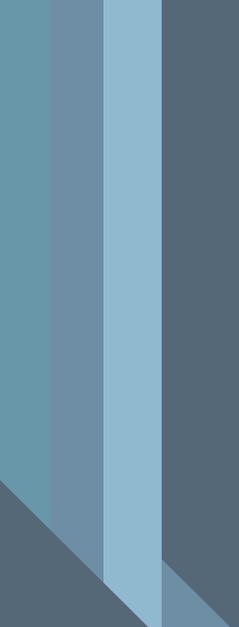


MONITORING SMALL-SCALE CROSS-BORDER TRADE IN AFRICA: Issues, Approaches, & Lessons





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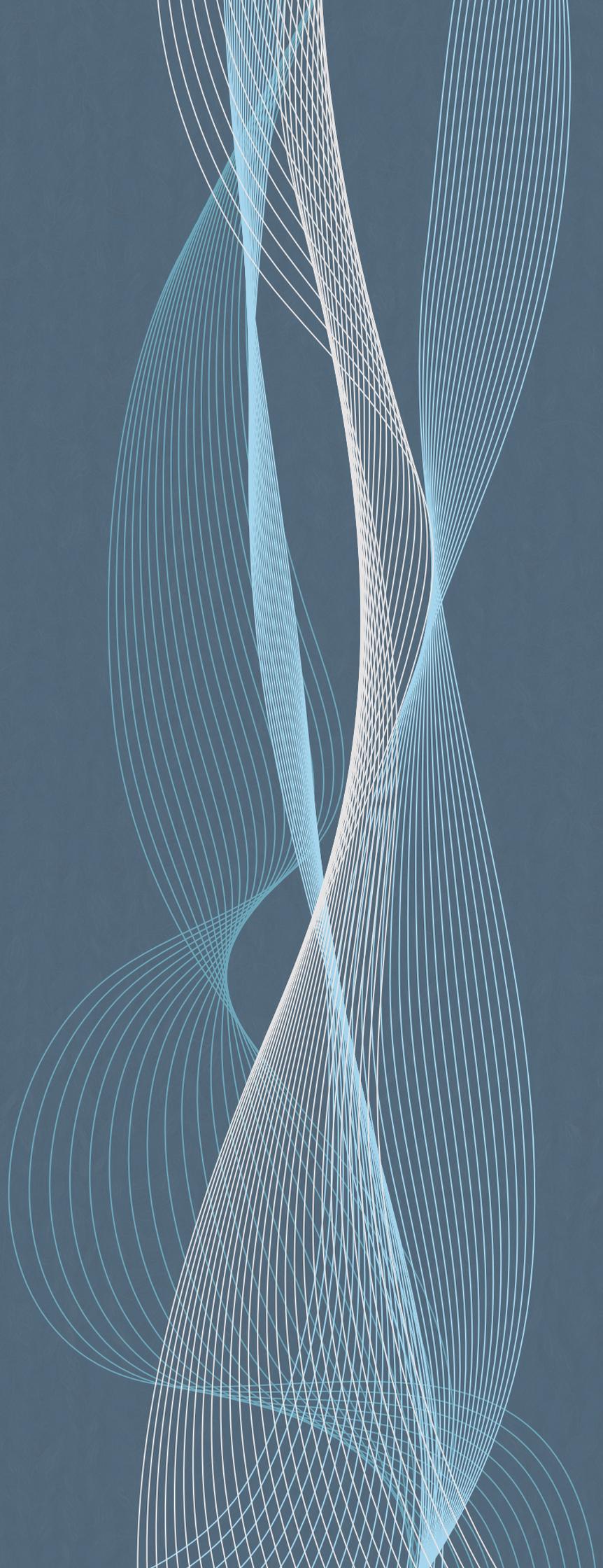
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Preface

This report synthesizes the work carried out as part of a World Bank ASA (Advisory Services & Analytics) activity to identify better systems and practical strategies that countries can use for improved monitoring of small-scale cross border trade (SSCBT). Large amounts of goods are known to be traded through cross border channels in Africa, yet SSCBT is poorly counted leading to a misrepresentation of the true state of regional integration and possible misalignment of trade and development policies. The study assesses the strengths and limitations of existing SSCBT data systems in East Africa to understand the feasibility and cost effectiveness of different data collection methods. It also looks at conditions along trade corridors in other regions of Africa where SSCBT data are only starting to be monitored to identify common bottlenecks and potential solutions for improved trade data collection in different environments. The analysis draws on fieldwork carried out during July/August 2019, as well as subsequent consultations with local counterparts, including with respect to the impact of the COVID-19 pandemic. Through this work, the study aims to inform policy in countries where SSCBT is important and where the establishment of monitoring systems would be relevant and desirable. The project also contributes to discussions and negotiations on regional integration by raising the profile of SSCBT and drawing attention to the importance of addressing barriers that limit this trade.

In addition to this report, findings of the ASA are also being shared with a diverse audience of policymakers, economic analysts, and civil society representatives through short policy notes, working papers, and dissemination events.

This report was prepared by Peter Walkenhorst (Consultant) with guidance from the project team leaders Paul Brenton (ETIRI) and John Keyser (EAEM2). The team is very grateful for support and inputs from Christopher Wabwire (UBOS), Emmanuel Ssemambo (BoU), Wilson Kamali (BNR), Jean-Baptiste Ukwigazira (MiniCom), Nadine Nguimdo (ONS Cameroon), Joseph Tembo (ZamStat), Fidele Yobo Gouem (WB Yaounde), and Nyembezi Mvunga (WB Lusaka). The document was edited by Anna Brown.

Executive Summary

Small-scale cross-border trade (SSCBT) is of substantial importance in African countries. The existence of marked price differences due to variations in production capacities, trade barriers, and regulatory compliance costs, combined with the absence of geographical or social separators, motivate many individuals to trade small consignments across borders. These shipments are not captured by Customs, nor recorded in official trade statistics, and, hence, are generally not taken into consideration by policymakers and investors. This report aims to identify systems and practical strategies that countries can use for improved monitoring of SSCBT.

Better information on SSCBT would notably inform policies for poverty reduction and inclusive growth. Such data would provide valuable evidence to assess regional food security and raise policymakers' awareness of the situation of women in border regions, who often represent the majority of small-scale traders. A more complete and accurate account of total imports and exports would also improve macroeconomic risk management and inform regional trade negotiations on the true, relative importance of different commodities in production, trade, and consumption. Last, but not least, a high ratio of SSCBT relative to Customs-recorded trade can point towards problems in the "formal" trade channel, such as overly strict regulatory requirements, high taxes (and bribes), or long border-crossing times, that drive traders to avoid official import or export declarations.

Surveys of SSCBT have consistently shown that the values and volumes of the multitude of small transactions add up to sizable aggregate import or export amounts that can exceed official, Customs-recorded trade. Cross-sectional or short-period surveys tend to face two challenges, though: they fail to capture seasonality in trade flows, which is important for agricultural products, and they often combine the enumeration of trade flow information

with an assessment of the socio-economic situation of traders, so that the survey instrument becomes very time-consuming to administrate, slowing down traders' activity.

As part of their work on food supply and demand trends, some international organizations, such as the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) or the Famine Early Warning Systems Network (FEWS Net), have also been capturing SSCBT data. They have done so on a year-round basis and in a manner that focuses on trade volumes and values. However, their data collection has centered on a limited number of agricultural products and selected trade routes, so the information is not comprehensive.

The most complete and accurate account of SSCBT is currently provided by government authorities in Uganda and Rwanda. These two East African countries have been monitoring SSCBT systematically since, respectively, 2005 and 2010. After a thorough profiling of borders to determine the magnitude and nature of SSCBT, they have placed enumerators at official (and in the case of Rwanda also informal) border crossings to observe and record import and export transactions that are not captured by Customs. This effort is supported by several key government agencies, including the Central Bank and the Statistical Office, that partner in the supervision and execution of the statistical work and also provide the necessary budgetary resources.

The data collection approaches of the two countries differ in some crucial respects. Rwandan enumerators conduct brief interviews of traders and record their findings on tablets, while Ugandan data collectors have so far relied on unobtrusive observation and the recording of the information on paper. Rwanda collects SSCBT data on a daily basis, while Uganda places enumerators at border crossings for two weeks every month and then extrapolates the data.

Moreover, Rwanda recruits their enumerators in the border region, while Uganda hires enumerators in the capital city area and then sends them to different border stations on a rotating basis.

In terms of its overall significance, SSCBT data has markedly affected perceived trade outcomes. For example, in Uganda, 29 percent of all exports in 2018 to the country's neighbors consisted of SSCBT, indicating a much higher degree of regional integration than if small-scale trade was not counted. Indeed, for many products, SSCBT is more important than Customs-recorded trade. Overall, by taking SSCBT into account, Uganda's merchandise trade deficit narrowed by 13.4 percent in 2018.

Other countries have taken note of the Ugandan and Rwandan experience. In Central Africa, the Statistical Office of Cameroon is launching an ambitious activity to improve the quality of trade statistics by placing enumerators at border crossings. These data collectors will capture both SSCBT and Customs-bound trade in an effort to provide a more comprehensive account of import and export transactions and overcome any misreporting or underreporting of trade by Customs, which might be due, for example, to the non-computerization of Customs stations.

In Southern Africa, the Zambian Statistical Office is undertaking a pilot study on SSCBT monitoring at four border stations. This work tailors the data collection approach to the local circumstances. For example, at Kasumbalesa, where goods flow almost exclusively from the Zambian side of the border to the Congolese city of the same name, two different methods of data capture are used: For many perishable products, such as pineapple, the total arriving quantity is assumed to be exported across the border during the day. The corresponding trade volume and value is obtained from the market manager. Exports of other products are captured by statistical personnel placed at the border crossing.

The existing SSCBT monitoring systems point to several important lessons for other countries that are considering the launch of similar activities.

Concerning leadership, a partnership among key parts of the government is highly desirable to ensure broad-based ownership of the project, quality control, and resource mobilization. Moreover, careful preparation, border profiling, and attention to the security of enumerators have been key success factors. Tablet-based enumeration can help avoid a separate data entry step and the delays and potential errors that come with it. Furthermore, some sampling (such as in Uganda) can be used to reduce data collection costs.

Both Uganda and Rwanda have sustained their SSCBT monitoring over several years and have found that the value of the information gathered exceeds the costs of data collection (about US\$400,000 per year). However, the countries' experiences also highlight some challenges. There has been a tendency to add socio-economic issues to the questionnaire, which then makes longer interviews necessary that impose delays on traders. It would instead be preferable to keep the high-frequency trade data collection separate from occasional in-depth surveys of the trader community.

Another issue has been that the previously used paper forms have been largely transcribed to electronic tablets, such that the data collection does not take full advantage of the touchscreen and the processing power of these devices. For example, the traded products are being captured at a relatively aggregated level, and it has been difficult ex-post to establish an accurate concordance with Customs-recorded trade. A multi-layered data entry that requests additional product detail if needed could address this issue.

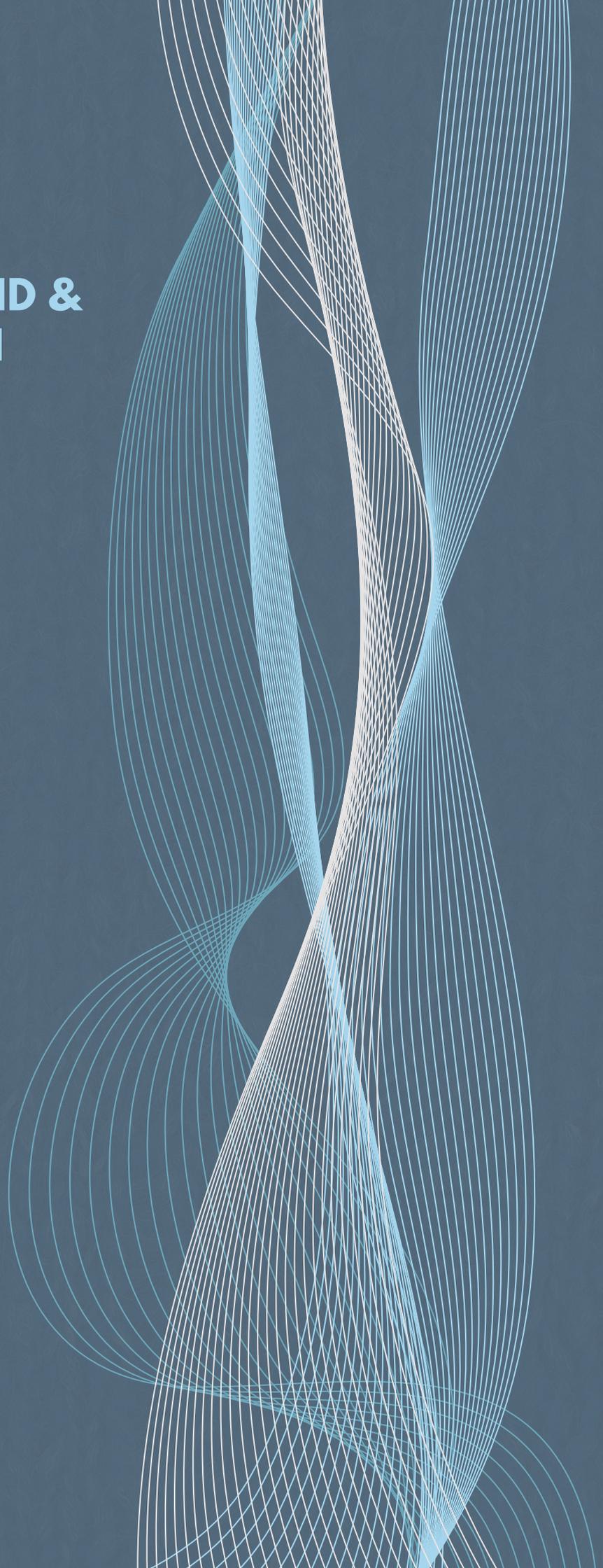
The limited comparability of SSCBT and Customs data on trade might also have inhibited data dissemination and use. Uganda publishes an annual report on SSCBT and Rwanda breaks out "formal" and "informal" in its balance of payment statistics, but dissemination events have been cancelled in both countries in recent years due to budgetary constraints, and the trade statistics reported to UN Comtrade are based on only Customs-recorded imports and exports.

The World Bank and other development partners have an important role to play in publicizing the lessons from existing SSCBT monitoring efforts and addressing the challenges. They could undertake active advocacy on the importance of more comprehensive and accurate trade statistics, encourage information sharing among countries on effective SSCBT monitoring practices, provide selected public goods, such as a concordance of frequently traded SSCBT products with the HS-classification, mobilize and coordinate donor support for border profiling surveys or monitoring pilot studies, and explicitly integrate consideration for small-scale cross-border traders into trade facilitation and Customs-modernization projects.

The spread of COVID-19 has severely affected small-scale traders and disrupted SSCBT monitoring. Social distancing guidelines have been virtually impossible to comply with at busy border crossings or in sprawling border markets, and confinement regulations and travel restrictions have severely limited the possibility for traders to pursue their importing or exporting activities. As a result, SSCBT volumes and values have collapsed, depriving many small-scale operators of their main income stream. These developments highlight the vulnerability of SSCBT to health or other natural or human-made disasters. Yet, experience also suggests that small-scale trade can rebound quickly once the situation has normalized and, thus, make a significant contribution to a swift and strong economic recovery.



**BACKGROUND &
MOTIVATION**



Visit a typical border station between African countries and you will notice the many individuals who engage in small-scale cross-border trade (SSCBT). This economic activity is motivated by price differences due to variations in production capacities, trade barriers, and regulatory compliance costs, which remain important in many African countries. Moreover, the traders often have few alternative income opportunities, so the modest returns from arbitrage trading provide enough incentive to engage in this physically demanding activity.

SSCBT is facilitated by the fact that many borders on the African Continent are not marked by clear geographical or social separators. Instead, pre colonial trading routes often run through present-day boundaries, and kinship groups continue to straddle national borders (Walther, 2014). As a result, some smuggling occurs outside of official border crossings, some trade passes borders without being properly registered by customs due to under-invoicing or corruption, and small-scale imports and exports traverse official border posts but are rarely captured in Customs statistics because the values of traded consignments fall below a certain threshold or because of other arrangements between traders and Customs officials.

These different types of unrecorded cross-border transactions are sometimes referred to as “informal trade” or “illegal trade”. They are generally not inspected and taxed through official channels. However, while many small-scale traders may not be registered as formal business owners, this informal status does not imply that they are intentionally trying to circumvent existing laws, applicable taxes, or relevant procedures (Brenton and Soprano, 2018). Moreover, some individuals might conduct both formal and informal activities, they might pay one tax and not another, or complete one formality and not another (WCO, 2015). In addition, it is important to understand that the informal practices of traders tie in with informal behavior of border officials. The latter often have some room for interpreting the

application of a legal text into technical practice in the field. This latitude can be used to facilitate trade for small-scale operators, or it can be misused to extract rents and bribes.

SSCBT is highly diverse with respect to the products traded, the mode of transportation, or the distance travelled. Some traders carry their goods on foot, on pushcarts, or by canoe across the border, others transport them on bicycles or motorcycles, while yet others travel by car or minibus. Vehicle-based SSCBT can occur over long distances and even transit into third countries. However, most products that are traded by small scale operators are destined for and stay in neighboring countries. Hence, SSCBT tends to be regional trade, and the fact that it is not recorded in Customs statistics means that the subsequent elaboration of official trade statistics based on Customs records misses these important regional import and export flows. This report argues that countries should enhance their efforts to better capture small-scale transactions – and indeed regularly monitor SSCBT –to generate a more accurate information base for policymaking.

1.1 IMPORTANCE OF SSCBT FOR INCLUSIVE GROWTH AND FOOD SECURITY

Better information on SSCBT would notably inform policies for poverty reduction and inclusive growth in border regions. Previous research has shown that small-scale traders and the producers and consumers they connect fall into the bottom third of the population by household income (Brenton and others, 2013). The income that traders derive from their importing or exporting activities is often crucial for the nutritional intake of their families and their ability to pay for basic education and health services. Thus, SSCBT is directly relevant to poverty reduction. In addition, SSCBT also makes a notable contribution to regional food security by linking markets across borders. Many SSCBT goods are smallholder agriculture commodities that end up being sold in open markets to generally poorer segments of the population.

Hence, SSCBT can fundamentally change assessments of regional food security and – in case of marked changes in trade patterns – indicate emerging food shortages. It is highly relevant to poor producers and poor consumers and missing out on this trade deprives policymakers of essential information on the economic situation of the most vulnerable. Indeed, international organizations such as FEWS NET (Famine Early Warning Systems Network) and CILSS (Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel) have captured SSCBT as a critical component for their analysis on food security and famine prevention.[1]

In border areas, formal jobs tend to be scarce, so SSCBT can make a substantial contribution to sustaining local economies. Some studies report a share of informal trade in total employment of up to 70 percent (UNECA, 2010). Many individuals who engage in SSCBT have benefitted from little formal education and have difficulties reading and writing. For example, survey results across six trade corridors in West Africa indicate that at least 40 percent of small-scale traders have no or only informal schooling (World Bank, 2020). Hence, completing the statutory declarations of border agencies represents a major challenge for these individuals, who also have few, if any, alternative employment opportunities.

Moreover, a large proportion of small-scale operators at border crossings tend to be female. Women assume a variety of roles in small-scale trade as border traders, transporters, processors, or vendors. In many cases, they face more severe impediments to trade than their male colleagues, in the form of higher trade costs and more pervasive corruption, more limited access to price and market information, and more frequent harassment and abuse (Brenton and others, 2013; Aboudou and others, 2017). In addition, they face time and mobility constraints due to family obligations. Addressing these gender-specific disadvantages and creating a safe, transparent, and equitable environment at border crossings will facilitate and promote cross-border trade and reduce gender injustice.

Attempts to force SSCBT operators to formalize to enhance Customs revenue, improve regulatory compliance, and solidify the information on cross-border trade flows, might threaten the livelihood of SSCBT operators and endanger the economic viability of border communities, as they might be subject to increased fiscal pressure. In contrast, improving the trading environment for small-scale traders and reducing their costs will help to deepen regional integration and foster development and income growth in border communities.

1.2 IMPORTANCE OF SSCBT FOR REGIONAL INTEGRATION AND TRADE POLICY FORMULATION

While the value of each individual import or export consignment might be low, the large number of such transactions means that the aggregate traded value can be substantial. For example, at the Gisenyi/Goma border station between Rwanda and the Democratic Republic of Congo, up to 50,000 traders cross into the neighboring country every day to buy or sell small quantities of products. Hence, not taking these small-scale transactions into account in official, Customs based trade statistics means missing a large part of the cross-border flows.

Information on SSCBT imports and exports can benefit economic policy processes in several ways. At the macroeconomic level, SSCBT together with Customs-recorded trade can reveal the true extent of a country's imports and exports and, thus, alter the balance of payments and the way the Central Bank manages macroeconomic risk. The magnitude of previously uncaptured SSCBT can also change the priorities for infrastructure investments, be they border-crossing facilities, border markets, or agro-processing plants. Further, a high ratio of SSCBT relative to Customs-recorded trade can point to problems in the "formal" trade channel, such as overly strict sanitary or other regulatory requirements, high taxes (and bribes), or long border-crossing times, that drive traders to avoid official import or export declarations.

[1] See section 2.4 for a more detailed discussion.

In the context of regional trade negotiations, including the Africa Continental Free Trade Agreement (AfCFTA), SSCBT data can inform decision makers on the true, relative importance of different commodities in production, trade, and consumption. This information is crucial to determine the products for which the country should actively seek enhanced market access or those that are sensitive and need a longer adjustment period.

Table 1 shows the 10 most important exported and imported products in Uganda and Rwanda, for which SSCBT accounts for the majority of trade with neighboring countries. All of these products are among the top 100 (of 1,259 product aggregates according to the Harmonized System 4-digit classification) in overall regional trade (Customs-recorded trade plus SSCBT) in their respective countries.

The listings reveal that SSCBT is very important for many regionally traded products, therefore not considering small-scale transactions fundamentally deflates the extent of regional integration. For example, according to Customs records, neither dried leguminous vegetables, dried fish, nor cereal flour ranked among the top 10 products that Rwanda exported to neighboring countries in 2017. However, if SSCBT is included, these three products jump to the fourth, fifth, and seventh place in overall regional exports. In total, 47 of the 100 most exported products from Rwanda to neighboring countries had an SSCBT share of more than 50 percent (20 of the top 100 products on the import side). The corresponding frequencies for Uganda are 39 out of the top 100 regionally exported products and 14 out of the top 100 regionally imported products.

Table 1: Major products for which SSCBT accounts for more than half of all trade, 2017

Uganda Imports	Uganda Exports	Rwanda Imports	Rwanda Exports
Bananas, 100%	Women's clothing 100%	Preserved fish, 100%	Swine meat, 100%
Worn Clothing, 99%	Men's clothin, 99%	Wood charcoal, 99%	Bovine meat, 100%
Wheat Flour, 91%	Foothwear, 99%	Coffee, 99%	Live poultry, 100%
Manioc, 89%	Dried Fish, 98%	Bananas, 94%	Dried fish, 97%
Vegetable Oil, 89%	Trunks & Suitcases, 97%	Worn clothing, 90%	Milk and cream, 94%
Fruit Juice, 85%	Live bovine animals, 92%	Beer, 86%	Prepared fish, 92%
Dried Legume, 69%	Worn Clothin, 83%	Tobacco, 80%	Swine meat, 100%
Leguminous Veg, 69%	Live bovine animals, 92%	Potatoes, 55%	Sugar, 64%
Dried Fish, 66%	Spirits & liquors, 57%	Dried leg. veg., 54%	Cereal flour, 64%
Onion and Garlic, 60%	Mattresses & bedding, 51%	Cereal flour, 50%	Mattresses & bedding, 64%

Note: Reported percentages refer to the share of SSCBT in overall trade.

1.3 EMPIRICAL EVIDENCE ON THE MAGNITUDE OF SSCBT

There have been a number of attempts to assess the importance of SSCBT through surveys. Lesser and Moisé-Leeman (2009) discuss several early studies of regional border trade, and consistently find that informal cross-border trade represents a significant proportion of regional cross-border trade in Sub-Saharan Africa. In some cases, the volume of informal flows is in fact estimated to exceed formal trade flows for certain commodities. A more recent overview by Bouet and others (2018) confirms that the value of SSCBT often meets or even exceeds the value of officially recorded cross-border transactions.

One challenge when interpreting the findings from short-duration or cross-sectional data collection efforts is seasonality. There is often seasonal variation in trade flows, particularly with respect to trade in agricultural commodities (Figure 1). As a result, the findings obtained on the importance of SSCBT at one point in time might not be generalizable to the entire year. Sometimes surveys contain questions that relate to the typical or year-long activity of individual operators, alongside others that query the ongoing transaction. However, there remains a risk that respondents will not be able to convey the longer-term information accurately.

Figure 1: Rwanda's SSCBT imports of edible vegetables (HS-chapter 07) in 2017 (US\$million)

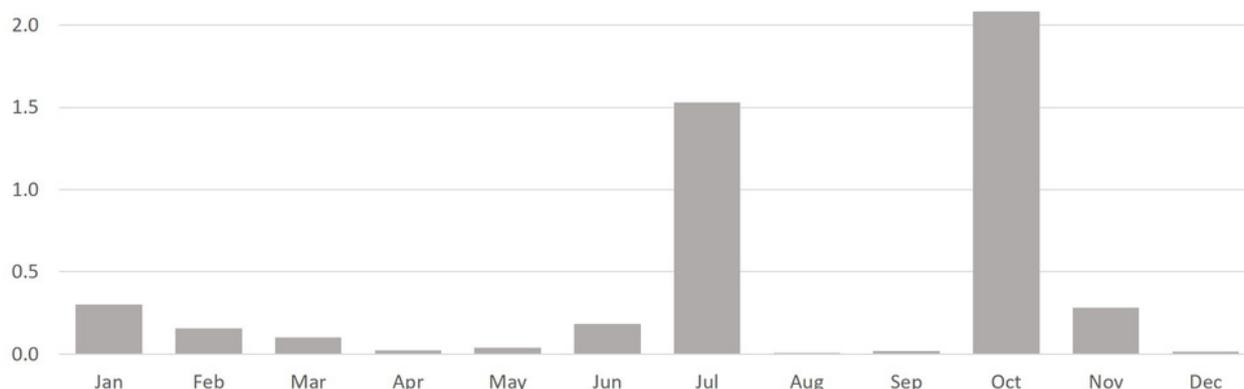


Table 2 provides an overview of studies that have tried to quantify SSCBT in different regions of Sub-Saharan Africa. It illustrates considerable diversity across methodologies and product coverage, as well as substantial variety in findings. That said, all studies concur that SSCBT is substantial and an important part of overall exports and imports.

Table 2: Overview of Selected Quantitative Surveys of SSCBT

Reference	Region	Methodology	Products	SSCBT Importance
Ackello-Ogutu & Echessah (1997)	Kenya / Uganda	Border observation; census over 12 months; 2-week data collection per month	All products	60% of officially recorded trade
Amin & Hoppe (2013)	Nigeria / Cameroon	Data from border markets, customs agents, truck traffic	All products	20 to 40 times higher than official import /export statistics
Bensassi et al. (2018)	Benin	Interviews at 151 border-crossing points	All products	Exports 5 times higher than officially recorded trade

Reference	Region	Methodology	Products	SSCBT Importance
KNBS (2011)	Kenya	Monitoring at 15 official border stations for two weeks	All products	6.3% of total trade on average, 25% with Ethiopia
Little (2005)	Somalia / Horn of Africa	Sales in border town markets	Livestock & grains	20 times higher than recorded trade
Njiwa et al. (2012)	Zambia / Malawi	Observation at Mwami-Mchinji border crossing	All products	170% of officially recorded trade
Nkendah (2013)	Cameroon / CEMAC	Border observation; census over 12 months; 2-week data collection per month	Agriculture & horticulture	96% of officially recorded trade
NSA (2015)	Namibia	Observation, every day during November 2014 and September 2015	All products	>70% of exports at some border posts; >35% of imports at some border posts
Macamo (1999)	Mozambique	Observation at 12 most active border crossings over 12 months	All products	10% to 90% of total trade with neighboring countries

Unrecorded small-scale trade is not limited to Africa (Box 1). Customs worldwide do not process consignments that are small and of low value. However, in Africa, these small-scale transactions are more prevalent, due to the large number of landlocked countries, the presence of large cities close to borders, relatively high barriers to cross-border trade, and few alternative income opportunities in border regions – especially for women and displaced persons.

Box 1: Quantitative Studies of SSCBT in other World regions

In the **MENA** region, Ayadi and others (2014) use mirror statistics and field research at selected border crossings to estimate the magnitude of Tunisia’s informal trade with Libya and Algeria. They find that SSCBT represents an important part of Tunisia’s bilateral trade with Libya and Algeria, accounting for more than half the official trade with Libya and more than total official trade with Algeria. Marked differences in taxes and subsidies on different sides of the border are seen as the main drivers of the substantial extent of informal trade.

In **South Asia**, Khan and others (2007) estimate that the value of total informal trade between Pakistan and India amounted to \$545 million in 2005. Their survey evidence suggests that the flow of goods is highly skewed. Total informal exports from Pakistan to India were estimated at \$10.4 million, while imports amounted to \$534.5 million.

In **Central Asia**, Kaminsky and Mitra (2010) find large unreported imports for goods sold in bazaars in Kazakhstan and the Kyrgyz Republic. They use mirror data analysis to estimate that three-quarters of all bazaar goods, such as textiles and clothing, are not recorded in Customs-based statistics. Most of these “missing imports” are brought into the countries by small-scale traders who benefit from existing exemptions for low volume and value transactions (50kg or \$1000).

1.4 BENEFITS FROM MONITORING SSCBT AND SSCBT DATA USE

Through SSCBT data collection, the government can develop greater awareness and appreciation of the potential impacts of SSCBT. As noted earlier, SSCBT data can inform policy decisions on food security, infrastructure investments, regional integration, and macroeconomic risk management. Moreover, in combination with information on the socio-economic characteristics of the border communities, the trade flow data can help to assess how this generally poor and vulnerable population is affected by economic developments.

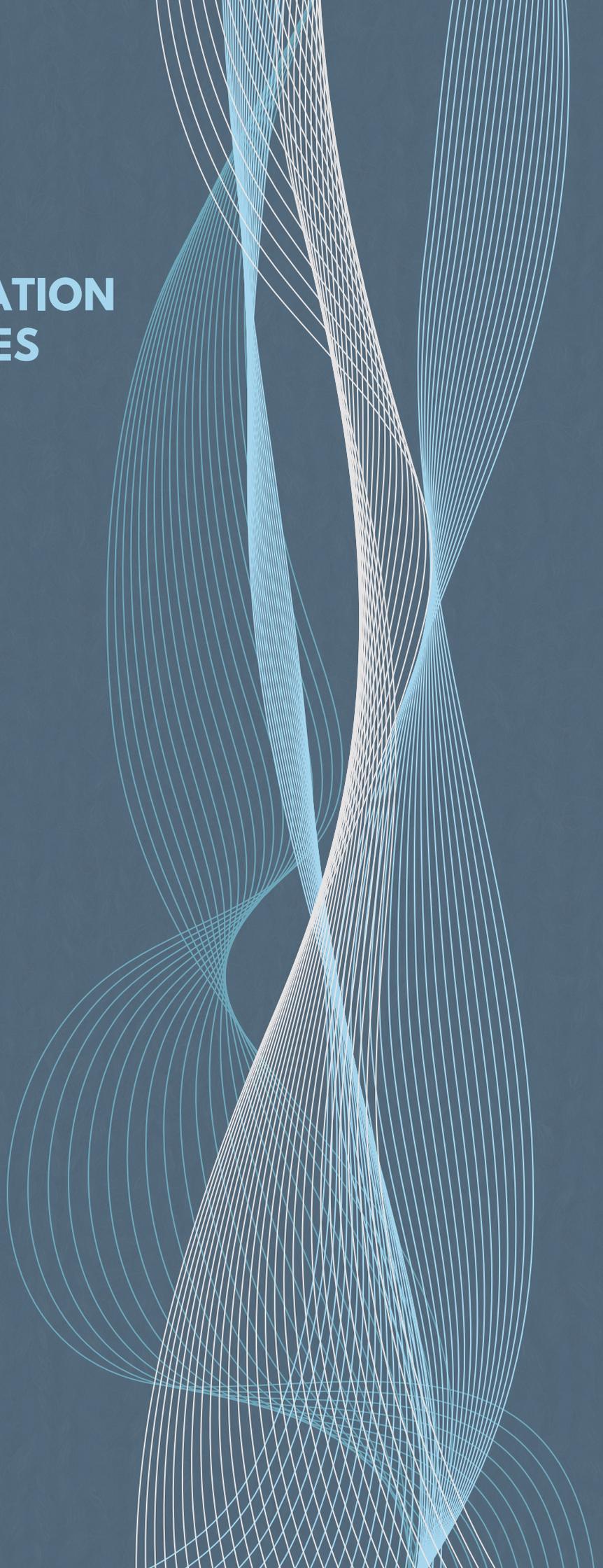
In addition to general growth linkages, SSCBT data can provide useful indications of local job creation and SME development. A strengthening of trading activity would suggest an increase in employment opportunities as well as firm growth. Often observers assume a pronounced dichotomy between formal and informal trade, with the latter occurring in the form of SSCBT. This separation does not necessarily exist in practice, though. For example, in West Africa, up to 44 percent of individuals that worked as small-scale traders reported that they operated a registered business (World Bank, 2020). Hence, stronger SSCBT will help these businesses to develop and prosper, while possibly also encouraging other traders to take the step towards formalization. If equipped with pertinent information on SSCBT, governments can foster this formalization process by undertaking targeted information campaigns and providing appropriate support services (FAO, 2017).

Another area where SSCBT data are valuable is to help authorities develop a better understanding of development linkages. Which goods are being traded informally and where do these products come from? Once the origin of the goods has been established, government agencies can approach small-scale producers to enhance quality, consistency, and standards of security, with a view to strengthening their efficiency and competitiveness. This might give the small-scale producers options to add value to their produce through additional stages of processing, enter an

international supply chain, or gain access to larger-scale commercial trading arrangements.



QUANTIFICATION APPROACHES



Ackello-Oguto (1996) distinguishes three different approaches to collecting qualitative and quantitative information on informal cross-border trade: (i) tracking movement of large transport vehicles and comparing the volume and value of the merchandise with official customs data to identify fraud and misdeclaration; (ii) monitoring stock levels at open border markets and comparing actual observed sales data with Customs data; and (iii) observing border movement to assess the importance of non-official trade. All these methods have their advantages and challenges, and sometimes a combination of them is required to obtain high-quality results.

2.1 THE CHALLENGE OF MONITORING SSCBT

Almost by definition, SSCBT is difficult and relatively costly to monitor. SSCBT consists of many small consignments of a diverse range of products that cross from one country into another. Checking on the nature, volume, and value of a small-scale transaction will often take as much time as assessing a larger shipment. Hence, in proportion to the value of the trade, the control costs for SSCBT are much higher than for large-scale commercial transactions. These high control costs are one of the main reasons why much of SSCBT remains unrecorded.

Another challenge for public authorities that try to assess and quantify SSCBT is that small-scale traders do not necessarily rely on formal transport infrastructure, such as paved roads. Instead, they might carry their merchandise via bike paths or footpaths from one country to the other, thereby avoiding official border crossings altogether.

Furthermore, some small-scale traders might actively try to avoid contact with border officials, perhaps because of past experiences of corruption or harassment, because they find the documentary requirements of the formal border clearance process overly demanding and cumbersome, or because of a lack of awareness of border requirements that leads to misperceptions about the amount of duties that are applicable to the goods they carry.

In such cases, it is difficult for statistical personnel to approach these traders and correctly assess their shipments.

In the same vein, small-scale traders might generally distrust government representatives. They might fear repercussions if they were to reveal the value and origin of their goods and, as a result, might not respond to survey questions truthfully.

2.2 LACK OF SSCBT COVERAGE AND OTHER QUALITY CHALLENGES IN TRADE STATISTICS

International merchandise trade statistics are largely based on Customs records. Other sources of information, such as data available in other government agencies or from enterprise surveys, can in principle be taken into account (Box 2), but generally few adjustments to the Customs data are made before publication. Indeed, many African countries have validation meetings with representatives from different parts of government to evaluate the available import and export data, but the outcome of these sessions is usually that the information from Customs is endorsed for governmental use and publication.

Box 2: Trade data collection by agencies other than Customs

Customs is not the only government agency at the border; other departments might also have personnel stationed at border crossings to fulfill their mandate and collect import and export data in the process. For example, in Cameroon, the Ministry of Trade, the Ministry of Agriculture/Livestock, the Logistics Bureau, and the Transporters Association have agents at the border to inspect and monitor trade and collect information on trade transactions. However, the quality of these data is often poor. The information is generally at a more aggregate product classification than the HS nomenclature used by Customs, so it is difficult to compare or integrate the results. In addition, due to resource constraints in the respective agencies it can take a long time, sometimes months, for the data to pass through the local and regional hierarchy before it reaches decision makers in the national capital. And last but not least, agents stationed at the border have an incentive to downplay the volume of transactions. The agencies generally charge an inspection or service fee that is linked to the number of transactions or the trade value, and if the local agent reports a lower number or value to his or her superiors then he or she will also have to transfer less revenue, keeping the excess for himself or herself.

One major drawback of Customs-based trade statistics is that SSCBT is not captured. This lack of SSCBT coverage is a major deficiency of current trade statistics, but it is not the only challenge. Many Customs stations do not have reliable access to the internet, are not computerized, or even lack electricity altogether. Data transmission problems and paper-based record-keeping are thus prevalent at many Customs posts. In a best-case scenario, the transactions are captured into national statistics with a delay, once the paper records have been passed to the regional or national offices and the data entered into the centralized computer system. However, given the resource constraints in many African countries, it is more likely that any paper records are never consolidated into national data.

It should be noted that the larger Customs stations, notably those that handle non-regional exports via maritime transport, are computerized and the collected data is reported as part of national trade statistics. On the other hand, small Customs posts in remote regions are more likely to still rely on paper-based record-keeping with limited subsequent data processing and reporting. It is the latter offices that largely handle trade with neighboring countries and the non-inclusion of the transactions from these posts in national trade statistics means that the official trade data is fundamentally flawed and biased against regional trade.

Another source of inaccuracy stems from the treatment of exports. Customs has several objectives, notably revenue generation, protection against unlawful imports, trade facilitation, and statistics compilation. Among these functions, the gathering of reliable statistics does not necessarily receive the same priority as, for example, duty collection. Indeed, transactions that generate no revenue, notably exports, often receive scant scrutiny from Customs and might not even be recorded at all.

Last but not least, outright Customs fraud can happen with or without the complicity of the Customs officer. Importers who want to bring merchandise into the country have an incentive to undervalue their shipment to avoid Customs duties, to hide highly taxed goods among low-tax items, or to declare goods in a lower taxed category. Customs often does not have the inspection tools and capabilities to detect this fraud, so transactions are wrongly captured and reported in official statistics.

2.3 SSCBT MONITORING VERSUS SOCIO-ECONOMIC SURVEYS

A number of African countries have undertaken surveys of the importance of small-scale cross border transactions and the socio-economic characteristics of the trading communities.

These questionnaires go well beyond the collection of basic trade flow information and can provide valuable insights into the demographic, social, and economic status of small-scale traders and convey perceptions of the quality of border infrastructure and border clearance services. These data are needed to improve policies towards small-scale traders, who are often poor and disadvantaged and, thus, merit increased attention from policymakers.

Yet, the composition of the border community, as well as its demographic and socio-economic characteristics, are generally stable over the short term and, thus, do not need to be assessed on a daily basis. Also, the nature of these surveys means that the information cannot be collected through non-obtrusive means but requires interviews of traders that are time consuming and, thus, disrupt the flow of cross-border trade to some extent. These broad-based questionnaires could and should therefore only be administered occasionally.

In contrast, SSCBT monitoring must be done regularly. Small-scale imports and exports can show strong variation over time. This is particularly the case for agricultural products that are subject to seasonality. Hence, it is necessary to collect SSCBT data frequently to avoid seasonality bias. A once-a-year or occasional survey can result in significant errors.

To avoid disrupting trade flows, high-frequency data collection on SSCBT should concentrate on the essential data points, that is traded product, trade volume, trade value, date, and direction of trade. These are also the data points that are collected by Customs for larger consignments. In the case of SSCBT, the essential trade data can even be estimated via unobtrusive observation based on local knowledge of the prevailing packaging and consignment sizes of the dominant products, as practiced by SSCBT enumerators in Uganda.

What is the ideal frequency of SSCBT data collection? Customs captures the characteristics of all large trade consignments every day. Rwanda has adopted a similar census-style approach of placing

SSCBT enumerators at border crossings every day of the week except for ungazetted borders, where enumerators operate only during market days) from early morning to late afternoon. On the other hand, Uganda collects

SSCBT data for two weeks and then extrapolates the data for the full month. The latter method appears to result in a good approximation of SSCBT trade flows, while freeing up resources for other purposes, including the administration of occasional in-depth socio-economic surveys of SSCBT.

Indeed, occasional socio-economic surveys and regular SSCBT monitoring are complementary. The longer, more comprehensive socio-economic surveys make it possible to collect data needed to improve policies for small-scale traders, while at the same time keeping the regular, more frequent SSCBT monitoring questionnaire simple and focusing it on the essential information needed to describe trade, without holding back and disrupting the flow of goods across the border.

2.4 EXISTING SSCBT MONITORING ACTIVITIES

The significance of unrecorded cross-border trade has encouraged some national and international organizations to monitor such trade more systematically and through surveys that are repeated over time. However, as in the case of cross-sectional analysis, there is substantial variety with respect to product coverage, monitoring frequency, and surveying methodologies.

Moreover, there are differences in the objectives of the existing data collection effort and related quality control. For some systems, SSCBT data collection is a side activity alongside core trade facilitation efforts (e.g. COMESA Trade Information Desks). For others (e.g. CILSS, FEWS NET), the collected SSCBT data is one indicator among several factors. And only for a few approaches (e.g. Uganda and Rwanda cross-border monitoring, see next chapter) is it the primary aim to collect SSCBT data and to do so according to the same high-quality standards as the collection of other trade flow information.

CILSS

The CILSS has since April 2013 tracked intraregional trade in agriculture and food products in West Africa. Data are collected on the value and volume of intraregional agricultural trade along the major commercial corridors linking Senegal, Mali, Burkina Faso, Benin, Togo, Ghana, Côte d'Ivoire, and Nigeria. The major agricultural commodities targeted comprise both livestock (cattle, sheep, and goats) and cereals (maize, millet, sorghum, and parboiled rice). In total, 10 trade corridors in West Africa, disaggregated by means of transport (truck, rail, and hoof/livestock), are monitored.

The data collection relies on pairs of local enumerators who are specialized on particular commodities and strategic markets or exit points (Mitaritonna and Traoré, 2017). They collect information on the product variety, value, volume, means of transport, origin, and destination through observation, and where necessary, trader/transporter interviews. In addition, CILSS captures information on trade barriers, with a particular focus on bribes and time delays at security checkpoints implemented by Customs, police, or the gendarmerie. Data on both commercial and informal transactions are collected. At the end of the day, the data of the two enumerators is compared and reconciled, and then transferred to CILSS headquarters for further processing. Finally, the findings are published in monthly, quarterly, and annual reports.

FEWS NET

In 1985, the US agency for International Development (USAID) created the FEWS NET as a tool to provide policymakers with information on upcoming stress situations with respect to food availability. In collaboration with local partners, FEWS NET has been conducting regular analysis of food commodity markets and trade in West, Southern, and East Africa, as well as in Central Asia, and Central America and the Caribbean. In East Africa, for example, the network monitors trade of 88 agriculture and food products (including maize, beans, wheat, rice, sorghum, and sesame) in 26 cross-border markets. FEWS NET draws on a variety of data sources, including information from

national ministries of trade and agriculture, international organizations, and NGOs. Moreover, the organization also employs networks of monitors to report localized data, such as staple food prices and rainfall.

FEWS NET (in collaboration with the World Food Program) has also been providing technical support for ACTESA (Alliance for Commodity Trade in Eastern and Southern Africa), which since 2015 has been operating under the auspices of COMESA. ACTESA has been collecting information on SSCBT at strategically selected borders. In Southern Africa, 19 border crossings are monitored (10 for Malawi, 8 for Zambia, 1 for Zimbabwe)[2]. Local enumerators visit border market overseers to check on the stock level of staple food commodities (maize-meal, cereals, cassava, rice, beans) before market opening and later after its closure. Data on the product quantity, pricing, and direction of trade is recorded on paper forms, and since 2018, on electronic tablets. The data is transferred to country field offices twice weekly.

The main purpose of the FEWS NET monitoring programs is to identify sudden changes in trade patterns of agricultural commodities that would indicate food shortages in some countries or regions. The findings are published in monthly or quarterly cross-border trade bulletins.

Professional Associations

Some private sector professional associations have also been collecting data on SSCBT to inform their members and government authorities of the extent of unrecorded trade. For example, the Cross-Border Traders Association (CBTA) in Zambia has been collecting information on SSCBT at selected border crossings. The CBTA hired students to capture information on the products that crossed the border in small consignments, their value, and the direction of trade. However, due to budgetary constraints, CBTA could employ only a few enumerators who did not necessarily have a sound statistical background. For example, the chosen product classification does not conform with the HS-classification otherwise used for trade statistics.

[2] Interview with Yvonne Vhehva, FEWS NET Regional Food Security Specialist, Zimbabwe, on 18 July 2019.

Another example of private sector data collection on SSCBT is the Transporters Association in Cameroon (CNCC, Conseil National des Chargeurs du Cameroun). The CNCC has agents located at border stations who collect fees for the services their members provide, as well as information on the trade transactions undertaken. However, these import and export data are at an aggregate product category level, and tend to be biased, because the agents have an incentive to downplay revenue-generating transactions. If they report lower than actual trade volumes to their headquarters, then they can keep the revenue from the unreported trade for their personal gain.

EAC/COMESA Simplified Trade Regime

To facilitate SSCBT, member states from the East African Community (EAC) and COMESA have adopted simplified trade regimes (STRs) for small-scale cross-border traders. The objective of the STRs is to make it easier for small-scale operators to conduct their activities by providing them with instruments and mechanisms that are tailored to their specific requirements.

In particular, small-scale traders benefit from a simplified customs document and a simplified certificate of origin. The latter entitles traders whose goods originate from member countries and are valued at less than US\$1,000 (COMESA) or US\$2,000 (EAC) per consignment to cross the border duty-free.[3][4] The lists of products that are eligible for STR are supposed to be displayed at border posts and in the main towns nearby. The simplified certificates of origin are also issued at the border posts and signed by the Customs office, so that traders that travel from remote areas can equally benefit from the regime.

By making the completion of border clearance formalities easier for small-scale operators, more of them complete the simplified declaration. This in turn means that border authorities in the EAC and COMESA obtain a more complete picture of trading activities. Customs keep track of STR transactions in their database, so that respective

data on imports and exports below the STR threshold could in principle be extracted and exploited for analytical purposes.

COMESA Trade Information Desks

Moreover, COMESA has been setting up a series of Trade Information Desks at 10 borders in the Democratic Republic of Congo, Rwanda, and Uganda. This activity is currently supported under the World Bank's Great Lakes Trade Facilitation Project. These offices are staffed with uniformed COMESA employees – the Trade Information Desk Officers (TIDOs). The task of these agents is to provide information to cross-border traders, help them fill out necessary documents, and provide assistance with transport arrangements and Customs clearance. In addition, the TIDOs collect information on the type of commodities that are being traded by small-scale operators, the time taken to cross the border, and incidents of unfair or illicit treatment. These data are subsequently passed to the COMESA Secretariat for further processing and analysis.

2.5 PROSPECTS OF NEW TECHNOLOGICAL APPROACHES FOR SSCBT MONITORING

Video surveillance techniques have made substantial progress in recent years. Closed circuit television cameras, in combination with specialized software, can be used to reliably track individuals (Figure 2). For example, a number of US cities have installed people-counting cameras in shopping areas to monitor pedestrian traffic. The systems provide real-time data on the number of individuals that pass by, the direction they are walking, and the time that people spend in a particular area of a store.[5] Motionloft, a provider of such systems, charges US\$3,600 annually for the camera installation and wireless data transmission per unit. More advanced software versions can also discern the gender of individuals, as well as their age and state of emotion.[6] Privacy concerns associated with these systems are attenuated through the absence of data storage.

[3] In DR Congo, the threshold is US\$500.

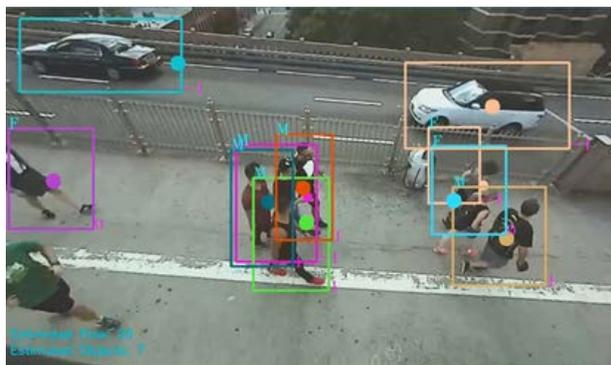
[4] There have been efforts to harmonize the thresholds, but no agreement has so far been reached among countries in the region.

[5] Baumgartner Vaughan, Dawn, The Herald Sun (Durham/NC), July 6, 2018.

[6] <https://www.techtimes.com/brandspin/237845/20190129/top-5-best-people-counting-software-2019.htm>

In principle, a Motionloft-type surveillance system could also be used at border crossings to count the number of traders, capture some of their demographic characteristics (e.g. gender, age), and determine the direction of trade. Moreover, time in the border area could be a useful indicator of the efficiency of the border clearance process. In addition, customized programming might make it possible for software to recognize different commodities and their typical packaging, so that the type and quantity of goods traded could be captured. However, as the prevailing consignment size and packaging tends to differ according to local customs, the surveillance software might need to be adjusted for different border locations to reliably monitor trade flows.

Figure 2: Video-based pedestrian counting



Source: Motionloft

Figure 3: Satellite Image of Diboli Market (Mali)



Another type of monitoring that has been tested to capture SSCBT is remote sensing. IPSOS Nigeria, a market research firm, has undertaken analysis of activity at border crossings using satellite imagery and de-identified cell phone data (Figure 3). To date, the firm has been running pilot studies in West Africa to understand the possibilities and challenges offered by available remote sensing data for conducting effective SSCBT monitoring (IPSOS, 2019).

In particular, imaging analysts at IPSOS used open and privately-sourced satellite imagery to identify key characteristics of border markets: (i) the market size; (ii) the total number of stalls (uncovered and covered); (iii) the level of available lighting; (iv) the total number of trucks present; and (v) the total number of cars present. The satellite image analysis was complemented with ground photos taken at each market to better identify certain infrastructural attributes, such as stall types, and number of stalls (Table 3).

Table 3: Findings from Satellite Imaging Analysis on Border Markets (Source: IPSOS)

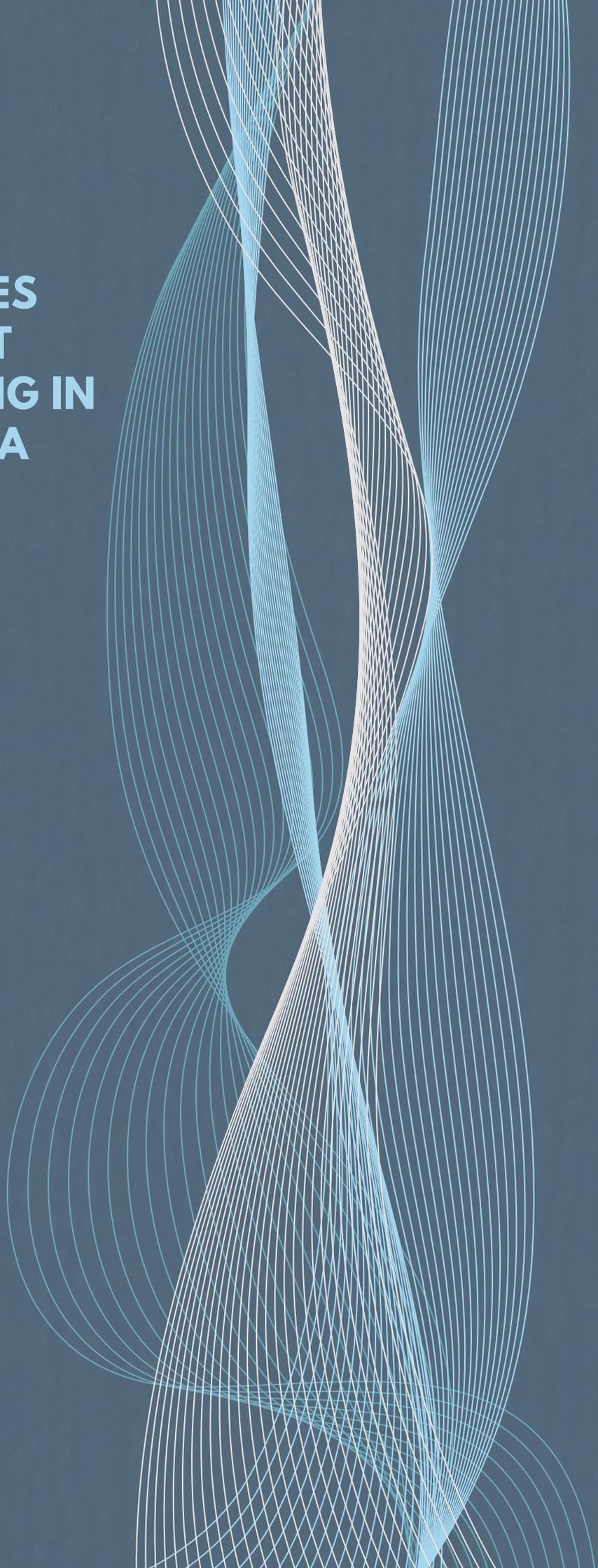
Market	Country	Uncovered Stalls	Covered Stalls	Count Trucks	Count Cars	Traders Avg Daily Count	Traders Avg Distance Travelled (KM)
Malanville	Benin	75+	225+	2	11	100-150	155
Parakou	Benin	0+	115+	0	6	150	75
Dosso	Niger	10+	185+	1	3	65-95	1.5
Madaoua	Niger	4	255+	1	2	90	55
Gaya	Niger	0	350+	6	15	125-200	1.5
Dawanau	Nigeria	61+	7+	22	51	25	N/A
Jibia	Nigeria	7+	10+	7	13	5-10	N/A

In addition, IPSOS analyzed cell phone data and pings that were anonymized to further enhance the understanding of SSCBT activity. For example, traders were identified as individuals that were present in the market while the market was open, typically spent most of the day in the trading location and returned to the market multiple days in a row. Furthermore, the speed of travel along routes to and from the market made it possible to differentiate between vehicle and pedestrian modes of transport.

The costs of IPSOS-style satellite and remote sensing amount to about US\$15,000 per border crossing annually, which includes monthly cell phone updates and quarterly imagery updates. This type of information could serve to track large-scale changes in market activities. However, the lack of transaction-level data on the products traded and their value limits the usefulness of the satellite and remote sensing approach for regular SSCBT monitoring.



**EXPERIENCES
WITH SSCBT
MONITORING IN
EAST AFRICA**

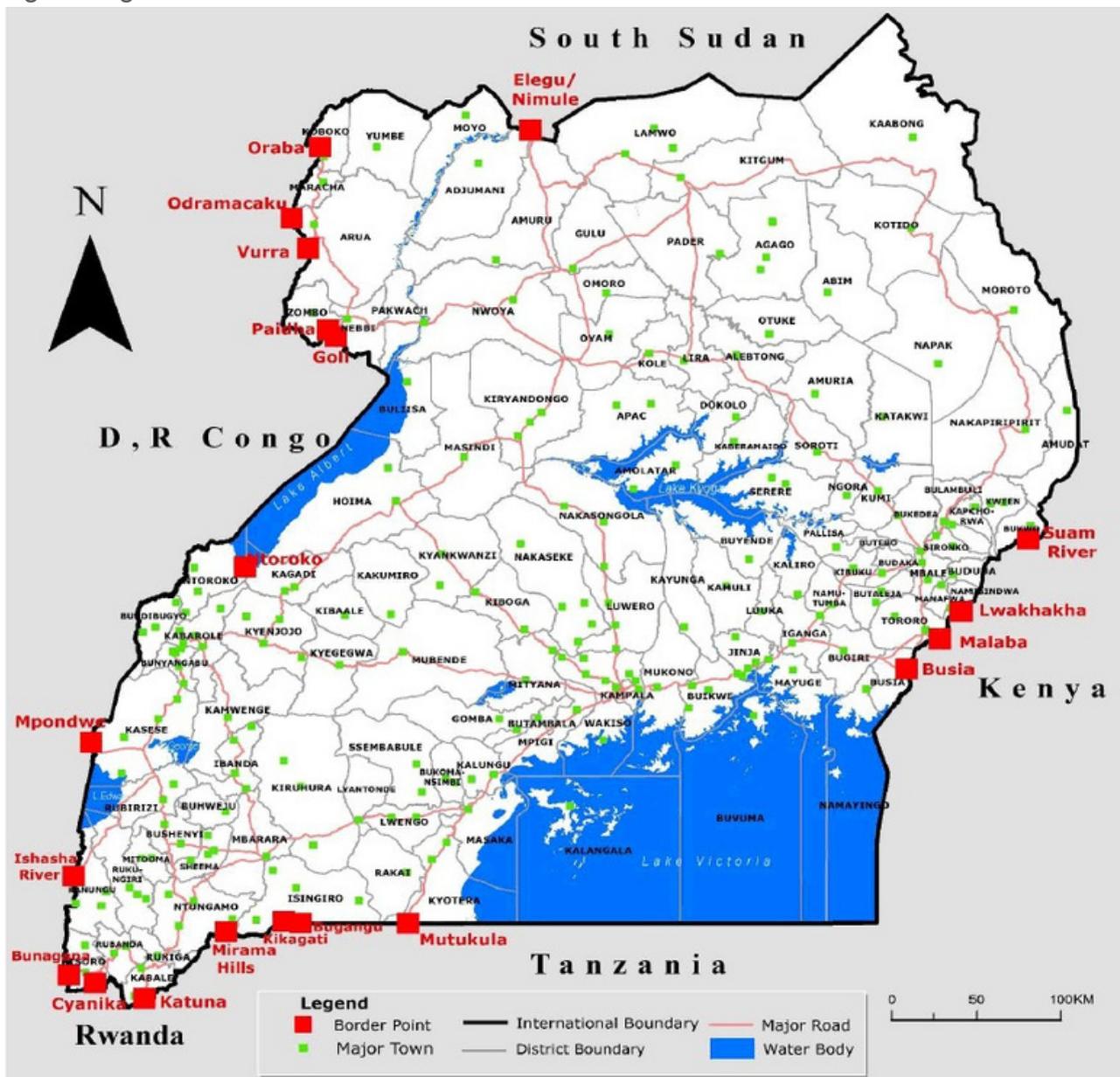


Regular surveys of SSCBT have to be undertaken to capture developments in exports and imports over time, including for agricultural products that might show strong seasonality. Such longitudinal analyses have been undertaken by Uganda and Rwanda since, respectively, 2005 and 2009. The two East African countries pursue somewhat differing approaches towards capturing SSCBT, and the remainder of this chapter is devoted to describing the respective data collection practices in detail and to drawing lessons for other countries.

3.1 SSCBT MONITORING IN UGANDA

Uganda has been analyzing SSCBT since 2003/04 to generate information on small-scale trade transactions and thereby improve the quality of external trade statistics in the balance of payments and the National Accounts. The SSCBT data collection effort was launched through a pilot survey from October 2003 to January 2004. The first annual monitoring was undertaken in 2005, based on surveys at 14 border crossings. Subsequently, coverage was extended to 20 border crossings and 3 bus terminals in 2007, and 20 crossings (Figure 4) and 4 terminals by 2009.

Figure 4: Ugandan Border Posts Monitored



Source: Uganda Bureau of Statistics

Eight of the monitored crossings are at the border with the DRC (Bunagana, Goli, Ishasha River, Mpondwe, Ntoroko, Odramachaku, Paidha, and Vvura), four with Kenya (Busia, Lwakhakha, Malaba, and Suam River), three each with Rwanda (Cyanika, Katuna, and Mirama Hills) and Tanzania (Kikagati, Mutukula, Bugango), and two with South Sudan (Elegu and Oraba). In addition to these 20 border posts, four bus terminals have been monitored covering the following routes: Kampala/Kigali, Kampala/Juba, Kampala/ Bujumbura and Kampala/Bukoba/Dar es-Salaam.

In 2009, the Uganda Bureau of Statistics (UBOS) published findings from a qualitative baseline study on SSCBT (UBOS, 2009). This empirical study complemented the SSCBT monitoring effort by focusing on the trade environment of small-scale operators. It analyzed a broad range of issues concerning SSCBT, including gender roles, access to financial services, marketing information, food security, and tariff and non-tariff barriers to trade.

In terms of its legal foundation, the SSCBT data collection is covered by the Statistics Act of 1998, which empowers UBOS to collect, analyze, and disseminate official statistics in the country. In addition, Service Level Agreements and Memorandums of Understanding have been signed between the key partners – UBOS, the Bank of Uganda, and the Uganda Revenue Authority. Other government agencies, notably the Immigration Control Department of the Ministry of Internal Affairs and Uganda Police and Border Security, support the data collection effort.

Survey design

Uganda collects information on SSCBT through enumerator observation at border stations. The border stations to be monitored were selected based on detailed border profiles that were established before the start of the data collection process. Only border stations that are important for SSCBT and that are free of armed conflict and violence in the surrounding region were retained.

Enumerators are then placed at strategic locations at the border, where they can easily observe small scale trade, while also being in the immediate proximity of a police or security officer.

The Ugandan authorities are aware that SSCBT also passes through informal crossing points along the country's long, porous borders. These locations do not have any Customs, immigration, or police officers present and trade is also not captured by the Informal Cross-Border Trade survey, as the security of the enumerators might be put at risk at these locations. Armed smugglers might mistakenly confuse a data collector with a tax enforcement officer and endanger the enumerator's physical integrity.

The Ugandan enumerators observe small-scale traders and transporters passing the border and note down the type of product, the volume or weight of the consignment, and the direction of trade. They can see whether a shipment is being declared to Customs and take only note consignments that would otherwise remain unrecorded. The use of naturalistic observation of SSCBT activity as the research design has the advantage of being unobtrusive and not impeding or delaying traders. Traders are only approached and questioned by enumerators in cases where the nature, weight, and value of the product is not easily discernable, such as, for example, pastries being carried across the border in a closed box.

The naturalistic observation is feasible only because of extensive research and preparation during the aforementioned border profiling activity. As part of this, the most frequently traded products at a border post have been studied, including their typical packaging and consignment size. For example, research has been undertaken on the predominant type of sack used for maize trade and a typical maize transport unit has been weighed to determine the quantity of product it contains. If a trader or transporter crosses the border with such a sack, the enumerator knows that it contains maize and weighs a certain amount.

Sampling and extrapolation

Data on SSCBT is collected for two weeks each month, which provides the basis for monthly estimates. In particular, a combination of random and purposive sampling is used to select two consecutive weeks during which trade is continuously monitored at a border station. The collected information is updated to generate SSCBT estimates for the month. This process takes variations of trading activities across days of the week into account. These fluctuations can be important, if, for example, the border markets are only open on certain days. UBOS first calculates an average of trade for each day of the week from the collected data, and then multiplies this average with the number of respective weekdays in the month. For example, if there are four Tuesdays in the month, the Tuesday average would be multiplied by four, and if there were five Thursdays, the Thursday average would be multiplied by five. Enumerators are on duty from 7am to 6pm.

Survey team

At least two enumerators are stationed at each border crossing. These enumerators have adequate knowledge of the local languages spoken at the respective border stations and have undergone special SSCBT training on data collection and interaction with traders. UBOS and BOU coordinating staff undertake unannounced field visits every month to check on compliance with existing processes and to ensure the overall quality of the data collection effort. Moreover, every year, the enumerators participate in a week-long “refresher” training session that reinforces principles of high-quality data collection and provides an occasion for sharing experiences and best practices.

In 2017, the SSCBT data collection team comprised 61 enumerators, including 33 men and 28 women. In addition, there were 11 supervisors, including five women, and five project coordinators (all male). On the backend side of the activity, the collected information was processed by six data entry agents (all female) and five data editors (one man, four women).

UBOS recruits its SSCBT enumerators centrally in Kampala and sends them to their border locations temporarily. Enumerators are periodically rotated to other border stations to avoid location fatigue and collusion with the local trader community. Key qualifications expected from enumerator candidates are knowledge of local languages and good quantitative skills.

Operating costs

The pilot survey in 2003/04 and the first three years of annual monitoring (2005-07) were financially supported by the UK's Department for International Development (DfID). Over the next three years (2008-2010), support was received from the Trade Capacity Enhancement (TRACE) Project of the Ministry of Tourism, Trade and Industry within the Integrated Framework for multi-donor funding. Since then, UBOS and BOU have carried the full costs of the project.

Table 4 presents an estimate of the costs of the SSCBT data collection effort. The total outlays amount to about US\$420,000 per year. The biggest cost items are the enumerator and field supervisor salaries, as well as their per diems, which cover accommodation and living expenses while at the border station. The overall costs are shared by UBOS and BOU, with UBOS covering the salaries and BOU the costs of the field work (per diems, transport, materials). The outlays for SSCBT monitoring are budgeted in the organizations' annual work plans.

Table 4: Estimated costs of SSCBT data collection in Uganda

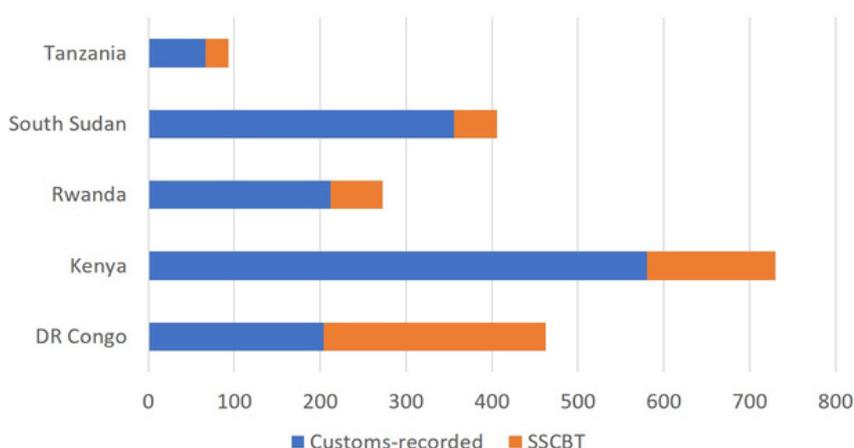
Item	USD/m	USD/y	Quantity	Total USD/y
Enumerator, salary	180	2160	61	131760
Enumerator, per diem and transport	180	2160	61	131760
Supervisor salary	200	2400	11	26400
Supervisor, per diem and transport	200	2400	11	26400
Data entry agent, salary	220	2640	6	15840
Data editor, salary	220	2640	5	13200
Coordinator (70% on SSCBT), salary share	700	8400	5	42000
High level field supervision, per diem and transport	240	2880	2	5760
Materials (e.g. notebooks, chairs, umbrellas)	25	300	61	18300
Data analysis and report writing		10000		10000
TOTAL COSTS				421420

The chosen approach to sample SSCBT transactions over two weeks and extrapolate these data to the full month has made it possible to contain costs. Indeed, the enumerators and field supervisors are only part-time employees, who are free to pursue other professional activities during the remainder of the month.

Key findings

SSCBT is important in Uganda. In 2018, the total value of exports, comprising commercial and SSCBT transactions, amounted to US\$3,634 million. About 15 percent of these exports (or US\$547 million) were small-scale trade. Concerning imports, SSCBT accounted for US\$60 million or 0.9 percent of overall imports of US\$6,789 million. Hence, by taking SSCBT into account, the merchandise trade deficit narrowed from US\$3,642 million to US\$3,115 million, a reduction by 13.4 percent.

Figure 7: Uganda’s exports to neighboring countries in 2018 (US\$million)



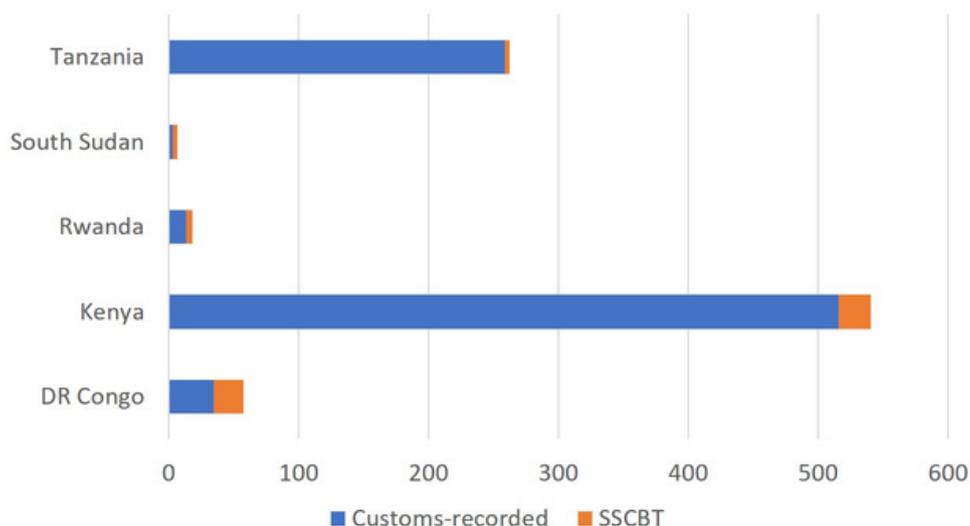
The global export and import figures hide the true importance of SSCBT, though, which lies at the level of regional trade. Uganda has land borders with five countries: DR Congo, Kenya, Rwanda, South Sudan, and Tanzania.[8] Figure 7 shows the relative importance of official (Customs-recorded) exports and SSCBT for these neighboring countries.

[8] SSCBT data is in principle also captured for Burundi by monitoring buses that serve the Kampala-Bujumbura route. However, during 2018 this bus service was not operating due to unrest in Bujumbura following the attempted coup in 2015.

In 2018, 29 percent of all exports to Uganda’s neighbors consisted of SSCBT, indicating a much higher degree of regional integration than if small-scale trade was not be counted. Indeed, about 56 percent of all exports to DR Congo and 29 percent of all exports to Tanzania consisted of SSCBT. For Kenya, Rwanda, and South Sudan, the SSCBT share in total exports amounted to, respectively, 21 percent, 22 percent, and 12 percent. If SSCBT exports are taken into account, DR Congo surpasses South Sudan in terms of its importance as an export destination for Uganda.

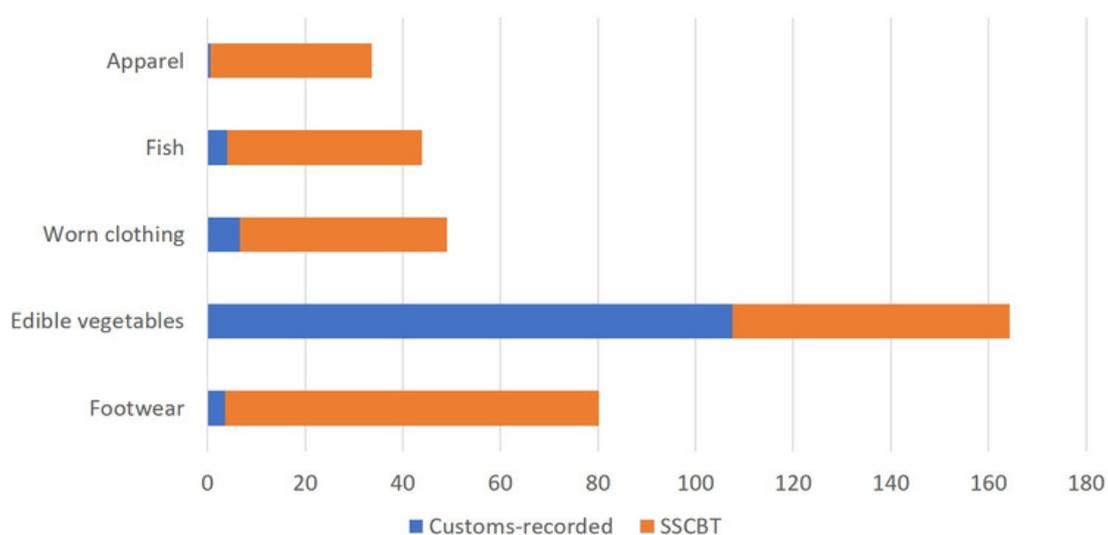
In terms of imports, about 7 percent of Uganda’s trade with its neighbors came from SSCBT. However, with South Sudan, it rose to 50 percent. Similarly, SSCBT imports from DRC at 40 percent of total imports were very prominent (Figure 8).

Figure 8: Uganda’s imports from neighboring countries in 2018 (US\$million)



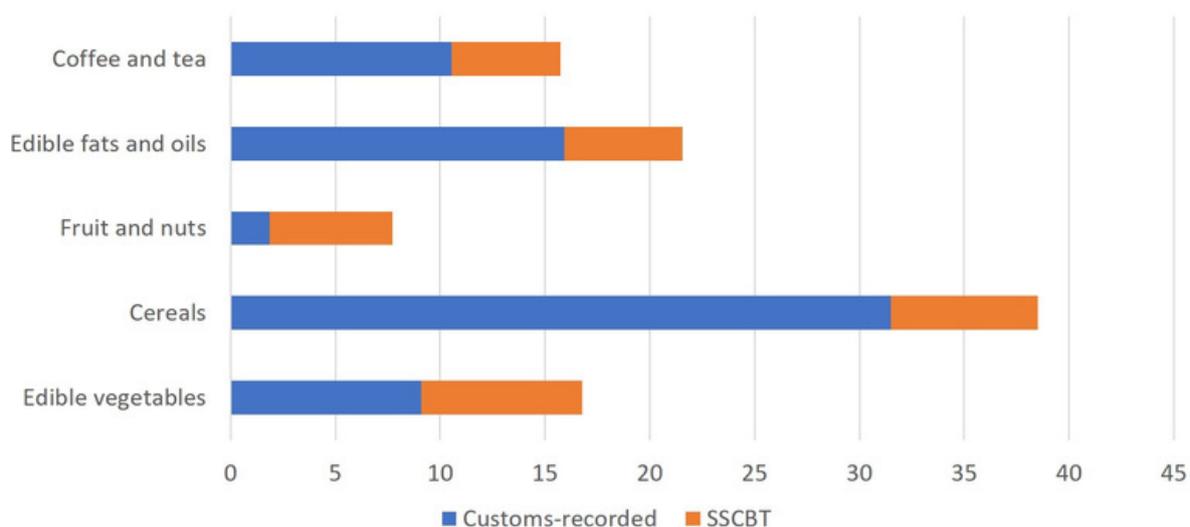
The most important SSCBT exports in Uganda during 2018 were footwear, edible vegetables, worn clothing, fish, and apparel. For all these product groups, SSCBT accounts for a substantial share of overall regional exports, and in the case of footwear, worn clothing, fish, and apparel, it even exceeds the value of Customs-recorded trade and represents more than 85 percent of total regional exports (Figure 9). It should be noted that products like fish and worn clothing represent a relatively large share in the consumption basket of the poorer segments within society, therefore a lack of SSCBT information would impede the design of effective policies for poverty reduction and inclusive growth.

Figure 9: Uganda’s exports to neighboring countries by selected product groups (HS-2) in 2018 (US\$ million)



Concerning imports, the most important product categories for SSCBT in 2018 were edible vegetables, cereals, fruit and nuts, edible fats, and coffee. For fruit and nuts, SSCBT accounted for 75 percent of all imports from neighboring countries, and for edible vegetables the corresponding figure was 45 percent. For cereals, edible fats and oils, and coffee, Customs-recorded transactions remained dominant, but SSCBT still accounted for substantial regional import shares of, respectively, 18 percent, 26 percent, and 32 percent (Figure 10).

Figure 10: Uganda’s imports from neighboring countries by selected product groups (HS-2) in 2018 (US\$million)



Dissemination and data use

The main instrument to disseminate information on SSCBT in Uganda is an annual publication by BOU and UBOS, the “Informal Cross-Border Trade Survey Report”. This description of the data collection methodology and key findings has been produced every year since 2005 (with the exception of a joint report for 2009/10). The latest edition was published in July 2019 and summarizes developments in SSCBT during 2018 (UBOS, 2019). The documents are available on the website of BOU and can be downloaded from there as pdf files. There was also a dissemination event for the joint BOU-UBOS report, but this event no longer takes place due to lack of budgetary funds.

Moreover, the balance of payments published by BOU shows a split between formal and informal trade. The Grain Council of Uganda and the Uganda Export Promotion Board have also been using SSCBT data. Further, UBOS reports that commercial traders, investors, and political representatives have made requests for SSCBT data to inform their decisions or advocacy campaigns. On the other hand, it is unclear whether and to what extent government ministries with responsibility for transport or agriculture have made use of the SSCBT data to inform their policy-making processes.

For example, the availability of SSCBT data seems to have had little influence on infrastructure investment at border stations. Several border crossings in Uganda have been upgraded in recent years to one-stop border posts. However, the substantial infrastructure investments seem to have exclusively focused on facilitating commercial, truck-based imports and exports and have not benefitted small-scale operators.^[9] For example, at the Busia border station between Uganda and Kenya, the facilities of the one-stop border post, inaugurated in 2018, with its newly paved road and parking areas, strongly contrast with the bumpy dirt track just outside the fenced zone that is used by small-scale traders to cross the border.

[9] The exception are border stations covered by the Great Lakes Project, which has an explicit focus on improving the trading environment for small-scale traders.

3.2 SSCBT monitoring in Rwanda

Data on small-scale cross-border transactions have been collected in Rwanda since 2009. In particular, a pilot study was undertaken in May 2009 that covered a limited number of crossing points along Rwanda's borders. The data capture was subsequently repeated and extended, with SSCBT monitoring undertaken during seven months in 2010 (January, February, March, April, September, October, November) and 10 months in 2011 (all months, except January and February). Since 2012, the survey has been undertaken systematically all year round. Currently, 59 border crossings are covered by the monitoring activity along the borders with Rwanda's four neighboring countries (Burundi, DR Congo, Tanzania, Uganda). This includes 16 gazetted border posts and 43 ungazetted crossing points.

The SSCBT data collection activities are implemented by five partner institutions: The National Bank of Rwanda (BNR), the Rwanda Revenue Authority (RRA), the Ministry of Trade and Industry (MINICOM), the Ministry of Agriculture and Animal Resources (MINAGRI), and the National Institute of Statistics of Rwanda (NISR). A memorandum of understanding was signed by the heads of the five institutions in 2009 to formalize the partnership, secure funding, and assign specific responsibilities to the different partners. BNR was mandated to assume leadership for the overall coordination and implementation of the SSCBT data collection activity. The partners meet once a quarter to discuss the project and related developments.

Figure 11: Rwandan Border Posts Monitored



Source: BNR

Survey design

Rwanda collects information on SSCBT through a trader survey. Initially, a paper-based questionnaire was administered by enumerators to the respondents while crossing the border or in the markets where the traders purchase goods. Since 2016, enumerators have been equipped with tablets instead of paper forms to enable computer-assisted personal interviews. This technological upgrade has made it possible to reduce data delivery time, facilitate survey logistics, improve the monitoring of enumerators in the field, and eliminate the overhead costs of data entry staff.

The SSCBT monitoring is carried out in locations that satisfy certain requirements: The border crossing should experience substantial amounts of otherwise unrecorded trade, it should be easily accessible, and it should be secure. The latter criterium means that SSCBT data collection generally takes place in the vicinity of other governmental institutions, such as Customs, police, or immigration.

Enumerators are positioned at a spot where they can monitor all movement of goods accurately. The aim is to capture all traded goods that are not recorded by Customs.[10] The enumerators inspect the trader and the traded goods visually and complement their observations by brief interviews.

At each particular border crossing, all the main characteristics of trade transactions are captured, notably the type of product, the quantity traded, the direction of trade, the origin and destination country, the value of the shipment, and the unit price of the product. Every day, enumerators receive up-to-date information on the prevailing prices at local markets, so that they are in a position to calculate the value of traded goods, if required.

Several trader characteristics are also recorded. These include the gender of the person crossing the border, his or her profession (farmer, trader, student, civil servant), his or her place of residence, and the mode of transport. Some of these features are non-observable and, thus, require a brief interview. While comparable information is not

available for Customs-recorded trade, the collected information is intended to make it possible to undertake supplementary analysis on small-scale traders and their activity.[11]

Survey instrument

Rwanda's SSCBT enumerators use SIM-card equipped tablets to record survey responses. These mobile devices are loaded with Open Data Kit (ODK) software. ODK is a free and open source set of tools to collect, manage, and use data. It provides a form-styled interface to record survey responses and makes it possible to send completed forms via a telephone connection to a central server, where the information is stored in a Eurotrace database and processed for further use.

The battery life of the tablets is sufficient to operate them even at border crossings that are not connected to the electricity grid throughout the working day. The devices are then recharged overnight.

The interface language used on the tablets is Kinyarwanda, which is spoken by almost all of the native population in Rwanda and its neighboring regions. The display interface resembles a survey form, with individual entries/questions being displayed on consecutive screens. Enumerators either write in their entries (e.g. their enumerator ID), select from a set of multiple-choice options (e.g. gender of the trader, see Figure 12), or scroll through a drop-down list to the appropriate item (e.g. type of product).

Figure 12: Screenshot of the SSCBT monitoring tablet with ODK interface



Source: BNR

[10] Transit goods are excluded, as are empty crates and bottles that cross the border for re-filling.

[11] In addition, in 2016 a comprehensive socio-economic survey of the trader population was undertaken (Charalambides and Parker 2016).

Data entry for SSCBT differentiates between 192 products. This level of disaggregation makes it possible to capture all the major product groups that are traded at small-scale. However, comparing the collected data on SSCBT to Customs-recorded trade information is challenging and only possible at a relatively aggregate level, as Customs uses the much more detailed Harmonized System classification with more than 5,000 commodity groups (at the HS-6 level). The National Institute of Statistics of Rwanda has developed a concordance to match the SSCBT product groups and a corresponding HS-6 entry, but this match-up is not always evident. For example, one SSCBT product category is fertilizer, while in the HS-system there are a multitude of fertilizer types (e.g. organic, nitrogen, phosphorus, potassium, mixtures). Hence, from the SSCBT data it is unclear which of these types was shipped across the border by small-scale operators.

Sampling

Rwanda runs a census on SSCBT, with the aim of capturing (almost) all goods transactions. Enumerators are present at border crossings all year from 6am to 6pm. The exceptions are ungazetted crossing points that only experience substantial SSCBT flows on market days. In these locations, enumerators are only present on the relevant days of the week.

In addition, BNR has been running a pilot program to capture small-scale cross-border services trade. This program consists of two components: First, dedicated enumerators are placed at major entry and exit locations in the country (including Kigali Airport) to administer a survey to non-resident individuals on their hotel, transport, and hospitality expenses. Second, the SSCBT enumerators question individuals that cross the border without carrying goods on whether they provide services on the other side of the border. Both of these data-collection components are recent and still under development, and no findings have been published to date.

The Bank also collects data on short-term and seasonal crossborder workers for BOP compilation.

Every quarter, for a period of a month, enumerators on major borders run a survey to ask residents and non-residents the income they earn from the other side of the border and how much they spend there. The findings are currently used in the compilation of BOP.

Survey team

The Rwandan enumerators are recruited in the border crossing areas. This practice ensures that the statistical personnel is familiar with the local languages and is known to the border community, so that the data collection is not affected by distrust towards enumerators. New recruits are supposed to have completed secondary education and be familiar with using computers. They receive two to three days of training in the field before assuming their positions. Every year a refresher training is conducted for all enumerators. The refresher training focuses on the code of conduct, best practices, and experience sharing among enumerators. Since 2019, enumerators have received an open-ended contract that also provides for health insurance. These better employment terms are likely to reduce the turnover of staff, which has been 8-10 percent each year.

As of July 2019, the data collection team consisted of 127 enumerators, but a number of these work at ungazetted border crossings only during certain days of the week. It is noteworthy that the enumerators that work only on market days are positioned where the border is formed by a lake or river, market days in both neighboring countries are known, and goods cross only on those market days. In terms of full-time equivalents, there were 93 data collection staff. Each border crossing is staffed by at least two data collection professionals, but high-frequency crossings receive additional personnel. For example, at “Petite Barriere” in Gisenyi, the busiest of the Rwandan border crossings, nine enumerators log the SSCBT transactions. The enumerators are based in the border communities and travel to Kigali only once per year to sign their contract and receive refresher training.

Supervision is carried out both online and in-person. The enumerators use tablets that are equipped with a GPS localization function, so that it is possible for supervisors in Kigali to check whether the enumerator and his or her tablet are at the border or elsewhere. In addition, physical supervision is carried out through four senior analysts from the partner institutions, who make unannounced visits to the different field locations on a quarterly basis.

Operating costs

Table 5 presents an estimate of the costs of SSCBT data collection. The total outlays amount to about US\$395,000 per year (BNR, 2019). The biggest cost items are enumerator salaries, as well as outlays for annual tablet replacements or upgrades. In addition, there are in-kind contributions from the partner institutions for the (partial) salaries of the four supervisors, which are not explicitly attributed to the SSCBT monitoring activity but covered by the regular budget of the institutions.

Table 5: Estimated costs of SSCBT data collection in Rwanda

Item	USD/m	USD/y	Quantity	Total USD/y
Enumerator, salary	280	3360	93	312480
Enumerator, transport for contract signing		20	93	1860
Supervisor transport	230	2170	4	11040
Supervisor, mission allowance	180	2160	4	8640
Phone communication/online supervision		30	93	2790
Tablet and accessories (replacement)		500	93	46500
Other equipment (e.g. badges, bags, umbrellas)		100	93	9300
Report writing retreat		1600	1	1600
TOTAL DATA COLLECTION				394210
Report printing		2000	1	2000
Dissemination conference		10000	1	10000
GRAND TOTAL				406210

Budgetary constraints have not made it possible in recent years to print a publication or organize a dissemination event. These activities are planned for the future, however, and will add about US\$12,000 to the overall costs. The latter are shared equally among the five partner institutions (Bank of Rwanda, Rwanda Revenue Authority, Ministry of Trade and Industry, Ministry of Agriculture, National Institute of Statistics of Rwanda).

The five partners are planning to conduct a cross-sectional survey of SSCBT. This would complement the ongoing SSCBT monitoring by asking traders a broader set of questions concerning their situation and perceptions with regards to their border-crossing activity, experience, and policy assessment. This survey was envisaged for 2019/20 and expected to cost about US\$25,000 (BNR, 2019).^[12]

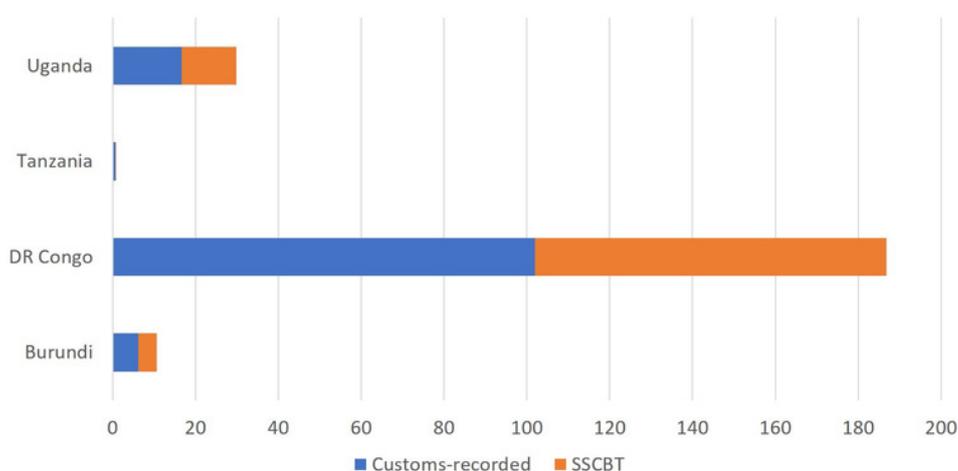
[12] For borders that are covered by the Great Lakes Trade Facilitation Project, the surveys were already administered in 2019.

Key findings

In 2017, the total value of Rwandan exports, comprising commercial and SSCBT transactions, amounted to US\$919 million. More than 11 percent of these exports (or US\$103 million) were from small-scale trade. Concerning imports, SSCBT accounted for US\$23.4 million or 0.9 percent of overall imports of US\$2,675 million. Hence, by taking SSCBT into account, the merchandise trade deficit narrowed from US\$1,835 million to US\$1,765 million, a reduction by 4 percent.

The global export and import figures hide the true importance of SSCBT, though, which lies at the level of regional trade. Rwanda has land borders with four countries: Burundi, DR Congo, Tanzania, and Uganda. Figure 13 shows the relative importance of formal (Customs-recorded) trade and SSCBT for these neighboring countries.

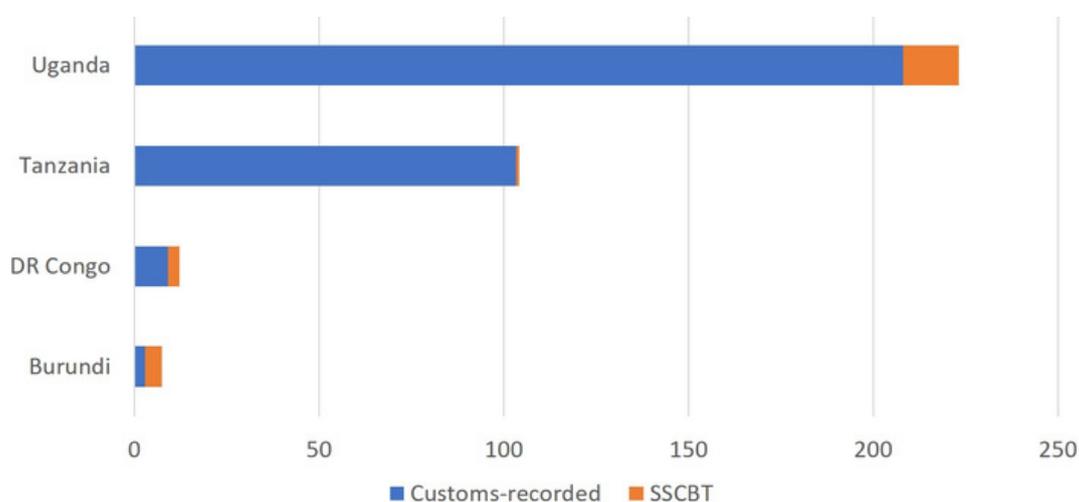
Figure 13: Rwanda's exports to neighboring countries in 2017 (US\$million)



About 45 percent of total exports (Customs-recorded plus small-scale) to neighboring countries come from SSCBT. Indeed, for three of the four countries (Burundi, DR Congo, Uganda), SSCBT accounts for more than 40 percent of all Rwandan exports to those countries. Exports to Tanzania are of minor importance for Rwanda and small-scale exports command a relatively small share of the total (9 percent).

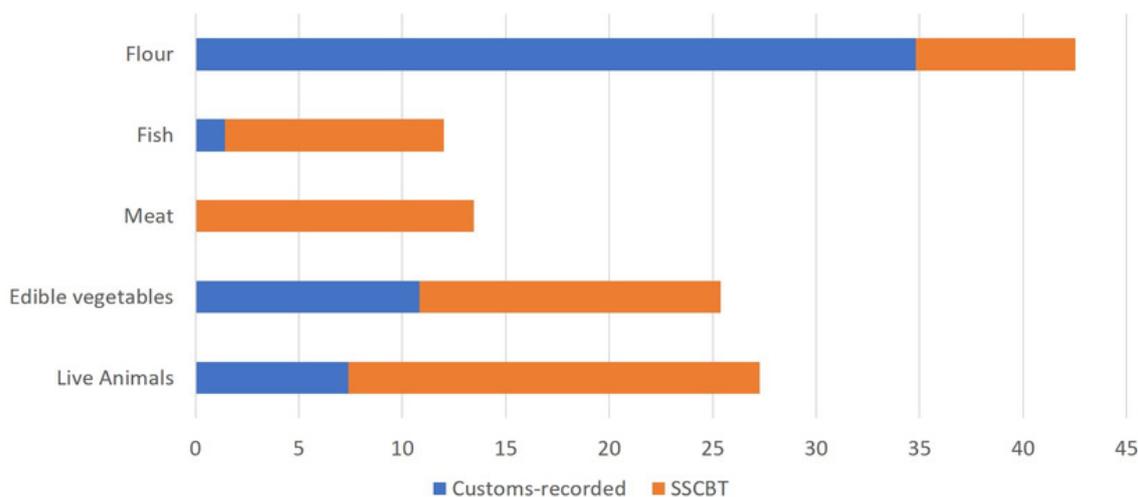
On the import side, about 7 percent of Rwanda's trade with its neighbors consisted of SSCBT in 2017 (Figure 14). However, with Burundi, small-scale imports amounted to 60 percent of the total, and with DR Congo, more than a quarter of all imports came from SSCBT. Uganda is Rwanda's most important origin of imports both in terms of Customs-recorded and SSCBT in the region. Tanzania is also an important source of imports, but SSCBT is only of marginal significance (1 percent of total imports).

Figure 14: Rwanda's imports from neighboring countries in 2017 (US\$million)



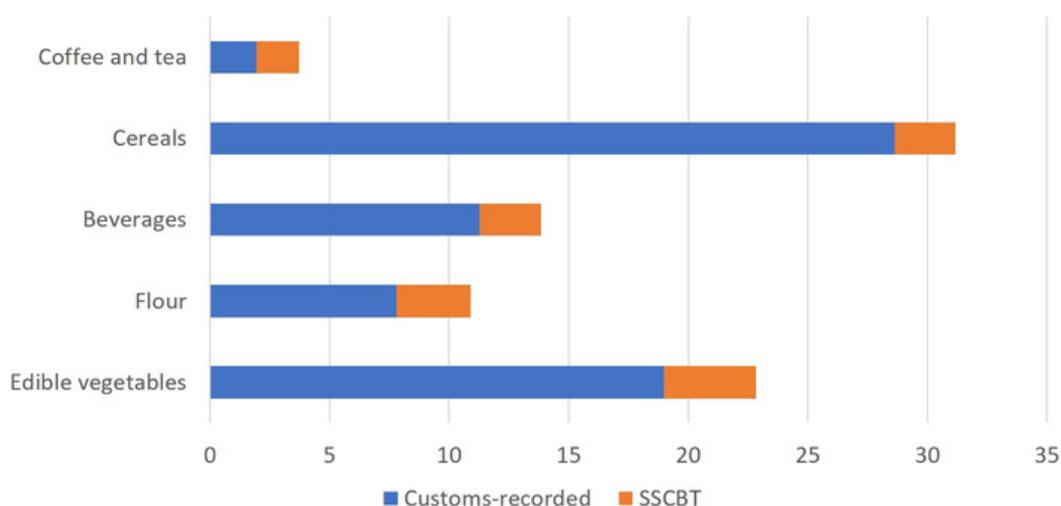
The most important SSCBT export products in Rwanda during 2017 were live animals, edible vegetables, meat, fish, and flour. For all these product groups, except flour, SSCBT accounts for the majority of overall exports, that is, the aggregate value of small-scale transactions exceeds the value of Customs-recorded trade (Figure 15). Indeed, in the case of meat, all exports to Rwanda’s neighbors are SSCBT.

Figure 15: Rwanda’s exports to neighboring countries by selected product groups (HS-2) in 2017 (US\$million)



Concerning imports, the most important product categories for SSCBT in 2017 were edible vegetables, flour, beverages, cereals, and coffee and tea. Rwanda is a major exporter of coffee and tea, but the country also imports some of these commodities from its neighbors. Almost half of these regional imports are SSCBT. Small-scale transactions also play a significant role for imports of flour (28 percent), beverages (18 percent), and edible vegetables (17 percent), while SSCBT is less important for cereals (8 percent of regional imports) (Figure 16).

Figure 16: Rwanda’s imports from neighboring countries by selected product groups (HS-2) in 2017 (US\$million)



Dissemination and data use

Monthly compilations of Rwanda’s SSCBT data are shared between the partner institutions, as well as with Joint Border Committees. The latter consist of officials from both sides of the border, for example the mayors of Gisenyi (RWA) and Goma (DRC). Moreover, information on SSCBT is circulated within the government through quarterly reports on Informal Cross-Border Trade Developments (e.g. BNR, 2019), which summarize changes in SSCBT imports and exports over the last four quarters. An annual publication and a dissemination event were planned for 2020.

Regular SSCBT monitoring quickly highlighted the economic importance of small-scale exports and imports, such that in 2012, the government adopted a National Cross-Border Trade Strategy with the aim of promoting exports to neighboring countries (Rwanda Ministry of Trade and Industry, 2012). The strategy explicitly recognizes the contribution of small-scale operators and proposes a set of policy measures to improve their trading environment.

SSCBT data is also used by the National Bank of Rwanda for improving its balance of payment statistics. Indeed, the BNR website and publications explicitly distinguish between “formal” and “informal” imports and exports.

The Rwandan Ministry of Trade and Industry states that SSCBT data have informed its policy making in past years. In particular, the location of five border markets, which have been created with financial support from TradeMark East Africa, has to some extent been based on SSCBT data. Similarly, the location and size of storage facilities for commercial products has been influenced by SSCBT information. Moreover, the Rwanda Revenue Authority has been relying on the collected data to decide whether to establish Customs posts at so far ungazetted border crossings.

3.3 CONGRUENCES AND DIFFERENCES IN THE MONITORING APPROACHES

Uganda and Rwanda are at the forefront of African nations in monitoring SSCBT. The two countries use different approaches (see Table 6), but both monitoring systems are based on sound statistical methodologies and aim for a high level of data validity and reliability. That said, the respective authorities are well aware that not all SSCBT is captured, as perfectly monitoring the porous borders in East Africa is almost impossible.

Table 6: Comparison of the SSCBT monitoring systems in Uganda and Rwanda

	Uganda	Rwanda
Start of annual SSCBT monitoring	2005	2010
No. of gazetted border stations monitored	20	16
No. of informal border crossings monitored	-	43
Research design for data collection	Observation	Questionnaire
Method of data capture	Paper form	Tablet
Sampling period	Two weeks per month	Every day of the month
Enumerator recruitment	Capital city	Local communities
SSCBT related publication	Downloadable annual report on BOU website	Inter-ministerial reporting
Regular dissemination event	No longer	No longer

The data on SSCBT confirm that small-scale imports and exports are indeed very important for Uganda and Rwanda. The magnitude of changes to overall trade flows when SSCBT is taken into account is substantial, and even more so if the focus is placed on regional trade. Moreover, the relative importance of SSCBT varies substantially across partner countries and across products, so there is a clear rationale for detailed SSCBT monitoring instead of applying a fixed coefficient to the Customs-recorded data to estimate overall imports and exports.

Thus, both of the SSCBT monitoring systems in Uganda and Rwanda have been successful in generating valuable information for policymakers. The fact that the approaches used are somewhat different offers an opportunity to reflect on the relative strengths of the alternative ways to monitor SSCBT, with a view to further develop and finetune data collection efforts. One of the main differences is the use of pen and paper-based data recording in Uganda, while Rwanda has employed computer-assisted interviewing since 2016.

As noted earlier, Uganda is also about to move to a tablet-based approach, but it seems worthwhile to keep some of the advantages of the earlier system in mind. In particular, Uganda has limited data capture on some key variables (product type, weight, direction of trade) and has to a large extent relied on unobtrusive observation, so that traders are not held up or delayed when crossing the border. Another advantage of the paper-based records is that when unusual products are exported or imported the enumerator can quickly make note of a product description and a statistical expert can then later classify this trade in line with the HS classification.

On the other hand, tablet-based data entry makes it possible to directly transfer the collected information to a database, thereby omitting a separate data-entry stage (and associated costs and transcription errors) and making the results quickly available – even in real-time. Tablets also facilitate data entry through pre-defined categories or drop-down lists and can be programmed to undertake consistency checks on the fly.

Yet, the ease of tablet-based data collection might trigger a lack of selectivity. In other words, there is a tendency to collect interesting, but non-essential, data. An example of this seems to be the capture of the trader's or transporter's gender. While women traders are important for SSCBT and deserve additional policy attention, it is not evident that gender needs to be monitored for every transaction.^[13] It is telling that policymakers in Rwanda could not identify any concrete project or policy that had been designed based on the information that was being collected for all transactions on the gender of the SSCBT individuals, or even point to a publication that had used the data. In this context, it would seem much more effective and analytically powerful to capture gender characteristics in occasional, perhaps annual, surveys that also reveal information on the trader's socio-economic circumstances (e.g. age, education, family situation, income). Even if capturing and entering the gender of a trader/transporter is very quick and perhaps takes only one second, at busy border crossings, such as

at Gisenyi-Goma that see up to 50,000 people crossing between countries every day, the one-second delay translates into an aggregate time commitment of almost 14 hours each year. And while enumerators are busy entering (non-essential) data on their tablets, some traders might walk by and not be recorded at all.^[14]

The tablet interface used mimics the structure of a form-based questionnaire. However, by replicating the structure of a paper form, the user interface does not take full advantage of the touchscreen. Data entry is generally performed by scrolling through drop-down menus that make use of only a small part of the tablet's screen, while many other modern touchscreen devices, including smartphones, use assemblies of large icons or buttons to navigate between categories and make selections with simple touch operations. Customizing the ODK interface to be more touch-friendly could help speed up data entry and avoid errors.

One challenge that both Uganda and Rwanda have been facing is how to code SSCBT products in a way that is comparable to the HS classification used by Customs. The problem arises from the need to match the limited number of product categories captured in the SSCBT monitoring to the more detailed classification used by Customs. SSCBT imports or exports only occur in a fraction of the 5,000 product categories in the HS system. Also, few of the SSCBT product categories are sufficiently narrowly defined to concord easily with a corresponding HS-6 entry. However, there are cases where the SSCBT data is at a more aggregate level. Hence, assigning the SSCBT-captured aggregate to a more disaggregate HS-6 entry presents a problem and generates a possible mismatch with implications for data quality and credibility. Remedies to this challenge could be a secondary drop-down opening or screen showing with different product varieties once the aggregate product is selected on the tablet. Alternatively, enumerators could be asked to write in a short description of the attributes of rarely traded products, so that statistical experts could later establish the correct concordance in the HS system.

[13] Customs does not capture the gender of the truck driver or the owner of the traded goods in their statistical records.

[14] Another example of data entry that could be streamlined is the requirement for the Rwandan enumerators to enter their identification number every time they submit an SSCBT entry.

Having the SSCBT data available in a form similar to Customs-recorded imports and exports will be critical for data acceptance and use. Even though both Uganda and Rwanda have developed sophisticated data collection systems for SSCBT, dissemination and use of the data has been limited. Also, neither of the countries has integrated their SSCBT data with Customs-recorded trade for submission to international databases, such as UN Comtrade. This means that most analysts inside and outside the countries will continue to use the incomplete Customs-only information to examine trade policies and assess regional integration and possibly provide flawed policy advice.[15]

One major difference between the Ugandan and Rwandan monitoring approaches is the periodicity of data collection. In Rwanda, enumerators are placed at border stations every day of the month (all market days for some ungazetted crossings). This census-style data collection is consistent with the capture of data for all import and export transactions by Customs. In contrast, Ugandan enumerators capture SSCBT for two weeks of the month and UBOS then extrapolates the data to the full month. While this procedure is subject to extrapolation error, if the sampling and extrapolation are done properly, the results will be very close to the full-census outcome. Moreover, given the porous nature of borders in Africa, the monitoring results for both Uganda and Rwanda are underestimating the true extent of SSCBT - independent of whether existing estimates are derived from a census of monitored border stations or a sampling approach. Yet, pursuing a good sampling strategy frees up resources, either to reduce the overall costs of the monitoring effort or to employ the enumerators for other tasks, such as conducting occasional, qualitative surveys of SSCBT including surveys of gender and challenges faced by women who engage in cross-border trade and surveys of services trade.

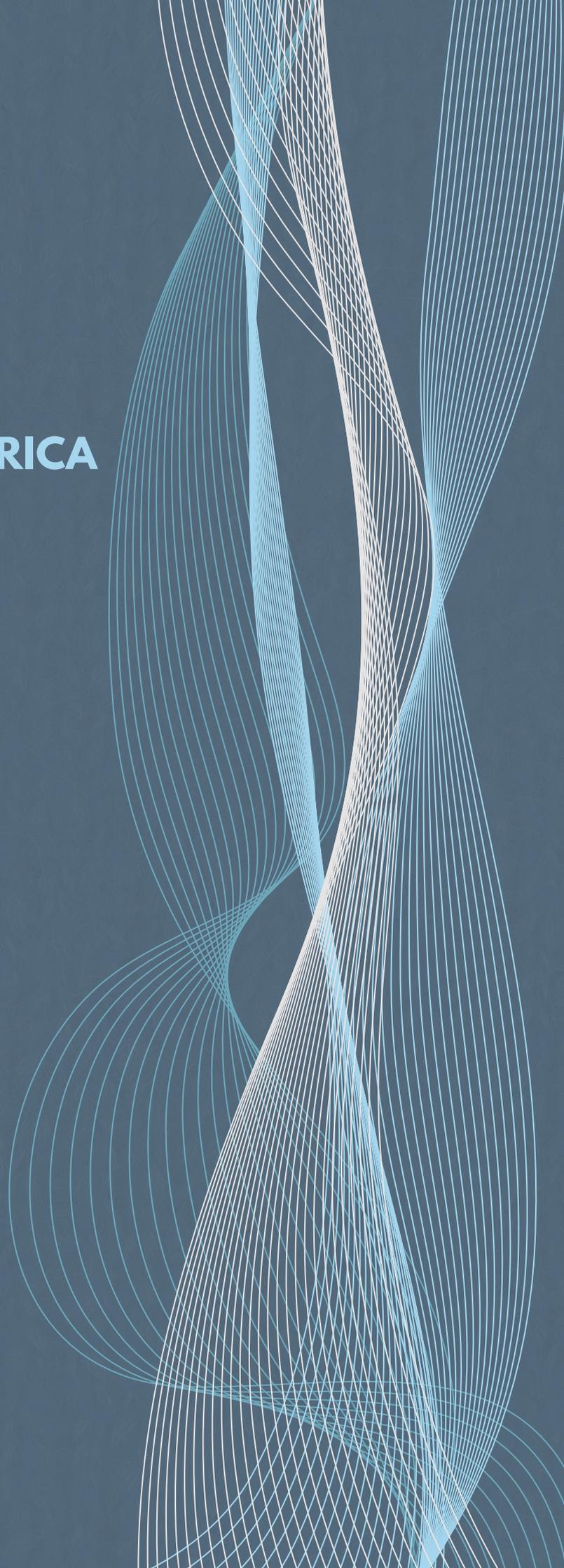
Another difference concerns the recruitment of the enumerators. Uganda hires the data collection staff in Kampala and then sends the enumerators to the border stations for a two-week rotation. This approach aims to avoid complacency and collusion

with the local trading community. However, such adverse effects have not been observed in Rwanda where enumerators are recruited in the border areas so that the monitoring project economizes on transport and lodging expenses.

[15] In this context, the recent efforts by COMESA to integrate data on SSCBT for countries under the Great Lakes Project into their trade database is very welcome.



**NEW SSCBT
MONITORING
EFFORTS IN
CENTRAL AND
SOUTHERN AFRICA**



Other countries have taken note of the Ugandan and Rwandan monitoring experience and have started to design their own SSCBT data collection systems. This is the case in the broader East African region with support from the EAC and COMESA, but also in other parts of Africa. The following discussion provides an overview of some of the past and ongoing efforts to capture SSCBT in Central and Southern Africa and highlights some of the issues encountered.

4.1 SSCBT SURVEYING IN CAMEROON

The first efforts to quantify SSCBT in Cameroon date back more than a decade. In 2008, the Ministry of Agriculture and Rural Development in Cameroon conducted a census of cross-border agricultural trade at nine border stations. Investigators were positioned at exit points where they could observe the incoming and outgoing flows of products traded. Enumerators worked for two weeks -- randomly selected -- each month throughout the year, and the data was then extrapolated to the full month/year. The findings suggest that SSCBT in agricultural and horticultural commodities, such as fresh vegetables, cassava flour, beans, rice, and plantain, amounted to almost the same value as total official trade (Nkendah, 2013).

Amin and Hoppe (2013) estimated SSCBT by using a combination of approaches. They analyze changes in stock levels at major markets along the Nigeria-Cameroon border, collect trade data from Customs agents stationed at border-crossing points, and estimate the number and size of trucks crossing border points. Their results indicate that Nigerian non-oil exports exceed the figures reported in Cameroon's official import statistics by a factor of 20. On the export side, their estimates indicate that Cameroonian exports are no less than 40 times larger than the officially recorded value of Nigerian imports.

A more recent World Bank study (World Bank, 2018) used documentation of the phyto-sanitary inspection service to analyze SSCBT and truck-based trade of agricultural commodities and find

marked discrepancies with the official trade data. For example, for Cameroon's exports to Gabon, they find that plantain, potatoes, onions, tomatoes, and beans are the most important commodities, while the official trade statistics suggest that palm oil, soups, broths, chocolate, milk and cream in solid forms, and chewing gum are the main imports into Gabon. This discrepancy in trade patterns seems due to a combination of missed SSCBT and the non-transmission of paper-based Customs records.

INS transactions pilot study

In 2013, Cameroon's Institut National de la Statistique (INS) undertook a survey of import and export transactions at border crossings in two of the country's eight regions, the North and the South (INS, 2014). Trained enumerators assessed the value and volume of cross-border trade independent of whether or not the transaction was registered by Customs. Hence, the aim of the study was to capture different sources of undervaluation or misreporting (also see the discussion in section 2.2) and not only to assess SSCBT.

A total of 74 enumerators used a combination of direct observation and questionnaires to gauge cross-border trade. The data collection was conducted during a two-week period in June and July 2013. A total of 34 border posts with 60 border-crossing points was surveyed. During the observation period, 8,353 exchanges were recorded by the enumerators (6,426 in the North and 1,925 in the South), with imports accounting for the majority (57 percent) of the transactions.

Only two of the 34 surveyed border posts were computerized, so the trade data collected by only these two Customs posts was integrated into the official trade statistics. In the South, Kye-Ossi is the only Customs station that transmits its data to the central authorities. Yet, the information from the INS survey reveals that Kye-Ossi accounted for only 26 percent of the value of all trade in the Southern region, so three-quarters of all transactions with Cameroon's southern neighbors are not reflected in the official statistics (also, see Box 3). Moreover, INS compared the data collected through the survey with the official Customs

records at Figuil, the only computerized border post in the North, and found that for the time period, considerable amounts of exports of groundnuts and motorcycles were missing from the official records. Hence, the survey documented that there are substantial shortcomings in the quality of the official trade statistics in Cameroon.

Box 3: The border crossings at Abang-Minko and Kye-Ossi

Abang-Minko and Kye-Ossi are the most important border crossings on Cameroon's southern border. At Abang-Minko the border between Cameroon and Gabon is marked by the river Ntem. At the border crossing, there are advanced checkpoints to control documentation, but the actual formalities have to be completed further inland (3.5km on the Cameroonian side, 30km on the Gabonese side). Most trade is vehicle based and consists of agricultural exports from Cameroon to Gabon. A local market ("Marché Mondiale") on Saturdays on the Cameroonian side of the border attracts a sizable number of individual traders from Gabon, who tend to cross the border by car or light truck. For 2013, Cameroon's National Institute of Statistics estimated the value of exports through Abang-Minko as 14.624 billion FCFA (US\$23.8 million). Since the Customs post at Abang-Minko (and also Bitam on the Gabonese side) is not computerized, this trade was only captured in paper records. The latter are not consolidated with other trade information, so the trade is not reflected in official trade statistics.

In contrast, Kye-Ossi is the site of a permanent market, which in fact serves two border crossings into Equatorial-Guinea (Kye-Ossi/Ebebiyín) and into Gabon (Kye-Ossi/Meyo Kye). The offices of the border agencies are all found in proximity to each other and the border. Traders are mostly of Gabonese or Equatorial Guinean nationality, entering Cameroon on small trucks or cars to purchase agriculture and food items in the market for export. There are also traders or transporters on foot, on bicycle, or with push carts. SSCBT is clearly more prevalent than in Abang-Minko, but not dominant. Similar to the case of Abang-Minko, a natural barrier – the Kye river -- inhibits the use of footpaths outside the border stations to conduct SSCBT. Concerning into Cameroon, some processed food, notably soft drinks, beer, and spirits that originate in third countries (Europe), enter via Equatorial-Guinea. For 2013, Cameroon's INS estimates total exports from Kye-Ossi amount to 6.123 billion FCFA (US\$10 million) and total imports to 1.828 billion FCFA (US\$3 million). Kye-Ossi is the only Customs station on Cameroon's southern borders that is computerized and whose trade records are reflected in the country's official trade statistics.

Further, as part of the interview, trade operators were asked whether they intended to declare their shipment at Customs. The findings suggest that 7 percent of exports and 10 percent of imports would go undeclared. These percentages will likely underestimate the true extent of SSCBT, as many traders and transporters might not have truthfully conveyed their intention to bypass Customs.

The study highlighted some challenges that a comprehensive statistical capture of all exports and imports faces: The enumerators had no means to verify and control the merchandise beyond visual inspection. Hence, they had to largely rely on the declarations and information provided by the interviewees. It is not clear whether the method was thus successful in uncovering operators' attempts of under-declaring or mis-declaring merchandise to Customs. Moreover, some operators refused to collaborate with the statistical enumerators or – in the case of transporters – sometimes did not possess the requested information on the composition and value of the cargo.

Ongoing INS Data Capture

The INS is currently undertaking follow-up work to the 2013 survey. It plans to again collect data on cross-border trade to fill the information gap that arises due to both the non-recording and mis-recording of trade transactions by Customs

This concerns SSCBT, as well as transactions processed by Customs that are under-recorded (for example, due to undervaluation by the trader) or under-reported (for example, due to the non-consolidation of paper-based records). The geographical scope will be extended to all regions in the country.

The project is being executed in three phases. First, a detailed border profile is being prepared, building on the 2013 experience. Cameroon is a geographically diverse country and conditions at different border crossings can vary considerably, even among crossings that are relatively close to each other. All cross-border passages will be identified and mapped, including with their GPS coordinates, to inform the subsequent determination of data collection locations. So far, 172 border-crossing points have been identified, 43 of which are located in the vicinity of a Customs post. Then, experts in local administrations will help to identify the two most important border crossings in each border district. In these locations, data on trade transactions will be collected for four days, including a market day. The information to be collected will mostly coincide with the information in Customs records: type of product, quantity, value, origin, destination, and the nationality of the trader. The findings will determine the weight the locations receive in the subsequent analysis, notably the extrapolation to annual estimates.

Second, reference surveys will be undertaken in the locations identified in the first phase every second month. This periodicity aims to capture seasonal fluctuations in trade flows. In the third and final phase, INS hopes to put a permanent system in place that allows for regular updating of the trade flow information.

The ongoing SSCBT monitoring effort is a significant step forward from the 2013 pilot study in terms of geographical scope and periodicity. However, to truly capture seasonal fluctuations in trade flows, it seems highly desirable to embrace phase three of the project and move to high frequency monitoring. In East Africa, Uganda and Rwanda have managed to set up corresponding

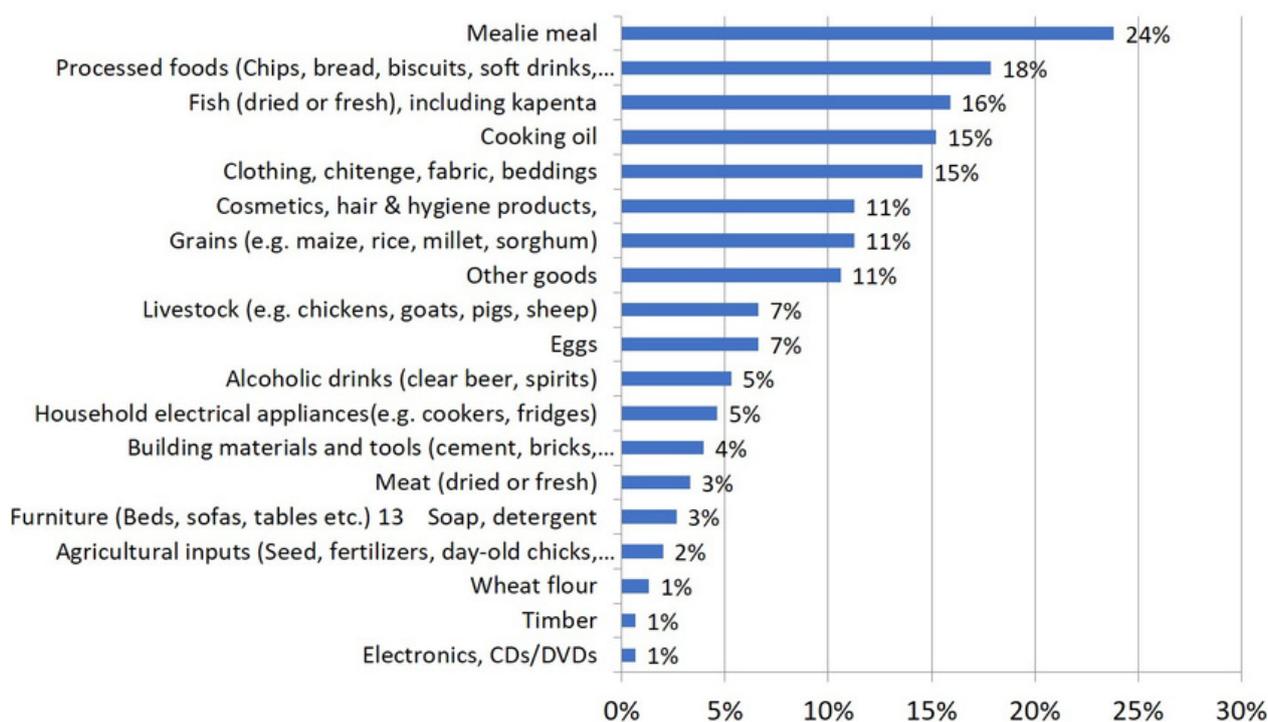
monitoring systems by forming partnerships between relevant agencies, notably between Statistics and the Central Bank, to broaden ownership and mobilize resources for the regular data collection effort.

4.2 SSCBT SURVEYING IN ZAMBIA

In Southern Africa, a number of attempts have been made or are ongoing to quantify SSCBT. For the Mwami-Mchinji border crossing that links Zambia and Malawi, Njiwa and others (2012) estimate that the value of unrecorded trade exceeds formal trade by 70 percent. They report that 20,000 to 30,000 small-scale traders cross the border every month, half of which use informal routes along the porous border. Women were found to constitute the majority of traders on the Zambian side (69 percent), whereas men were dominant on the Malawian side (55 percent). Traders in Mwami (Zambia) were on average older and more experienced in their trading activity than their colleagues in Mchinji (Malawi).

In 2015, RuralNet conducted a detailed border profiling study for SSCBT at the Kasumbalesa border between Zambia and DRC (RuralNet Associates, 2015). Several tailored questionnaires were administered to cross-border traders, porters, roadside vendors, service providers, and service consumers on both the Zambian and the Congolese side of the border. The cross-sectional study reached 600 respondents. The findings suggest that 80 percent of all SSCBT in Kasumbalesa concerns agriculture and food products (see Figure 17). Two thirds of traders and transporters use the official border crossing, while one third uses less secure, but quicker, unofficial footpaths to bring their merchandise from Zambia into DRC. Moreover, the survey contained several questions on trader and porter perceptions. It turned out that 21 percent of porters perceived bribery as common among Zambian border officials and police, and 68 percent reported that bribery was common among DRC officials. Also, when traders were asked about safety in the border area, 60 percent perceived the DRC border side as being unsafe or very unsafe, while the corresponding figure for the Zambian side was 23 percent.

Figure 17: Traded Products at Kasumbalesa, August 2015



The RuralNet study also included a survey of small-scale cross-border service providers and found that services exports flow in the opposite direction from goods exports, that is from DRC to Zambia. In particular, Congolese hairdressers, tailors, and other service providers are crossing the border to practice their trade on the Zambian side of the border.

The Zambia Cross-Border Traders Association (CBTA) has also been collecting information on SSCBT in Zambia. This statistical function has been ancillary to the association’s collaboration on COMESA-sponsored Trade Information Desks at selected border crossings. CBTA placed enumerators along some of the main border-crossing points to take notes on import and export activity. Data were in principle collected on a daily basis during daytime hours. The collected information is subsequently consolidated and published in quarterly reports that are shared with the Ministry of Trade and the COMESA Secretariat (see example summary table below).

Table 7: CBTA Summary of Most Traded Goods at the Mokampo Border Crossing (Zambia), January 2017

Product name	Unit of measure	Total quantity	Unit price (ZMW)	Total value (ZMW)	Total value US \$	Category	Comment
Cement	5okgs	1384	K58	80272	8540	Export	Large qty
Cooking oil	20lts	649	K300	194700	20713	Export	Large qty
Chibuku beer	20lts	1635	K30	49050	5218	Export	Large qty
Mineral water	Cases	870	K30	26100	2777	Export	Large qty
Charcoal	25kg	1865	K25	46625	4960	Import	Large qty
Chicken	Each	1662	K40	66480	7072	Export	Small qty
Eggs	Trays	2487	K30	74610	7937	Export	Large qty
Mealie meal	25kgs	1059	K130	137670	14646	Export	Large qty
Roller meal	25kgs	912	K115	104880	11157	Export	Large qty
Soft drinks	Cases	764	K65	49660	5283	Export	Large qty
Mushroom	Baskets	2139	K150	320850	34133	Import	Large qty
Eagle beer	Crates	675	K79	53325	5673	Export	Small qty
GRAND TOTAL				K1,204,222	\$ 128,110		

However, uptake and use of the data has been limited due to its perceived weaknesses in comprehensiveness and credibility. The enumerators were local students with little if any training or experience in statistical data collection, and not all designated crossing points might have been staffed throughout the monitoring period. Further, only selected border crossings are monitored by CBTA, so that data aggregation to national level would be misleading. The categorization of products also does not coincide, for example, with the HS nomenclature used by Customs, and the methods of assessing the quantities and values of the goods are unclear. Nevertheless, the collected data provides an indication of the magnitude and composition of SSCBT at different border crossings, so is valuable to a certain extent.

Ongoing SSCBT Data Capture in Zambia

The COMESA Secretariat is in the process of guiding the systematic collection of statistical data and information on SSCBT at selected borders in Southern Africa. The effort focuses on Zambia and tries to capture gender-disaggregated information at border crossings that are known to feature large amounts of otherwise not recorded SSCBT. The project is supported by a five-year grant of 1.3 million Euros from the European Development Fund. The fixed period donor support provides recipient countries, in this case Zambia, with the challenge of project sustainability once the external funding ends. In East Africa, both Uganda and Rwanda managed to form partnerships among government agencies to ensure the longer-term viability of data collection. In Zambia, such collaboration between the Statistics agency and other governmental departments is not yet in place.

Four border crossings between Zambia and its neighbors are included in the data collection effort: Kasumbalesa between Zambia and DRC; Mwami/Mchinji between Zambia and Malawi; Chirundu between Zambia and Zimbabwe; and Tunduma/Nakonde between Zambia and Tanzania.

The project is implemented in cooperation with the Zambia Statistics Agency (ZamStat), which in turn works with the local chapters of the Cross-Border

Traders Association (CBTA) at the border locations. A total of 35 enumerators are being placed at the selected borders, with the two busiest locations (Kasumbalesa and Nakonde) receiving 15 statistical agents each, while three and two enumerators, respectively, are placed at Mwami and Chirundu. All data collection staff is being recruited locally in the border areas in collaboration with the CBTA.

The geo-physical conditions, border post layout, and composition of traded products differ markedly between the four locations. Preparatory work has established detailed border profiles and guidelines for enumerators. For example, the typical size of transport bags or containers and the weights of standard consignments of products in each location has been determined. This makes it possible in many cases for enumerators to capture trade flow information through unobtrusive observation and avoids stopping traders for an interview. Data collection staff is equipped with tablets for structured data entry and rapid transmission to the central database.

Data is being collected on a daily basis during daytime hours. In addition to gaining insights into the quantity and composition of SSCBT, the project explicitly tries to obtain gender-disaggregated data to better understand the situation and impediments faced by women traders, with a view to inform the policy-making process on possible remedies. However, many women traders will employ male porters to carry their goods across the border. Hence, while gender might appear as an easily identifiable trait through observation, in practice an interview is necessary to determine the gender of the owner of the traded goods.

The Kasumbalesa border market is particular in the sense that virtually all products sold are exported towards DRC. This reflects the local geography with a large city on the other side of the border. There are between 4,000 and 8,000 bicycle porters in the area, who transport goods across the border and generally do several trips per day. The SSCBT data collection methodology developed by ZamStat tries to take advantage of this one-way flow of goods. For pineapple and other perishable goods, enumerators check with the market managers in the

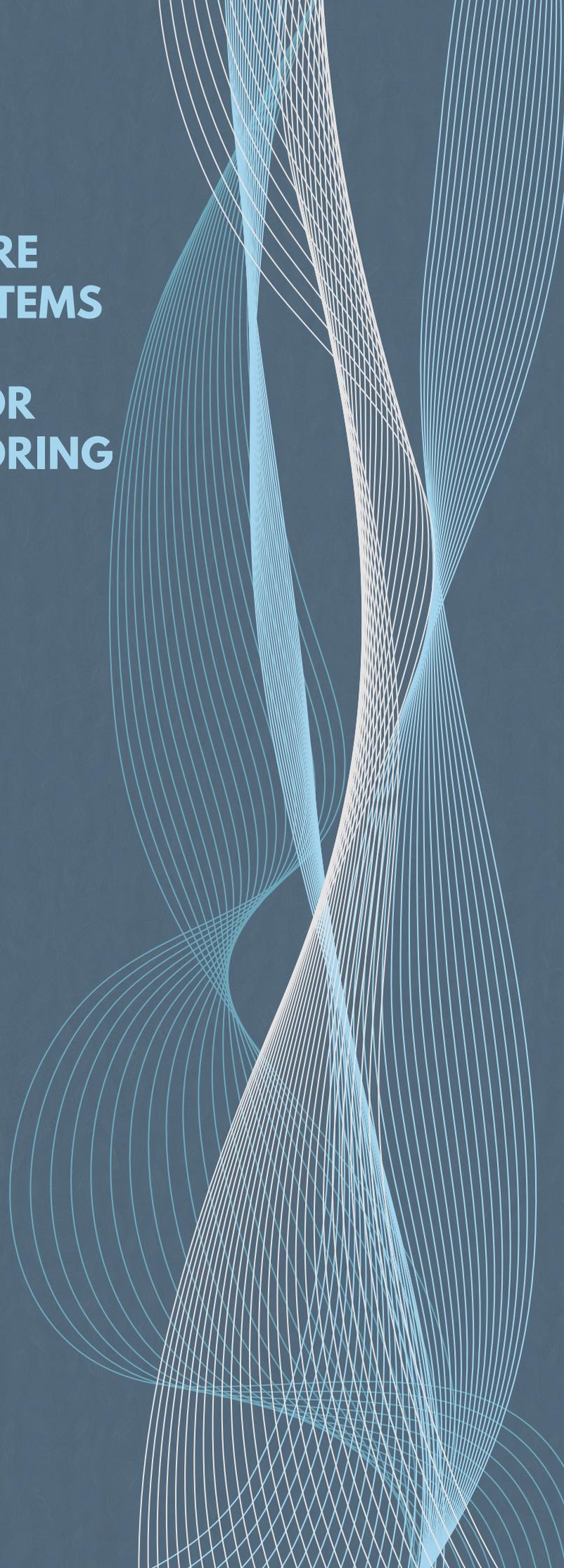
morning on the number and load of trucks that have brought the products to the market in Kasumbalesa. This quantity is then assumed to move across the border during the day. Other enumerators who are placed alongside border crossings know that these perishable products have already been statistically captured and do not take account of the transactions themselves.

The indirect resource balance method of capturing SSCBT could in principle also be applied to non perishable products in Kasumbalesa as long as information on changes in stock levels could also be obtained. The critical criteria for using market inflows as proxies for cross-border trade is that inflows and stock levels would have to be clearly observable. This would not be the case if the products were brought in via small consignments by a large number of different suppliers and if trading places are widely disbursed.

Apart from simplifying the task of recording all traders or porters that pass an observation post, the indirect measurement of trade through the comparison of resource balances has the advantage that it can capture small-scale trade that does not pass through the main border crossings. At Kasumbalesa, the border is porous, and many informal footpaths exist that link the Zambian Kasumbalesa to the Congolese city of the same name. This trade is difficult if not impossible to measure through direct observation or interception but is readily captured when comparing stock changes.

5

TOWARDS MORE EFFECTIVE SYSTEMS PRACTICAL STRATEGIES FOR SSCBT MONITORING



SSCBT monitoring is feasible and generates useful information to improve policy and investment decisions. Against this background, the central question is for how much longer countries in Africa can afford NOT to put effective monitoring systems into place. Public funds are scarce and allocating resources without accurate information on exports and imports can lead to very costly mistakes in terms of policy failures or poor investment returns.

5.1 KEY ISSUES FOR COUNTRIES IN AFRICA

What can be learned from the available experiences with systematic data collection on small-scale cross-border trade? What are the pitfalls to avoid and the milestones to be accomplished? Three lessons seem to have particular relevance for SSCBT monitoring throughout Africa: the benefits of adapting SSCBT systems to local conditions, the need to mobilize internal resources to become independent of project funding, and the importance of disseminating and using the SSCBT data actively.

Adapting SSCBT systems to local conditions

At the outset, both Uganda and Rwanda spent considerable time and resources to carefully prospect the survey locations. This profiling of border crossings comprised three components: First, the determination of the magnitude of SSCBT to ensure that the volume and value of small-scale trade justify the placement of enumeration staff. Given the porous nature of borders in Africa, it is virtually impossible to capture 100 percent of SSCBT, but the vast majority of small-scale imports and exports flow along established trading routes, where they can be monitored. Uganda decided to collect SSCBT data at 20 border posts, as well as four bus terminals that serve neighboring countries, while Rwanda chose to monitor SSCBT at 16 gazetted border posts and 43 ungazetted crossing points. Similarly, detailed profiling studies were also conducted in Cameroon and Zambia.

Second, Uganda and Rwanda ensured that the enumeration locations were safe for their statisticians to work in. In practice, this has meant

that enumerators were placed in the proximity of a police station or security checkpoint to provide for their protection. Without the presence of police or security officers, armed smugglers might mistakenly confuse a data collector with a tax enforcement officer and endanger the enumerator's physical integrity.

Third, Uganda and Rwanda have both spent considerable effort studying local trading customs in the border locations and training their staff accordingly. For example, Uganda determined the prevailing packing materials and sizes of commonly traded goods and weighed the typical trading unit. This way the enumerator can just observe the traders passing by with the locally standardized goods package and make note of the corresponding weight, without having to stop to interview the trader. Rwanda recruits its enumerators in the border locations, so the statistical staff are familiar with the local customs and are also known in person to the traders, so that a short interview, if necessary, appears less threatening or disrupting.

The key lesson here for other countries is to create sufficient flexibility in their data collection approach to allow for local variation. Uganda and Rwanda not only developed SSCBT monitoring systems that differ in many aspects, but also recognized that SSCBT can take different forms in different locations within the country. These differences should be taken into account and reflected in the data collection. For example, a land border crossing might require a very different enumeration approach than a river or lake crossing. So instead of developing a highly harmonized one-method-fits-all approach, countries are better off by applying flexible methodologies of data collection that all aim for comprehensive and accurate data compilation that reaches (or surpasses) the quality of Customs recorded trade statistics.

Finding internal resources

The fact that Uganda and Rwanda have continued their SSCBT monitoring over several years is a clear indication that the value of the information created exceeded the costs of SSCBT data collection. Indeed, it is easy to see how policy mistakes with

the misallocation of resources due to lack of information on SSCBT can cause economic damage that far exceeds the approximately US\$400,000 that each country spends annually on SSCBT monitoring.

In both Uganda and Rwanda, key agencies have teamed up to guide, administer, and undertake the data collection effort. In Uganda, UBOS and BOU lead with support from the Uganda Revenue Authority and other government agencies. In Rwanda, five partner institutions -- the National Bank of Rwanda, the Rwanda Revenue Authority, the Ministry of Trade and Industry, the Ministry of Agriculture and Animal Resources, and the National Institute of Statistics of Rwanda -- collaborate for the data collection. The institutional relationships have been formalized through memoranda of understanding as well as service agreements, and the participating agencies also jointly cover the budgetary outlays for the activity.

The launch of SSCBT monitoring in Uganda was initially supported by project funding from the UK's Department for International Development and subsequently by the Multi-donor Trust Fund of the Integrated Framework. However, as this donor support petered out, the Ugandan authorities mobilized resources from their own budgets to continue the useful data collection. This graduation towards self-sufficiency is an important step that other countries should try to mimic and plan for from the outset. Donor support for particular activities can be unstable over time, so it is critical to assemble a network of internal partners early on in the SSCBT monitoring effort and ensure a multi-year budget.

The recently launched, ongoing SSCBT data collection systems in Cameroon and Zambia are currently led exclusively by the statistical agencies of the respective countries. In Cameroon, the activity is financed from the INS budget, while ZamStat in Zambia benefits from EU support via COMESA for its monitoring efforts. This reliance on one institution or donor support raises questions about the longer-term sustainability of the monitoring systems. INS and ZamStat might do well

to build a constituency for their SSCBT data efforts and explore whether they can find partner organizations within government that can help them steer the substantive work, anchor the project in a medium- to long-term perspective, and contribute to its financing. Natural partners with an interest in SSCBT data and well-resourced budgets would be the Central Banks and Customs agencies. Other government branches that might be inclined to join the partnership because of the usefulness of SSCBT data for their activities could include units responsible for trade, regional integration, transport, or agriculture. Collaborating across administrative units can, of course, be a challenge and would involve some devolution of control over the data collection process. However, the experience in Uganda and Rwanda has shown that these partnerships can work and, indeed, seem to have been one of the key determinants of success.

Disseminating and using the data actively

Collecting SSCBT data is not an aim in itself, but a means to provide policymakers and investors with a better information base for their decisions. As the well-known management consultant Peter Drucker observed: "If you don't measure it, you can't manage it". Uganda and Rwanda are both actively disseminating the SSCBT information they collect. Uganda is preparing an annual report that can be downloaded for free from the website of the BOU. Rwanda is circulating a quarterly report among government ministries, and the Bank of Rwanda is publishing information that distinguishes between "formal" and "informal" trade on its website and in printed materials. Nevertheless, the track record of using the SSCBT data seems mixed in the two East African countries and the collected data could be more intensely exploited in the policy-making process.

SSCBT data can first and foremost give information on the true extent of imports and exports. At the aggregate level this information can inform macroeconomic decision making. It can markedly change the balance of payments and thus determine how the Central Bank and the government manage macroeconomic risk. In currency unions, such as CEMAC, the information

can, for example, also influence how much physical currency is allocated to different member countries.

Moreover, the relative size of SSCBT trade compared with Customs-recorded trade can provide useful information to policymakers on priorities for infrastructure investments. For example, a large number of SSCBT transactions at a border station might suggest the desirability to invest in trade facilitation measures, such as separate pedestrian lanes, that are targeted at small-scale operators.

At the product level, the SSCBT data can inform decision makers of the true, relative importance of different commodities in production, trade, and consumption. This can be valuable input, for example, into the elaboration of export strategies, or the allocation of resources for agricultural extension services, border market development, or agro-processing facilities. Further, the more complete and accurate information on imports and exports provides trade ministry officials with a better information base for trade negotiations at the regional or global level. The negotiating team can notably more reliably determine a country's offensive and defensive interests vis-à-vis their partners.

Last but not least, a high ratio of SSCBT to Customs-recorded trade can provide useful hints to problems in the "formal" trade channel. Trade barriers that may include overly complex and strict regulatory requirements, high taxes (and bribes), or long border-clearing times can incentivize traders to avoid Customs and break up their shipments into smaller consignments, which are then carried by porters across the borders. Hence, the extent of SSCBT can reveal challenges to the effectiveness of the existing trade policy mix.

5.2 KEY ISSUES FOR DEVELOPMENT PARTNERS

Development partners have shown considerable interest in improving the information base on export and import flows among African countries. Indeed, the UK's Department for International Development provided initial financial aid for

Uganda's SSCBT monitoring effort, and the European Commission has been supporting ongoing scoping and pilot studies on SSCBT monitoring in Central and Southern Africa. This financial assistance is certainly appreciated by governments and can be instrumental in getting a surveying activity launched. However, key public policy functions, such as statistical information gathering, should generally not be dependent on project funding. Any SSCBT assistance program should, thus, usefully preview the handover of responsibility for SSCBT monitoring to local counterparts to ensure the activity's sustainability. Donors can thereby possibly act as federators that bring the different local institutions together around the common goal of high-quality SSCBT data collection.

The role of development partners in the advancement of SSCBT monitoring can usefully go well beyond financial aspects, though. Development partner organizations typically have offices in many different countries in Africa and can thus play a critical role in raising the profile of SSCBT surveying with their local partners and highlighting the need for accurate statistical information as a critical input into the policy-making process. Equally, donors can share the experiences that other countries on the continent might have had with SSCBT monitoring and promote best practices for data collection, processing, and dissemination.

In the same vein, development partners can make a welcome contribution by ensuring quality control for SSCBT data collection. In many cases, there is a tendency to misuse SSCBT enumerators stationed at the border for collecting socio-economic information that really does not require high-frequency enumeration but would better be captured through occasional, dedicated surveys (see section 2.2 above). Overloading the SSCBT monitoring process with excessive data collection demands risks slowing down traders at the border, while also putting stress on enumerators that can lead to wrong or incomplete capture of the core SSCBT variables.

Since SSCBT monitoring is still immature and many countries are just starting out on systematically capturing information on small-scale cross-border transactions, there is also a role for development partners to provide selected public goods. For example, a concordance or conversion mechanism to map the relatively short list of products that are observed and captured by SSCBT enumerators to the more detailed Harmonized Classification used by Customs could be very useful for integrating SSCBT and Customs-recorded trade for analysis and subsequent dissemination. Even in Uganda and Rwanda that have more than a decade of SSCBT monitoring experience, concordance between SSCBT data and Customs data remains a challenge. As a result, the data reported to UN Comtrade and, hence, used by analysts worldwide, consists to date exclusively of Customs-recorded trade. Another possible useful contribution for public dissemination would be a tablet software interface that is optimized and customized for SSCBT data collection. The existing open-source data entry solutions that are used, for example, in Rwanda largely mimic paper forms and do not take full advantage of the touchscreen of modern tablets.

Finally, donors should take note of the increasingly solid evidence on the importance of SSCBT for trade within Africa and integrate corresponding considerations into their operational programs. For example, investment projects concerning new cross-border infrastructure or upgrading of existing border stations should consistently also improve the operating environment of small-scale operators and not just focus on truck-based, large-scale cross-border traffic. The relevant project components will, of course, differ across border-crossing points but could possibly include consideration for dedicated pedestrian lanes, market stalls, improved lighting, rain cover, or sanitary facilities.

5.3 KEY ISSUES IN THE CONTEXT OF THE COVID-19 PANDEMIC AND OTHER DISASTERS

The spread of COVID-19 has severely affected small-scale traders and disrupted SSCBT monitoring. Social distancing guidelines have been

virtually impossible to comply with at busy border crossings or in sprawling border markets, and confinement regulations and travel restrictions have severely limited the possibility for traders to pursue their importing or exporting activities. As a result, SSCBT volumes and values have collapsed, depriving many small-scale operators of their main income stream.

In desperation, some small-scale traders might have resorted to crossing the border through uncharted footpaths that are not controlled by border police, thereby running the risk of catching or spreading the virus while at the same time turning SSCBT into illegal smuggling.

At some border crossings along the Rwanda-DRC border, local traders' associations have organized the bulking of products to cope with the situation. The trader association on the importing side of the border collects requests for a particular product, e.g. plantains, from its members and communicates this demand to the trader association on the exporting side. The latter then collects export consignments from its members and loads them on a minibus or small truck that then crosses the border. This procedure has helped reduce the number of people that cross the border to just the transport provider, thus diminishing the risk of virus spread.

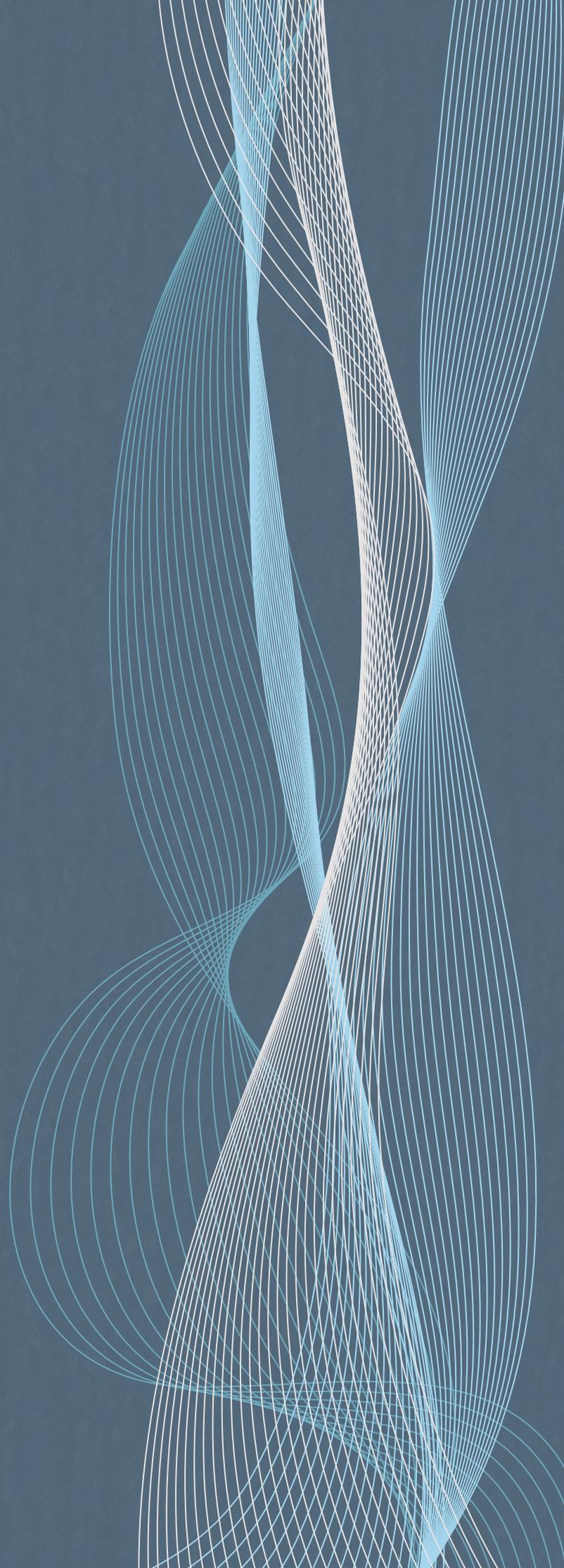
The collapse of SSCBT as well as concern for the health of its enumerators have also prompted statistical agencies to adapt to the pandemic. For example, the authorities in Rwanda have paused their regular SSCBT monitoring. The SSCBT data for the non-monitored period is being estimated based on information from other border agencies, such as Customs, and local trader associations.

Experience has shown that SSCBT is very vulnerable to natural or human-made disasters, but that small-scale trade can also bounce back quickly once the situation normalizes. For example, Rauschendorfer and Shepherd (2020) report that during the violent conflict in South Sudan, informal exports from Uganda to South Sudan collapsed by 80 percent, while formal exports dropped only by 12 percent.

Yet, in surveys, small-scale operators affirm that they would resume their trading activity with the neighboring country as soon as the security situation would be sufficiently stable. By doing so, they would contribute to a rapid economic recovery. Rauschendorfer and Shepherd suggest that development partners can prepare and foster this rebound by helping small-scale exporters meanwhile find alternative markets for their products.



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