab's Classic Malawi Tea, chili sauce, Toor Dhal, maize flour, dough mixes and cereals.

Najeeb said that the Dhal is processed from pigeon pea only for the market on the Indian subcontinent. The dhal is shipped by truck to Beira, Mozambique, for ocean shipment to India. He said that 2-3 containers were being shipped per month.

The company also processes the "Ljkuni Phala" infant food. It is sold at the retail level in shops (e.g. Shoprite sells 500 gr. packages for K56.49) and specially packaged, usually without the milk powder, for NGOs. The milk powder is an expensive ingredient, so the NGOs often ask for the version formulated without it. One of the chief ingredients of Lukuni Phala is soybean meal. Lowenberg-DeBoer asked if common beans had ever been used in the product and Najeeb said to the best of his knowledge soybeans had always been used.

Rab cleans and pack beans in 10 kg, 20 kg, and 50 kg bags for relief organizations, such as Oxfam, Red Cross and Salvation Army. He said that typically they might handle 100 MT of beans per year. The beans are purchased at their 30 Kulima Gold outlets throughout the country or at their head office in Limbe. In Limbe, the beans are purchased typically by the truck load from "assemblers." Najeeb noted that some of these beans surely come from Mozambique, but since the beans from Mozambique are similar in every way to those produced in Malawi, there is no way to know the quantity from Mozambique.

In this coming season Rab will be involved with National Association of Smallholder Farmers of Malawi (NASFAM) and NGOs in promoting production of sugar beans for export to South Africa. He said that they have 200 tons of sugar bean seed imported from South Africa in place. Rab will supply the fertilizer and seed, but the NGOs will supervise actual production. (Note: At a seeding rate of 60 kg/ha to 80 kg/ha this quantity of seed would plant 2500 ha to 3000 ha, and produce 2500 to 3000 MT of beans).

It also puts together the "starter packs" of fertilizer and seed distributed by NGOs and the Malawi government. He said that this was done on a cost basis. A typical starter pack might contain two packs of 5 kg of NPK fertilizer, 2 kg of maize seed, and 2 kg of bean or groundnut seed, depending on the area.

Nejeeb said that Rab Processors was starting to branch out internationally. Recently an office was opened in Durban, South Africa. Tea (in tea bag form) is being sold in South Africa and the United Kingdom.

Bvumbwe Market – After the visit to Rab Processors, Kambewa, Filipe and Lowenberg-DeBoer went to the Bvumbwe Market, about 10 kilometers south of Blantyre toward Mulanje. This market is known for supplying vegetables to Blantyre. There were many vendors with cabbages, turnip greens (and other greens), carrots, tomatoes, eggplant and green beans, but only a few with green shell beans or dry beans. They spoke with a group of market women outside the market proper, who were selling red beans and mixed beans at K2/plate (the about 3 inch diameter plate – See Figure 2 in Appendix D).

They said that people preferred the red, but if the red bean price was higher than that of the other varieties, Malawian consumers would switch to other beans. They also were selling some smaller white beans and said that some consumers liked them, but supply of the white beans was low. The women said that they bought their beans in the Lizulu area, with some of the beans coming from Mozambique. The women said that the truck being loaded with cabbage next to them was bound for markets in Mozambique, so there is evidence of reciprocal trade in agricultural products between Malawi and Mozambique.

Inside the Bvumbwe Market, Kambewa, Filipe and Lowenberg-DeBoer spoke with a vendor asking K45/kg for mixed beans (khaki, red, yellow) and K60/kg for sorted beans. She said that she often sold the two at the same price, but that there was more negotiating room on the mixed beans.

A neighboring vendor had several types of beans, including the red speckled Kalima type, which she called by the Bunda variety name, Napilira. She sold beans at K3 for the small 3" plate.

ADMARC – On Tuesday afternoon, Kambewa, Filipe and Lowenberg-DeBoer met with Maria Chamanza, Marketing Manager for the Agricultural Development and Marketing Corporation of Malawi (ADMARC). She said that in a "normal year" ADMARC sells about 1000 MT to 1500 MT of beans to the domestic market, mainly to institutions like hospitals, schools and prisons, and about 1000 MT is exported. Unfortunately, the last two years have not been normal. Last year they handled no beans because of the poor crop in Malawi, high price of beans and no money for buying beans. This year they have not purchased beans because the farm level price in Malawi is higher than what they obtain for the product in export. She said that they were being quoted village level prices of K35 to K40/kg, but the export market would only pay around K30/kg.

Chamanza said that ADMARC sells about 80% to 85% of the beans to buyers in Zimbabwe and the rest to South Africa. Most of the beans exported are sugar beans, with the remainder being red beans. She said that in "normal years" they also exported about 1000 MT of cowpea grain mostly to Zimbabwe. It was her understanding that most of this exported cowpea grain was converted to seed use. In most cases, both beans and cowpeas sold in Zimbabwe were purchased by brokers for resale.

She said that ADMARC packages beans in 1 and 2 kg bags which are sold in ADMARC outlets and some other shops in Malawi. Also some companies that dry pack beans buy from ADMARC. She said that institutions in Malawi would buy any type of bean (e.g. red, white, khaki, sugar bean), but they clearly preferred sorted beans. Only the prisons bought substantial

amounts of unsorted beans. She said that ADMARC buys about 3000 MT of soybean from Malawian producers each year for resale to processors.

Chamanza noted that ADMARC only buys sorted beans at less than 14% moisture. There is no minimum grain size. She said that most of their sugar beans came from the central region and most reds from the southern region of Malawi. About 50% of the total quantity of beans purchased by ADMARC comes from the central region and 40% from the southern region. Only about 10% of the beans came from the north of the country.

She said that talk about privatizing ADMARC is exaggerated. She thought that the company would remain in government hands, but would become more commercial (i.e. would focus more on profitable enterprises). She said that beans are a profitable part of their business and would remain even if the company were privatized. One thing that will probably change with either privatization or commercialization is that some low volume outlets would be closed or become seasonal. She said that ADMARC sees their chief competition as the traders (e.g. Transglobe). She noted that several companies and numerous NGOS have manufactured Lukuni Phala, including Rab, Grain & Milling (the government milling company owned by ADMARC itself) and Transglobe. Except for Rab, this manufacturing occurred only in response to a specific contract.

ADMARC sells hybrid maize seed and last year began multiplying and selling open pollinated flint maize varieties. It does not handle pulse seed. She said that farmers typically save their own seed for pulse crops.

Wednesday, June 4 – Kambewa, Filipe and Lowenberg-DeBoer started at 5:00 a.m. from Blantyre and traveled to Lilongwe with stops at the Lizulu Market and Chimbiya Market. The Malawi-Mozambique border passes through the Lizulu market. It is a once biweekly market on Wednesdays and Saturdays.

At the Lizulu Market they spoke with a bean producer and reseller who stocked red, white, sugar beans and mixed beans. She said that the red beans sold for K48/kg. and the others for K45/kg. Mixed small seeded brown and purple cowpeas were selling for K20/kg. She said that she produces the white beans herself.

Kambewa, Filipe and Lowenberg-DeBoer also spoke with an assembler at the edge of the highway. He had seven full bags and two partial ones on the edge of the highway. He had white, Nayanti and mixed beans; he said that he sold out of red beans yesterday. He buys sorted beans at K35/kg and sells at K50/kg. Mixed beans are purchased for K28/kg and sold for K35/kg. He sells to buyers who come from Blantyre or Lilongwe. Many of the buyers know his house in the adjacent village and come on non-market days. More buyers come from Blantyre than Lilongwe because there are other markets on the highway from Lilongwe before buyers come to Lizulu, but Lizulu is the first major market for beans on the road from Blantyre.

The assembler said he buys from growers in the Tsangano area and within the market (See Figure 3 in Appendix D). He pointed to a row of women attempting to retail small quantities of

beans and said, “when the sun get high and it is hot, they will sell their beans to me and go home.”

The assembler said that he was born in Mozambique, but came to Malawi during the Civil War and stayed. He said that all transactions in the market were in Malawi currency, Kwacha, but some seller changed their earnings into Mozambican Metacais before returning home.

The assembler outlined the steps from the producers to the consumer:

1) Producer
2) Reseller on the path to the market – producer sells rather than devote the time and effort to go all the way to the market.
3) Reseller in the market who buys either from the producer, or from the reseller who purchased on the path.
4) Assembler in the rural market
5) Urban buyer who may be either a retailer or wholesaler.

He noted that one reason why producers might sell on the path to the market is that many assemblers buy by weight. Many growers don’t trust the scales (See Figure 4 in Appendix D). Kambewa, Filipe and Lowenberg-DeBoer noticed that one assembler buying by volume had a line of producers waiting while assemblers buying by weight had sparse business.

NASFAM – Kambewa, Filipe and Lowenberg-DeBoer met with Cecilia Aipira, Marketing Operations Office, of the National Smallholder Farmers Association of Malawi (NASFAM). It is an umbrella group for 31 local farmer associations and pre-associations. It was founded in 1997 with help from USAID.

When Lowenberg-DeBoer visited NASFAM in 2002, staff were talking about beans as an alternative cash crop for the Malawian small holder. At that time they had identified sugar beans as having a market in South Africa. Lowenberg-DeBoer asked Aipira about the current status of this effort.

She said that they were still trying to understand this market. If they promoted sugar bean production among NASFAM growers, they had to provide a market and they were not sure if the market was there and for what type of bean. They had made a trip to South Africa and identified a market for beans, particularly “sugar beans” for consumer dry pack and in the mines. She noted that the South African market included Botswana and Namibia.

She said that they were trying to understand what the market labeled as a “sugar bean”. The South African market requires red wine markings on a light brown background, but she had a sugar bean sample from a Malawi market which included khakis and brown beans with markings of various hues. They had contacted Roland Chirwa, CIAT, about seed and had obtained about one half ton of the new CIAT sugar bean variety, which they hope to multiply this year.

But Aipira had more fundamental questions about the market for sugar beans. “Is this a fad, or something that our farmers can produce for many years,” she asked. “Two or three years ago people here were not talking about sugar beans, but now everyone seems to be.”

"Can Malawi produce more beans than it needs to consumer?" she asked. "Right now bean market prices in Malawi are higher than in the export markets because the demand is so high here." It is possible that Malawi would be better off focusing on labor intensive higher value crops (e.g. tobacco, horticulture, flowers) and buy commodity food crops (e.g. maize, beans). She said that NASFAM has not marketed many beans, only about 30 MT within Malawi.

"Beans are not one of our core crops," she said. "It is something at the back of our mind, like pigeon pea and coffee." She noted that beans competed for land with soybeans in parts of Malawi and soybeans were almost ready to graduate as a core crop. Soybeans in Malawi are mainly used in infant foods, but there is some use in texturized protein and growing feed use. She said that all the soybeans were used as oil meal. To the best of her knowledge there is no soybean oil production in Malawi.

Kambewa commented that soybeans had gone through a period of rapid expansion in the mid1990s, along with sunflower, but then the market collapsed. After that, farmers were afraid to produce either soybean or sunflower for fear that there would be no market. Soybean is only now coming out of that negative reaction.

She cited the soybean market as the type of market that they liked to develop. She said that NASFAM has developed relationships with soybean users in Malawi (e.g. manufacturers of Ljkuni Phala). They need to buy soybean every year, regardless of the price. This is unlike brokers who do not need to handle a product if price conditions are not right.

Aipira complained about the bean production and area statistics published by the Ministry of Agriculture, Irrigation and Food Security. "The Ministry of Agriculture bean numbers are ridiculous," she said.

She also noted that one constraint on their activity is the fact that "contracts cannot be enforced on smallholders." If most of the members of a local association decide to sell elsewhere, there is nothing that NASFAM can do about it, she said.

Aipira expressed interest in the information on regional bean markets being collected by the Bean/Cowpea CRSP. She said that this is just the type of information that NASFAM needed to make decisions about their role in bean marketing.

PTC HyperStore – Kambewa, Filipe and Lowenberg-DeBoer visited the PTC HyperStore in Lilongwe. It was being renovated (probably in response to competition from Shoprite) and the stock was low, but it had two brands of Ljkuni Phala on the shelves: Rab Processors, and St. Gabriel Production Unit, Namitete, Malawi. St. Gabriel is a Roman Catholic Mission. The St. Gabriel product was made of only maize and soybeans, without milk powder. It sold for K27.50, while the Rab Processors product with milk powder sold for K57. Both were 500 gr. Packets. No dry pack beans were stocked at the store.

Ministry of Agriculture – Kambewa, Filipe and Lowenberg-DeBoer visited the evaluation and monitoring unit of the Ministry of Agriculture to better understand how crop statistics are collected. They spoke with Grace Kamvazakazi and Frank Kamanga.
Kamanga and Kamvazakazi described the data collection methodology. They said that data was collected by local extension agents, called Agricultural Development Extension Officers (ADEOs), at the level of "sections" with the Extension Planning Areas. For the "summer" crops two blocks (typically villages) are randomly chosen with a section and within each block, up to 15 farm households are selected. The blocks stay the same from year to year, but new farm households are selected each year. The initial household is selected randomly and the next household is selected as n names further down the list, where n=N/15 and N = total number of households in the village.

For the summer crop there are three contacts with the selected households:

1) planting intentions survey,
2) verification of planting intentions, and
3) yield data collection.

In the first contact they ask about planting plans and estimate field area by pacing off the fields. For intercrop each crop is noted as the whole area on which it occurs. There is no attempt to generate "monocrop equivalents." For example, if a 0.25 ha field has been planted to a maize-bean intercrop it counts as 0.25 ha maize and 0.25 ha beans. The second contact is midseason and agents ask what has actually been planted.

Yield data is collected either by measuring yield in the field (for instance by harvesting and weighing a 10x10m square) or by asking how much has been harvested and weighing unit if possible. For instance, if two pails of beans have been harvested, the agent should weigh a pail of beans. The growers should also be asked about how much of the crop has already been consumer (e.g. green maize, shell beans).

The "winter" crop is subject only to a single contact at the end of the season in which the agent asks about area and production.

Kamanga and Kamvazakazi said that the National Statistics Office (NSO) will be taking over this data collection next season, but they intend to maintain the same methodology. The criticism of the data collection has not focused on the methodology, but on implementation. Some of the agents apparently did not follow the protocol. Generally the Ministry of Agriculture has suffered from shortage of staff arising from some staff retiring without being replaced because training, these had stopped for some years, some staff died and could not be replaced. This resulted in overloading the few extension workers that remained.

Thursday, June 5 – At 8:00 on Thursday, June 5, Kambewa, Filipe and Lowenberg-DeBoer met with Dr. Juan Estrada Ville and Dr. Moses Siambi, both of ICRISAT at the Chitedze Agricultural Research Station near Lilongwe. Estrade is an economist and Siambi is an agronomist. Estrada told the team that they are working mainly on developing new markets for pigeon pea and groundnut, and crop management practices that produce the products demanded by those markets. He said that they have plans to work on chickpea and common bean. Filipe asked if

ICRISAT has the expertise in common bean. Estrada replied that they would develop that expertise if needed.

“We are no longer constrained to the mandated crops,” Estrada said.

With NASFAM staff Estrada has made market development trips to South Africa and to Europe. He said that at a time when groundnut was selling for $300/MZM in Malawi, there were confectionary markets in Europe for certain groundnuts at $600/MZM. He said that through NASFAM Malawian farmers could have direct access to those markets instead of passing through private brokers in Malawi.

Lowenberg-DeBoer asked if NASFAM could actually be more entrepreneurial and more efficient than the traders (e.g. Transglobe, Rab Processors). Estrada said that he thought NASFAM could be competitive.

Estrada said that they were also working to implement food safety procedures (HACIP), mainly for managing aflatoxin in groundnuts. These food safety standards would then become part of their value added.

“CG7 groundnuts are selling to Europe as edible nuts. Chambana, is selling as bird feed,” Estrada said. “There is potential of developing a snack food line. We have macadamia nuts in Malawi. There are cashews in Mozambique.”

Lilongwe Market – Merchants interviewed in the Lilongwe Market cited K5/plate as the standard price for all beans. Three merchants in one area said that khaki sells best in Lilongwe, but they can’t raise the price because consumers would switch to other bean types if khaki’s were even slightly higher. One merchant says that he must pay more to acquire khaki beans, but because consumers resist any price differential between bean market categories he cross subsidizes the khaki beans from profits on other types. He noted that red beans were preferred in markets in southern Malawi.

USAID – Kambewa, Filipe and Lowenberg-DeBoer met with Larry Rubey, USAID. Lowenberg-DeBoer gave him a copy of the Field Crops Research article on cowpea in West Africa (Langyintuo et al., 2003) and explained that they would like to do something similar for beans. Lowenberg-DeBoer noted that the Field Crops Research article represented five years of work.

Rubey encouraged the marketing effort and urged the team to provide intermediate results to NASFAM and NGOs in Malawi. He said that they had urgent marketing problems that they needed to solve.

Lowenberg-DeBoer said that they would develop a one-page summary of their bean marketing results. This summary would be shared with NASFAM and World Vision directly, and copied to Rubey, who could forward it to other NGOs.

"One of the main things that USAID can do in a place like this is to connect people and organizations to information," he said.

Bunda College – Thursday afternoon, Kambewa, Filipe and Lowenberg-DeBoer met with James Bokosi, bean breeder and Malawi coordinator for the Bean/Cowpea CRSP. They discussed Bokosi's role in the group that advised the Malawi government on biotechnology issues during the debate about accepting genetically modified (GM) maize in relief shipments last November. Bokosi went with the Malawian Agriculture minister, Honorable Aleke Banda to a regional meeting in Maputo to discuss this issue. Malawi was one of the few governments in southern Africa to call on the scientific expertise and to look at both sides of the GM issue. In the end, Malawi accepted GM maize. The main argument was that there was no documented negative effects of eating GM maize and that if Malawi did not accept the grain, some Malawians would starve. Bokosi was modest about his contribution to the international discussion, but it should be noted that providing such expertise to governments is another role that CRSP scientists play.

Lowenberg-DeBoer noted that the CRSP Technical Committee (TC) had spent almost a morning talking about the Malawi component. He noted that the TC had called for a timeline of variety release, changes in the seed component (i.e. the Miles, Masangano, Madiglioni effort and impact assessment in Malawi and Tanzania. Bokosi indicated his willingness to work with a team to develop an appropriate sampling design for measuring the adoption of CRSP varieties in Malawi. Lowenberg-DeBoer said that it was important to field a multidisciplinary team including someone from the breeding component who could identify varieties growing in the field. He noted that the TC had indicated that such an impact assessment would be a high priority for CRSP supplemental funding, but at the earliest this effort could begin in 2004. It was not part of the workplans recently approved by the TC.

Relative to variety release, Bokosi said that the breeding component still did not have funds from Oregon State University. He said that all the other components at Bunda now had funding from the new phase. Bokosi said that some on-farm trials needed to document yields, disease resistance, etc. for the variety release committee had not been done last summer season because of the lack of funds.

"It is not a complete excuse for not releasing varieties," Bokosi said, "But it is a contributing factor."

Bokosi and Kambewa said that they were satisfied with the financial arrangement for the economics and marketing component, in which the funds were managed at Bunda. Kambewa said that Bunda transferred the funds to him electronically, so he did not need to travel to Bunda to access funds.

Bokosi gave them copies of the first issue of the Bunda Journal of Agricultural, Environmental Science and Technology. This issue was completely devoted to CRSP work with articles on:

- Common bean genetic resources in Malawi by Mloza-Banda, Ferguson and Mkandawire.
- Status of seedbourne bean diseases in Malawi by Chiumia, Msukie, Mloza-Banda and Mkandawire

- Farmer perception of seedbourne diseases in Malawi by Mloza-Banda, Ferguson and Msukie
- An institutional analysis of seed multiplication schemes in Malawi by Kambewa, Ferguson and Bernsten
- Factors influencing bean variety adoption decisions by Masangano

Friday, June 6 – On Friday morning Kambewa, Filipe and Lowenberg-DeBoer traveled to Zomba. In the afternoon they met with Essau Mwendo, World Vision Manager for the Chingale Agricultural Development Project, near Zomba. The project was described in the Toyota Partners magazine, issue #1, 2003, p. 12 to 15, and in a World Vision Pamphlet entitled "Chingale ADP Update." The Chingale ADP started in 1996 and had a 15-year plan. It is mainly financed by World Vision US, with World Vision Australia helping in the seed effort and a private donor funding for an aquaculture effort. There are three components to the overall project: 1) agriculture, 2) health, and 3) education. The agriculture component includes: a) inputs, b) aquaculture and c) seed production. The crops for which seed is being produced include: maize, beans, cowpeas, pigeon peas, chickpea and groundnut.

Mwendo recounted the history of bean seed production in the ADP. In 1998, 17 farmers produced 1.3 MT. In 1999, 103 farmers produced 14 MT. In 2000, 200 farmers produced 17 MT. There was a similar increase in cowpea seed production. Seed is sold mainly to other NGOs, including Action Aid, Oxfam, and Christian Service Committee. Pannar purchased some cowpea seed last year for sale in Mozambique.

For seed producers, World Vision furnishes seed, fertilizer and pesticides. This input loan is paid back in seed. Growers pay back 2 kg of seed for each kg received. Certified seed is being produced. World Vision pays for inspection at this time.

The plan for this project is to leave a farmer association that can function on its own. Currently the project has 80 employees, but this is being reduced gradually so that at the end of 15 years only a skeleton staff remains and critical functions have been transferred to the farmer association. A board of successful business people who grew up in Chingale, but now work in Blantyre and Lilongwe is being developed to help advise the farmer association. Mwendo expressed concern about NASFAM.

"NASFAM is doing a good job now," he said, "but what happens when USAID funds end. They don't have an exit strategy."

Mwendo said that it was important for the farmer association to build business skills. Those smallholders need to treat their farm like a business. With the association they have more bargaining power than they would individually, but marketing capacity must be built.

"At harvest farmers need money," Mwendo said. "Buyers know that farmers need money. They come with money in hand and say why wait for the association to sell. You can have your money today."

To reduce the temptation for premature sales, the association has centralized storage of bean seed. This also helps convince buyers that the association has the capacity to supply them. A warehouse full of bags of seed is much more convincing than saying that we have 200 farmers each with a bag or two in their houses. The association is also working on an inventory credit plan with European Union financing that would give growers 80% of the harvest time price, shortly after harvest.

Growers are allowed to withdraw their stock from the central storage. In last year's famine about 30 MT were withdrawn and converted from seed to food. But central storage reduces the impulse to sell prematurely.

Mwendo questioned the idea of exporting beans.

"Why should we talk of export markets when we have not addressed local demand," he said. "The challenge is linking buyers and sellers in Malawi."

There are many institution beans (e.g. schools, hospitals, military barracks). Also retail chains are looking for beans. Mwendo said that World Vision has been in discussions with Shoprite to supply dry pack beans. He said that World Vision would invest in the equipment and supplies to start the farmer association in the dry pack enterprise.

Mwendo said that the farmer association had discussed sugar bean production with Rab Processors, but they had come to the conclusion that it was not a good deal. They were offering only K25/kg to producers. This was an example of the capacity building that World Vision has focused on. The farmers were able to evaluate the Rab proposal as a business proposition.

"People need to have a sober mind and look at the opportunities," Mwendo stated.

Mwendo said that he looked forward to working with the CRSP on this marketing effort. He said that NGOs like World Vision had community linkages, but needed the technologies to help people. Research organizations have technologies, but often don't have the community linkages to get technologies into the hands of people. NGOs and researchers can benefit by collaborating.

Zomba Market – Kambewa, Filipe and Lowenberg-DeBoer visited the Zomba market late in the afternoon. Some merchants were starting to pack up and leave, but they spoke with one woman selling beans and grain. She had for sale some very dark red beans, two shades of Nanyati (a very light brown and a darker brown), large and small white beans and the red speckled type. All were selling at K5/plate (about 2.5 inches in diameter). She said that people in Zomba preferred the red beans from Lizulu and Mangochi, which are on the southern tip of Lake Malawi (called Lake Nyassa in Mozambique). Kambewa hypothesized that the beans from Mangochi were actually from Mozambique because the lowlands at the south end of the lake are not a bean-growing area; however, the bean-growing areas of Niaassa are not far away.

Saturday, June 7 – Kambewa, Filipe and Lowenberg- DeBoer met in Kambewa's office on the Chancellor College campus to discuss the price and quality data collection. Lowenberg-DeBoer made several suggestions concerning the data collection:

- Texture is not a very useful characteristic to note for beans – it would be better to record if beans were dull or shiny.
- Storage does not seem to be a major issue for beans in Malawi, so the storage method and container columns are not very useful, and might be replaced by some other data.
- The source of the beans should be noted.
- Malawian consumers seem to prefer sorted beans, so any mix of beans should be noted. For instance, based on the 100 grain subsample used for the 100 grain weight, we might note: 1) the percent of the main type, 2) percent of the second most important type, 3) percent of the third most important type.
- Based on that same 100 grain subsample, the percent of shriveled or off-color beans should be noted. There are some holes, so holes should be noted.
- Notes should include information on differences between quality of the types in a mix. For example, if in a mix of khaki, Nanyati and white, 40% of the whites were shriveled or discolored, this should be noted.
- Probably several (e.g. 5) samples should be purchased for primary market classes. The main primary market classes are probably: red (including Kalima types), khaki/Nanyati, other (including yellows, large and small whites, etc.).

Kambewa noted that samples would be purchased in Blantyre area, in Lilongwe and the Lizulu/Chimbiya Markets. Lowenberg-DeBoer suggested that when two markets in an area are data collection sites, perhaps the five samples per market class can be divided between them. For example, in the Dedza area three samples might be purchased in Lizulu and two in Chimbiya for any given market class.

Kambewa said he had hired someone to collect the samples, make measurements and enter the data. This person is a student who would use his private car to travel to collect the data especially in the first phase of data collection as part of training to the research assistant. Future bean purchases will be done by the assistant with a few trips accompanied by Kambewa.

Lowenberg-DeBoer noted that the annual report of the Eastern and Southern Africa (ESA) economics and marketing component should have a few paragraphs on how the price and quality data was being collected and a table of descriptive statistics, including prices per kilogram for different market classes. The fiscal year ends on 30 Sept., 2003 and the report should be submitted shortly after the end of the fiscal year.

Muloza Market - Kambewa, Filipe and Lowenberg-DeBoer traveled to Mulanje late Saturday morning. They visited the Muloza Market on the border with Mozambique south of Mulanje. There, they found mainly red beans for sale, with a few khakis and sugar beans. The sugar beans included a high proportion of those with red wine markings, unlike other markets visited in Malawi where sugar bean markings were often brown.

Vendor #1 - The first vendor they spoke with had a shed on the road to the border. He had four bags of red beans, a bag of khakis, a half bag of sugar beans, two bags of brown and purple cowpeas, and a half bag of small, brown cowpeas. The sugar beans included a high proportion with red markings. Next to the bags was a pile of red beans on a plastic sheet. The vendor said

that the small cowpeas came from a variety that vined. He said that there were no Kalima red speckled beans in Mozambique, and that large red beans were most preferred by the buyers coming to him. Some buyers also bought sugar beans.

He said that he purchased the red beans in Mozambique for around K25/kg and resold for K40/kg at the retail level. This might be discounted to K37/kg for whole bag sales. He said that khaki beans were purchased for around K20/kg in Mozambique and resold for K25 to K30/kg in Malawi. He said that transactions in some markets in Mozambique were in Kwachas, but other required Metacais.

The vender said that all the beans and cowpea came from Mozambique and he went personally to Mozambique to buy beans. The quantity purchased depended on available funds, but often he purchased 10 to 20 bags (50 kg). He said that he bought and sold throughout the year, but beans were purchased from Mozambique mainly in the June to December period. During the other months beans were sourced in Malawi. He said that bean prices in December could go as high as K80/kg.

Vendor #2 – This vendor had three bags of red beans in front of his shed, just 20 meters off the highway to the border. He said that he had a bag of khaki beans inside. He had been trying to sell these khaki beans for 2.5 weeks, without success. He said that many khaki beans were produced in the areas of Mozambique that he visited on bean buying trips, but khakis did not sell well in the Muloza Market.

He said there were taxes if beans were brought over the border, an export tax of K20/bag on the Mozambique side and an import duty of K150/bag on the Malawi side. His transport cost was K150 to K200 for fare, plus K70 to K120 per bag on the return trip.

IV) Mozambique

Kambewa, Filipe and Lowenberg-DeBoer crossed the Mozambique border on Sunday afternoon, June 8, and were met by Sergio Nhemba, WV. Nhemba is the manager of the Milange Food Security Project funded by the European Union and implemented by Solidariedada, a Mozambican NGO, and WV. This project has agricultural extension and marketing components. On Monday morning, June 9, they were joined by Brian Hilton, WV Quelemane, and Carlitos Pinto, Small Business Trainer, with the Milange Food Security Project.

After picking Hilton up at the Milange air strip, they paid a courtesy visit to Luis Martin, District Agriculture Director. Martin mentioned that his office worked with the Michigan State University (MSU) project to collect price data.

Milange Vendor #1 – This vendor had a stall on a concrete bench just inside the door to a municipal market building. It should be noted that many stalls in the municipal market building were empty, while outside the market people were constructing stalls of slab lumber.

He was selling khaki beans and a mixture of khaki and sugar beans, in addition to rice and flour. Some of the sugar beans were the red speckled on tan background types demanded by the South

African market. The price was the same for both types of beans, 2500MZM/can (a condensed milk can, about 6 oz. – See Figure 5 in Appendix D). He said that he did not stock red beans because consumers did not like them. The sugar bean mixture had a few red beans, but he said people did not mind that. He said they like the sugar bean more than the khaki beans.

This vendor said he bought his beans at a market called "Mugulia" about 60 kilometers on the road toward Gorué. Or more specifically in a section of that market called "Balances" because vendors used scales instead of volume measures. He said that he most recently purchased at K25/kg for sugar beans or khaki beans. Red beans were K30/kg (probably because of the demand from Malawians). When he sells by weight it is 10,000MZM/kg (at K1=260MZM this is K38.5/kg). He is strictly a retailer.

Milange Vendor #2 – This vendor had a table at the opposite door of the municipal market building. He had a heap of khaki-speckled on tan background bean mixture, and another heap of rice. The speckled beans included those with brown, black and red speckles. He said that he buys sorted beans and mixes them.

He noted that some consumers preferred to purchase by volume measure. He sold by three volume measures:

1) a condensed milk can (about 6 oz.) for MZM2500 (four of these cans makes 1 kg),
2) a cylindrical sardine can for 2000MZM, and
3) a smaller cylindrical sardine can for 1500MZM.

He said he goes to the Balances to buy beans. The market is open on Tuesdays and Thursdays. At the Balances, people use hanging spring scales. He said he often purchased as many as 10 bags which he would store in a room at the municipal market. He said that retail business is not good now; he purchased 10 bags on May 22, and still has 3 bags in storage. He noted that at Mugulia assemblers paid farmers K20/kg, he purchased for K22/kg, and he sold in Milange at 10,000MZM/kg (K1 = 260MZM on the street that day in Milange). At the going exchange rate, the Milange retail price was K38.5/kg. The cost of going to Balances is 40,000MZM one way in a car. On the return trip, the cost per bag is 20,000MZM. He noted that Malawian buyers come to the balances, but Mozambican wholesalers do not travel to Malawi to sell beans.

"They [the Malawians] know there markets," he said. "We don't know their markets."

Milange Vendor #3 – This was a teenage girl selling beans for her father. These were mixed beans, including a substantial number of reds. She said that her father buys them as a mixture, but she does not know where. The price is the same as the other beans in the market (no discount for the mixture).

Outside the Milange Market – The first vendor the team stopped to talk to had a stall and shed constructed of slab wood. He attracted the team's attention because he was one of the few vendors selling red beans. He said that the red beans are mainly purchased by Mozambicans who lived in Malawi during the Mozambique civil war. Local people in Milange prefer sugar beans, and the second choice is khaki. The preparation of all the beans is the same. He says that he also

had a bag of khaki beans in his shed, but had applied actelic since he planned to store it for several months until the price increased.

This vendor said he buys directly from producers in the Mugulia area. He buys khaki for 9500MZM/kg and sells for 11,000MZM/kg, and buys reds for 10,000MZM/kg, and sells for 12,000MZM/kg.
He noted that Malawians come to the Mugulia area to buy beans, but Mozambicans do not go to Malawi to sell beans. He noted the need to exchange money to do business in Malawi and the potential exchange rate risk.

The second vendor outside the Milange market was selling both beans and cowpeas for the same price, 3000MZM/can. He said that he buys beans at the Balances. He said that this time of year the same consumers buy both beans and cowpeas, but later in the marketing year, bean prices tend to rise more sharply than cowpea prices and lower income consumers will prefer cowpea. He said that bean prices rise more sharply than cowpea prices because of the demand for beans from Malawi and Zimbabwe. He said that some people do prepare badjia and sometimes sell them in the market.

While walking, Nemba noted that pigeon pea often replaced cowpea in the production systems in the Milange area. People grow cowpea, but mainly for leaves. They do not dry cowpea leaves for later use.

Wholesale, outskirts of Milange – This man had a warehouse built of slab wood. He said he handles about 10,000 bags of beans per year (with 50kg bags this is 500MZM). He hires men with bicycles to transport the beans to traders on the Malawian side of the border. The men are paid K20/bag. They usually carry three bags per bicycle, but some can carry four.

The men on bicycles are not required to have an export license, but they do pay the Mozambican export tax (K5 to K15/bag depending on the customs agent) and they Malawian customs duty of about K100/bag. He noted that there is now duty on maize, but it must be paid on beans. He said the Mozambique export license is very difficult to obtain and has never had one. It requires a trip to Quelimane and substantial paper work. He complained that this works to the advantage of Malawian traders as they do not have to undergo through a similar ordeal.

The wholesaler noted that transportation by bicycle is more expensive than by truck, but large scale shipments face many obstacles, including:

1) the Mozambique export license,
2) insurance on the truck for Malawi,
3) immigration charge on the driver (28,000MZM),
4) Malawi road tax, and
5) temporary importation certificate on the truck.

He said that he handles all types of beans, but mainly khaki beans. He noted a difference in purchase price at the producer or first assembler level:

K22/kg for khaki beans
K26-27/kg for red
K25-26/kg for sugar beans

He complained that the price in Malawi was not so good this year. He was shipping more to Quelimane and Beira. (Note: In Malawi, Rab Processors, Tumbala and others complained that prices were too high in Malawi).

Pinto, the project small business trainer, said that he has about 40 entrepreneurs in his small business training program, including this entrepreneur. Some 20-30 of these entrepreneurs handled beans. The wholesaler the team met was not the largest scale bean merchant among them. (Note that if there are 20 wholesale bean merchants in Milange and wholesaler interviewed is average, then this group moves some 10,000 MT of beans into Malawi annually).

The team paid a courtesy visit to the Director of Commercialization for Milange District, Horacio Luis Figueiredo. He noted that his office registers exports, collects data on food production and watches over food security.

The team also visited a farm just outside of Milange with an extension agent employed by the Solidaridade-WV Food Security Project (See Figure 6 in Appendix D). On this farm, as in much of Milange District, beans are planted as a second crop after maize is harvested. The maize stalks are cleared, the land tilled, ridges built and beans planted. This farmer planted three rows of beans lengthwise on ridges about 70 cm wide. In the past beans were relay interplanted into growing maize crops.

The extension agent noted that they worked with 310 farmers total and 190 planted beans. Marketing was one focus of the project. They centralize the production in a group warehouse constructed by the farmers. They contact buyers. Having the production centralized reduces transaction costs for the buyers.

Gorué Market – Gorué is at about 800 m altitude, while Milange is at 600 m. The team first spoke with a woman from Maputo who bought beans in Gorué for shipment to Maputo. She bought from men who went from farm-to-farm with bicycles buying beans. She stored them in a warehouse near the Gorué market until a truckload of about 30 MT was accumulated. The storage charge 4000MZM/bag paid at the time the bag is removed from storage, regardless of length of storage. The beans were put in large bags holding over 100 kg because of a patch sewn in the top. The large bags are used because the truck charges by bag. The men loading the truck were paid 5000MZM per bag. Eight men were working on truck loading. The trucking cost from Gorué to Maputo is 48 million MZM. Trucks are hired in Gorué. Her one way fare to come from Maputo to Gorué is 1 million MZM.

The woman noted that a truck was to be loaded that evening. If it left Gorué on Tuesday morning it would arrive in Maputo on Saturday. She said that this was her 7th load since March. She

added that the bean shipments continue at about the same pace until December. (Note: if she ships two truck loads of beans per month to Maputo from March through December, that is about 600 MT.)

She said that she sells to institutions (e.g. hospitals, schools, prisons, military barracks) and to retailers. In Maputo the warehouse charges 2000MZM/bag/day. This warehouse is at the Xipamanine Market. Sales to institutions require paperwork and taxes. She pays a firm 30,000MZM to 40,000MZM per bag to handle the paperwork and taxes.
She said that sugar beans sell best in Maputo, and at a higher price than khaki beans. They prefer the red speckled beans on a tan background. Red beans do not sell well in Maputo.

Gorué Market Vendor #1 – This vendor was near an entrance to the market. He was selling beans for 2000MZM/can (about a 5 oz can) and cowpeas for 1000MZM/can. The cowpeas are local, relatively large and with few bruchid holes. He said that this time of the year beans and cowpea were purchased by the same consumers, but later in the marketing year bean prices rose sharply and lower income consumers tended to buy cowpeas.

The vendor noted that the same consumers purchased khaki beans and sugar beans. He said that he went from farm-to-farm to buy, just as those who sold to the wholesaler, but he preferred to add value by selling retail. He said that he bought mixed khaki and sugar beans. He noted that consumers in Gorué did not like red beans; they do not like the red broth.

Badjia – There were not Badjia sellers in the Gorué municipal market building, but vendors of wheat flour-based fritters said that a badjia seller had been there earlier in the day. On the walk back to the WV office, Kambewa, Filipe and Lowenberg-DeBoer encountered a man selling badjia on the sidewalk. The badjia were about 3 inches long and 1 inch in diameter. They were very crusty and quite dense inside. They had been prepared some time ago and were almost cold. The badjia were sold for 500MZM/badjia.

Alto Molocue – Because of the fog at Gorué the team did not arrive in Alto Molocue until late in the morning on June 10. The team left Alto Molocue at about 13:30 because of the need to maintain the Air Serv schedule and arrive at Quelimane before dusk. Thus the visit there was relatively short.

The team was met at the air strip by the District Director of Agriculture (DDA). The initial half hour of the visit was spent with a welcome by the Nutritional Council of Volunteers organized by the World Vision project and the District Department of Agriculture. Then the team paid a courtesy visit to the DDA office and the District Commissioner.

Assembler – The team met with an entrepreneur in his bakery in Alto Molocue. This man also had a bean buying station and purchased beans directly from farmers. The bean buying station is staffed by his employees. He sold the beans in Nampula, mainly to Gani Enterprises, a diversified company operated by Mozambicans of Indian descent. He said he did not have the connections to sell beans in Beira or Maputo.

The man said his bakery provided the cashflow which enabled him to engage in the bean business. He said that his bakery baked about 5000 loaves of bread per day.

The man said that he typically sent one or two trucks to Nampula with bean every two weeks from March to December. He said that he owned two trucks; one could carry 15 MT and the other 10 MT.

He said that three types of beans were produced in the area and he handled all three types as long as they were sorted:

1) speckled – the sugar bean type – some with red speckles
2) khaki
3) magnum – tan colored – slightly darker than the khaki

He noted that the speckled beans sell for a higher price than the other types (See Figure 7 in Appendix D).

The baker noted that he rented space in the warehouse across the street from the bakery and owned a warehouse elsewhere in the city. He said that the rented warehouse space was paid for by sack, with the rate in the range of 2,500MZM to 4,000MZM per sack, depending on the size of the sack. He said that he always used 50 kg sacks because he owned his own trucks and did not need to handle the larger bags to lower trucking costs.

Loading trucks is typically paid for on a fixed contract basis. A group of men might be offered a certain sum of money to load a truck (e.g. 200,000MT). They are paid when they complete the loading and are responsible for dividing the money among themselves.

The baker said that he bought most beans either through his bean buying station or from NGOs like WV. He only purchased from other assemblers if he had a contract to fulfill.

He noted that the three main problems in the bean business in Alto Molocue were:

1) lack of capital – banks did not lend to bean assemblers,
2) roads – poor roads to Nampula increased transport costs, and
3) no guarantee of sale – he said that sometimes he had to wait a long time to sell or a long time to receive his money from Gani which sometimes had cashflow problems.

Retailer #1 – This man sold beans and other foodstuffs in the Alto Molocue market. He had khaki beans for 2000MZM/cup (slightly smaller than the standard English measuring cup) and speckled beans for the same price, but with a slightly smaller cup. A neighboring vendor was selling mixed beans for 1000MZM for an even smaller cup (about one half standard measuring cup).

He said that he usually purchased the beans at the Nowela fair, which is a weekly rural market on Sundays. He said that many of the venders from the Alto Molocue market went to the Nowela fair on Sundays, some to sell their products, others to buy from producers. He said that he took

public transport to the fair at cost of 35,000MZM one-way. On the return he paid 35,000MZM to 80,000MZM per bag for transport. He said that the usually buys 5 to 6 bags every two weeks.

Retailer #2 – This man sold beans in a stall behind the Alto Molocue market. He had a pile of speckled beans (red speckles, brown speckles, black speckles with a few reds mixed in) and a pile of khaki and "magnum" beans. He said that the speckled beans sell best, and consumers like the magnun beans better than the khaki beans. He noted that they don't like red beans, but will tolerate a few in the speckled beans. He said that he buys beans at the Karumanu fair.

Maputo, Wednesday Afternoon, 11 June

Filipe and Lowenberg-DeBoer were met at the Maputo airport by Anabela Mabota, Ministry of Agriculture (*is this the right identification?*). They reviewed the bean price data collected by the Agricultural Market Information System (Portuguese abbreviation SIMA) since 1991. Mabota described the price collection protocol which relied on posted prices or verbal reports by vendors. For beans the price is that of the most popular bean type in the market, but if that most popular type shifted there was no record of shifts. Mabota put the bean data on a CD in excel form and provided several recent reports on potential for bean and cowpea exports from Mozambique (Jooste and Smith, 2003; and ICC, 2002). She also mentioned that numerous reports developed by the Mozambique Food Security Project are available on the website

(http://www.aec.msu.edu/agecon/fs2/mozambique/researchreports.htm).

Filipe and Lowenberg-DeBoer also met Duncan Boughton, In-Country Coordinator, Food Security III Project, funded by USAID and implemented by Michigan State University.

From the Ministry of Agriculture, Filipe, Mabota and Lowenberg-DeBoer went to Technoserv. They met with Jake Walters (*find title*). He noted that while Technoserv continues to be interested in beans, they did not implement the regional bean market study that was discussed during Lowenberg-DeBoer's last visit to Maputo in 2001. Walters said that bean markets were a challenge because they were so complex. The preferences for different types of beans were a special problem.

Maputo, Thursday, 12 June

Thursday morning Filipe had an appointment at the U.S. Embassy to obtain a visa for return to the U.S. Lowenberg-DeBoer met with Sally Henderson and Gary Bayer, World Vision. Lowenberg-DeBoer briefed Henderson and Bayer on the observations made on the visits to markets in Malawi and Zambezia Province, Mozambique. Henderson and Bayer said that the bean market information is important to World Vision.

"We would really like to crack the bean market," Henderson said.

Henderson and Bayer asked what World Vision could do to assist the study. Lowenberg-DeBoer replied that the logistical support provided by World Vision on the recent trip to Zambezia was critical. Continuing to provide such support is a key contribution. He also mentioned that finding

a way to gather bean price and quality information in Mozambique was essential. Data on the Milange market is to be collected by the CRSP project in Malawi, but no method has been arranged to collect the data in Mozambique's cities. He explained the protocol based on buying samples every month and measuring the characteristics of those beans. He said that this would be discussed with INIA representatives, but if no arrangement could be developed with INIA, perhaps WV would consider collecting such data in Maputo and other cities.

Henderson provided a copy of the baseline study of the Milange Food Security Project.

Maputo Supermarkets

Lowenberg-DeBoer and Filipe checked availability, quality and price of beans and cowpeas in several Maputo supermarkets. The first store visited was Shoprite. It should be noted that the Maputo Shoprite is dingier than Shoprite stores in Lilongwe, Blantyre or Dar es Salaam; perhaps this is because the Shoprite store in Maputo is older than those in Malawi and Tanzania. The Maputo Shoprite also appears to devote more shelf space to non-food items than other stores in the chain.

Maputo Shoprite stocked two types of dry pack beans: sugar beans (feijoa catarino) and small white beans. Both were packed in South Africa. The sugar beans were darker brown than the beans with cream colored background described by Roland Chirwa, CIAT, but they had red markings. The sugar beans were selling for 22,000MZM/500 gr. and the small white beans for 18,000MZM/500 gr.

In the supermarket on the Ave. de 24th Julho beans and cowpeas from Portugal were stocked. The brand name was Rio Bravo, Uniarme C.R.L., Linda-A-Velha, Portugal. The cowpeas were white with blackeye, selling for 20,000MZM/500gr. There were also some beans and cowpeas in unmarked clear plastic bags, apparently packed locally. The cowpeas in the unmarked bags were white with black eyes, unlikely to have come from either Mozambique or South Africa, because almost all the cowpeas produced in those countries is brown.

In a supermarket on the Ave. Mao-Tse-Tung, dry pack cowpea packed in South Africa were for sale at 36,000MZM/500gr. The cowpeas were white with black eyes packed for Newtown Trading Company, 13 Endean St., City Deep Ext. 4, Johannesburg. The shop also stocked a mix of brown speckled and khaki beans in unmarked clear plastic bags priced at 27,500MZM/500gr. There were also some dry pack and canned beans from Portugal. Canned cowpeas were labeled "Feijao Frade", but were identifiable as cowpea from the photo on the label.

In a supermarket on Ave. de Eduardo Mondalane the same brands were stocked as in the shop on Ave. Mao-Tse-Tung. There was a mix of beans packed in unmarked, clear plastic bags. This mix of brown speckled and khaki beans was not well sorted or cleaned. Sticks and leaf fragments were visible through the clear plastic.

USAID Maputo – Filipe and Lowenberg-DeBoer met with Sidney Bliss and Suzanne Poland at the USAID mission in Maputo on Thursday afternoon. Lowenberg-DeBoer and Filipe briefed Bliss and Poland on market visits in Malawi and Mozambique. They discussed the potential for

domestic bean markets in Mozambique and bean exports. Bliss and Poland requested that they be included in the one-page summaries of bean marketing results circulated to NGOs in Mozambique.

Bliss suggested contacts with several aid agencies and NGOs operating in Mozambique (Appendix C). He noted that the Swedish and Irish aid agencies are working in the Mozambican province of Nyassa. DANIDA is working in Tete. The NGO Food for the Hungry is working in Garongossa and Africare in Manica.

Friday in Maputo – Filipe and Lowenberg-DeBoer met with Cesar Augusto Tique at INIA. Tique was delegated to meet with them because the director general and deputy director were out of town. Lowenberg-DeBoer briefly described the objectives of the trip to Malawi and Mozambique.

They discussed the potential for INIA implementation of the bean price and quality study in Maputo and other Mozambican cities. Lowenberg-DeBoer briefly explained the data collection protocol and that Filipe would analyze the data. He also noted that there is a small budget for this activity. He gave Tique a copy of the protocol and data collection form used in Tanzania. Tique said that he would bring this up at the next meeting of the INIA director and department heads.

Tique said that this type of price and quality data collection is the type of activity being discussed for the proposed INIA Socio-economics unit. This unit would include gender analysis and nutrition issues, as well as economics. Tique said that he expected this unit to be created within a month, in spite of the shortage of train social scientists at INIA.

Tique also noted that an ICRISAT project is doing market research for beans, especially chickpea. He suggested that Filipe talk to Carlos Dominguez during his stay in Maputo.

GPSCA – Filipe and Lowenberg-DeBoer met with Leonardo Iacovone, of GPSCA. Iacovone briefly described the creation of GPSCA about 18 months ago. He said that it was created to link public and private efforts in developing markets for agricultural products produced in Mozambique.

One of the initial activities was that of the External Market Taskforce. They initially carried out a rapid appraisal of export potential to South Africa and Malawi. He said that the Jooste and Smith report showed the potential for exports to South Africa, but the Malawi report was less clear. Given the limited funds available, the Taskforce decided to focus on exports to South Africa for the second phase of the Taskforce work. Malawi is on the back burner as far as the taskforce is concerned.

The South African side of this second phase is being carried out by Jooste and his team. Based on the initial report, they dropped sweet corn and paprika from the list of potential exports. There will also be a domestic consultant who looks at markets within Mozambique and potential for supply response. The first draft of the Jooste et al. study is expected to be completed by the end of July. Iacovone offered to send a draft of the report for review and Lowenberg-DeBoer said that he would be eager to review it. The final version of the Jooste et al. study should be

completed by the end of September. Iacovone offered to email electronic versions of the Jooste and Smith (2003) study, the Malawi study, a DID Malawi-Mozambique cross border study and the terms of reference for the 2nd phase study to be carried out by Jooste et al. Iacovone asked to be kept informed of the Bean/Cowpea CRSP marketing work.

"The government of Mozambique needs a wider perspective in dealing with investors and market development," Iacovone said. "They don't know the dynamics of the market and consequently it is hard to develop a strategy."

XiXiaminine Market – Filipe and Lowenberg-DeBoer went to the market with Jose Francisco Monteiro, who collects price data for SIMA. Monteiro said that for beans he collected information on the most common (modal) price of the most commonly sold type of bean that day. He said the most common price is identified by walking through the market and noting price placards and/or talking to vendors. He said the most commonly sold type of bean may vary from month to month. He carried a standard plastic beaker to measure the volume of beans being sold by "can". This volume measure was converted to kilograms at the office.

Filipe, Lowenberg-DeBoer and Monteiro visited a wholesaler in a place near the XiIiaminine retail market called "Bazouka". This wholesaler handled khaki and sugar beans. Currently they sold for 650,000MZM to 700,000 MZM for 50kg bags. He said that currently they were sourcing beans from Gorué. This will continue through July. From July to December they will source beans from Nyassa, and from December to March they source beans from Angonia, in the Province of Tete.

He said that the does not buy beans at Garangossa because it is difficult to accumulate a truck load there. Farm-to-farm bean buyers do not operate in Garangossa, so they must park their truck and wait for growers to come to them. He noted that the sugar beans produced at Garangossa are better quality than those sold at Gorué and Lichiniga.

The wholesaler said that he travels to Gorué, in Zambezia, and Lichinga, in Nyassa, once every 15 to 20 days. He has an agent in place there during the marketing period to buy beans. He said that his fare to Gorué is 1 million MZM one way, and to Angonia 700,000MZM. On the way back there is no fare, because he rides in trucks carrying beans.

The cost of transport from Gouré is 48 to 50 million MZM for a truck load of 300 sacks of 100+ kg each. The cost from Lichinga is 55 to 60 million MZM for a truck load of 500 bags of about 60 kg each. Transport from Angonia occurs in two stages: stage 1 is from Angonia to Tete, and the second stage is from Tete to Maputo. The first stage of the Angonia transport uses small trucks carrying about four tons and costing 60,000MZM to 70,000MZM per bag. The second stage cost is 70,000MZM/100 kg sack.

Loading and unloading is 5000MZM/sack in Gouré and Maputo. It is 2500MZM/sack in Tete and 1000MZM in Lichinga. Storage is 4000MZM/sack in Gorué and 5000MZM/sack in Angonia and Lichinga. In Gorué and Angonia the length of storage does not affect the storage cost. Storage is 500MZM/bag per day in Maputo.

In the XiXiaminine retail market various prices were observed. Sugar beans said to be imported (probably from South Africa or Swaziland) sold for 17,000 MZM per can (almost 1000 ml) in one stall. In that stall Mozambican khaki beans were being sold for 13,000MZM/can. At another stall prices were marked on cardboard placards. Both sugar and khaki beans were being sold for 12,000MZM/can. Cowpeas were marked as 7,000MZM/can.

Statistics – Filipe, Mabota and Lowenberg-DeBoer met with Ellen Payongayong, a visiting specialist with the MSU Food Security Project. She said that a "census" was carried out two years ago. This was not a complete census, but a very large sample. Summary results of this census could be purchased at the national statistics office. The Ministry of Agriculture carried out a sample survey of 4900 households nationwide in 2002 and is planning another survey in 2003. The 2002 survey asked about crop production, area, assets, livestock, income sources, participation in the market and inputs. She said that the 2002 survey included almost all the questions from the census, plus the income module.

The 2002 survey data should be available in a couple of weeks. She said that she or Mabota could email the complete data set if Filipe and Lowenberg-DeBoer had submitted a written request to the Ministry of Agriculture.

The 2002 survey collected data on four pulses: common bean, cowpea, pigeon pea and "jugo". Intercropping was handled by asking about the relative space allocated to a crop in a multiple choice fashion (e.g. all the space, most of the space, over half, half, less than half….).

The 2002 survey was a stratified sample, with districts and segments within districts randomly selected. Within the segments eight households were randomly selected from an official list kept by local officials. The census used a similar procedure.

Monday, June 16 – On the Monday after Lowenberg-DeBoer left Mozambique, Filipe worked on typing and submitting the data release request to the National Director of the Ag. Economic division of the Ministry of Agriculture and Rural development (Direccao de Economia Agraria in Portuguese.) Then a visit to the marketing project at INIA coordinated by Carlos E. Dominguez, ICRISAT. According to Dominguez the marketing component of the ICRISAT operation in Mozambique is to be coordinated by the Malawian economic component and will be focused on groundnut and pigeon pea. Dominguez also said that the project is financed by the Rockefeller Foundation. In Mozambique it will start by collecting market data in the province of Nampula. The local coordinator for the economic component in Nampula is Joel Cossa (a previous World Vision marketing component officer in Nampula). It is a pilot project that is aimed at collecting and disseminating agricultural products market information. The long term plan is to be able to collect and disseminate prices for all available products in the agricultural markets. The ICRISAT INIA's component in Maputo does not have economists to run the economic component of this project, so it will be coordinated by the ICRISAT's economist in Malawi. Dominguez mentioned that the framework of the marketing project to be used is similar to the one they saw being used in Zambia, but it is still in its very first stages. He also mentioned that they would be working in collaboration with the Kenyan Agricultural commodity exchange. They do not plan to work with beans or cowpeas.

Tuesday June 17, 2003 - Tuesday morning was dedicated to handling visa issues. Also a visit to the Ministry of Agriculture was made in order to collect statistical data as well as documents, and also make contact with the people in the statistics department of the Ministry of Agriculture. In the afternoon, efforts were made to make an appointment with the marketing project Programa de Apoio aos Mercados Agricolas (PAMA), Program for Supporting Agricultural Markets at the National Rural Development division of the Ministry of Agriculture (Direcao Nacional de Desenvolvimento Rural). The appointment was set up for the following day in the morning. To acquire Mozambique topographic maps as well as soils maps, Filipe learned that an official written request should be submitted to the National Director of the Geography and Cadastre National division of the Ministry of agriculture. The request for the map acquisition was done late in the day.

Wednesday June 18, 2003 - The morning was dedicated for the appointment with the PAMA project. The interview was with Mr. Arlindo Manjate, the Planning, Monitoring and Evaluation officer. He said that the PAMA program is a concept program. It is a tool through which the Rural Development National Direction is using to develope and provide a national policy, legislative and financial framework through which different initiatives and projects aimed at supporting agricultural market linkages could be accommodated, thereby making these interventions complementary and cost effective. The detailed component of PAMA will be developed over time involving stake holders in the private sector, NGO and the donor community. All this will be facilitated by a component of the program called PAMA Support Project (PSP). PSP is part of the PAMA that is to be implemented over a period of seven years starting now. The bulk of the PSP implementation will be concentrated in five districts of Cabo Delgado (Balama, Namuno, Ancuabe, Montepuez, and Chiure); Three districts of Niassa (Cuamba, Maua, Marrupa) and three districts of Maputo (Magude, Moamba, and Boane).The selection of the project focal areas in the target districts was determined by the production levels, good accessibility and population density criterions. PAMA consists of several different integrated projects that are aimed at improving the farmers' income through improvement of their access to the markets. Arlindo Manjate explained that PAMA's program aim is to help smallholder farmers participate more effectively in the market economy by supporting a range of market linkages development activities. The PSP will be working by subcontracting services for the different market development activities such as road construction, market study consultancy, etc. The general idea is to build a unit that will be responsible for bringing the market to the farmers. The project started in 2001 with the evaluation of general market needs and the choice of target area. The primary target area was chosen to be Cabo Delgado and Niassa and later on it will be extended to Maputo. The program includes components of road improvement, capacity building, institutional improvement, training and organizing farmers into associations, rural finance, etc. Most of the projects are in the study phase period. The PAMA is more into subcontracting-type of work which they will finance to implement field operations. They do not aim at specific type of crop although they acknowledge that special attention will be made if important cash crops are identified. Late in the afternoon after the meeting with PAMA the request for map acquisition of the maps was submitted to the Geography and Cadastre Unit of the Ministry of Agriculture.

Thursday June 19, 2003 - Part of the morning was spent dealing with visa issues. From there a visit was made to the INIA office for further discussion on the price and data collection issue as

well as for acquiring the soil maps. Also a visit to the Ministry of Agriculture was made in order to collect the statistics data. Late in the day I visited the FAO marketing project at the Ministry of Commerce. I met with Alexander Schalke, ag economist and specialist for information and markets. He said that the project was called Marketing Management Assistance for Food Security. It is a phase II of the European community-funded project and executed by FAO and the Ministry of Commerce. The project provides technical assistance to the government of Mozambique in the transition from the central planned economy to open economy; the project also aims at assisting the Government of Mozambique at making the transition from the a role of regulating the supply of food (mainly food aid) and other commodities to a role of supporting and facilitating the development of a private sector-driven commodity market as well as creating a trade environment. The specific objectives of the FAO marketing project includes the establishment of a more transparent and efficient marketing system for basic agricultural commodities; to establish a fully operational, transparent and effective Commodity Market And Trade Information Network (COMATIN) as a management information system for the Ministry of Commerce; as well as support market liberalization efforts; to revise the National Commerce Directorate institutional structure and strengthen its capacity to monitor and analyze agricultural markets and trade conditions as well as provide operational and policy related advice on market and trade development issues. Regarding the status of the development of the activities Alexander Schalke mentioned that the project works in collaboration with other ministries such as the Ministry of Agriculture accessing the markets as well as accessing the government with the decision information required for government action. Presently, the project is involved in studying marketing opportunities for the Mozambican agricultural products with the Ministry of Agriculture marketing component (GASP). Products such as paprika, beans, pigeon peas and others are included in the study. He mentioned that the unit has a list of publications of different marketing and trade issues. He gave Manuel Filipe a copy of a report on the costs of transportation in Mozambique.

Friday June 20, 2003 - The day was dedicated to collecting all the documents from the various institutions, including maps (soil map and topographic maps), and copies of documents from Ministry of Agriculture and INIA. The day was also spent at wrapping up last minute details before the trip back to the US.

V) Hypotheses and puzzles

This exploratory visit to Malawian and Mozambican bean markets has led to several hypotheses and some puzzles. The hypotheses relating to Malawi include:

1) Malawi does not have a competitive advantage in exporting beans. A preliminary test of this hypothesis could be done by comparing Malawi and international bean prices. The international prices should be landed in South Africa. This should be done with monthly or weekly prices. If only average prices are compared, Malawi prices could be under the international market for a portion of the year (e.g. harvest time). If the Malawi prices are regularly above the international prices it is unlikely that Malawi can compete in the international market.
2) In the urban areas of southern Malawi red beans are preferred, but in the central region khaki beans are preferred.

3) Malawi has a moderate potential for increased bean supply. It has little land to bring into agricultural production, but it could use technology to increase bean yields (e.g. improved varieties, fertilizer).
4) In general, Malawians prefer larger bean sizes.
5) Malawians prefer sorted beans.
6) Malawian traders are highly sensitive to price differential (where price is defined as amount per plate irrespective of their expressed preferences.

The hypotheses relating to Mozambique include:

1) Mozambique has a potentially regional competitive advantage in bean production. It has additional land to put into bean production, as well as a potential to improve technology. It is not clear that smallholder beans from Mozambique can compete with mechanized bean production in China, Argentina and the US. The transport cost advantage may not be enough to offset the production inefficiency of smallholder production.

2) Transactions and transport cost are important constraints to bean exports. The export license is a major additional hurdle. To avoid the export license, merchants use bicycles to haul bags of beans to Malawi a few bags at time, thereby increasing costs.

3) The pattern of bean sales in Mozambique is heavily influenced by the road network. Beans from Milange go to Malawi because it is easier and cheaper to transport them to Malawi than to reach other parts of Mozambique (e.g. Maputo, Beira). Beans from Gorué are often hauled to Maputo because the cost of transport to Malawi is higher than from Milange. Beans from Alto Molocue go to Nampula because it is the closest production area to that city. A substantial quantity of beans from Nyassa also go to Nampula because of the rail line.

Puzzles include:

A) Why do Malawian retailers so often price all beans at the same price per volume? They do this even when they buy the beans at different prices in Mozambique. Potential solutions:

    a. The price per kg differs because weight per volume measure differs. Retailers intentionally fill the “coffee plate” less full for the more valuable beans. This question should be answered by the on-going price and quality studies which will provide per kg prices for beans sold by volume.

    b. Retailers maintain the constant price across bean types because of a cultural preference by consumers. Essentially they cross-subsidize the more expensive beans by higher profits on the less valuable ones to maintain market share. This cultural preference by the consumer might be based on a sense of fairness (e.g. all consumers should pay the same price for their beans regardless of their preference. Because bean preference in strongly influenced by place of origin, this is the same as saying that people of all ethnic origins should pay the same price

for a basic staple like beans.). Another possibility is that it is an attitude held over from the controlled economy of the Banda era.

c. The same price for all bean types may indicate that bean preferences are not strongly held, compared to the effect of the budget constraint. Uniformly, Malawian vendors said that if they raised the price of the preferred bean even slightly, consumers would switch to another bean. This may in part be due to the fact that most Malawian consumers operate under a very tight budget constraint. The preference for a certain type of bean is often not strong enough to overcome the pressure to economize.

VI) Summary of Response to Objectives

1) Develop a preliminary description of the bean and cowpea market structure in Malawi and Mozambique – Beans are widely traded in and between Malawi and Mozambique (Figure 1). Within Malawi beans from the Dedza and Ntcheu districts (e.g. markets at Lizulu and Chimbiya) tend to go to Lilongwe, while those from the Ntcheu (e.g. Lizulu and Tsangano Turnoff) and from Mulanje go to Blantyre. Within Mozambique beans from Gorué tend to go to Maputo, while those from Alto Molocue go to Nampula. There is indication that Maputo (and Beira) also draw beans from Garangossa, Tete (Angonia) and Nyassa. Both countries import and export some beans, with the largest flow currently being exports of beans from Milange and Angonia Districts of Mozambique to Malawi. There is some indication that these flows are substantial. For example, in an interview with one of 20 or 30 bean wholesale traders in Milange it was revealed that he sends about 500 MT over the border each year. If this trader is average, this means that 10,000 to 15,000 MT of beans cross the border at Milange alone. Small quantities of high quality dry pack and canned beans come to both countries from South Africa. Some bulk beans, apparently from South Africa or Swaziland, are sold in Maputo informal markets.

Consumers in central Malawi seem to prefer khaki or “sugar beans” (tan with brown, black or red speckles). Those in southern Malawi tend to prefer red beans. Most of the beans flowing over the border at Milange seem to be red beans produced as a cash crop by Mozambican growers because the preferred bean in most of Mozambique seems to be the khaki or sugar bean. There is evidence of a premium for red beans on the Milange market because of demand from southern Malawi. There is little evidence khaki or sugar beans from Milange or adjacent areas of Mozambique reach Lilongwe. Some khakis or sugar beans from Angonia reach Lilongwe via Ntcheu and Dedza area markets.

2) Identify information needs for bean and cowpea market structure - The interviews and discussion indicate strong interest in bean markets in the region. In spite of several consultant studies (e.g. Dixie, 2000; Jooste and Smith, 2003; ICC, 2002; Muendane, 2002) numerous questions remain about the competitiveness of countries in the region in bean production and the dynamics of regional markets. The consultant studies tend to be narrowly focused on short run demands and the needs of specific South African firms. There is an urgent need for a study with a broader perspective that looks at longer run trends in bean supply and demand relative to the competitiveness of each country (and regions within

countries). This type of study is well suited to being implemented within the context of a PhD dissertation research.

The Bean/Cowpea CRSP Eastern and Southern Africa economics and marketing team should respond to intermediate term information demands by regularly updating USAID, NGOs and relevant government agencies on research results. One of the methods discussed with stakeholders during this trip is a one page summary circulated by email at the time of the annual report (October & November each year). Stakeholders with a particular interest in some of the results could request additional information. Groups that have requested this information include: USAID missions in Malawi and Mozambique, WV in Quelimane, Maputo and Zomba (Chingale), NASFAM, and GPSCA.

In the next few years while Filipe is doing required course work at Purdue, gaps in bean market information should be filled by research trips during summer or holiday periods. These missions need to be timed and planned to allow for time in Maputo to acquire a US visa. Within Malwai and Mozambique areas for which more information on supply and marketing practices are needed include:

- Rumphi area of northern Malawi,
- Ntchisi area in central Malawi, a district near Lilongwe City
- The Garongosa area of Sofala, Mozambique,
- The area of Tete province Mozambique across the border from the Dedza area of Malawi, and
- Nyassa province of Mozambique.

Beyond Malawi and Mozambique, a regional perspective requires data on demand trends for beans in South Africa, Botswana and Namibia; and on potential supply and demand in Zimbabwe, Zambia, Tanzania and Angola. The current plan is to work with the University of the Free State, Bloemfontein, SA, on demand in South Africa, Botswana and Namibia. Collecting information in Zimbabwe, Zambia, Tanzania and Angola will depend on collaboration with CIAT and on interpretation of human subjects regulations at Purdue.

3) Assist in the setting up of a pilot bean price and quality data collection – Initial results from two months of price and quality data collection in Malawi was discussed. Suggestions were made for adapting the protocol to the characteristics of the Malawi market. Kambewa developed a plan to include data collection in the Milange, Mozambique market. Filipe and Lowenberg-DeBoer discussed price and quality data collection in Maputo and Beira with the INIA leadership.


0 150 300 km
0 150 300 mi
TANZANIA
Lake Nyasa
ZAMBIA
Lichinga
Pemba
Lilongue
Mangoche
Dedza
Nacala
Angonia
Blantire
Nampula
Gurue
Tete
Mulanje
Milanje
A. Molocue
ZIMBABWE
Gorongoza
Quelimane
Chimoio
M. Binga
Beira
Mozambique Channel
Chicualacuala
Inhambane
MAPUTO
SWAZILAND
SOUTH AFRICA
Indian Ocean

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Appendix A

Protocol for the Pilot visit to Malawi and Mozambique- 2003

Objectives

The 2002-2007 proposal for the Bean/Cowpea CRSP Eastern and Southern Africa Region outlines a plan to study bean and cowpea marketing in the region. The 2002-2003 workplan specifies that an initial step in that study will be to describe bean and cowpea market structure in the area where Malawi and Mozambique share borders. To carryout that work plan Dr. Jess Lowenberg-DeBoer and Manuel Filipe are planning to visit Malawi and Mozambique in May 2003. In Malawi they will be joined by Dr. Patrick Kambewa, Chancellor College, Zomba. The general objective of this trip is to create the basis for starting a data collection process for the Bean/Cowpea CRSP research work in Malawi and Mozambique and for the doctoral thesis research for Manuel Filipe. The specific objectives of this team will be to:

1) develop a preliminary description of the bean and cowpea market structure in Malawi and Mozambique,
2) identify information needs for bean and cowpea market structure, and
3) assist in the setting up a pilot bean price and quality data collection.

The market structure description will be based primarily on interviews with key informants in southern Malawi and the province of Zambezia in Mozambique. There will be a special focus on describing any cross border trade in beans and cowpeas, between Malawi and Mozambique or with third countries. Markets for both raw beans and cowpeas, as well as processed products will be investigated.

The pilot bean price and quality study in Malawi will be supervised by Kambewa. In Mozambique the price and quality study will be supervised by Brian Hilton of World Vision, based in Quelimane. Lowenberg-DeBoer, Kambewa and Hilton have exchanged information about the price and quality study via email, but the current status of the data collection is not known. Ideally, the data collection would have started before the Lowenberg-DeBoer and Filipe arrive, so that the procedure would have been tested. In both countries the price and quality protocol and data collection developed in Tanzania (Annexes 1 & 2) will be used as a starting point.

Methods

This visit is intended to be an exploratory one. Little research has been done on bean and cowpea marketing in either Malawi or Mozambique and thus it is not clear that CRSP researcher know issues and problems well enough to formulate hypothesis and to identify data to be collected. In such a circumstance, the best approach is to start with open ended questions that are intended to generate discussion. The type of questions to be used in this trip are mainly intended to create an open line of conversation that will allow in depth exploration of the topics (in a “snowball” fashion), for a maximization of information gathering from the potential information sources.
The research will start with visits to key figures of the Agricultural Services, Research Centers, marketing/ trade services and agents, representative producers, markets, consumers, and others (depending on the “snowball” results). This visit is intended to be for the identification of

potential information sources, as well as for the collection of maximum information possible from them regarding the topics of the study.

The visits will start in Malawi and continue to Mozambique. The plan is to visit farmers (to see the production sites), trading locations (such as markets), transportation agents, costumers, and Non-Governmental Organizations (NGOs), etc.

Possible information sources in Malawi

For the Malawi case the study will use the experience from the visit by Dr. J. Lowenberg-DeBoer to Malawi in March 2002. He visited a number of governmental agencies and non-governmental organizations in the Lilongwe area. This visit would focus on any government agencies, private businesses and non-governmental organizations in the Blantyre area and on markets in the southern part of the country.

Possible information source in Mozambique

For the Mozambique case the study will focus on government agencies, Non-Governmental Organizations and markets in Zambezia province. The plan is for Manuel Filipe, a native of Mozambique and also the primary connection between the CRSP and World Vision International, to identify potential sources of information as well as to maximize the data collection process. The potential source of information would be:

Merchants and consumers in traditional markets handling beans and cowpeas
Ministry of Agriculture (Extension Services, Statistics Services, National Agricultural Services, etc)
Ministry of Commerce and Industry
Ministry of Planning and Finance
National Statistics Service
Non Governmental Organizations (World Vision International, Concern, etc)
Faculties of agronomy and/or economics of the local Universities
National Service of Disaster Prevention
World Vision International Zambezia and Maputo
National Agronomic Research Institute (INIA) Zambezia and Maputo

It should be noted that the potential information sources mentioned above for the two countries may not all be contacted during the present visit or the futures ones. This will depend on the mentioned snow ball effect during the visit and time availability.

Sampling process

The visit is expected to last two weeks, one week for each country. The team expects to have 5 to 6 days of field work and one to two days for traveling within each country and between countries. Although the priority in selecting the source of information as well as the topics for discussion during this trip are responses to the specific objectives of the trip, the questionnaire structure is to allow for the collection of the maximum information possible regarding bean/cowpea production and marketing in Malawi and Mozambique so that future trips can be successful.

Interview guidelines

Possible questions to ask bean/cowpea producers:

1. How much bean/cowpea do you produce?

2. What area is reserved for beans and/or cowpea?

3. What is the main objective for bean and cowpea production? (Food, sell, other…)

4. What are the production techniques you use for producing bean and/or cowpea (monoculture, mixed culture, other)?

5. If mixed crop, what is bean/cowpea mixed with and why?

6. What kind of inputs do you use?

7. How much do they cost?

8. Where do you buy them? (distance to store if it is the case)

9. What are the varieties you use?

10. Where do you get the seeds from?

11. How much do you pay for the seeds

12. What is the agricultural timetable?

13. Where do you store the harvest? And for how long?

14. Do you use any products to preserve the harvest?

15. If yes where do you buy them? (Distance)

16. How much does the product cost?

17. If you use a warehouse, how much do you pay?

18. How far is the warehouse?

19. What are the major bean and/or cowpea production problems in general and with the used varieties in particular?

20. Space for comments

Possible questions to ask to bean/cowpea producers who sell in the market:

1. How much bean/cowpea do you produce?

2. How much do you sell each time you come to the market

3. How often do you come to sell at the market?

4. How far is your production site?

5. How far is your home?

6. Where do you store your products?

7. For how long?

8. Do you use chemicals for storage

9. If yes, what are they and how much do they cost?

10. If you use a warehouse, how much do you pay?

11. Can you characterize the changes in the quality due to storage?

12. What effect do you think these changes have on price and/or quantity sold?

13. What are the varieties of bean and or cowpea that you produce

14. What are the varieties you sell?

15. If there exists varieties that are produced but not sold identify and explain why they are not sold?

16. Do you buy bean/ or cowpea? If yes what varieties and why?

17. Which varieties do you think sell more and what aspects make these varieties to be sold more than the others?

18. Which varieties do you think sell at a higher price and what aspects do you think makes these varieties more expensive?

19. What are the major problem with sales of bean and cowpea here?

20. How do you think this can be solved?

21. Space for comments

Possible questions to ask bean/cowpea merchants:

1. How much bean/cowpea do you sell/day or week?

2. How many days do you come to sell per week/month out of how many weeks or months a year?

3. What are the varieties of beans/cowpea that you sell?

4. What are the varieties that sell better?

5. What aspects of the varieties of beans that sell better do you think are responsible for the higher selling price?

6. What aspects of the varieties of beans that do not sell well are responsible for the lower selling price?

7. What are the quality aspects do you think consumers prefer in the varieties of beans or cowpea you sell?

8. What are the quality aspects consumers do not like in the sold varieties?

9. Where do you buy the beans and/or cowpea that you sell?

10. For how much do you buy them?

11. What are the transportation costs involved?

12. What are the main problems in the marketing beans and why?

13. And how should these problems be solved?

14. Space for comments

Possible questions to ask to warehouse operators:

1. How much bean/cowpea do you store per week or month?
2. What is the average storage time customers use?
3. How much do you charge for storage?
4. Who are the people who store here (Producer, intermediaries, your self, etc)
5. How do you keep the quality of the product from deteriorating?
6. Do you use chemical products for the storage?
7. What is this chemical and how much do you pay for it?
8. Where do you get the chemicals from?
9. Where do you think the products go from here and how (mean of transport)?
10. What varieties store better?
11. What aspects of these varieties do you think make them store better?
12. What are the most common varieties stored here?
13. Space for comments

Possible questions to ask truckers:

1. How much bean/cowpea do you transport per trip?

2. Where to you take the bean and or cowpea to?

3. How much do you charge for the trip?

4. Who are the people who ask for the transportation service (producer, seller, companies etc.)?

5. What do you think are the main problem with transportation here?

6. How do you think they should be solved?

7. Space for comments

Possible questions to ask to NGO's:

1. General information about the NGO (Who they are, what do they do etc?)

2. Do you work with any aspect involving bean or cowpea (production, transportation, commercialization etc.)?

3. What is this aspect, bean or cowpea?

4. What do you think are the major constraint in that particular sector?

5. What can be done to help solve the problems?

6. Space for comments.

Possible questions to ask government officials

1. What is the main characteristic of the bean cowpea production sector here?

2. What is the market structure of bean cowpea here?

3. What is the role of the government in the structure?

4. What are the major constraints in the bean/cowpea sector?

5. How can the constraints be solved?

6. Space for comments

Possible questions to ask researchers (research institutes and Universities

1. In what aspect of bean and /cowpea are you working on?

2. To what concern or problem are you trying to respond to with the research program you have now?

3. What are the major problems you identified to be solved related within the bean and cowpea program?

4. What are the varieties you launched so far?

5. What are farmers' responses?

6. What are the important qualities farmers perceive?

7. What are the qualities you perceive which are important for the consumers?

8. Space for comments

Possible questions to ask to other non-specified agents:

1. Here the open questions are to be applied. The questions will depend on the interest observed through the "snowball" effect. The topics to be covered will be one of the ones listed below.

Topics for open discussion

Production
- Who Produces (commercial vs. family subsistence)?
- When?
- Methods of production (Techniques and inputs)?
- Costs of production?

Transportation
- Who transports?
- Where to?
- When?
- Costs of transportation involved?

Marketing/commercialization
- Who sells?
- Where?
- When?
- How (measurements, selling strategies)?
- Prices?
- Cost of storage?

Trade
- How much is traded?
- What variety?
- When?
- Who does the trade?
- Costs Involved?

Consumer preference
- What varieties are preferred?
- What aspects of the bean cowpea are important?
- What qualities are associated with the prices being practiced?

The quality price association will be done by an adaptation of the survey and methodology used in the West Africa and being implemented in Tanzania. A copy of the Tanzania version of the survey is presented in Annex 2 of this document.

The price and quality study for bean and cowpea in Malawi and Mozambique will require:

- Selecting the varieties for the study
- Identifying the quality aspects guiding the prices in the market
- Localizing the markets where to conduct the study
- Find technicians that will collaborate with the study in the data collection.
- Adjust the protocol to the Malawi's and Mozambique conditions (varieties, quality aspects, method of measurements...)

A collaboration with local institutions such as NGO's, local research stations and/or National Extension Services will be necessary for the collection of the data.

Timing of the Trip

There are 15 total days allocated for the trip. 6 working days in each country (12 total), 1 or 2 weekend days and 1 or 2 days for traveling between countries and/or between provinces within the country and also to cover any on field time increment need.

Tentative Schedule in Malawi.

Day 1 - Depending on arrival time, visit with Collaborators for planning and choosing the specific sites for visiting.

Day 2 - Complete discussion of the planning and start visiting the agents identified on day one (researchers, NGOs, government officials, and others)

Day 3 - Continue visiting agents (researchers, NGOs, government officials, and others)

Day 4 - Visiting markets (talking with sellers, producers, truckers and others).

Day 5 - Visiting markets (talking with sellers) and discussing with field team about the price and quality study.

Day 6 - Visiting markets, producers and discussing with the field team about the price and quality study, and leave Malawi

Tentative Schedule in Mozambique.

Day 7 - Depending on arrival time in Mozambique, meeting with World vision and discussing the field work plan

Day 8 - Finish discussions about the field work plan, visit fields, talk with producers, truckers and other identified agents.

Day 9 - Visit markets, field sites and agents (government agents, other NGOs)

Day 10 - Visiting markets, field sites and discussing with field team about the price and quality data collection

Day 11 - Visit markets, field sites, and other agents.

Day 12 - Discuss future field work with World Vision and with other pertinent agents in Zambezia

Day 13 - Trip to Maputo. Depending on arrival time, start contacts for discussion of human subjects and research collaboration with World Vision, INIA, and other identified agents

Day 14 - Continue discussions with agents regarding research collaboration as well as studying the bean cowpea market structure in Mozambique, and preparing the trip back to US

Day 15 - Last minute topic discussions with agents and returning to US.

This schedule is subject to change according to the travel times and field conditions.

Annex 1

Protocol for the Pilot Bean Price and Quality Study in Tanzania - 2003

Objective
The general objective of the bean price and quality study is to determine which visual characteristics of beans can be linked to price premiums or discounts. This information will be used by breeders in developing new varieties and in market development activities. Price and quality analysis provides complementary information to the consumer opinion surveys that have previously been used to study consumer bean preferences in Tanzania.

Method
The data collection methodology focuses on purchasing samples just as a consumer would do, and recording the price and characteristics (e.g. color, size, damage). This data will be analyzed statistically with "hedonic pricing" models, that provide estimates of the premiums or discounts for various characteristics. Samples should be purchased in each market studied once per month.

Sampling – The procedure is intended to select a random sample of the beans for sale in a given market. Over time, the sample should include beans of all types and quality levels.

Market Categories - Because of the well defined market classes in beans, the pilot study sample in Morogoro will be stratified into four categories:

1) Kablanketi (soya) type,
2) Red, Canadian Wonder type,
3) Yellow, Kigoma type, and
4) Miscellaneous types.

The miscellaneous category is intended to increase the variability of the bean types in the data. It would include recently introduced bean varieties (e.g. red speckled Kalima or Rosecocco types, SUA varieties Rojo and SUA90 and Kablanket-type long grain, Mbeya). It may also include traditional bean types, such as the black and white striped beans observed in the Matambo market. Because of problems related to moisture content and perishability, fresh shelled beans should not be included in the sample.

Units purchased - For each market category two purchases should be made in each market, each month. One purchase should be the most common weighed quantity, one kilogram, and the other the most common volume unit (e.g. liter, ½ liter, ¼ liter). Thus there would be in each market at most eight samples purchased each month.

Dates of Purchase - The market should be visited on the same day of the week of the same week of the month each month (e.g. Wednesday of the second full week of the month). Since paydays are usually at the end of the month, it is suggested that samples be purchased in the middle of the month to avoid perturbation of the market either immediately after a payday when vendors feel that they don't have to negotiate because consumers have money or at the

end of the month when sales are very slow because many consumers have exhausted the month's budget.

Sampling Procedure - The proposed sampling procedure is as follows:

1) The observer starts the process with a list of the regular bean sellers in a market and the types of beans that they usually sell. The first time the observer visits a market would be the time to create the initial list.
2) The observer makes a quick walk through the market to add any new bean vendors to the list and to observe bean types actually in stock at each vendor. The observer should be particularly alert for any farmers selling their own production, occasional vendors, or merchants who are broadening their product line by including beans. At the same time the observer inquires about the general level bean prices and observes any price signs posted.
3) The observer adds any new vendors to the bean merchant list for the market with the types of beans that they stock. The regular bean vendor list is corrected for the types of beans in stock. For each market class, slips of paper with the names of the merchants stocking that type that day are prepared and placed in a container. The total number of merchants selling each type of beans that day should be noted in a notebook.
4) Two slips of paper are drawn at random from each market class container. The first merchant name will be a one kilogram purchase and the second will be the volume purchase.
5) The observer goes to each of the merchants selected and attempts to negotiate the purchase (i.e. either a kilogram or the volume measure of the bean market class indicated). The price paid should be as close as possible to the usual price paid by other customers for the type and quality. If the vendor insists on charging more than the price paid by others (for instance, because he or she perceives that this is research and can pay a higher price), the observer is given the flexibility to select another name from the bag and go to another vendor.
6) With each purchase the observer notes the status and conditions of the sale (e.g. gender, retail or wholesale, any unusual conditions such as flooding in the market, prices inflated by a payday or holiday) and the observer asks about the location where the grain was produced and month of harvest. This information is noted in a notebook.
7) Each purchase is placed in a separate plastic bag.
8) When all samples have been purchased, the samples are taken back to campus, the measurements taken and the form completed. A sample form is attached.
9) Information from completed forms is entered into an Excel spreadsheet.
10) In addition complementary information is noted including: the number of vendors selling each type of beans in each market for each sample purchase date and the price, unit size (e.g. 500 gr., 1 kg) and bean type of beans sold by formal sector retailers in Morogoro.

Annex 2

DRY BEANS PRICE QUALITY SURVEY **YEAR_____** **MONTH _____** **DAY _____**

Observer_____

Item	Bean type	Unit of measure	Price	Weight of 100 grains	Number of holes per 100 grains	Average width of 10 grain	Average length of 10 grains	Std Dev. Of 10 grains	% of discolored grains	Shiny or dull	Other bean types displayed by seller	Type of seller by volume	Type of seller by product mix	Mixtures % of grain not true to type	Season of harvest	Region of source	Gender of the trader

Bean Types
1=Soya Kablanketi (short grain)
2=Red Canadian wonder
3=Yellow (Kigoma)
4=Mixtures hard to categorize

Unit of measure
1=1 kg weight
2=1/4 volume measure

Seller type by volume:
1=Retailer only
2=Whole seller and retailer

Season of harvest
1=Previous season
2=Current season

Seller Type by product mixes:
1=Grain seller only (sell legume and cereals only)
2=Mixed product seller (sell non-grain products)
3=Grain seller selling legume grains only

COMMENTS: (Any information that might have impact on significant changes in prices, e.g. floods on the market that decrease access by buyers, increase supply of produce beyond normal occurrences. Availability of bean types other than specified, new information received by sellers about bean on transit, availability, sources and prices during the week etc.)

Other instructions:
Sampling: Take a quick walk through the market, check new sellers and make a sample from the list.
Purchase: 1kg and ¼ tin of beans for each type of bean and record prices.
Visits: Both sabasaba and central market Wednesday of the second or fourth week of the month (alternating the weeks)

Appendix B – Malawi and Mozambique Contact List

Cecilia Aipira, Marketing Operations Officer
NASFAM
1st Floor St. Martin House
Off Independence Drive
City Centre, P.O. Box 30716
Lilongwe, 3, Malawi
Phone: 265 (0) 1 772 866
Fax: 265 (0) 770 858
mops@nasfam.malawi.net

Gary L. Bayer
Agricultural Program Director
Av. Agostinho Neto
P.O. Box 2531
Maputo, Mozambique
Phone: (258-1) 35 06 05 or 35 06 00
Fax: (258-1) 35 06 39 or 35 06 18
Celtel: 082 871 328
Gary_bayer@wvi.org

Sidney Bliss
USAID Maputo
sbliss@usaid.gov

Maria P. Chamanza
Marketing Manager
ADMARC
P.O. Box 5052
Limbe, Malawi
Phone: (256) 644 269/640 044
Cell: 917 146
Fax: (265) 642 625/640 486
Email: corporate@admarcmw.com

Dr. Allan J. Chiyembekeza
ICRISAT Country Representative
Chitedze Agricultural Research Station
P.O. Box 1096
Lilongwe, Malawi
Phone: 265 1 707 057/067/071
Direct Line: 265 1 707 297
Cell: 265 8 828 736
Fax: 265 1 707 298

A.Chiyembekeza@cgiar.org
acheyembekeza@malawi.net

Irene de Souza
Agricultural Activities Manager
USAID
JAT Complex, Rua 1231 No 41
P.O. Box 783
Maputo, Mozambique
Phone: 35 20 00
Direct Line: 35 20 59
Fax: 35 20 85, 35 21 00
isouza@usaid.gov

Dr. Juan M. Estrada-Valle
ICRISAT
Chitedze Agricultural Research Station
P.O. Box 1096
Lilongwe, Malawi
Phone: 265 1 707 057/067/071
Mobile: 265 8 201 698
Fax: 265 1 707 298
j.estrada@cgiar.org
juanestrada@malawi.net

Brian Hilton, Agricultural Program Coordinator
World Vision
Caixa Postal 474
Quelimane, Mozambique
Office Phone: (258-4) 21 32 04
Home Phone: (258-1) 21 21 60
Fax: (258-4) 21 2136/21 20 75
Cell: 258-82-592-074
Email: brian_hilton@wvi.org

Leonardo Iacovone, Assesor Economico
GPSCA
Rua de Gavea No 33-1 ANDAR
Maputo, Mozambique
Phone: 258(0)1 307957/427436
Fax: 258(0)1 427436
L.Iacovone@tvlabo.co.mt

Essau Mwendo, ADP Manager
World Vision Malawi
Chingale A.D.P.
P.O. Box 650
Zomba, Malawi
Phone : 01 524 010/526 429
Mobile: 08 832 156
Essau_Mwendo@wvi.org

Mohamed Najeeb
Rab Processors LTD
P.O. Box 5338
Limbe, Malawi
Phone: 01 641 498
Mobile: 08 844 192
Fax: (265) 01651 804/815 01644 927
Email : tmrab@mw.net

Sergio Nemba
Solidariedade – Zambezia
Av. Eduardo Mondlane, 1396
Quelimane, Mozambique
Cell: 082-430374
Fax: 04 21 52 05
Email: soldzambezia@teledata.mz
snemba@yahoo.com

Suzanne M. Poland
Food for Peace Officer
USAID
JAT III Building, Rua 1231, No 41
Bairro Central "C"
Maputo, Mozambique
Phone: 35 20 52
Fax: 35 20 85
Cell: 082 304 113
spoland@usaid.gov

Dr. Larry Rubey
Chief, Agriculture and Natural Resources
USAID Malawi
NICO House
P.O. Box 30455
Lilongwe 3, Malawi
Phone: 265 1 772 455/458/197
Email: lrubey@usaid.gov

Dr. Moses Siambi
Regional Agronomist
Chitedze Agricultural Research Station
P.O. Box 1096
Lilongwe, Malawi
Phone: 265 1 707 057/067/071
Mobile: 265 8 201 697
Fax: 265 1 707 298
m.siambi@cgiar.org

Cesar Augusto Tique, Land and Environmental Planner
INIA
Caixa Postal 3658
Av. Das FPLM, 2698
Mavalane, Maputo 8, Mozambique
Cell: 082 314 4322
Phone: 258 1 460099
Fax: 258 1 460074
iniadta@teledata.ma

Jake Walters, Director
Technoserve Mozambique
Av. Da Base N'tchinga No. 509
Bairro da Coop
Maputo, Mozambique
Phone: (011) 258-1-416032 or 419616
Fax: (011) 258-1-416049
Email: jake.walter@tvcabo.co.mz

Alexander J. F. Schalke, Agricultural Economist and Specialist for Market Information
Ministerio da Industria e Comercio,
Direccao Nacional Do Comercio
Projecto de Asistencia a Gestao do Mercado
Praca 25 de Junho No 37 (2º Andar)
Caixa Postal 1928
Maputo, Mozambique
Tel .: 258 (1) 300664/ 65 – 428697
Fax: 258 (1) 300664
Home tel.: 258 (1) 498729
Cell: 258 (82) 319161
E-mail: faodsa@tropical.co.mz

Arlindo Manjate, Agricultural Economist,
Planificacao, Monitoria e Avaliacao
PAMA
Programa de Apoio aos Mercados Agrícolas
MADER – IFAD
Rua 3253, No 134
Bairro da Maxaquene C
Maputo, Mozambique
Tel: 258 (1) 418007/17
Fax: 258 (1) 414465
E-mail: amanjate@pama.org.mz

Carlos E. Domínguez
Project Manager – Seed Specialist
International Crops Research Institute for the Semi-Arid Tropics – ICRISAT
INIA
Av. Das FPLM No 2698
Caixa Postal 1906
Maputo, Mozambique
Tels: Off – 258 -1- 461657
Fax: 258 -1 – 461581
Home Tel: 258 -1- 415934
Cell 258-82-306573
Email: ICRISAT@zebra.uem.mz
c.dominguez@cgiar.org
Consultative Group on Internacional Agricultural Research. -CGIAR

Appendix C - Mozambique Contacts from Sidney Bliss, USAID, Maputo:

Lars Carlson, Programme Officer, Natural Resources and Environment
Embassy of Sweden
Av. Julius Nyerer, 1128
P.O. Box 338
Maputo, Mozambique
Phone: 49 00 91/4
Fax: 49 23 74/49 00 56
Email: LARS.CARLSON@SIDA.SE

Mr. Paulino D'Uamba
DANIDA
Reception phone: 48 00 00
Direct phone : 48 00 15
Email : poudua@um.dk

Phillip Wijmans
Lutheran World Federation
Maputo, Mozambique
Phone: 49 11 85/49 16 10
Email: Philip@lwfmoz.uem.mz

Rob Peterson, in Lichinga with the Irish Development Agency
Irelandan@teledata.mz

Vincent Tickner (in England)
gamco@net.com.co.uk

Appendix D

Figure One: Volume measure (Koffee plates) being used at the Central Market in Blantyre, Malawi

Figure Two: Volume measure at Bvumbwe Market outside Blantyre, Malawi

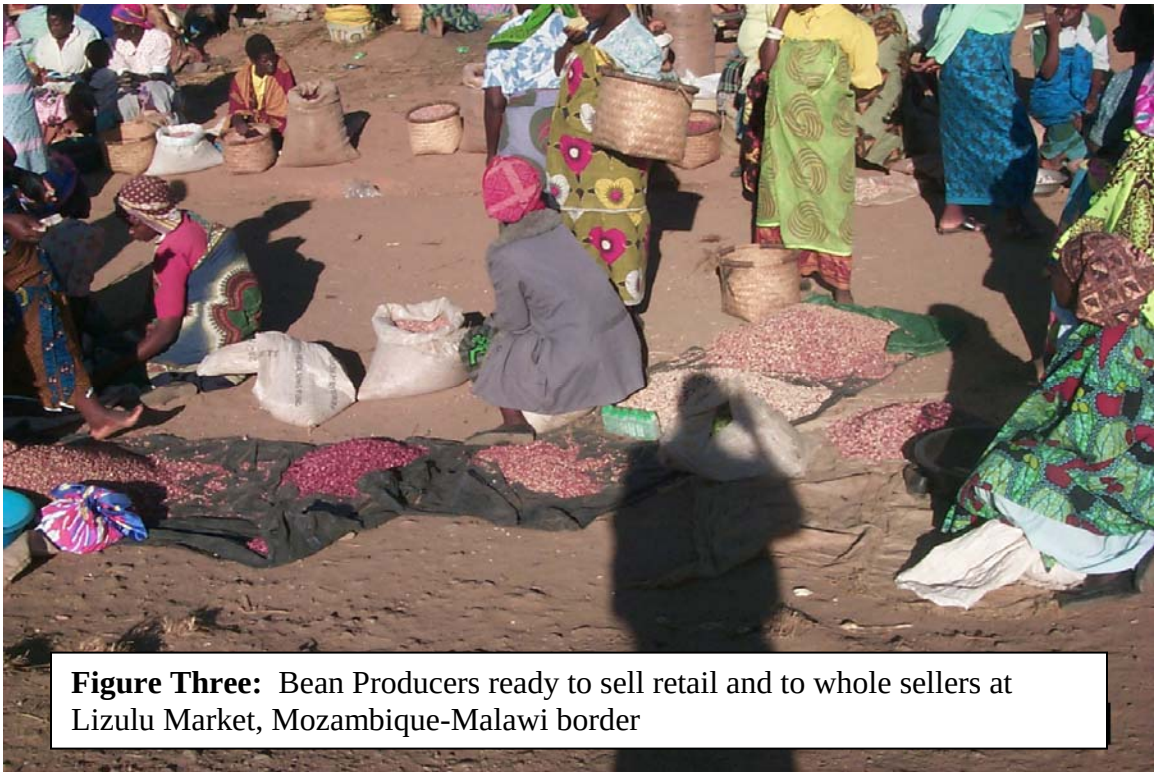

Figure Three: Bean Producers ready to sell retail and to whole sellers at Lizulu Market, Mozambique-Malawi border

Figure Four: Scales used at Lizulu wholesale market, Mozambique-Malawi border

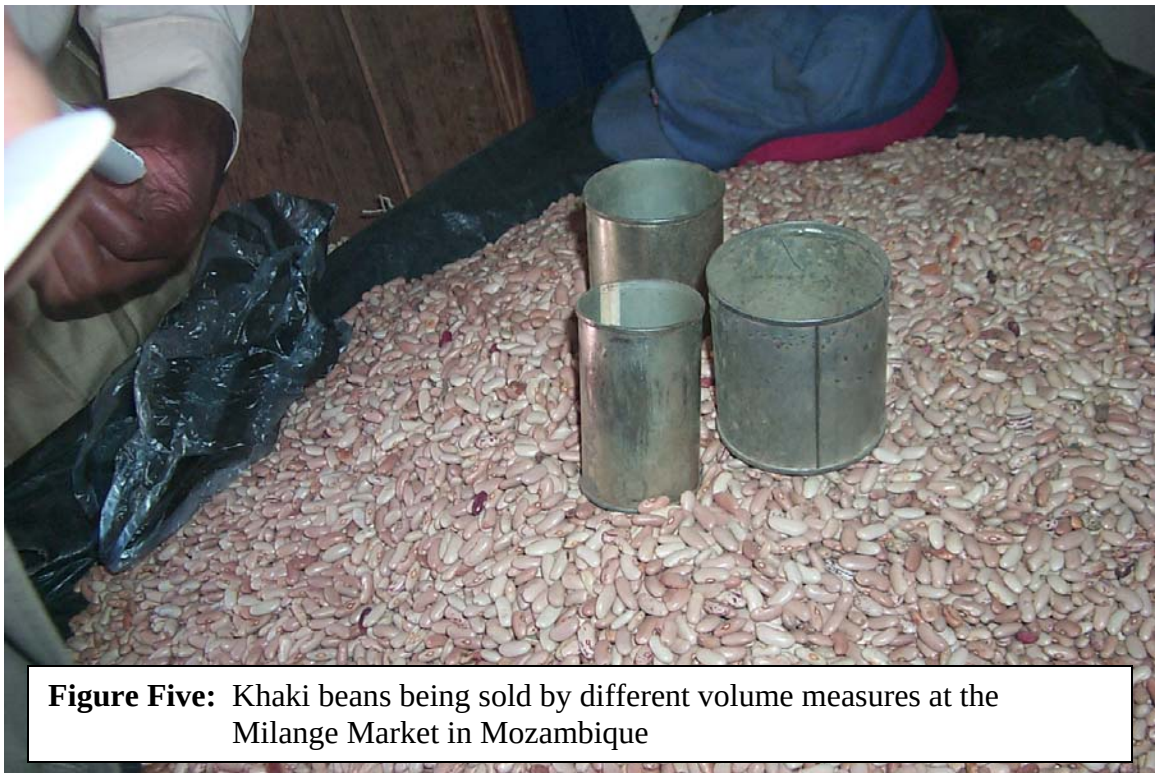

Figure Five: Khaki beans being sold by different volume measures at the Milange Market in Mozambique

Figure Six: A bean field in Milange, Mozambique

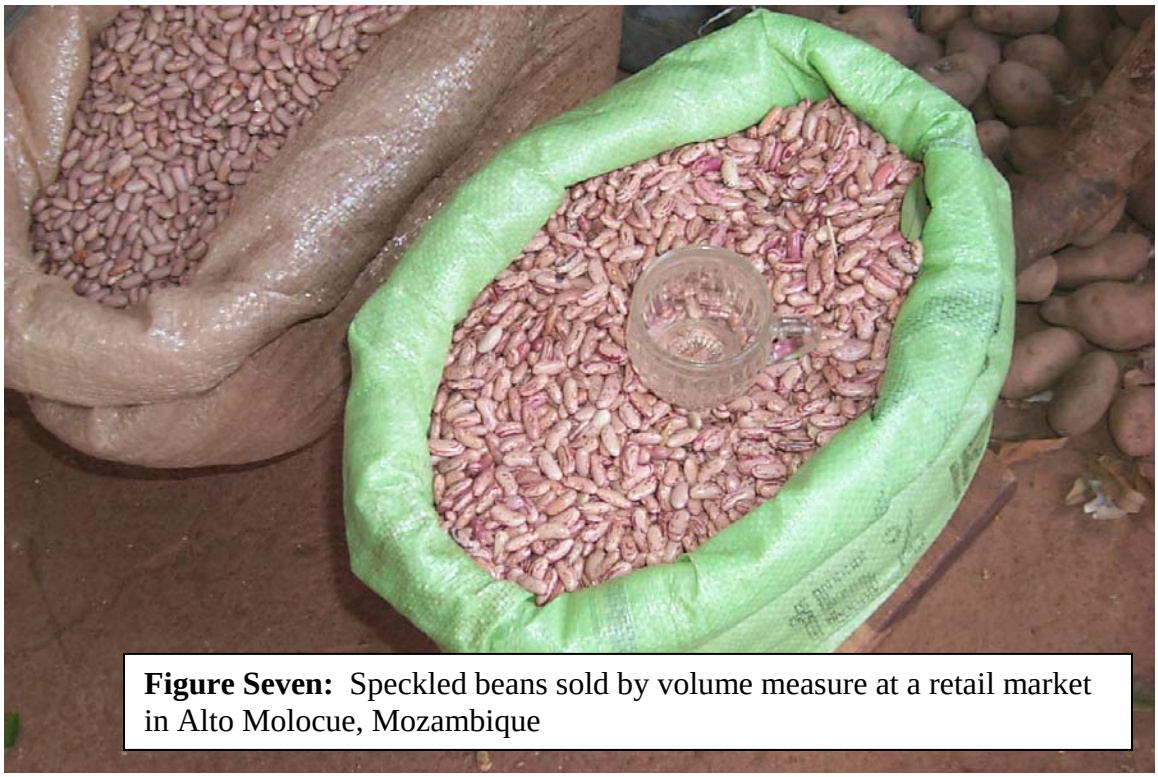

Figure Seven: Speckled beans sold by volume measure at a retail market in Alto Molocue, Mozambique