



SD Publication Series
Office of Sustainable Development
*Bureau for Africa **



**Methodologies for Estimating Informal
Crossborder Trade in Eastern and
Southern Africa**

Kenya/Uganda Border
Tanzania and its Neighbors
Malawi and its Neighbors
Mozambique and its Neighbors



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Foreword

As global trade integration continues to develop, countries are organizing themselves into stronger regional blocs. Within Africa, there has been increased interest in intra-regional trade for some time. Subregional initiatives aimed at promoting trade in Eastern and southern Africa are not new. Examples include:

- East African Community (EAC) of 1919;
- Southern African Customs Union (SACU) of 1969;
- Southern Africa Development Community (SADC) of 1990;
- Common Market for Eastern and Southern Africa (COMESA) [formerly Preferential Trade Area (PTA) for Eastern and Southern Africa] of 1982; and more recently,
- Crossborder Initiative (CBI) of 1993.

While some progress in reducing tariff and nontariff barriers to trade has been made, formal trade among most African countries continues to be limited. Meanwhile, informal/unrecorded trade is thought to be substantial. This series of studies, led by Kenyan Chris Ackello-Ogutu, is particularly timely given the increased interest in the subject.

Ackello-Ogutu's research techniques reflect his concern for variations that often exist among regions and countries, but are frequently ignored by research-

ers in research methodology design. His data collection techniques (e.g., border site selection; 12-month duration of border observation for tracking goods; random sampling selection procedure) quantify crossborder trade and fit specific circumstances that prevail in Eastern and southern Africa, rather than simply applying broad, across-the-board techniques.

This report should serve as a highly useful guide for needs assessment/planning, data set collection, further research, project/program elaboration, and policy formulation on the subject of unofficial crossborder trade.

It is one in a series of studies on Africa's regional trade and agricultural comparative advantage, a joint activity of the Africa Bureau's Food Security and Productivity Unit in the Office of Sustainable Development, Productive Sector Growth and Environment Division (AFR/SD/PSGE), and the Regional Economic Development Services Office for East and Southern Africa (REDSO/ESA). The series is part of an ongoing effort to analyze development constraints, increase the effectiveness of our assistance programs, and jumpstart economic growth in Africa.

Curt Reintsma
Division Chief
USAID/AFR/SD/PSGE

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This methodology document is a product of numerous interactive engagements with crossborder trade practitioners, public officials, field staff, country coordinators/researchers and other professionals, to all of whom I remain indebted.

My specific appreciation goes to Professor Johny Egg, for his professional inspiration and provision of valuable documents from his extensive collaborative efforts in the study of crossborder trade in Western Africa. I also wish to single out Brian D'Silva and Joe Carvalho for their steadfast commitment to strengthening regional cooperation, analytical capacity for policy analysis, and sustainability of economic growth in Eastern and southern Africa (ESA). The experi-

ence we have achieved while working and deliberating with them, particularly on the informal crossborder trade in ESA and the Greater Horn of Africa is indelible.

Last, but by no means least, we highly appreciate the logistical support and understanding by Technoserve staff in Nairobi, particularly during the formative stages in May 1994 when the concept of collecting unrecorded crossborder trade data was an intrigue to everyone, including the author.

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Executive Summary

There is considerable interest in informal trade among countries in ESA, but so far no serious research effort has been directed at understanding its magnitude, determinants, and consequences, particularly on the welfare of the border regions, national/regional food security and government revenue.

Starting in 1994, Technoserve, on behalf of REDSO/ESA and AFR/SD/PSGE, commissioned surveys in Kenya, Tanzania, Malawi, and Mozambique, with the broad objective of providing qualitative and quantitative information about informal crossborder trade among these countries and their neighbors. The objective of this paper is to give practical methodological and analytical guidelines for field staff and researchers engaged in collection and compilation of unrecorded crossborder trade in the four countries.

Three techniques for collecting primary informal crossborder trade data are applied either alone or as a combination depending on the circumstances: *border observation*; *tracking movement of large transport vehicles*; and *stock taking at open markets*. In addition to information derived from these techniques, one *baseline survey* conducted midway through the project duration for each area of study provides information on commodity prices, costs, exchange rates, trader characteristics, information sources, market functions, and origin/destination of goods.

Border observation requires selection of popular and accessible border sites for posting of enumerators. In the specific case of the geographic areas selected for the study in ESA, border monitoring is conducted by applying census techniques to cover major agricultural and industrial commodities during two weeks randomly selected from each month over a period of 12 months. Estimated average monthly trade volumes derived from observed figures are used to estimate the annual volume and value of unrecorded trade flows between two trading partners.

Direct border observation alone may not yield a realistic picture of the unrecorded trade if transporters collide with customs officials to fraudulently avoid payment of duty through misdeclaration and misspecification of cargo. The *tracking technique* is aimed at estimating the volume of unrecorded trade that passes across the border through manipulation of the documentation procedures. Tracking is conducted only on a sample of 10 percent of the trucks passing through selected borders, and basically entails tracking cargo movement from the port of entry to the declared destination, eventually comparing the findings with those in the official customs records.

The *stock taking technique* is particularly suitable for open border markets commonly found along the frontier road between Malawi and Mozambique. The technique requires quantification of net import and export figures by taking into account volume of goods brought to the market by Mozambican and Malawian traders, volumes purchased, and carryover stocks—the latter being treated as beginning stocks for the next market day. This approach, however, is combined with the border observation on nonmarket days when the level of trade activity declines appreciably.

Although unrecorded trade figures could theoretically be computed using trade statistics from secondary sources, such statistics are notoriously deficient and misleading. The techniques highlighted in the paper are thus deemed to be the most appropriate under the circumstances in ESA.

The paper concludes by proposing analytical considerations to be highlighted in the country case studies. Apart from the discussion of traded volumes and balance of trade between countries, country coordinators and researchers are also required to expound and/or make inferences on the following:

- comparison of informal crossborder trade with official trade statistics, where feasible;
- informal crossborder trade seasonality and possible determinants;
- official and unofficial costs of informal trade;
- likely winners and losers in trade liberalization within the ESA region; and
- benefits from reducing/eliminating tariffs.

Policy implications relating to food security, and the possibilities of increasing and/or creating new trade will be discussed. The food security issue is a particularly vexatious one and is fairly high in the agendas of both governments and their benefactors such as donor and relief agencies.

It is anticipated that country case studies will address the dodgy question of whether or not coun-

tries are more food secure with borders closed or open. Although the current wave of initiatives aimed at regional integration—*a' la* COMESA, SADC, EAC and the Intergovernmental Authority on Drought and Development (IGADD)—explicitly target trade liberalization, and hence should, in principle, obviate the inherent dangers of closed borders, intransigence on the part of some of the policy makers and would-be collaborators has been inimical to the achievement of tangible free trade benefits. Consequently, informal/unrecorded trade thrives but possibly with adverse implications to government revenues. In the near future, these and other pertinent issues will be the subject of further detailed analysis aimed at a synthesis and consolidation of the findings from the country case studies.

Glossary of Acronyms and Abbreviations

| | |
|-----------|--|
| ADMARC | Agricultural Development and Marketing Corporation of Malawi |
| AEC | African Economic Community |
| AFR | Bureau for Africa (USAID) |
| CBI | Cross Border Initiative |
| COMESA | Common Market for Eastern and Southern Africa (formerly PTA) |
| EAC | East African Community |
| ESA | Eastern and Southern Africa |
| FAO | Food and Agriculture Organization of the United Nations |
| GHA | Greater Horn of Africa |
| IGADD | Intergovernmental Authority on Drought and Development |
| OAU | Organization for African Unity |
| PSGE | Productive Sector Growth and Environment Division (USAID/AFR/SD) |
| PTA | Preferential Trade Agreement (now COMESA) |
| REC | Regional Economic Community |
| REDSO/ESA | Regional Economic Development Support Office / Eastern and Southern Africa (USAID) |
| SACU | Southern Africa Customs Union |
| SADC | Southern Africa Development Community |
| SD | Office of Sustainable Development (USAID/AFR) |
| SSA | Sub Saharan Africa |
| URA | Uganda Revenue Authority |
| USAID | U.S. Agency for International Development |

1. Introduction

Trade between Sub-Saharan Africa and the developed world has always been in a narrow range of traditional commodities such as tea, coffee, tobacco, cotton, sisal and minerals. At the same time, trade within Sub-Saharan Africa not only remains woefully low in physical and value terms but is also fraught with selfish regulations and policies adopted by the incumbent governments.

The 1982 Preferential Trade Agreement (PTA), which has now assumed a wider operational mandate and a new title, the Common Market for Eastern and Southern Africa, has been working for several years to enhance intra-African trade. While progress has been made in reducing tariff and non-tariff barriers, formal trade among African countries is still depressed. In Eastern and Southern Africa in particular, indications are that informal (unrecorded) trade is still extremely high. For example, it is estimated that 30,000 - 60,000 metric tons of maize is smuggled annually from Zambia to Zaire costing the former US\$ 3 million and that much of the Malawian "surplus" maize in the early 1980s was Mozambican.¹ The Uganda Petroleum Dealers Association estimates that 25 percent of petroleum fuel (petrol, diesel and paraffin) consumed in Uganda is smuggled from Kenya, costing the Ugandan government about US\$1.2 million annually.²

The phenomenon of unofficial trade across the borders most likely arises from unfavorable agricultural and macroeconomic policies being followed by the African governments. In particular, uncoordinated and partial implementation of structural adjustment programs and the reluctance to eliminate all formal trade barriers significantly influence unrecorded (informal) cross-border trade. Interest in the informal cross-border trade has been overwhelming but inadequate knowledge of its magnitude not only leads to misleading figures in the national accounts,

but also inhibits formulation of appropriate policies and strategies to exploit its potential impact particularly on regional food security.

Many questions remain unanswered about informal cross-border trade. How vital is it to the economies in Eastern and Southern Africa? What are the commodities being traded and what are the quantities involved? Where does the comparative advantage lie with respect to the key commodities being traded, and what would be the net benefits to be gained from trade liberalization? As part of the effort to begin to understand and quantify the role of unofficial trade in Eastern and Southern Africa, Technoserve on behalf of USAID's Regional Economic Development Support Office in Nairobi, Kenya (REDSO/ESA) and the Africa Bureau's Productive Sector Growth and Environment Division in the Office of Sustainable Development (AFR/SD/PSGE), is commissioning surveys of unofficial trade in four geographic locations:

- Kenya/Uganda Border;
- Tanzania and its neighbors Malawi, Zambia, Zaire and Uganda;
- Malawi and its neighbors Mozambique, Zambia, and Tanzania; and

¹Kingsbury, D.S. (1988). "Potential Incentive Effects of Pricing Policy on Agricultural Trade in Several SADC Countries: Preliminary Results". Paper Presented for Conference on Food Security Research in Southern Africa, Harare, Zimbabwe. Quoted by Thompson, C.B. (1991) - *Harvests Under Fire: Regional Cooperation for Food Security in Southern Africa*, Zed Books, London, U.K.

²The *Standard* Newspaper: Business and Finance Section; Friday July 15, 1994.

- Mozambique and its neighbors the Republic of South Africa, Swaziland, Malawi, Zimbabwe, Zambia and Tanzania.

SURVEY OBJECTIVES

The broad objective of the surveys is to provide qualitative and quantitative information about informal crossborder trade and to assess its impact on national/regional food security. It is anticipated that the questions raised in the introductory section will be addressed by fulfilling the following specific objectives:

- provide an overall analysis of how the informal traders overcome the major constraints facing formal traders such as mutually acceptable exchange rates, transportation, information, financing and means of balancing trade between countries;
- provide estimates of the magnitude of unrecorded trade highlighting the most important commodities (and categories of commodities) being traded and the trade patterns;
- give a comparative analysis of recorded and unofficial (unrecorded) trade volumes highlighting the factors determining the disparity between the two;
- give an aggregate analysis of the costs and benefits of informal trade showing who gains and who loses from trade liberalization;
- provide an overall assessment of the impact of informal crossborder trade on national food security and the effects of crossborder trade liberalization; and
- recommend steps that should be taken to enhance trade between the survey countries and their neighbors.

2. Data Collection Methodology

DEFINITIONS

Before proceeding to the techniques for data collection, it is necessary to clarify the following terminology:

Informal/Unofficial/Unrecorded Trade

The emphasis here should be on the term unrecorded trade. Goods passing through the unofficial routes without customs officials constitute only one form of unrecorded trade. Other forms of nonrecording are underinvoicing and misdeclarations of cargo which invariably occur with the cognisance of the customs officials and are hence fiendishly difficult to document for purposes of research. Efforts will be made to establish the total annual volume of trade that does not go onto the official government records. This form of trade can also be referred to as unofficial or informal trade

Community transactions along the open border not served by established roads and trading centres will not be covered due to budgetary and sampling reasons.

Traded Commodities

One way of categorizing the commodities is to distinguish them as agricultural products and inputs; manufactured consumer goods, including textiles; or minerals and forest resources. We are particularly interested in agricultural commodities due to the linkage of the commodity markets and national food security. However, it is likely that crossborder trade is balanced by exchange of food products for manu-

factured goods, minerals and forest resources. A discrimination in favor of agricultural commodities is therefore likely to generate a bias in estimates of the unrecorded trade.

Commodities may also be categorized according to their origin as follows: locally produced in country under study; reexports originating from a third country; and goods in transit. There have been cases of goods in transit being off-loaded for sale before reaching their final destination thereby evading official records and payment of duty.

Reexports of goods imported from the world market (or donated as food aid from a third country) is not uncommon in Eastern and southern Africa. Since such reexports do not enjoy the concessionary COMESA tax rates accorded to locally produced goods, the temptation to pass the former through the underground routes is irresistible. Preliminary investigations have established that there is a thriving trade in donated food items in practically all the major trading routes in the region.

Locally produced goods may also be smuggled to a second country if producer prices are more attractive there, before being exported officially to a third country. A classical case was in the late 1970s when Kenya was exporting coffee which was believed to have originated from Uganda unofficially. Currently, there are indications that Tanzanian coffee may be crossing the northwestern border into Uganda and subsequently exported by the latter (or, even more curiously, by Kenya). Similar examples can easily be identified in the case of Mozambique and its neighbors for trade involving cashew nuts, prawns, minerals and forest resources; and in the case of Malawian tobacco which finds its way to the auction marts in the neighboring countries.

Traders

Traders consist of registered wholesalers, retailers, and informal hawkers/dealers. It will be essential to estimate the proportion of the traders' stocks meant for export as distinct from that going to the local community. This is a particularly important point to consider in sampling and monitoring at border sites where frontier wholesalers and retailers target the bulk of their merchandise for the export market. Examples of large retail outlets targeting the export market can be found at Namaacha (Mozambique/Swaziland border), Busia (Kenya/Uganda border) and at Mchinji where the Agricultural Development and Marketing Corporation (ADMARC) of Malawi serves not only the Malawian producers, but also, the Zambian farmers seeking trade in maize, beans and fertilizer.

Agents

Agents may be registered firms or individuals acting on behalf of importers and exporters. At some of the border towns, public officials double as agents, but this is usually a very closely guarded secret. The involvement of public officials in the informal trade makes it extremely difficult to stomp out the habit of nonregistration of goods. It would be in the interest of the officials to bureaucratize the documentation procedures thus boosting the informal sector in which the officials are active participants. Shopkeepers and other retail dealers also act as agents for established importers and exporters by prodding temporary storage facility.

Hawkers

Hawkers generally do not have permanent structures and hence operate at the open border markets and along the roads in competition with the registered retailers. Some of the hawkers may be selling on

behalf of the bigger shops and dealers. The hawkers may carry goods which originally came into the country through the official channels, but invariably, the goods are products of smuggling routes and generally sell at relatively lower prices compared to those quoted by the retail shops. Electronics, textiles, soft drinks, utensils and cooking ware are the most popular items for hawkers. Hawkets may carry the same items back and forth across the border in search of buyers, thus disqualifying the goods they carry from the observational techniques to be described in the subsequent sections of this report.

Transporters/Couriers

This is a fairly visible group at most of the borders with the traders they serve invariably playing a seemingly innocuous role. Transportation is done using trucks, boats, carts, bicycles or by hand/head, depending on load, route and distance. Most of the goods that pass through the unofficial channels are brought in large trucks and are subsequently broken down into smaller parcels which can readily be carried even by children who act as couriers. This method works well for maize, wheat flour, petrol, soft drinks, beer and many other bulky items originating from the commercial centres of the exporting country.

Consumers

Consumers freely cross the border with what the customs officials refer to as hand/head luggage that are never recorded or taxed. Such consumers are not the same as the couriers who also operate in the same fashion but on behalf of bigger traders or transporters, as described above. Due to the fact that border communities from two neighboring countries are generally closely integrated through common dialects and/or origin (for example the Masai who are artificially separated by the Kenya/Tanzania border), movement across the border is not easy to control.

The small transactions made amount to fairly large unrecorded trade between neighboring countries.

Public Officials

This, for various reasons, is a crucial group in crossborder trade and generally consists of customs officials, police officers, provincial/district administrators and cess collectors. They are an important source of secondary information as well as information relating to how trade is conducted across the border. Furthermore, they may also operate in other nonofficial capacities which may be of interest.

TECHNIQUES FOR QUANTIFYING CROSSBORDER TRADE³

The different categories of practitioners and officials described above all together play a significant role in informal crossborder trade. The techniques for data collection must take into account the characteristics and prevailing trading habits of the practitioners at the border. There are various possibilities for quantifying informal crossborder trade. However, the following subsections describe only those techniques deemed most appropriate for the circumstances in eastern and southern Africa.

Using Secondary Data

The use of data recorded by the customs officials may reveal the extent of unofficial trade between two countries. For a given commodity, the official trade figures of two trading partners hardly tally. For example, Kenyan beer officially declared in Kenya as exports to Tanzania will not be recorded by Tanzania if the merchandise is off-loaded within Kenya and smuggled across the border into Tanzania. Similarly, reexports of sugar or rice from Kenya are illegally made to Uganda across the border at Busia and Malaba. Since the Uganda Revenue Authority (URA) mounts sporadic road blocks to check for tax payment, traders are now accustomed to the idea and do

pay the relevant taxes before transporting the smuggled goods to their final destinations. One would therefore expect to find, in Uganda, records of such imports from Kenya. Records of such exports would not exist on the Kenyan side.

Even in cases where trade flows are recorded by both countries, values may not correspond due to over/underinvoicing or misdeclarations aimed at exploiting lower tax rates. Further estimation problems arise when both countries do not record trade flows as in the case of contraband. For example, petrol, cigarettes, wines, spirits and cosmetics originating from Kenya were being treated by the Ugandan authorities as contraband. Traders would therefore avoid declaration of these goods in either country. Similarly, trade flows in basic food stuffs such as maize, beans, fish, fruits and vegetables, seem to go on unhindered especially when the amounts involved are small (head loads). Records hardly exist for such trade and actual border monitoring (observation) may be the only option for quantification.

A Technique for Border Monitoring⁴

Both official and unofficial crossborder trade is concentrated in and around established towns and customs points along the borders. The unofficial routes are usually around these stations rather than in the remote frontier region. The border monitoring will therefore be concentrated around the known crossing points. A listing of such points, as well as the major commodities traded, is provided below for the four geographic areas selected for investigation.

Kenya-Uganda Border

Compared to the other borders to be monitored such as those of Mozambique and Tanzania, the border

³ Egg, J., J Igue and J. Coste (1988). Regional Exchanges, Frontier Markets and Food Security in West Africa: Methodology and First Results. INRA, Montpellier, France.

⁴ See Egg, J. et al.

between Kenya and Uganda is relatively short. The sites selected for intensive monitoring were: Usenge (A and B), Uhanya, Nambo, Osieko, Goe, Nyenye, Marenga (A and B), Mulukoba, Magoye, Busia and Malaba. All the sites, except Busia and Malaba, cater for Lake Victoria routes. All the border sites handle at least some quantity of the following products:

- Agricultural Products (Food and Beverage): Maize, Beans, Fish, Cassava, Wheat Flour, Sugar, Rice, Bread, Juices and Soda.
- Agricultural Raw Materials: Cotton lint and Cotton seed
- Industrial Goods: Cooking Oils and Fats, Toiletries, Petroleum products, Beer, Wines and Spirits, Textiles and Vehicle/Bicycle parts

Tanzania (Mainland) and its Neighbors

Five zones (borders) were selected for intensive monitoring in Tanzania, namely, i) Tanzania/Kenya; ii) Tanzania/Malawi; iii) Tanzania/Zambia; iv) Tanzania/Zaire; and v) Tanzania/Uganda. Due to conflicts in Rwanda, Tanzania/Rwanda and Tanzania/Burundi borders were omitted. Similarly, Tanzania's border with Mozambique was not monitored due to problems of logistics.

The selected border sites in Tanzania (serving the neighboring countries indicated) are shown below:

- Kenya: Horohoro, Holili, Tarakea, Namanga, Mwanza, Sirari
- Malawi: Kyela
- Zambia: Tunduma, Kasesya, Kigoma/Ujiji
- Zaire: Kigoma/Ujiji
- Uganda: Mutukula, Bukoba

The goods selected for the Tanzania borders were similar to those for the Kenya/Uganda border except for the following additions: Millet, Spices, Potatoes, Coffee, Hides and Skins, Chemicals, Shoes and Construction Materials.

Malawi and Neighboring Countries

The borders of Malawi with Mozambique, Zambia and Tanzania were monitored at the following sites:

| <u>Border</u> | <u>Town in Malawi</u> |
|---------------|--|
| Mozambique | Mwanza* Mulange (Muloza) Dedza** Thambani |
| Zambia | Mchinji |
| Tanzania | Karonga* |

* Tracking (tracing) system in Addition to Observation see explanation in Section 3 (iii)

** Sales quantification at frontier open markets in addition to observation see explanation in Section 3 (iv)

The following categories of goods were selected for investigation:

- Agricultural (Food and Beverage): Maize, Sugar, Potatoes, Rice, Beans, Bread, Pigeon Peas, Juices and Sodas, Fish, Beer, Cassava, Fruits, Wheat Flour, Vegetables
- Agricultural (Farm Inputs)
- Agricultural (Industrial Crops): Hybrid seed, Cotton (lint & seed), Fertilizer, Tobacco, Sun flower
- Manufactured Consumer Goods/Handicrafts: Cooking Oils and Fats, Toiletries (Soaps, tooth pastes, etc.), Petroleum products, Textiles, Shoes, Bicycles, Vehicle/Bicycle parts

Mozambique and Neighboring Countries

Mozambique has extensive borders and most of the border sites are poorly served with modern infrastructure. Due to the civil strife which lasted for

many years, most of the border communities have not settled down to undertake productive engagements. The following sites were deemed to be the most appropriate for a cost-effective field work:

| <u>Border</u> | <u>Town</u> |
|--------------------------|-------------------|
| Swaziland | Namaacha |
| Republic of South Africa | Resano Garcia* |
| Zimbabwe | Machipanda* |
| | Cuchamano* |
| Zambia | Cassacatiza |
| Malawi | Zobue |
| | Domue |
| | Calomue |
| | Mandimba |
| Tanzania | Mocimboa da Praia |

* Tracking (Tracing) system in addition to border observation see section 3(iii)

The following product categories were proposed for the borders of Mozambique:

■ Agricultural (Food and Beverage)

| | |
|---------------|------------------|
| Maize (Grain) | Maize (Flour) |
| Tobacco | Prawns |
| Beans | Juices and Sodas |
| Beef | Beer |
| Fish | Fruits |
| Cashews | Vegetables |
| Wheat Flour | Potatoes |
| White Sugar | Brown Sugar |

■ Agricultural (Industrial Crops)

■ Agricultural (Farm Inputs/Implements)

| | |
|----------------------|-------------|
| Cotton (lint & seed) | Hybrid seed |
| Tobacco | Matchets |
| Sunflower | Hoes |
| Fertilizer | |

■ Manufactured Consumer Goods/Handicrafts

| | |
|---------------------------------------|--------------------|
| Cooking Oils and Fats | Woven Baskets |
| Toiletries (Soaps, Toothpastes, etc.) | Shoes |
| Bicycles | Petroleum products |
| Vehicle/Bicycle parts | Wines and Spirits |
| Aluminium Pots | Textiles |

Observation Time Framework

Border monitoring along the Kenya/Uganda border commenced in early August, 1994. Monitoring in Malawi and Tanzania started in April 1995 and August 1995, respectively, while in Mozambique, monitoring was due to commence in December 1995. At all the borders, observation lasts for 12 calendar months. Site selection is on the basis of practical considerations such as volume of trade, communication, transport links, availability of supporting institutions, and availability of recruitable personnel for the monitoring duties.

The sampling procedure can be characterized as a two-stage process initially involving selection of judgemental clusters consisting of relevant trade practitioners at the specified border towns. The next stage requires specification of two weeks randomly selected from each of the twelve months. For purposes of illustration, if we commence monitoring during the second week of August 1994, as was the case for the Kenya/Uganda border, the following chart would apply (note that, except for the calendar months and the corresponding permutations for deriving the two weeks of the month to be monitored, the charts for the other geographic areas would be similar, hence there is no need to reproduce them here).

The figures in the third column of the chart indicate the weeks of the month when monitoring actually takes place; for instance, 8.2 and 8.4 mean that the second and fourth quarters (weeks) of August 1994 were monitored. The weeks of the month to be monitored are randomly selected with the restriction that each quarter of the month is sampled (observed) six

times over the 12 months thus providing adequate data for reconstructing realistic estimates of the monthly trade volume. In the above chart, the monitoring quarters are distributed as follows over the calendar months:

- QTR I 1994 September; November; December; 1995 March; May; July
- QTR II 1994 August; October; 1995 January; February; April; June
- QTR III 1994 September; October; December; 1995 February; May; June

- QTR IV 1994 August; November; 1995 January; March; April; July

Note: For simplicity, a four-quarter month is assumed. Where there are complications as in February, or where a month begins midweek, forward or backward shifts are made appropriately to ensure that seven days of monitoring are accommodated; preferably by starting on Monday and ending on Sunday.

Monitoring is done using a census approach during day time (or whenever business ordinarily takes place) for all the days of the week thus giving a total of 168 days (12 months x 2 weeks x 7 days).

**Table 2.1 Time Chart for Monitoring Cross-Border Trade
(Case of Kenya/Uganda Border)**

| <u>Year</u> | <u>Calendar Month</u> | <u>Monitoring Weeks of Month</u> |
|-------------|-----------------------|----------------------------------|
| 1994 | August (8) | 8.2 and 8.4 |
| | September (9) | 9.1 and 9.3 |
| | October (10) | 10.2 and 10.3 |
| | November (11) | 11.1 and 11.4 |
| | December (12) | 12.1 and 12.3 |
| 1995 | January (1) | 1.2 and 1.4 |
| | February (2) | 2.2 and 2.3 |
| | March (3) | 3.1 and 3.4 |
| | April (4) | 4.2 and 4.4 |
| | May (5) | 5.1 and 5.3 |
| | June (6) | 6.2 and 6.3 |
| | July (7) | 7.1 and 7.4 |

The 12 month period was deemed long enough to capture trade seasonality within the year.

The random selection of the quarters is meant to avoid the potential influence enumerators may have on the trading activities and routines of those being monitored as would most likely occur if observation is concentrated at the same sites over a long stretch of time. Posting of enumerators at one point over a long period of time may also expose them unduly to life threatening encounters with smugglers who may feel that their operational hours are being curtailed.

The sampling procedure adopted here is not unique, nor is it based on rigorous theory of probability. We do not, for example, have a statistically justifiable random sample upon which probabilistic inferences can be based. However, attempts have been made at all the geographic sites under investigation, to cover no less than 75% of the unrecorded trade taking into account both site and commodity selection. The uncovered proportion is accounted for by trade on contraband and goods that are not easily observable such as electronics, cigarettes, alcohol (other than beer) precious metals and other valuable natural resources. Similarly, any trade that takes place at life-threatening hours and places could not be covered. These minor shortcomings notwithstanding, the observational technique was found to be a cost-effective way of gathering data under border region conditions which are generally far from ideal. It is hoped that these pioneering efforts aimed at quantifying unrecorded trade in eastern and southern Africa will be followed by more statistically nuanced studies.

Tracking movement of goods

The border monitoring technique described above assumes that goods bypassing customs channels can easily be observed. Sophisticated secret deals involving importers, exporters, customs and other public officials make it extremely difficult for a casual observer to get a realistic estimate of the volume of trade clandestinely transacted at the border posts. Observation will also be hard in the case of goods being brought into a country by motorists due to the difficulty of establishing the nature of the goods

inside the cars. This latter problem can, however, be handled under the observational technique through proper training of the enumerators so as to enable them to detect contents of cars without being a nuisance to the commuters. By collaborating with the customs officials and/or applying small financial incentives, especially for those who transport goods on behalf of other businessmen, it is possible to institute quasi-official opening and declaration of the cargo crossing the border in sealed pushcarts, cars and trucks. The problem which was first alluded to, however, requires a special technique.

It is being proposed that, in addition to the observation technique described in the previous subsection, a tracking system entailing tracing the movement of a sample of containerized vehicles and trucks be undertaken in order to establish their mode of movement, origin, destination, nature and value of goods transported. This information would then be crosschecked against the official customs declaration papers at relevant ports of entry and exit. Admittedly, this requires a cleverly planned operation by fairly experienced persons, preferably former customs or police officers, but it is felt that the strategy would reveal vital information regarding underinvoicing, misspecification of goods and other malpractices aimed at avoiding payment of duty. It is possible to conduct this operation once a month on a sample of 10% of the trucks. Information acquired through tracking will augment data obtained from the routine border observation which will be concentrating on piecemeal rather than bulk movements of goods across the border. The sites for which this technique is recommended are marked by an asterisk (*) and will be found along the borders of Mozambique and Malawi.

Quantifying Crossborder Sales at Frontier Open Markets

The border of Malawi and Mozambique between Dedza and Ntcheu has a frontier road and nationals of both countries cross freely back and forth to trade especially in agricultural commodities. There are a number of open markets along the frontier road op-

erating on specific days. Our preliminary investigations revealed that traders come from distant markets such as Blantyre and Lilongwe to purchase goods in these markets. Individual consumers are also served by the markets. Due to the intensity of trade during the designated market days, it is not feasible to apply the routine observation techniques. We are therefore proposing a stock taking system to be applied to informal traders and established retailers at the markets. The objective of this approach is to estimate the quantity of goods sold and bought by traders/buyers from either country, taking into account stock carryover and replenishment.

A sample (or where possible, a census) of traders can be taken and an estimate made at the end of the trading day of the goods traded and the carryover stocks. Weekly and monthly import/export figures can then be derived from the daily estimates of the net stock changes. The details for this procedure must be determined by volume of trade, storage structures used, level of qualification of enumerators, frequency of active market days and perishability of the commodities.

3. Data Requirement

The following records will be solicited from primary sources:

DATA FROM WEEKLY OBSERVATION (MONITORING)

- composition of the goods
- quantity/volume of the goods
- exchange rates
- commodity prices
- direction of trade
- observable determinants of trade (e.g. weather and demand/supply changes)
- mode of transport
- packaging and popular units of measure

BASELINE DATA

- Trader characteristics
 - gender/age distribution
 - specialized commodities
- Information
 - sources
 - mode of communication
- Prices
 - consumer (local crossborder)
 - wholesale (local crossborder)
- Costs
 - Licences
 - transport (kg-km)
 - tariffs
 - other rents (include unofficial)

- Exchange rates
 - Financing (sources and availability)
 - Contracts/payment methods
 - Grading
 - Storage
 - Mode of transport
 - Origin and destination as stated
- Packaging
 - material (most common)
 - size (most common)

The baseline information should be solicited using structured questionnaires for a convenient sample of traders, agents and public officials (see Appendix A, Questionnaires I and II). The baseline survey is not intended for hawkers couriers and consumers due to sampling and logistical reasons. It is proposed that for each of the geographic zones, one baseline survey be conducted midway through the project. The baseline data are not likely to change significantly on a weekly basis. Their compilation only once should allow the enumerators adequate time to simply monitor (observe) movement of goods from one country to another without asking too many questions. However, goods are usually packaged thus requiring, on certain occasions, some form of incentive and/or tactful conversation before the nature of the contents can be revealed.

4. Data Analysis

Analysis of data will closely follow the survey objectives and specifically highlight the following points:

- Descriptive statistics should be used to evaluate the significance and implications of trade policies and other constraints faced by informal crossborder traders. Baseline data should be used to evaluate, for selected commodities, the marketing structure, functions performed and price formation. In particular, a comparative analysis should be made of the profitability of the major marketing channels, highlighting the role of transportation, information, financing, exchange rates, and risks.
- Quantification of trade (value terms) will be done using monthly data from crossborder trade monitoring for the stipulated period of 12 months. For a given month denoted by m , the data used for derivation of the monthly, and, ultimately, the annual trade volumes, for a given commodity can be denoted by the vector $\bar{q}_m = (q_{mwd})$ where $w = 1...2$ denotes the number of monitoring weeks of month m and $d = 1...7$ stands for days. Assuming a thirty day month, the estimate of the average monthly trade \bar{q}_m in physical units is derived from the daily trade average by multiplying by 30 viz:

where the symbols are as explained in the text. The estimate for the annual trade volume Q is then given as:

Given estimates for the average price for each month \bar{p}_m , the total valuation (with local currencies appropriately converted to US \$) for the annual trade is :

Trade balances between pairs of countries can be derived from an import-export matrix constructed using the above equation summed up for all the relevant commodities.

- Using the estimated annual quantity of unrecorded trade and the required tariffs, it is possible to estimate the losses in tax revenue for given countries. The effects of trade liberalization can then be determined using sensitivity analysis which would also reveal who loses and who gains from trade liberalization.
- We adopt FAO's definition of food security as the ability by all consumers to have both physical and economic means or access to basic food requirements at all times. Three important ingredients of food security are: ensuring adequacy of food supply; maintaining supply stability; and ensuring access to supplies for all consumers.

Obviously, an optimal mix of these ingredients can only be achieved through appropriate policies on domestic production, trade, distribution, prices and incomes. Whereas data and time constraints are likely to hinder exhaustive treatment of these factors, the baseline data should yield qualified statements about the potential impact of crossborder trade on national food security and the effects of trade liberalization. In particular, analyses should be made to

highlight the following:

- composition of exports & imports
- food trade (staples) as proportion of total trade volume
- seasonality in local food production relative to crossborder supply availability
- prices of food imports (compare with import parity prices)

- real consumer incomes

All data compilation and analysis will be done using the Statistical Package for the Social Sciences (SPSS) software and the draft and final reports presented in WORDPERFECT 5.1

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