

## Indicators to Monitor Deeper

## Regional Trade Integration in Africa







## **Abbreviations and Acronyms**

ALCO	Abidjan-Lagos Corridor Organization
ASEAN	Association of Southeast Asian Nations
ASYCUDA	Automated SYstem for CUstoms DAta
CET	common external tariff
CIF	cost, insurance, and freight
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
EBRD	European Bank for Reconstruction and Development
ECOWAS	Economic Community of West African States
FAO	Food and Agriculture Organization
FAO/GIEWS	FAO Global Information and Early Warning System
FEWSNET	Famine Early Warning Systems Network
FDI	foreign direct investment
FOB	free on board
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
HS	Harmonized System
IDB	Inter-American Development Bank
IMF	International Monetary Fund
IMF DoTS	IMF Direction of Trade Statistics
ITC	International Trade Centre
kg	kilogram
km	kilometer

LC	letter of credit
LPI	Logistics Performance Index
MFN	most-favored nation
MMEs	cost of mobile money transfers
MRAs	mutual recognition agreements
MSMEs	micro and small enterprises
NTBs	non-tariff barriers
OECD	Organisation for Economic Co-operation and Development
OPA	Observatory for Abnormal Practices
OPVs	open-pollinated varieties
PPPs	public-private partnerships
REC	Regional Economic Community
RSA	Research Solutions Africa
RTA	regional trade agreement
RTGS	real-time gross settlement
SADC	Southern African Development Community
SITC	Standard International Trade Classification
SMEs	small and medium enterprises
SMS	short message service
SPS	sanitary and phytosanitary
SSA	Sub-Saharan Africa
SSATP	Sub-Saharan Africa Transport Policy Program
STRI	Services Trade Restrictiveness Index
TBT	technical barriers to trade
TiVA	trade in value-added
UEMOA	West African Economic and Monetary Union
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
US\$	U.S. dollar

USAID	U.S. Agency for International Development
WAEMU	West African Economic and Monetary Union
WITS	World Integrated Trade Solution
WTO	World Trade Organization

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### 1. Introduction1

1. Stronger regional integration has been a policy priority in Africa for several decades. Closer trade links with neighboring countries promise to stabilize food markets, enhance profitable exchanges in light manufactures, reduce consumer prices, and help develop regional production networks. However, the implementation of existing integration initiatives has often been lackluster, so that the economic development and poverty reduction potential from expanded intraregional trade has remained untapped. Markets remain fragmented by a range of barriers to trade and competition along the value chain of traded goods and services (see Brenton and Isik 2012a). Countries in Africa have committed to a process of deeper integration, but have made little progress in implementing commitments and removing barriers.

2. This report looks at the monitoring of regional integration in Africa and argues that more effective monitoring processes for existing integration arrangements could help to raise the profile of the prevailing implementation deficits and provide policy makers and civil society with the necessary information to push for corrective action. Currently, most integration monitoring systems are scorecard-based compliance assessments. These processes are useful in determining which member countries have transposed their regional-level reform commitments into national law, but say little about changes in trade practices on the ground. Where outcome indicators are used, these generally are of an aggregate nature, such as measuring changes in the volume of intraregional trade, or focus on tariff liberalization, the original centerpiece of most regional trade agreements.

3. To obtain information on the impact of integration policies on ordinary traders, indicators of trade transaction costs are required. These can be indirect measures of trade volume changes or price differences, or direct estimates of the various trade cost components. The latter tend to be more specific and can more easily be related to changes in particular policy measures.

4. Such indicators and monitoring will support implementation of commitments to reform rules and regulations governing trade that are politically difficult to implement. Politicians and officials can be held more accountable for commitments they have made, but also need credit for positive outcomes that result from politically difficult decisions. It is easier to take credit for building a new road and with it a photo-op to cut a ribbon to open it on television than it is to take credit for difficult policy reforms, whose impact may not be so physically obvious. Relatedly, stakeholders need to be able to see progress being made and to reap the benefits of opening up to regional trade to allow politicians to garner their support for further, deeper integration steps. A key objective of this project has been to derive indicators that show impacts on poor traders and producers of tradable goods. For example, given the poor conditions often faced by small, informal traders, many of whom are women, there is a need to monitor harassment by officials when crossing the border.

5. Better monitoring of progress in reducing trade costs along infrastructure linkages, such as trade corridors linking landlocked countries to ports or those joining producers to markets, can help more directly connect investment projects, development outcomes, and donor support for regional integration. “Aid for Trade” programs have so far not given enough attention to improving policies and regulations affecting trade. According to data collected by the Organisation for Economic Co-operation and Development (OECD), on average from 2006 to 2010, just 2 percent of disbursements went to trade policies and regulations, with over 52 percent going to economic infrastructure and 46 percent going to building productive capacities. Better indicators may therefore help to bring better balance to the Aid for Trade portfolio in Africa.

6. In addition to better targeted donor support, indicators that capture the implementation of policy reforms may encourage greater private sector involvement in the provision of infrastructure in Africa. Policy and regulatory constraints to trade along key connective infrastructure investments undermine the returns to those investments. An increased focus on policy reforms and capacity to monitor their implementation could underpin greater use of public-private partnerships (PPPs) and private sector investment in infrastructure and offer an opportunity to link implementation of policy reforms and such investments.

7. The overall aim of this report is to explore indicators that capture the impact of regional policy reforms on trade transaction costs for ordinary traders, with a focus on indicators that can be linked to the implementation of specific policy measures. The type of policy reforms that we have in mind include measures to simplify trade procedures, including for small informal traders; measures to improve customs procedures through common nomenclature and operating procedures, one-stop border posts, improved training, and performance targets for officials; measures such as

harmonization, mutual recognition, or equivalence that reduce the costs of conforming and proving conformity with health and safety standards in overseas markets; measures to allow the freedom of movement of service providers across borders, including mutual recognition of qualifications for professionals, recognition of insurance and driving licenses for truck drivers, and harmonization of vehicle weight and axle load requirements; and measures to reduce the cost and ensure recognition of certificates of origin.

8. The rationale for each of these measures is to reduce barriers that increase trade transaction costs. For regional integration to have an impact on poverty, reductions in transaction costs must be passed on to producers and consumers. This necessitates obtaining information on outcomes and places attention on competition in the domestic distribution chain.

9. Outside Africa, there are some regional integration initiatives that have started to monitor trade outcomes systematically through indicators that cover not only aggregate trade evolution and tariff reductions, but also non-tariff measures, trade facilitation, and services trade. Regional trade initiatives in Africa could usefully adopt similar processes and complement their monitoring systems with indirect goods and services trade volume information, as well as specific indicators on trade costs related to tariffs, non-tariff barriers, trade logistics obstacles, and services market regulation.

10. Some of the data necessary to construct more discerning trade outcome indicators are already available, while additional information that is missing might be relatively easy to generate. The scope of the indicator set and the selection of the particular range of indicators will be specific to each individual integration initiative and will require some consultations and negotiation, but if policy makers and public officials are serious about addressing the implementation deficit, they need to devote more attention and resources to establishing the extent to which regional integration efforts are being reflected in trading practices.

11. The remainder of the study falls into six sections. Section 2 briefly discusses integration monitoring systems and related indicators in general. Section 3 presents an overview of regional trade indicators that are currently used by policy makers in Sub-Saharan Africa. Section 4 discusses the three main types of indicators, those measuring compliance with integration commitments, those measuring outcomes indirectly and at an aggregate level, and those capturing specific trade cost components either directly or indirectly. The usefulness of the indicator categories tends to be negatively related to the ease of obtaining the respective data and information. Thus, a trade-off has to be made during the indicator selection process.



12. Section 5 looks at possible indicators from data that are currently being collected, including data collected by transport corridor monitoring committees (section 5.1), detailed trade data collected by customs (5.2), information on product prices (5.3), and data on value-added (5.4). Section 6 discusses indicators that can be derived from data that can be obtained from new approaches, including mystery shopping (section 6.1) and crowdsourcing (6.2). Finally, section 7 concludes with suggestions for the way forward, including a basic template for a monitoring report and a discussion of how donors could support an invigorated approach to monitoring regional integration in Africa.

#### Indicators to monitor regional integration

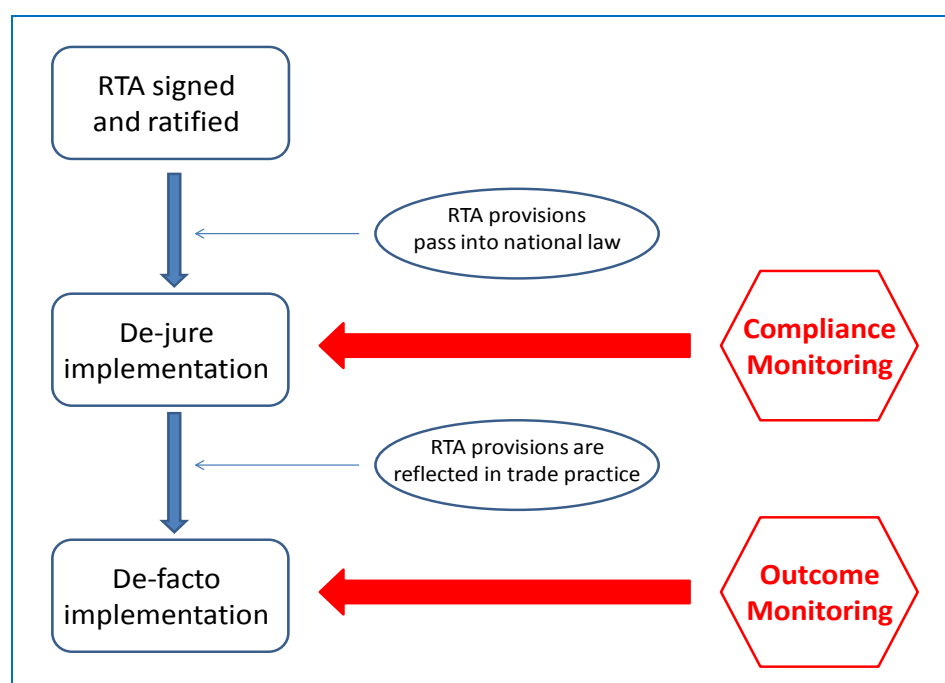
13. Light-weight, institutionalized monitoring processes to scrutinize the progress in adopting key features of regional integration commitments can be very valuable to address implementation deficits. Monitoring provides a feedback mechanism for policy makers as well as information for the general public on the progress achieved. Moreover, it constitutes an institutionalized channel of regular information-sharing among the members of a regional trade agreement (RTA) that can help to build trust, and as such enhance the willingness of partners to envisage steps toward deeper integration. In view of these benefits, several international organizations have put forward formal monitoring systems (De Lombaerde, Pietrangeli, and Weeratunge 2008), which vary widely in terms of integration area coverage and the number of indicators they are proposing to follow. Moreover, in some cases, such as the EU-CARICOM Economic Partnership Agreement, monitoring processes have been explicitly anchored in the RTAs. The purpose of the monitoring exercise is therefore to determine the progress made toward the stated integration objectives (“reflexive monitoring”), and/or to benchmark the state of integration vis-à-vis third countries or groupings (“comparative monitoring”) (De Lombaerde and van Langenhove 2005).

#### Monitoring regional integration

14. Two major stages of implementation and related monitoring can be distinguished (figure 2.1). First, the provisions of a signed and ratified RTA have to be incorporated into national law, which might require some adjustment or amendment to the existing body of laws and regulations. This stage might be called “de-jure implementation” and the associated monitoring process checks on the extent of compliance of a country’s national legislation with the provisions of the RTA.

15. Second, the provisions of the RTA and national laws have to be applied to the situation on the ground. This process would involve the updating of administrative guidelines for executing agencies and ensure that the new regional trade arrangements are adhered to not only by the letter of the law, but also in its underlying spirit. For example, where an RTA implies a reduction in border tariffs, this preference should not be offset through a concurrent increase in costly technical inspections or additional demands from border officials for informal payments. This second stage might be called “de-facto implementation” and the related monitoring process would focus on integration outcomes.

Figure 2.1 RTA implementation and related monitoring



Source: World Bank.

16. Compliance monitoring and outcome monitoring are valuable processes and their findings are complementary. In cases where the enforcement of national laws is strong and where broad political and administrative support for the regional integration process exists, the qualitative results from the two forms of monitoring will be closely aligned. However, in countries that face severe governance challenges or administrative capacity bottlenecks, compliance and outcome monitoring might paint a rather divergent picture of the progress in regional integration. For example, reform commitments from RTAs might well have been incorporated in national legislation, but might not (yet) be reflected in the practice of traders. In these situations, outcome monitoring is clearly the more discerning approach.

17. Compliance monitoring generally uses scorecards. These performance measurement tools show the status of country-level de-jure implementation across different integration areas and time periods. By doing so, implementation gaps can be exposed over time and offending governments pressured by their peers to act.

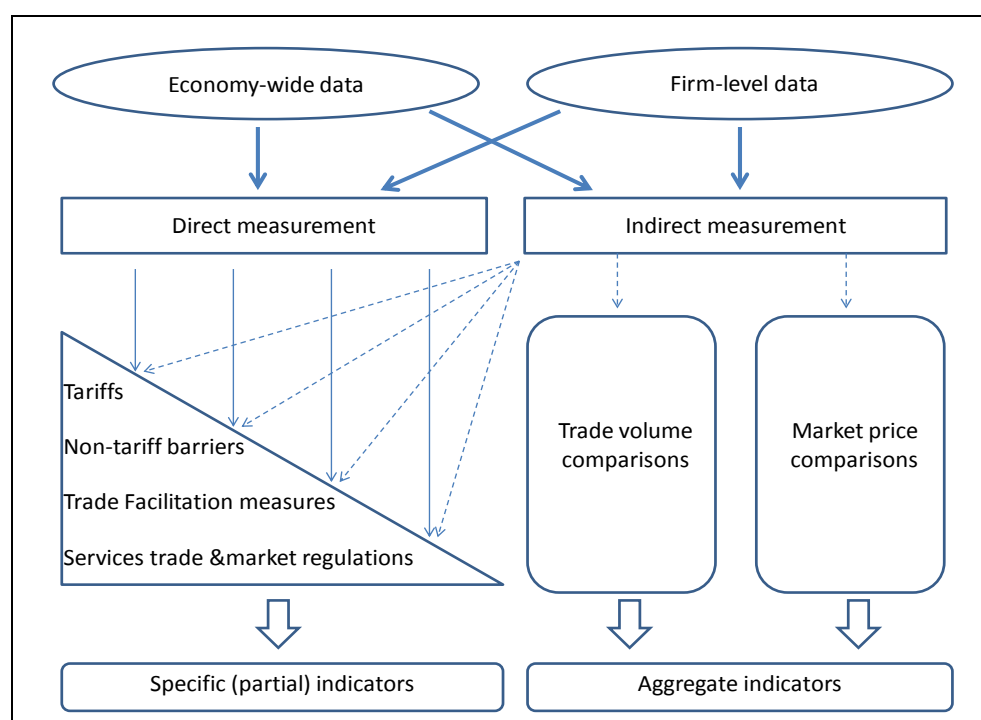
18. Outcome monitoring goes further and assesses to what extent the ultimate objective of regional integration, that is the facilitation of intraregional exchanges for traders and business people,

has been achieved. It tends to be more challenging than compliance checks, as the data requirements are more demanding. In the case of trade integration, outcome monitoring relies on indicators that make it possible to assess reductions in overall trade costs, meaning all costs incurred in getting a good to a final user other than the marginal cost of producing the good (Anderson and van Wincoop 2004). The indicators notably comprise costs related to border tariffs, non-tariff barriers, trade-related regulations, and transport and distribution, including the costs of time, such as that spent waiting to cross borders.

#### Trade cost indicators

19. Similar to any good economic indicator, indicators of trade costs should be (i) relatively easy to understand, (ii) based on readily available data, and (iii) illustrative of an important phenomenon. Ideally, trade costs would be measured directly across the different cost components. However, the necessary data are not always available, so that indirect indicators often have to be used. Such indirect approaches can either rely on quantity information, for example, the share of regional trade in total trade or gross domestic product (GDP), or price information, such as cross-border differences in prices for homogeneous goods. Either economy-wide statistics or firm-level data can serve as the basis for the construction of trade cost indicators (figure 2.2).

Figure 2.2 Overview of trade cost measurement



Source: World Bank.

20. Trade cost indicators do not necessarily need to be closely related to a particular policy instrument, but the attribution of results becomes more difficult as the number of factors that influence the indicator increases. For example, the share of regional trade in total trade might rise due to regional trade policy reforms, but the change in the ratio could also be due to a price drop for the country's exports to world markets, a reduction of exports to third countries because of supply constraints, or a crop failure in a partner country that triggers higher regional food imports. Hence, attributing the change in the regional trade-to-GDP indicator to the success of regional integration policies could be misleading. This also means that defining a specific level of intraregional trade in total trade as a policy target will not be useful.<sup>2</sup>

21. There are, thus, benefits to more narrowly defined, more specific indicators. Monitoring several of these specific indicators will tend to give a more accurate picture of the state of RTA implementation and provide more clear-cut feedback on particular policies than looking at one or only a few aggregate indicators. Moreover, whenever indicators based on direct measurement are available, the information will be much easier to interpret than data for indirect indicators. The latter always require an additional step of conversion to translate the quantity or price information into estimates of the costs faced by traders.

22. Despite their limitations, *indirect, aggregate indicators* are widely used for trade integration monitoring because of the relative ease of obtaining near-term data that are comparable across countries and time periods. Table 2.1 shows several examples. As mentioned earlier, the interpretation of this type of indicator often poses problems. For example, an increased share of regional trade in total trade might suggest closer regional integration, but it could also mean that the country has been losing competitiveness in international markets. Moreover, in cross-country comparisons, the ratio will be heavily influenced by country size and geography.

**Table 2.1 Examples of indirect, aggregate trade cost indicators**

<b>Quantity-based</b>	<b>Price-based</b>
Share of regional trade in total trade	Price of staple food items (maize, rice)
Share of regional trade in GDP	Price of a typical bag of fertilizer
Intraregional trade intensity (i.e., ratio of regional trade share to global trade share)	Price of a liter of diesel
Number of firms exporting to global markets, regional markets, and both	Price of homogeneous manufactures (e.g., plastic buckets, steel tubes, Ikea catalogue items)
Number of products exported to regional markets,	

global markets, and both

Value of exports per firm, regional/global

Employment in exporting firms, regional/global

Number of new export products that were first traded  
regionally before being exported globally

Number of "new" seed varieties available to farmers

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*Source:* World Bank.

*Note:* GDP = gross domestic product.

23. Comparisons of prices for homogeneous products can also be difficult to interpret when seen in isolation. Even in a perfectly integrated market, one would not expect the prices in the supply center and the demand center to be identical, as there are transport and transaction costs to link the two markets. Hence, some knowledge of the magnitude of these trade costs (and for time-series analysis, their evolution) would be needed to make proper judgments on the degree of market integration. In addition, there are challenges with respect to the comparability of products, the degree of competition in the markets, and currency conversion.

24. Among partial trade cost indicators, information on *tariff barriers* is most prevalent, since the liberalization of border taxes has been the early focus of most trade integration agreements. Various indicators can be envisioned, which use direct tariff measurement or indirect prevalence data (table 2.2).

Table 2.2 Examples of tariff-centered trade cost indicators

Direct	Indirect
Production-weighted average regional and MFN tariff	Share of regional trade that pays MFN duty
Trade-weighted average regional and MFN tariff	Share of nonzero intraregional and MFN tariff lines
Simple average intraregional and MFN tariff	Share of tariff lines that are exempted from regional preferences
Highest intraregional and MFN tariff	Prevalence of intraregional and MFN tariff peaks

Source: World Bank.

Note: MFN = most-favored nation.

25. *Non-tariff measures* come in many shapes and configurations. The United Nations Conference on Trade and Development (UNCTAD) distinguishes a total of 16 different categories. These comprise technical measures (sanitary and phytosanitary (SPS) measures, technical barriers to trade, and pre-shipment inspection), nontechnical measures (contingent trade protection, non-automatic licenses, price controls, finance-related, competition-related, investment-related, distribution-related, post-sales, subsidies, government procurement, intellectual property, and rules of origin), and export-related measures (UNCTAD 2013). Most non-tariff measures have a domestic policy rationale, but if they are implemented in an overly restrictive manner, they can become barriers to trade. Table 2.3 lists a selection of indicators that can be used to monitor trade and integration.

Table 2.3 Examples of NTB-centered trade cost indicators

Direct	Indirect
Cost of border crossing permit/jetton	Time to cross border
Cost of obtaining import/export license/permit	Time and predictability to obtain import/export license/permit
Cost of obtaining certificate of origin	Time/predictability to obtain certificate of origin
Cost to obtain SPS certificate	Time/predictability to obtain SPS certificate
Amount of informal payments at border	Share of tariff lines subject to export bans
Cost of standard tests for aflatoxin	

Source: World Bank.

Note: NTB = non-tariff barrier; SPS = sanitary and phytosanitary.

26. *Trade facilitation–related barriers* constitute a subset of non-tariff barriers (NTBs) that is related to the logistics of cross-border trade. These measures cover practices and procedures concerning transport and border clearance. Again, a large number of potential direct and indirect indicators can be envisaged, of which a sample is presented in table 2.4.

27. A well-performing logistics sector is particularly important for the emergence of regional production chains. Production networks spanning across several economies have been at the center of the manufacturing export success in East Asia. Although monitoring regional and global production chains is a demanding, data-intensive undertaking, several promising approaches have recently been developed. Koopman and others (2011) calculate a global or regional participation index based on foreign value-added embodied in gross exports and the domestic value-added embodied in third countries' gross exports. Fally (2011) takes the number of production stages as an indicator on the length of the global or regional value chain. And Antràs and others (2012) calculate an index of “upstreamness” based on industry-level input-output tables.

Table 2.4 Examples of trade facilitation–centered trade cost indicators



Direct	Indirect
Average cost per mile to transport goods to neighboring markets	Number of roadblocks on key trade routes
Average cost of delivering a container from the port to the main consumption center	Number of weigh stations on key trade routes
	Time spent at border/roadblocks/weigh stations (especially for perishable agricultural products)
	Number of transport operators that traders can choose from
	Frequency of physical inspections at border
	Frequency of rejections of certificate of origin
	Share of eligible small-scale traders that benefit from simplified documentation procedures
	Share of one-stop border posts in total number of border posts

Source: World Bank.

28. *Services trade* is substantially different from goods trade. Services can be delivered through four different modes, notably consumption abroad, cross-border delivery, commercial presence, and presence of natural persons, and are heavily affected by behind-the-border regulations. Concerning indicators for integration monitoring, indirect aggregate indicators based on quantity or price are similar in nature to those used for goods trade, while direct partial indicators are specific to the sector or subsector. Table 2.5 provides examples.

Table 2.5 Examples of services trade–centered trade cost indicators

	Partial		Aggregate	
	Direct	Indirect	Quantity	Price
Average hourly fees charged by services providers		Number of professionals that obtain work permits under mutual recognition agreements	Share of regional services trade in total services trade	Fees charged by service providers for selected standardized services
Cost to obtain business visa for neighboring markets		Time to obtain a business visa for neighboring markets	Share of regional services trade in GDP	Cost of trade finance
Cost to obtain work permit for neighboring markets		Time to obtain work permit for neighboring markets		Cost of crop insurance  Cost of local/international phone call

Source: World Bank.

Note: GDP = gross domestic product.

Indicators that are currently used in Africa

29. Regional integration in Africa offers substantial opportunities for growth and employment creation. Official statistics show that trade with neighboring countries in food and basic manufacturing goods is very low, but burgeoning informal markets for these products in border regions attest to the existence of price differences that can be profitably exploited. Regional production networks are virtually nonexistent in Africa; such regional supply chains have helped countries in East Asia to boost their exports of manufactures to world markets. Recent analytical work suggests that behind-the-border barriers and anti-competitive regulations are major obstacles to mutually beneficial exchanges at the regional level in Africa, and that policy reforms in areas such as non-tariff barriers, trade logistics, and services market regulations could generate substantial benefits (Brenton and Isik 2012a).

30. Governments in Africa are aware of the growing importance of the “new issues” in regional integration, such as non-tariff measures, trade facilitation, and services trade. Corresponding chapters or protocols have been added to most existing RTAs to supplement the original focus on tariff liberalization. Yet, the operationalization and implementation of the new issue areas lags behind, such that the good integration intentions of the agreements often exist only on paper, but not in the reality of the traders.

31. Furthermore, monitoring of regional trade integration in general, and of integration with respect to the removal of non-tariff barriers, trade logistics impediments, and services trade obstacles in particular, is not very well developed. The processes maintained within the different Regional Economic Communities tend to focus on compliance with integration commitments in the area of tariff integration. Other subject areas are poorly covered and de-facto implementation is rarely assessed. A laudable exception is the proposal by the Common Market for Eastern and Southern Africa (COMESA) Secretariat for a set of regional integration indicators that is comprehensive and covers all the *new* trade integration areas (COMESA 2002). Yet, even within this proposal, more than two-thirds of all the indicators that concern trade are compliance indicators and trade integration outcomes are only considered in some of the categories (table 3.1).<sup>3</sup>

32. The compliance indicators on COMESA’s list illustrate some of the challenges that analysts face when assessing the status of integration based on such tools. In particular, some of the compliance indicators are defined very broadly and leave substantial discretion to the evaluator. For example, the issue whether an independent competition authority exists has, in fact, several dimensions. Has a law on the establishment of a competition authority been passed? Is the institution independent from government influence, including funding? Has the authority been provided with appropriate human and financial resources? Is there case evidence that the institution is functioning? If a “yes” to only the first question were already to trigger a full score for integration in this category,

the monitoring process would be rather weak, as obviously a fully functioning competition authority would only have been partially established. A better way to reflect the status of integration in this case would be to record the progress made toward the integration objective by reporting, for instance, completion scores in percentage terms.

**Table 3.1 COMESA's proposal for a set of regional trade integration indicators**

Category	Variable	Outcome indicator		Indicator of compliance
		Direct	Indirect	
<b>Trade liberalization</b>	Number of nonzero tariffs		X	
	Highest MFN tariff	X		
	Highest regional tariff	X		
	Weighted average MFN tariff	X		
<b>Trade facilitation</b>	Level of conformity to the WTO TBT Agreement			X
	Capacity of member states to implement mutually recognized certification marking schemes			X
	Notification of national enquiry points			X
	Ability to regulate and monitor sanitary and phytosanitary standards			X
	Use of ASYCUDA (or similar)			X
	Use of GATT valuation system			X
	Use of COMESA customs document			X
	Use of HS 1996 (or later) customs classification system			X
<b>Trade in services</b>	Establishment and publication of Contact and Enquiry Point			X
	Performance with regard to commitments			X
	Reductions in exemptions over time		X	
<b>Transit facilitation</b>	Implementation of COMESA harmonized road transit charges			X
	Use of COMESA carriers license			X
	Use of COMESA customs bond guarantee			X
	Implementation of harmonized axle load and vehicle dimension regulations			X

## Indicators to Monitor Deeper Regional Trade Integration in Africa

	Implementation of COMESA third-party vehicle licensing system			X
<b>Capital flows and foreign investment</b>	Existence of foreign investment code providing national treatment			X
	Degree to which there are any restrictions on foreign ownership of businesses		X	
	Level of restrictions on foreign ownership of land		X	
	Level of restrictions on repatriation of earnings		X	
<b>Regulatory environment</b>	Existence of an independent competition authority tasked with implementing a set of legally recognized rules and regulations on competition			X
	Existence of an independent telecommunications authority tasked with implementing a set of legally recognized rules and regulations on telecommunications			X
	Existence of an independent standards authority tasked with implementing a set of legally recognized rules and regulations on standards			X
	Existence of defined regulations dealing with public procurement in member states			X
<b>Licensing requirements</b>	Level of licensing requirements to operate a business		X	
	Time taken to obtain appropriate licenses to start business	X		
	Transparency of licensing system			X

Source: COMESA 2002.

Note: ASYCUDA = Automated System for Customs Data; COMESA = Common Market for Eastern and Southern Africa; GATT = General Agreement on Tariffs and Trade; HS = Harmonized System; MFN = most-favored nation; TBT = technical barriers to trade; WTO = World Trade Organization.

### Compliance and tariff monitoring

33. The examination of compliance with tariff reduction and harmonization commitments in trade agreements can be described as the standard form of monitoring. The processes are normally managed by the RTA Secretariats, who receive respective information from members. For example, the African Union Commission, in collaboration with the African Development Bank and the United Nations Economic Commission for Africa, checks regularly on progress at the continental level with respect to the implementation of the Abuja Treaty of 1991 (table 3.2). Similar monitoring systems based on self-reporting and aggregate “achieved/not achieved” assessments are available for virtually all integration agreements in Africa.

Table 3.2 Abuja Treaty scorecard of regional integration in Africa

At REC level								Completion date in the Abuja Treaty
	ECOWAS	COMESA	ECCAS	IGAD	CEN-SAD	EAC	SADC	
First stage (5 years): Strengthen RECs	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	1999
Second stage (8 years): Coordinate and harmonize activities and progressively eliminate tariff and non-tariff barriers	Achieved	Achieved	Achieved	X	Achieved	Achieved	Achieved	2007
Third stage (10 years): free trade area and customs union in each REC	X (2015)	X (June 2009)	X (2011)	To be set	To be set	X X	X (2011)	2017
At continental level								
Fourth stage (2 years): continental customs union	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	
Fifth stage (4 years): continental common market	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	2023
Sixth stage (5 years): continental economic and monetary union	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	Not Achieved	2028

X represents the current stage of integration of each REC.

Source: UNECA 2012.

34. The integration outcomes reported in table 3.2 again highlight the drawbacks of highly aggregated compliance monitoring. For example, although COMESA has been working to remove tariff and non-tariff barriers among its members, not all member countries are participating in its free trade area. Nevertheless, the scorecard records an unambiguous “achieved” for this category. Similar reservations could be made for the integration progress in the Economic Community of Central African States and the Economic Community of West African States (ECOWAS).

35. In West Africa, the West African Economic and Monetary Union (WAEMU 2010) uses a detailed scorecard approach to assess compliance. It lists the community-level directives in different policy areas and reports whether or not a member country has transcribed the integration measures into national law. In addition, the reporting comprises an average of compliance across all member countries, as well as an average of compliance across integration measures in each country.

36. In the East African Community (EAC), a framework for monitoring and evaluating the implementation of the EAC Common Market Protocol was established in 2012. This framework calls

for the periodic preparation of reports on the de-jure implementation of Protocol provisions for submission to the Council of Ministers, which then assesses the progress made toward the original schedule. This has been complemented by the EAC Common Market Scorecard, produced by the World Bank Group for the EAC Secretariat, which assesses progress toward a common market in capital, services, and goods across the Partner States. It considers each EAC Partner State's laws and regulations with regard to conformity to commitments under EAC Common Market protocol. The 2014 report<sup>4</sup> reviews 683 laws and regulations relevant to the common market (124 in capital, 545 in services, and 14 in goods) and several legal notices, reports, and trade statistics.

37. As part of its strategic planning, COMESA has mapped out a set of quantitative targets that it and its member states hope to meet by 2014 (COMESA 2012). A useful characteristic of the listing is that it specifies targets for particular subcategories (e.g., adoption of harmonized standards,<sup>5</sup> common tariff nomenclature, and common external tariff (CET)), instead of just focusing on a broad, overall assessment of tariff commitment implementation:

1. At least 10 Member States formalize Inter-Ministerial Committees by 2014
2. Full implementation of FTA by the Democratic Republic of Congo, Eritrea, Ethiopia, and Uganda
3. At least 30 percent of NTBs resolved per year per country
4. At least 10 Member States implement some of the harmonized standards by 2014
5. All Member State countries domesticate the Common Tariff Nomenclature by 2014
6. At least 10 COMESA Member States implement CET by 2014 (excluding sensitive and excluded lists)
7. At least 11 Member States have their final list of sensitive products submitted to COMESA Secretariat and gazetted at Member State level by 2014
8. At least 10 Member States domesticate the Customs Management Regulations by 2014
9. At least 10 Member States submit a final schedule of commitments by 2014
10. At least 10 Member States adopt the COMESA Competition Enforcement Guidelines by 2014
11. At least six Member States sign and ratify the Protocol to the Common Investment Agreement and domesticate the investment agreements by 2014
12. Member States implement Transit Transport Facilitation Instruments by 2014.

13. The monitoring process at the Southern African Development Community (SADC) also keeps track, mainly of the “existence” of national institutions or laws (table 3.3). In addition, the analysis matrix contains some entries that point toward aggregate outcome indicators.

Table 3.3 SADC trade integration monitoring matrix

INTERVENTION AREA	INTEGRATION OBJECTIVE	INDICATORS	STATISTICAL INFORMATION REQUIRED
<b>CLUSTER 1: TRADE INDUSTRY FINANCE AND INVESTMENT (TIFI)</b>			
1.1 Goods and Services Market Integration	Trade and Economic Liberalization and Development through phased establishment of: SADC Free Trade Agreement (FTA), Customs Union, Common Market, Monetary Union, and eventually Regional Currency	<ul style="list-style-type: none"> <li>- Existence/ implementation of Framework for Common Trade Policies.</li> <li>- Existence/ implementation of Framework for Removal of Tariff and Non-Tariff Barriers.</li> <li>- Existence of integrated goods and services market.</li> <li>- Extent of Availability and Accessibility of Services.</li> <li>- Existence/ implementation of Regional agreement on free movement of people.</li> <li>- Magnitude and development of Intra- and extra-regional trade.</li> <li>- Degree of trade openness.</li> <li>- Regional Economic Integration</li> <li>- Economic Growth and Prosperity.</li> </ul>	<ul style="list-style-type: none"> <li>- Merchandise trade: total exports and total imports, major commodity breakdowns, Intra- and extra - SADC imports and exports of goods, export and import unit and volume indices, terms of trade indices.</li> <li>- Exports and imports of (transportation, travel, and other) services.</li> <li>- Balance of payments: imports and exports of goods and services, current account balance, reserves, overall balance, International Investment Position.</li> <li>- External debt and debt-service schedule.</li> <li>- Intra-regional migratory flow.</li> <li>- Tariff level of tariffs for intra- and extra-regional imports.</li> <li>- Imports coverage rate by exports.</li> </ul>

Source: SADC 2012.

#### Non-tariff barriers

14. Non-tariff barriers are highly heterogeneous and quantifying their prevalence and impact is a major challenge. NTBs range from procedural and administrative issues (such as customs clearance procedures, documentation, interpretation, and application of rules of origin) to technical and regulatory matters (such as divergent standards), as well as charges and fees related to the clearance of goods in transit.

15. In 2007, SADC instituted a mechanism that registers complaints from private sector operators regarding NTBs, which was subsequently extended to COMESA and EAC as part of the tripartite arrangement. Implementation of the mechanism involves collaboration between traders, national focal points based in government trade departments, and the RTA secretariats in bringing contentious issues to the attention of policy makers and following up on complaints until their resolution. Between 2007 and 2012, 329 notifications were made to the SADC Secretariat, of which 223 have been resolved (SADC 2012). Table 3.4 shows an excerpt on resolved NTB issues within the EAC.



16. Although the process of establishing an NTB registry and negotiating the resolution of complaints is a valuable undertaking, it is important to ensure that the resolution mechanism does not remain limited to the particular case, but extends to the underlying policy issue. If complaints are treated as isolated cases that can be taken off the table through administrative derogation, the overarching aim of facilitating intraregional trade might not be achieved, as the trade impediments that triggered the complaint are not addressed. Indeed, the same type of complaints might surface again and again. In this context, it could be useful for the Regional Economic Community (REC) Secretariats, perhaps in cooperation with development partners, to undertake an assessment of the impact of the NTB complaints registry on trade policy in member countries.

Table 3.4 NTB resolution in the EAC

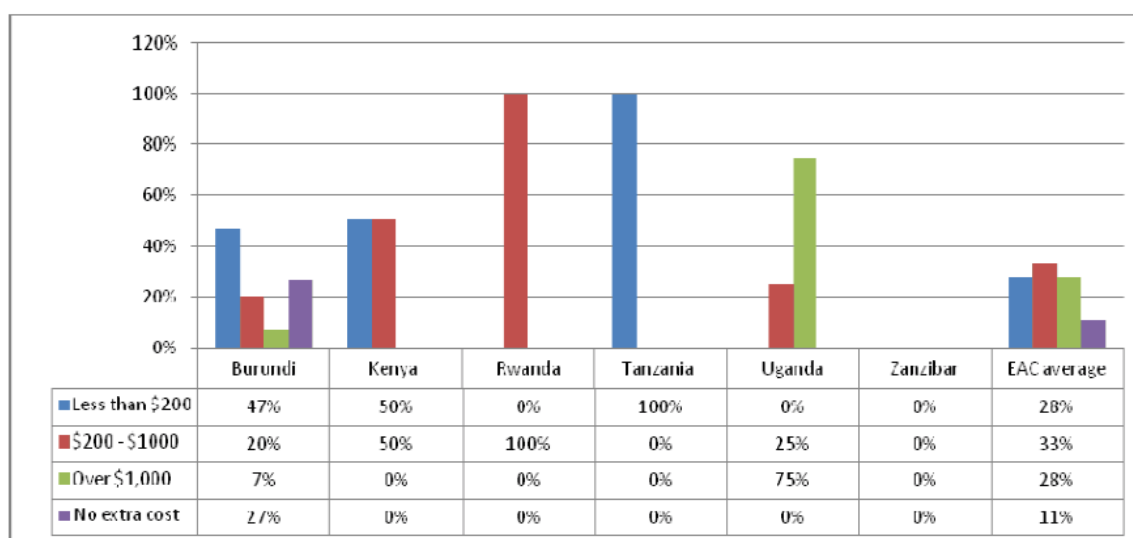
## Indicators to Monitor Deeper Regional Trade Integration in Africa

	NTB summary Description	Affected countries	NTB source & Ministry/ Department/ Agency for action	Impact to Businesses	Prioritized Action	Bottlenecks or Success Factor	Status / Recommendations	Time-frame
<b>RESOLVED NON TARIFF BARRIERS</b>								
1.	Tanzania requires cash bonds for transportation of sugar to Rwanda.	Rwanda	TRA	Adds to cost of doing business	Abolition of the requirement	Resistance from TRA because of possible dumping of sugar.	Tanzania reported that she is now using bonds rather than normal bonds.	Resolved
2.	Burundi charges entry fee for vehicles from other Partner States	Kenya, Uganda, Tanzania & Rwanda	Burundi Customs	Adds to cost of doing business	Abolition of the charge		Burundi reported she had abolished the charge.	Resolved
3.	Varying application of axle load specifications	All Partner States	Kenya Ministry of transport  TANROADS  Uganda Ministry of transport	Unnecessary time loss at the weigh-bridges  Corruption	Introduce weigh-in motion systems and harmonization of axle load limits and gross vehicle mass (GVM) in the region	Insufficient financial resources  Political disagreements on whether to adopt COMESA or SADC specifications	The meeting of the session of permanent secretaries of the Sectoral council of transport, communications and metrology was held on 16 <sup>th</sup> – 19 <sup>th</sup> August 2011 in Nairobi to consider the matter. The session recommended that a meeting technical expert be convened by EAC Secretariat to develop supportive legal, institutional and operative framework for approval by the Council by April 2012.	Resolved
4.	Imposition Visa to Burundians entering Tanzania	Burundi	Immigration Department of Tanzania	Restriction of entering.	Removal of visa		Tanzania reported that the issue was been handled by the relevant Government body  (issue has been Resolved)	Resolved

Source: EAC 2012.

17. Data on direct costs of NTBs are generally difficult to find, but surveys of traders can help in obtaining estimates that illustrate the order of magnitude. For example, the EAC in collaboration with several development partners has regularly undertaken surveys of traders, transport service providers, and business people to obtain information on the severity of impediments related to technical standards, SPS measures, and business licensing. Figure 3.1 summarizes the results on costs incurred because of the lack of information about new standards.

Figure 3.1 Average extra costs incurred as a result of not being adequately informed about new/changed regulations on quality



Source: EAC 2011.

#### Regulatory barriers to trade in services

18. Services trade does not (yet) have a high profile in the trade integration process in Africa and effective monitoring systems do not exist for this trade area. COMESA (2011) included several indicators on services trade in its latest medium-term strategic plan, but all of these indicators focus on compliance issues and do not address trade outcomes. Table 3.5 contains the respective indicator matrix.

Table 3.5 Matrix of services trade monitoring indicators in COMESA

*Indicators to Monitor Deeper Regional Trade Integration in Africa*

Key actions	Key outcomes	Performance statement	Target indicators
Carry out assessments and identify additional priority services sectors in the Member States	Additional regional priority services sectors agreed	Priority services sectors agreed	
Implement the Trade in Services Regulations in accordance with the Negotiating Guidelines		Regulations on trade in services implemented	No of member States that have transposed regulation
		Schedules of specific commitments adopted	Number of sectors offered at regional level by each member state exceeds its WTO commitments
Negotiate levels of market access and national treatment to be accorded to service suppliers within the region	Market access and national treatment to Member States	Level of services liberalization provided for in the schedules of specific commitments	Level of market access and national treatment accorded
Negotiate Mutual Recognition Agreements to facilitate movement of professionals in the region	A framework for Mutual Recognition Agreements to facilitate movement of professionals in the region developed and implemented	Implementation of Mutual Recognition Agreements	Number of countries implementing Mutual Recognition Agreements
Develop methods of gathering services statistics	Services statistics methodology	Services statistics	Methodology for services statistics agreed and adopted by Member States by 2014
Establish the COMESA Regional Association of Services Industries	COMESA Regional Association of Services Industries created.	Functional COMESA Regional Association	COMESA Regional Association of Services Industries in place by 2013
Review MFN exemptions	MFN exemptions finalized		Regional exemption list agreed by 2011

Source: COMESA 2011.

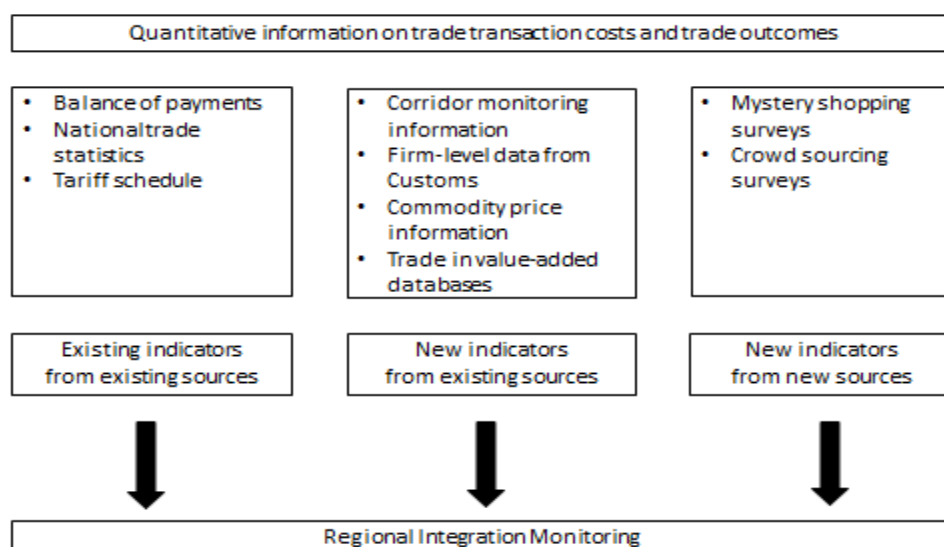
Note: COMESA = Common Market for Eastern and Southern Africa; MFN = most-favored nation; WTO = World Trade Organization.

## Generating new indicators from existing data sources

19. The preceding discussion has established that a variety of different approaches to monitor regional trade integration exist in Africa. Unfortunately, however, systematic and rigorous implementation monitoring still seems to be more of an afterthought than a well-planned practice. And the information systems that inform policy makers and civil society about the status of regional integration appear to be slow in adjusting to mounting evidence that the main impediments to regional trade expansion in Africa are no longer caused by border taxes, but to non-tariff barriers, poor trade logistics, and excessively strict services market regulations.

20. Current efforts to monitor regional integration in Africa rely heavily on trade flow information that is provided by the Statistical Offices, which in turn derive the information from customs information (merchandise trade) and Central Bank balance of payments data (for services trade). Although this information is useful, it is aggregate and does not make it possible to analyze developments at the level of trade transactions. Fortunately, additional data sources have been generated by national and international organizations over recent years that have the potential to improve the set of indicators available to monitor regional integration (figure 4.1). These new indicators are derived from existing sources, notably transport corridor monitoring committees, firm-level data from customs agencies, price data from statistical bodies, and trade in value-added information, or through new and innovative surveying techniques, such as mystery shopping and crowd sourcing. These new indicator sources are presented and discussed in the following.

Figure 4.1 Data for regional integration monitoring



## Information from transport corridor monitoring

21. Transport corridors play an important role in fostering regional integration. They notably provide the road, rail, or river infrastructure for long-distance shipments between countries within a region (map 4.1). As a result, a large share of regional and international trade passes through these routes.

Map 4.1 Transport corridors in Africa



Source: Bolloré.

22. Transport corridor monitoring committees have been established for several key transport ways in Africa. These bodies have started to collect a range of information about corridor performance, which is generally evaluated by assessing the quality of the services provided for goods moving along the transport way. Service quality is thereby frequently measured in the average time

and cost per transport unit. These indicators may be further disaggregated for specific links and nodes to increase the comparability of the results across corridors.

23. An important distinction needs to be made between *monitoring* and *performance* indicators. *Performance* indicators are often accompanied by detailed descriptions of how trade and logistics function in the corridor, assessments of volumes of trade, and times and costs of transport along the corridor. These assessments are then used to evaluate the relative constraints on trade activities in the corridor at that point in time and how the constraints might be reduced. Performance indicators tend to be measured infrequently, perhaps only once.

24. In contrast, *monitoring* indicators are measured at regular intervals of time, so that changes in the performance of the corridor can be assessed over time. Because of the need for frequent measurement, the range and scope of monitoring indicators are much more restricted than those of corridor performance indicators that rely on one-off surveys of transport operators and corridor traders. However, if the value of a particular performance indicator is established, it has often been possible to find a less costly and less demanding comparable indicator that can be used as a monitoring indicator.

25. For both types of indicator, it is useful to have benchmarks against which their values can be compared. For performance indicators, these might be the values for the corridor in question if it had no impediments and all the transport operations were undertaken with maximum efficiency. What are more often used are values for the same indicators from what are considered comparable corridors for which performance is in some sense considered “best practice” or corridors that convey products that are in competition with the corridor in question.

26. Benchmarks for monitoring indicators can be the same, but more often are measures of the same indicators for the corridor in question over time. Although the objectives of measuring monitoring indicators might be different between corridors, there is a core set of indicators that are nearly always included:

1. Total transit time from port to an inland destination
2. Port delays
3. Land border crossing times

4. Informal transit control times and costs (bribes)
  5. Time spent at formal weigh stations and other legal control points
  6. Numbers of trucks leaving/entering ports
  7. Numbers of trucks crossing land borders.
8. There are several different approaches for obtaining data for corridor monitoring. Three methodologies can be distinguished according to the way the information is generated (Raballand and others 2008):
1. Questionnaires filled by trip operators/drivers. Selected truck drivers may be asked to fill in trip sheets in which they report all the official and nonofficial stops made and document all official payments and bribes.
  2. Surveys by independent enumerators on the behavior at bottlenecks. Observers might be posted before and after border-crossings to report the time needed to cross the border or the number of trucks transiting.
  3. Data sharing with freight forwarders, port authorities, and customs agencies. Existing information on traffic, transport time/cost, and clearance time data is obtained from the respective services.
4. Few corridor monitoring systems provide a complete make-up of the times and costs (and their variability) between the port and an inland destination, and none provides even total times and costs between intermediate locations, as would be needed to assess corridor improvement impacts on bilateral trade. Most of the monitoring systems provide total time and/or cost between the corridor port and one inland destination, but only partial indicators of the makeup of the time and/or cost. Usually the indicators are provided for containers and sometimes also for bulk and break-bulk cargoes.
5. There are two groups of trade corridors in Sub-Saharan Africa that provide information on trade and transport indicators.<sup>6</sup> One is the Northern Corridor in East Africa and the other is a group of corridors in West and Central Africa.<sup>7</sup> The first only provides monitoring indicators, but the second provides monitoring and performance indicators. Consideration of the performance indicators is important, as the monitoring indicators in East and West African corridors do not provide the information that is needed to measure changes in all transaction costs or changes in intraregional trade.



6. Monitoring of transport performance, and to a minimum extent also trade performance, of the Northern Corridor has been undertaken for at least 15 years, much longer than for any other corridor in Africa. The quality of the monitoring has dramatically increased since a regular source of funding has been available to the Northern Corridor Transit and Transport Coordinating Committee, which undertakes the monitoring tasks.

7. West Africa trade and transport corridors lack an organization equivalent to the Trade and Transport Coordinating Committee in the Northern Corridor (except for the Abidjan-Lagos Corridor). Without such a focus for the collection of monitoring data, its collection is not well planned and tends to be left to aid agencies to organize and finance.

8. One such donor-supported initiative is the Observatory for Abnormal Practices (OPA), which has evolved into a project for Improved Road Transport Governance. It represents a West African Economic and Monetary Union (UEMOA)/ECOWAS coordinated project aimed at collecting data on selected abnormal practices experienced along international corridors in West Africa. The objective is to publish and disseminate the results as part of an advocacy to bring about improvements in corridor performance. The Observatory started collecting data in 2006 with the financial and technical support of the U.S. Agency for International Development (USAID) West Africa Trade Hub.

9. Given the origins of the OPA, the indicators that are collected focus on one specific aspect of performance, that is, the incidence of informal “abnormal practices.” In particular, this refers to the incidence of formal and informal checkpoints and who operates them, the time taken to pass through them, and the amount of any bribes that are paid to pass through or to pass through more quickly.

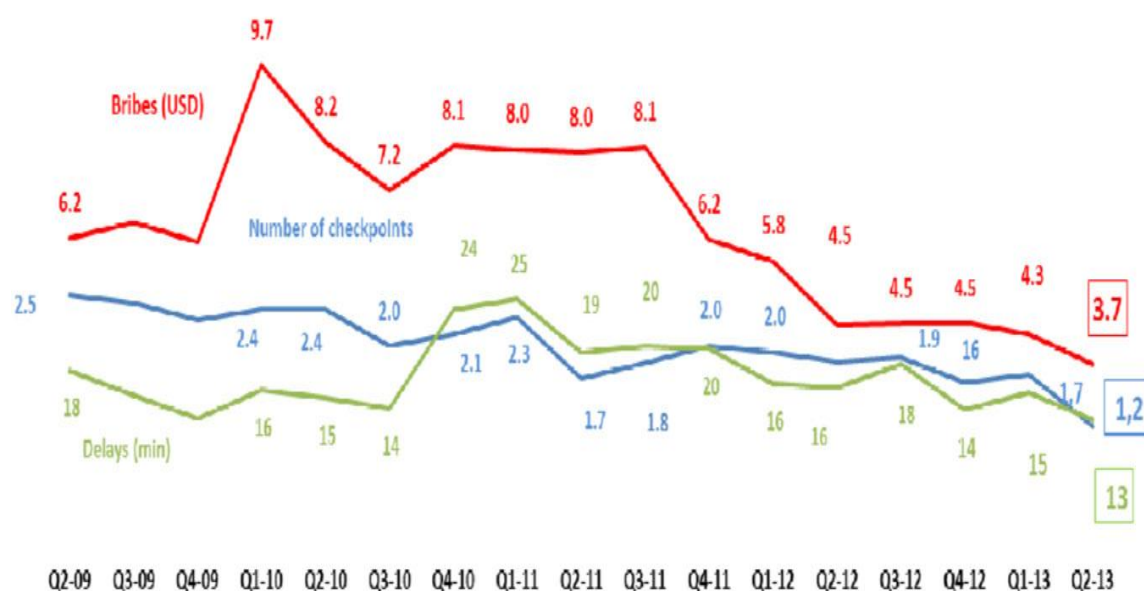
10. In particular, truck drivers are asked to fill out surveys with information on the number of control points, delays, and illicit charges. This information is collected for several major transport corridors, notably Tema-Ouagadougou, Ouagadougou-Bamako via Koury, Ouagadougou-Bamako via Hérémakono, Lomé-Ouagadougou, Dakar-Bamako, Abidjan-Ouagadougou, and Abidjan-Bamako.

11. OPA publishes the results of its surveys in quarterly reports that are made available on its website. These contain an overview of developments over time (figure 4.2), as well as summaries of particular abnormal practices, such as the number of road controls (figure 4.3), the delays caused (figure 4.4), or the amounts of bribes asked. Similar information is collected and published by the

Permanent Interstate Committee for Drought Control in the Sahel (CILSS) for agricultural trade along several of the major transport routes (CILSS 2014).

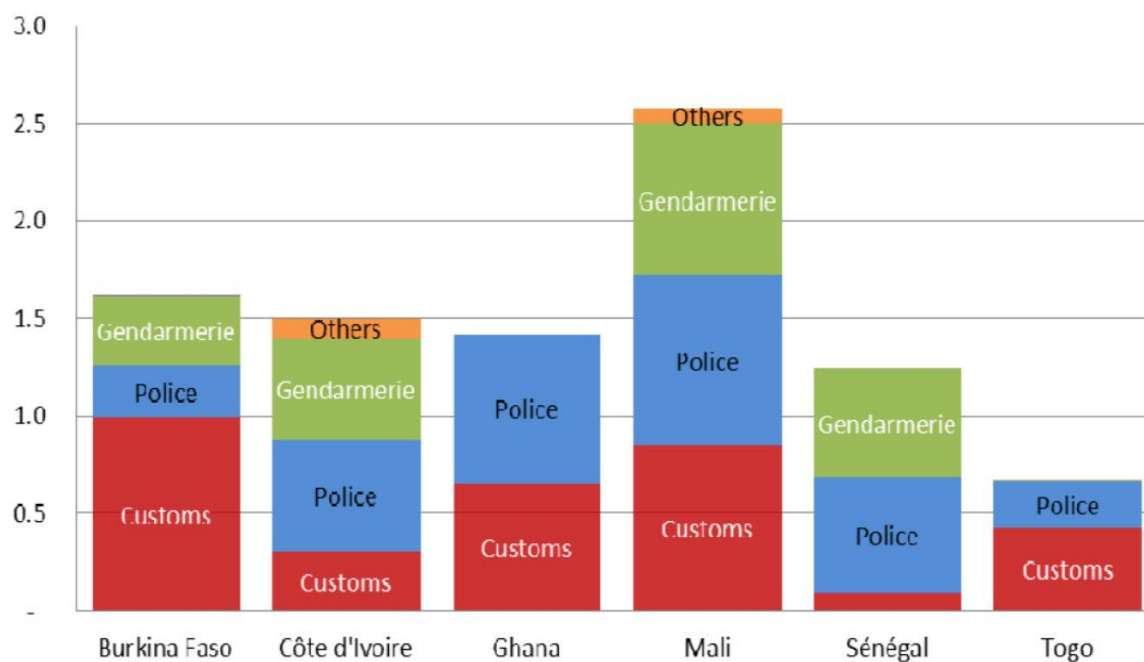
12. These data provide a variable picture. While figure 4.2 shows a general improvement since 2009, figure 4.4 gives a much more mixed and volatile account from which it is difficult to draw clear conclusions. This raises the issue of whether the situation really has involved a large number of ups and downs and lack of progress overall, or reflects the underlying methodology whereby data are collected from trucker surveys at specific moments rather than over a sustained period over time.

Figure 4.2 Road transport governance indicators in West Africa (per 100 km)



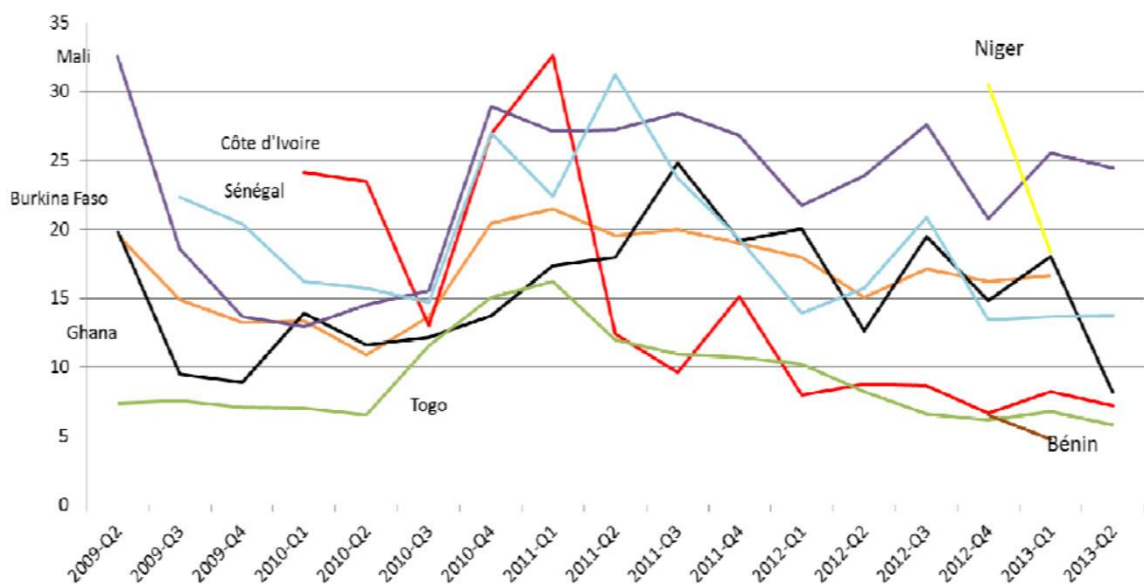
Source: Borderless Alliance 2013.

Figure 4.3 Number of controls in West Africa (per 100 km)



Source: Borderless Alliance 2013.

Figure 4.4 Delays caused by road controls in West Africa (minutes per 100 km)



Source: Borderless Alliance 2013.

13. In principle, roadblocks, delays, and illicit payments make it more costly for traders to ship their goods within countries and across the border into neighboring markets. Related information from corridor monitoring can thus improve the information base on trade transactions costs and is directly related to integration monitoring. Effective regional integration should lead to a reduction of trade transactions costs among partner countries and indicators such as those generated by Borderless and CILSS for West Africa can help to inform the policy dialogue on related progress.

14. However, there have been several one-off measures of performance indicators that come closer to this objective. One of the most comprehensive of these was the Logistics Cost Study of Transport Corridors in West and Central Africa, prepared for the World Bank in 2013. The objective of the study was to enable regional economic communities and individual countries to formulate policies that result in reduction of transaction costs along the main West and Central African corridors.

15. This study made use of a microeconomic approach first developed by Arvis and others (2007). In this approach, the total logistics supply chain costs paid by the shipper/consignee to or from a landlocked country are identified as the sum of two components: the financial costs of logistics services and costs related to the economic impact of delays and uncertainties. The formal and informal transaction cost data were derived from a combination of transport company accounts and interviews with staff and drivers of the same companies. The methodology is not easy to apply, as it involves interviewing representatives of transport companies and, as indicated in the report, they do not always have the data available and if they do, are not always willing to provide it.

16. However, the regular monitoring indicators collected for the East and West Africa trade and transport corridors do not provide all the information needed to assess the trade impacts of measures to improve corridor performance. They only provide data on some of the components of total transaction costs. However, some additional monitoring indicators, it might be possible to come close to measuring total transaction costs. In particular, if a panel of interested transport companies could be established in the corridor under investigation, the collected information could facilitate the provision of consistent transaction costs over time.

17. Following the methodology used in the Logistics Cost Study of Transport Corridors in West and Central Africa, prepared for the World Bank in 2013, transaction costs could be estimated in two parts, financial costs and hidden costs. The cost information might also be collected only for specific products or supply chains.

The indicators of financial costs would be the following:

1. Gateway charges (port costs) for the handling of freight within the port. These charges can usually be provided by shipping agents and/or freight forwarders.
2. Truck or rail tariffs. Average rail tariffs can sometimes be derived from railway financial accounts (if these are available); otherwise, the best sources are shipping agents and freight forwarders.
3. Inland freight handling charges. These include customs and other formal agency charges as well as those to freight handling agents. They can sometimes be found in the financial accounts of the traders, but more often must be obtained from interview information.

4. The indicators of hidden charges are more difficult to measure. All sets of the corridor monitoring indicators include some measure of these costs. The indicators that are currently collected and that would be useful for this purpose include (from the West Africa corridor monitoring indicators, which are more complete than those for the Northern Corridor):

1. Number of checkpoints, including border posts manned by official agencies (customs, police gendarmerie, health and forestry, immigration), expressed as number of checkpoints per km of route
2. Time taken to conduct controls at these checkpoints, expressed as total time and time per km of route
3. Amount of bribes or unofficial payments paid and collected at the checkpoints, expressed as a total in U.S. dollars and U.S. dollars per km of route.

4. Indicators of corridor trade volumes, other than those derived from port and customs data and national trade statistics, are also difficult to obtain. The missing element is data on trade that does not pass through the port and that is not collected at the inland border crossings. These data can be measured with specific analysis of land border customs data or from roadside surveys of truck operators. Suggested trade indicators from inland border customs agencies include trade flows (volume and value) between the countries involved in the corridor and some of their close neighbors (such as Tanzania for the Northern Corridor). From truck surveys, more detailed data can be obtained on origins and destinations of traded products, but only on a sample basis compared with the population basis for customs data. In addition, there is a chance of finding some evidence and quantification of otherwise unrecorded trade flows from these surveys.

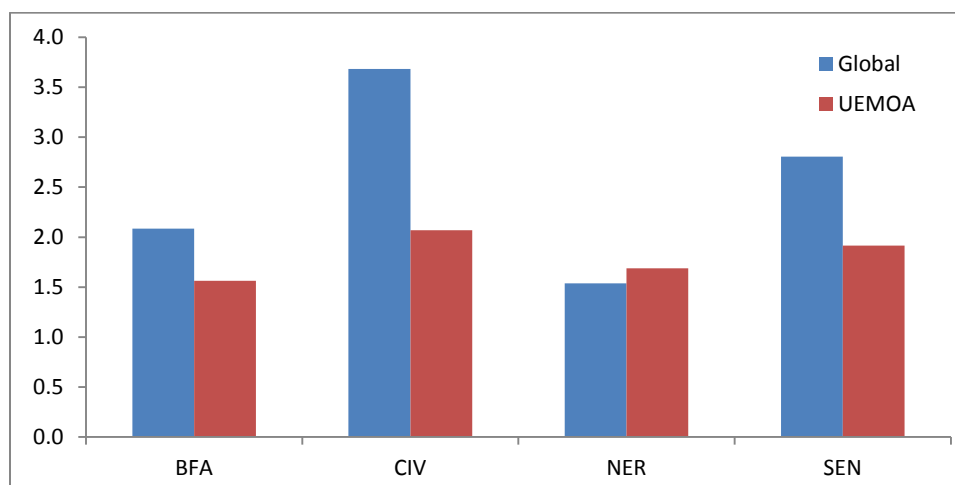
Transactions-level data from customs agencies

5. In recent years, data from customs agencies on firm-level exports and imports have increasingly become available. Based on such information from 38 developing and 7 developed countries, the World Bank released the Exporter Dynamics Database in 2012 (Cebeci and others 2012). A second release of an updated and expanded database was scheduled for early 2015.

6. This quantitative information at the individual firm level makes it possible to undertake cross-country comparisons of exporters based on factors such as size, survival, growth, and concentration. It can also be used to monitor the number of firms that are exporting to regional partners, and to analyze whether and to what extent firms that are exporting primarily to regional markets differ from those that are exporting globally. For example, data for West African countries suggest that in most cases (Niger is the exception) firms that are exporting regionally supply fewer markets than those that are exporting globally (figure 4.5). This finding seems to be driven by the global exporters being markedly larger in export value than regional exporters (figure 4.6).

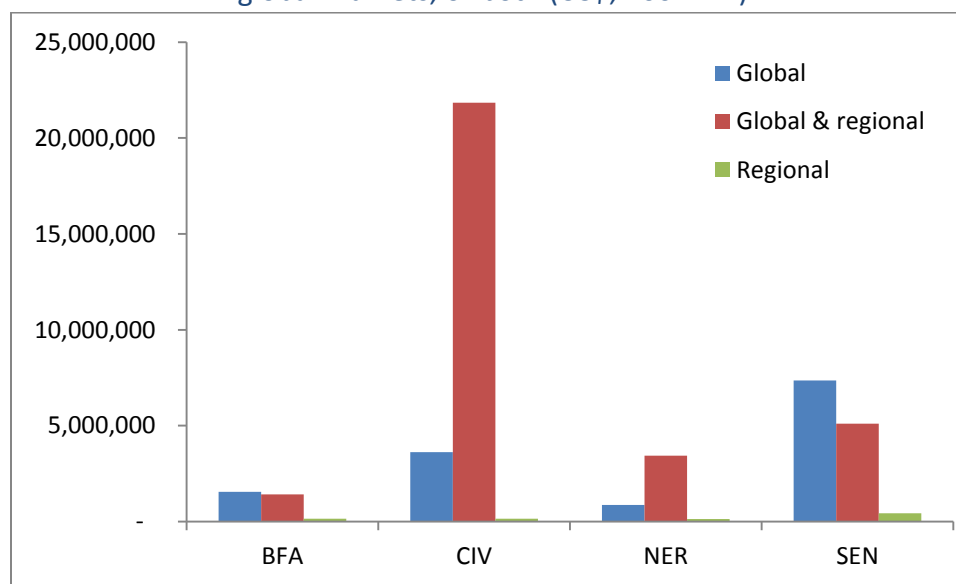
7. A question of central importance for the success of regional integration is whether firms can use the experience from exporting to regional partners as a springboard toward competitiveness in global markets. So far, the time-series in the Exporter Dynamics Database are not sufficiently long for African countries to address this issue conclusively. As more customs data are integrated into the database over time, regional integration monitoring could possibly draw on such firm-level information to integrate indicators that reflect the springboard character of regional markets.

Figure 4.5 Number of markets supplied by exporters oriented toward global or regional partners, 2007–12



Source: World Bank Exporter Dynamics Database.

Figure 4.6 Average export values to regional markets, global markets, or both (US\$, 2007–12)



Source: World Bank Exporter Dynamics Database.

#### Information on product price differences

8. Market price comparisons represent an indirect form of measuring regional integration. If markets are competitive, prices in different locations should not differ by more than the trade transaction costs to ship goods between locations. So as trade transactions costs fall as the result of regional integration, the prices of comparable products on different sides of the border should converge.

9. Price comparisons face several challenges. First, prices between two locations might converge in line with local supply and demand conditions despite persistently high transactions costs. In this case, however, there would be no trade observed between the locations and the two markets would be disconnected. Hence, to use price comparisons for regional integration analysis, analysts have to make sure that trade is occurring. This can generally be assured by focusing on comparisons between production (surplus) regions and consumption (deficit) locations.

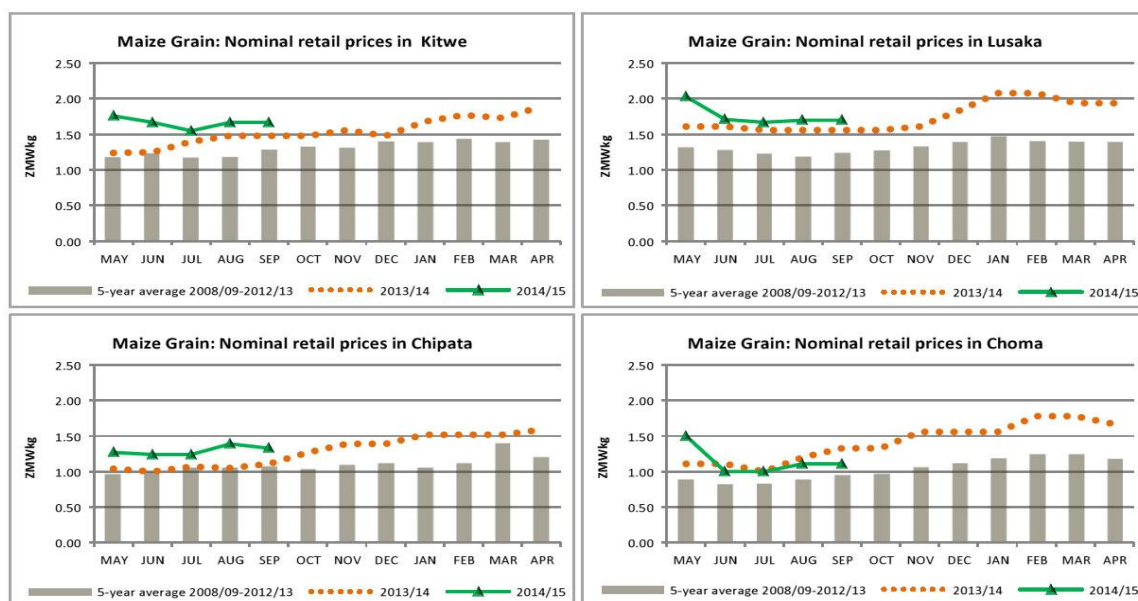
10. Second, the local markets, in which prices are collected, need to be competitive. If local traders have market power, they can influence local prices and distort the comparisons. The findings from price comparison analysis would in this case be spurious.

11. Third, the products under consideration need to be homogeneous. Comparisons should focus on goods or services of identical characteristics and quality. And many prices, especially those of agricultural products, are subject to strong seasonality, so it is important to base comparisons on information that is collected at the same relative point in time (i.e., the same stage in the season).

12. For 29 African countries, monthly information on staple food prices is available from USAID's Famine Early Warning Systems Network (FEWSNET) project. FEWSNET staff do not themselves collect price data, but the project's in-country representatives assemble national data sets from data gathered by government agencies. Price data are collected at different stages: wholesale, retail, assembly market, and producer market, with retail prices showing the broadest coverage. Figure 4.7 provides an example of FEWSNET reporting of food staple prices in different regions in Zambia.



Figure 4.7 Monthly maize prices in Zambia



Source: FEWSNET.

13. Just as FEWSNET compares prices across regions within a country, the data could similarly be used for comparisons across countries and time within an REC, and hence serve the purpose of regional integration monitoring. FEWSNET does not provide data for all African countries and the commodity coverage varies in the countries in which the service is active, but comparisons of prices along some major trade corridors would certainly enrich the integration assessments that are currently being prepared by RECs. Moreover, if more complete country and commodity coverage is desired, analysts could draw directly on the same government price reporting structures that FEWSNET does.

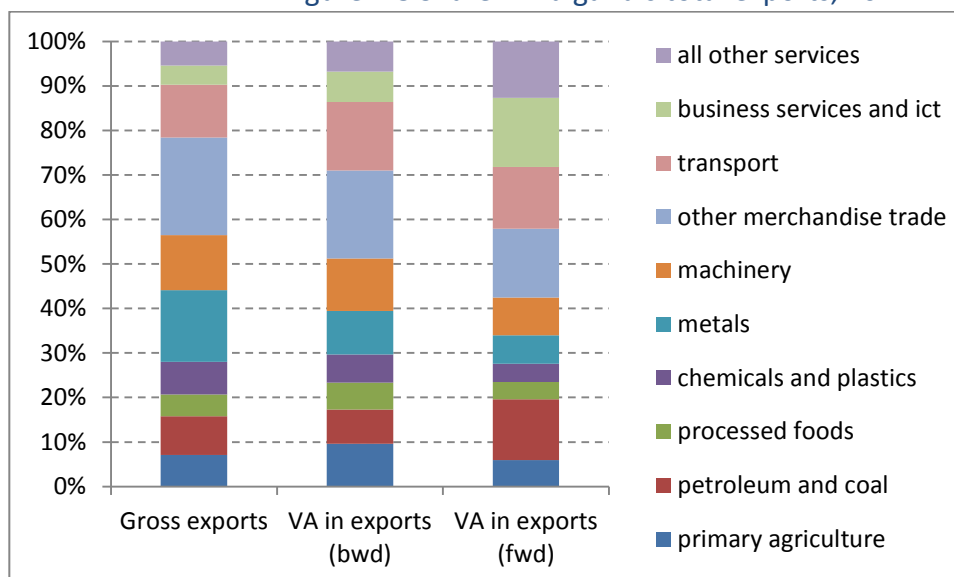
#### Trade in value-added data

14. Trade in value-added analysis has recently been used to estimate the sources of value (by country and industry) that is added in producing goods and services for export (OECD, WTO, and UNCTAD 2013; Francois, Manchin, and Tomberger 2013). The approach explicitly recognizes that growing regional and global value chains mean that a country's exports might increasingly rely on significant intermediate imports. Understanding these interdependencies is of critical importance for explaining the competitiveness of countries and the productivity gains that can be achieved by further international integration.

15. The analysis of trade in value-added can be undertaken in two alternative ways that yield complementary insights. In the first approach, an evaluation based on backward linkages takes stock of the value-added in exports of a particular sector, including the value-added that is provided by other domestic sectors through intermediate inputs. For example, the exports of the machinery sector would comprise the direct value-added in machinery production, as well as the value-added of intermediate inputs that the domestic plastics industry might have provided to the exported machinery items. The second approach that looks at forward linkages accounts for all the value-added that a sector provides directly to its own exports, but also indirectly to the exports of other sectors. For example, the exports of the machinery sector would consist of the direct value-added in machinery production for exports, but also a share of the value-added from exports of food that was produced with machinery of domestic origin.

16. The assessment on the relative contributions of particular sectors to export success can change markedly if trade in value-added is considered instead of gross exports. In particular, the contribution of some services sectors, such as transport and business services, is substantially larger if their inputs into exporting goods sectors are taken into account (figure 4.8). By contrast, sectors that rely heavily on imported intermediary inputs (e.g., metals in the case of Bulgaria) show a lower contribution to value-added in exports than to gross exports.

Figure 4.8 Share in Bulgaria's total exports, 2011



Source: World Bank.

17. The information on value-added in exports can also provide insights into the extent to which countries are integrated into regional and global value chains. The emergence of production chains

has been one of the key drivers of East Asia's success in exporting manufactured goods, while African countries have been largely left out of such production networks so far. Effective regional integration that reduces trade transaction costs should facilitate the emergence of regional networks, with different production stages being located in different countries according to their respective comparative advantage. In this context, the calculation of a global or regional participation index based on foreign value-added embodied in gross exports and the domestic value-added embodied in partner countries' gross exports (Koopman and others 2011) could provide a quantitative indication on the extent to which regional integration has succeeded.

18. The World Bank recently developed a trade in value-added database, based on the information and social accounting matrixes contained in successive versions of the Global Trade Analysis Project database (Francois, Manchin, and Tomberger 2014). Eighteen countries from Sub-Saharan Africa are covered. However, in its current form the database does not make it possible to distinguish between intraregional and extra-regional trade, so that the analysis of supply chains and the calculation of participation indexes is restricted to global production networks.

## Generating new indicators from new types of data sources

19. Better use of indicators from existing sources is certainly a promising avenue to enrich the information base for regional integration monitoring in a cost-effective manner. Yet, even with all the indicators discussed above, some information gaps will remain. For example, capturing regulatory aspects of services market integration is not possible with the available information on trade outcomes or policy restrictiveness. In these cases, new data sources will need to be found. Traditional surveys can be used to gather missing information, but these tend to be very costly. And it has been shown that surveys do not generate reliable information on some pertinent issues, such as the price and quality of different services, and surveys often do not cover individuals and businesses operating in the informal sector. In this context, alternative approaches to gather information have been proposed, such as mystery shopping and crowdsourcing. The following sections discuss the prospects for using these new data sources to derive new regional integration indicators and assess the representativeness and reliability of the resulting information.

### Mystery shopping data

20. Mystery shopping involves enlisting individuals who act as prospective customers to gather specific information about products and services. The mystery shopper's identity and purpose is thereby not known by the establishment that is being evaluated. Mystery shoppers inquire about a predetermined set of products and services and report their experiences in a consistent and comparable way. This technique is commonly used by corporations that want to ensure compliance with internal regulations and high-quality customer service, but it can equally be applied to obtain information on the availability and pricing of particular products and services. In comparison with traditional survey instruments, mystery shopping has the advantages of not requiring an appointment with a contact person in the target organization and not being subject to survey-induced bias in the responses, as the counterpart is not aware of the survey.

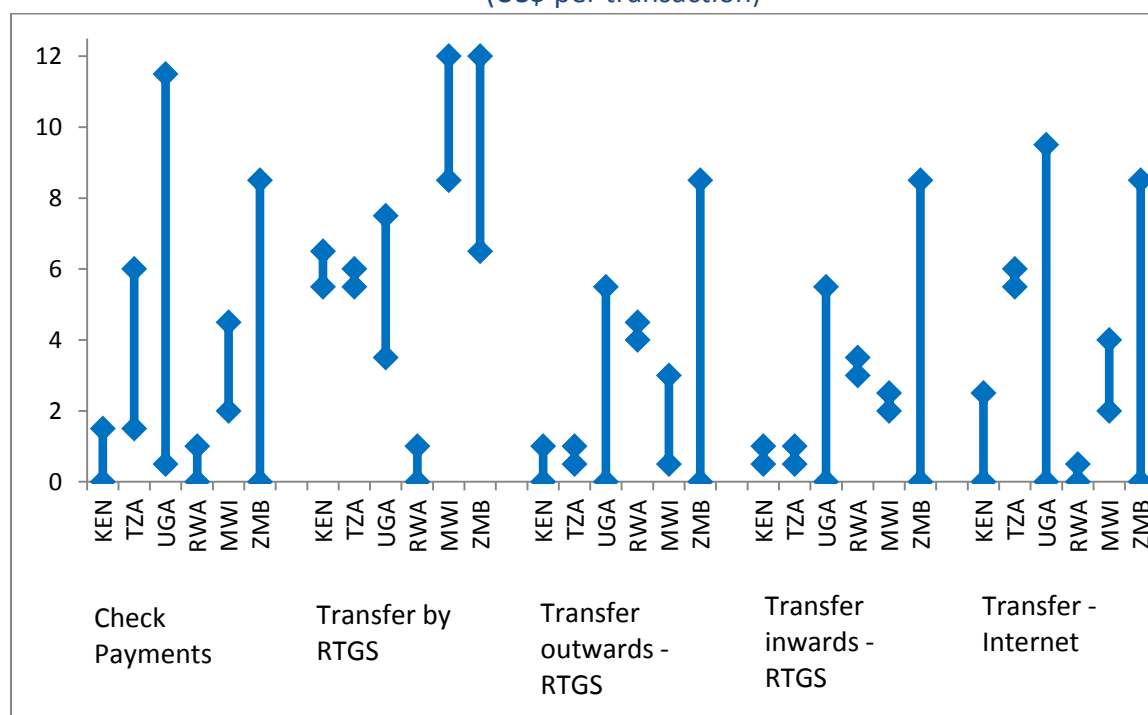
21. In principle, mystery shopping surveys have the potential to help fill important information gaps for regional integration monitoring. For example, the surveys could be used to assess whether services sector integration leads to a convergence in prices across the region. Similarly, they could provide insights into whether promises to remove non-tariff barriers are indeed implemented, so that the costs of NTBs decline over time.

22. In April and May 2014, the World Bank conducted a mystery shopping pilot study to collect information on the availability of banking, insurance, and accountancy services to small- and medium-size enterprises and the pricing of these services (a more detailed discussion of this survey is provided in annex C). A total of 216 anonymous customer visits to the offices of service providers were made in six COMESA countries (Kenya, Malawi, Rwanda, Tanzania, Uganda, and Zambia). The aim of the study

was to obtain comparable information on the availability of banking, insurance, and accounting services in the surveyed countries, as well as on the prices of standardized service products.

23. The survey responses provide broad information on the most common banking, insurance, and accounting services offered. They also provide information on price ranges of standardized services. In banking, for example, data on the costs to customers of domestic transactions, foreign funds transfers, and business account transactions in the examined countries were generated. However, the information on prices for banking transactions shows strong variability within and between countries (figure 5.1). The pronounced variation in the sample raises questions about the reliability of the data and the usefulness of calculating average prices to undertake comparisons across countries (and across time) based on this data set. Moreover, the comparability of insurance rates across the examined countries suffered from the presence of government subsidies for insurance coverage in some of the countries, which obviously distorts the prices. Moreover, in the accounting sector, services are highly customized to the individual situation of and relationship with the client, so that standardized, self-standing service quotes are not easily and reliably available. Hence, the generated information has to be treated with care.

Figure 5.1 Mystery shopping: Range of prices for selected domestic banking services (US\$ per transaction)



Source: World Bank.

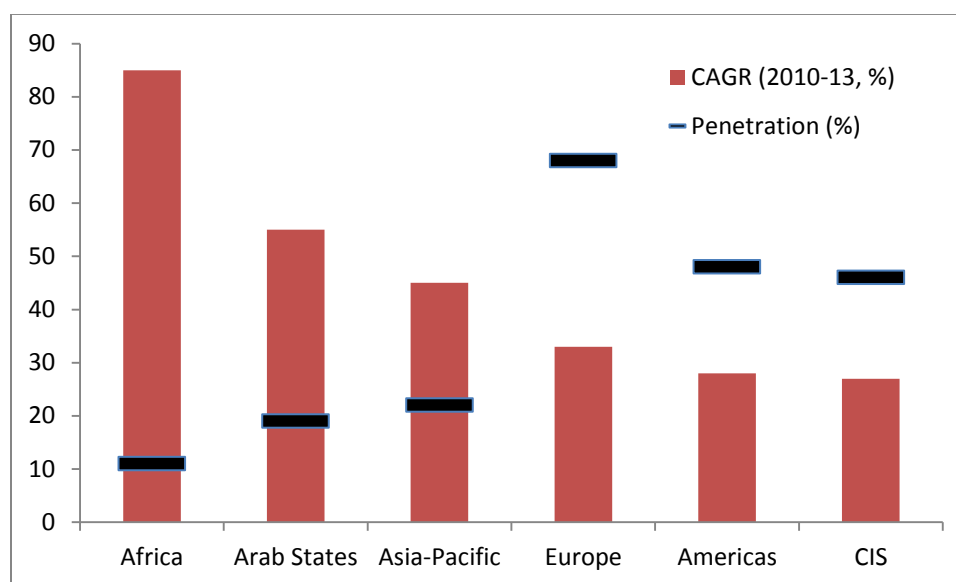
24. The findings from the World Bank's pilot study thus caution against the immediate use of mystery shopping data for regional integration monitoring, at least as far as the focus of the survey is non-standardized or bundled services. The large variation in the services pricing data reduces the confidence in use of this type of information to assess policy decisions on regional integration over time. The technique seems to require refinement to standardize the situational context and the services products covered, and an increase in the sample size to generate data that can reliably be compared across countries and indicate progress over time toward integration. Nonetheless, having some cross-country information on services pricing is valuable and could be included in an integration monitoring report as a descriptive insert, such as a text box, to keep the important underlying integration issues from falling out of view, so they remain on the agenda of policy makers. Moreover, there are other areas of integration where mystery shopping could work well. For example, in agriculture and transport, the technique could be a useful way to get simple price data from the market and from haulers.

#### Crowdsourcing data

25. Crowdsourcing is the process of soliciting contributions from a large group of people—often an online community or a group of mobile device users. The technique relies on the efforts of a large number of volunteers to assemble data and information that is then processed and aggregated to provide an overall situational assessment. Crowdsourcing can generally provide data quicker and cheaper than other surveying approaches, as the information is digitalized from the point of user input and then immediately transmitted to the data management center. There is also no need for interviewers, as the information is user provided via their digital device.

26. Crowdsourcing seems to be increasingly well suited for use in Africa, as the prevalence of social networking and mobile applications is expanding rapidly. For example, although the penetration of mobile broadband in Africa is still lower than in other regions of the world, the growth in connectivity far outpaces the expansion rates elsewhere (figure 5.2). Hence, a growing population of potential contributors to crowdsourcing surveys exists.

Figure 5.2 Penetration and growth of mobile broadband subscriptions



Source: International Telecommunications Union.

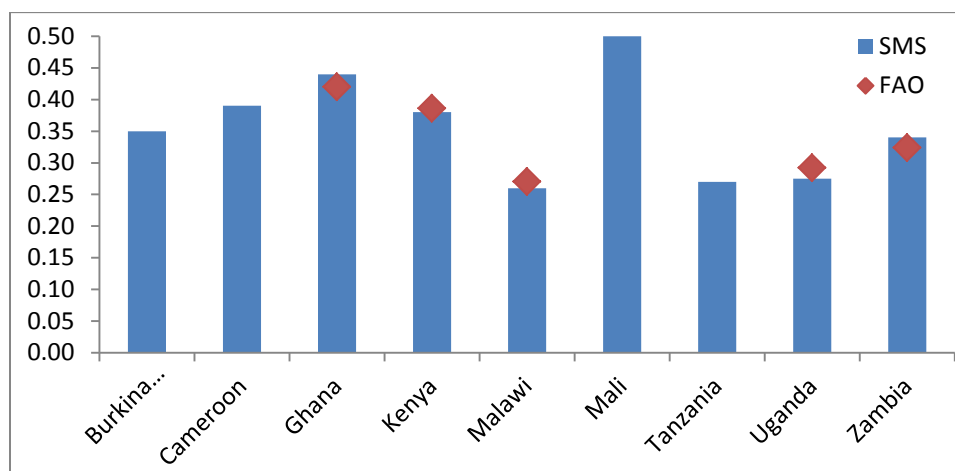
27. There are a number of possible uses of crowdsourcing surveys for the purpose of regional integration monitoring. Contributors could be asked to provide information on particular barriers to trade they are facing or to report on product and services prices, which could then provide insights on the extent to which markets are integrated across borders. It would thereby often be useful not to undertake these surveys as self-standing processes, but to place them in the context of other interactions with the contributors to provide the latter with incentives to participate. For example, information on prices for agricultural inputs, such as fertilizer or seeds, could be collected as a by-product of an agricultural extension program, or data on border waiting times could be sourced through an app that helps truckers manage their fleet. Alternatively, contributors could receive direct financial incentives, for instance through a top-up of their mobile plan.

28. In 2014, the World Bank used short message service (SMS)-based crowdsourcing surveys to conduct three pilot studies on intraregional trade in Africa. The first pilot focused on the prices and quality of maize, seeds, and fertilizers, and targeted farmers from Burkina Faso, Cameroon, Ghana, Kenya, Malawi, Mali, Tanzania, Uganda, and Zambia.<sup>8</sup> An SMS survey was administered to about 150 respondents in each of the target countries, based on an existing phone directory.

29. The results of the farmer survey showed a large number of extreme price values, which are likely related to typos during the data entry. After correction for such outliers, the average prices for maize, for example, fall into a reasonable range and, in fact, correlate closely with pricing information from the Food and Agriculture Organization (FAO) in those countries where such information is available (figure 5.3). A similar level of consistency in the results was observed for fertilizer price

information (figure 5.4), while the data on seed prices showed unexpectedly large variation, which might be related to the more heterogeneous nature of the product and the relatively low number of responses concerning seed pricing.

Figure 5.3 Price of maize in survey countries (US\$/kg)

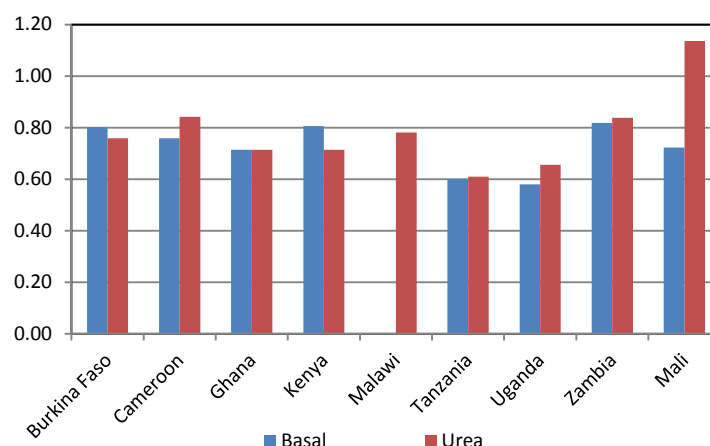


Source: World Bank.

30. Statistics on the prices, quality, and consumption of fertilizers in Sub-Saharan Africa are poor, so that additional information is very welcome to provide a more comprehensive picture of the market. In the SMS survey, farmers were asked the price they paid for the fertilizers they use. The results suggest that prices for homogeneous products can differ substantially between neighboring countries. For example, the price of urea was found to be more than 16 percent higher in Kenya than in Tanzania.

Figure 5.4 Price of fertilizers, by type (US\$/kg)

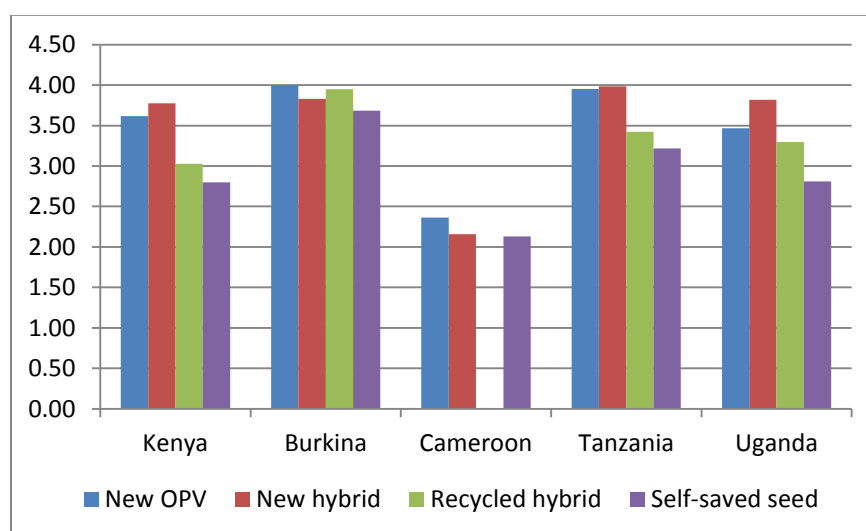




Source: World Bank.

31. In addition to obtaining data on specific prices or quantities of goods and services, SMS surveys are also a useful tool to obtain information on the perceptions of consumers and producers or farmers on a range of qualitative aspects rather than price. Figure 5.5 shows the average level of reported farmer satisfaction with the seeds they are using. With the exception of Burkina Faso, farmers are more satisfied with using new open-pollinated varieties (OPVs) and new hybrids rather than recycled and own seeds. Interestingly, farmers in Cameroon have a much lower level of satisfaction with their seeds than farmers in other countries have.

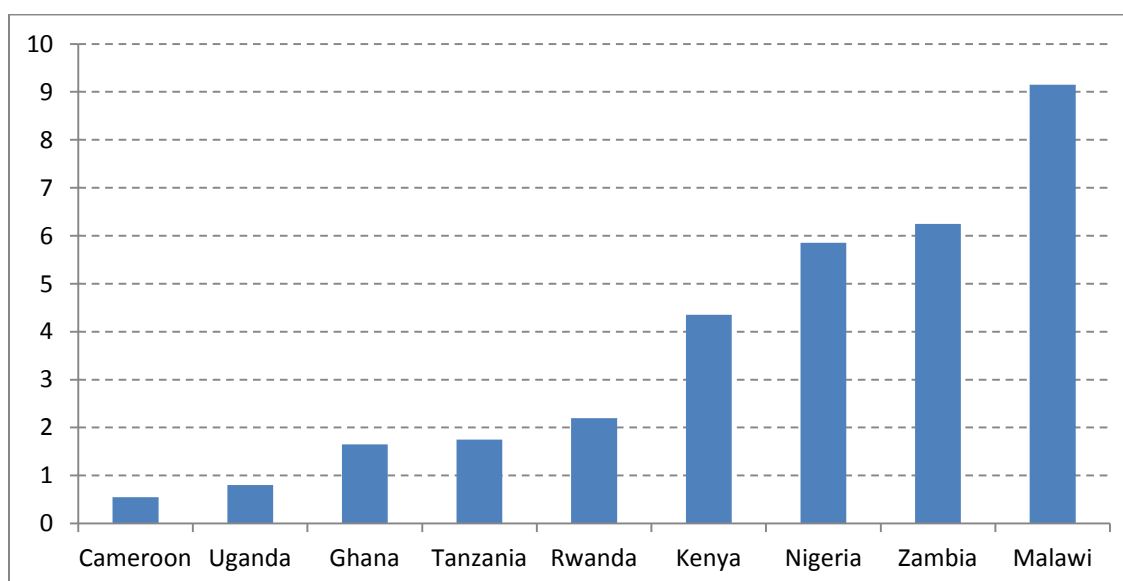
Figure 5.5 Average level of satisfaction, by type of seed (1=dissatisfied; 5=very satisfied)



Source: World Bank.

32. The second pilot study gathered quantitative information on trade in health and education services in Cameroon, Ghana, Kenya, Malawi, Nigeria, Rwanda, Tanzania, Uganda, and Zambia (see annex E). The study aimed at obtaining (i) data on health and education professionals, as well as students and patients involved in trade in health and education services; (ii) information on differences in the cost and quality of education degrees and medical treatments across countries; and (iii) information on the recognition of foreign academic degrees and medical qualifications. The results from the SMS-based survey highlight the extent and importance of regional trade in health and education services, while also suggesting that service costs are not necessarily the drivers of trade flows in services. Instead, the availability and quality of services seem to be more important factors. Moreover, the crowdsourcing technique generated comparable information on selected barriers to services trade, such as the time it takes to recognize the foreign degrees of professionals (figure 5.6), or the cost of courses required for the recognition of the degrees obtained abroad.

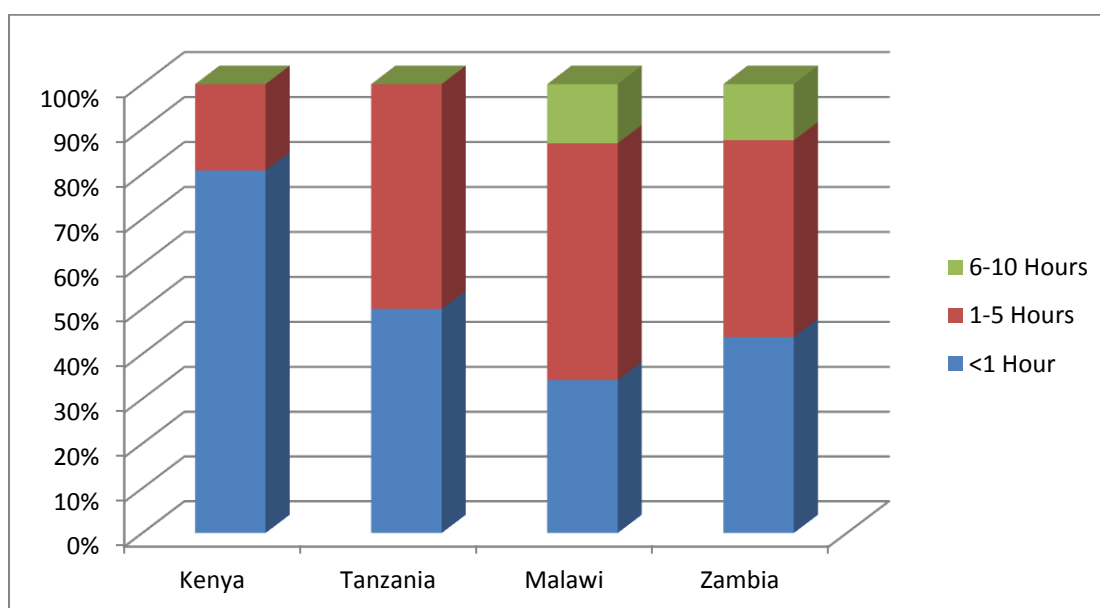
Figure 5.6 Time required to recognize medical degrees obtained abroad (weeks)



Source: World Bank.

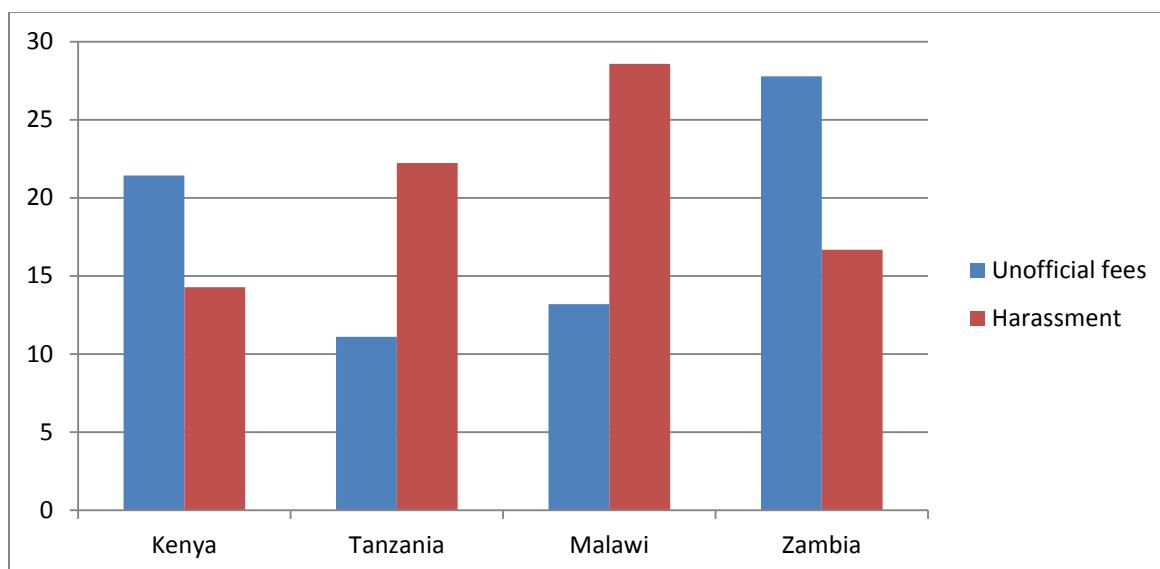
33. The third study obtained information from small cross-border traders in Kenya, Malawi, Tanzania, and Zambia. Through a cell-phone based questionnaire, the traders were asked about their most recent experience of crossing the border in time taken, whether they paid unofficial fees, if they were subject to insults or physical abuse, and which goods they were carrying. Figures 5.7 and 5.8 show the responses to the questions on time to cross and bribes and harassment. The data can be further disaggregated by gender. In addition to providing comparative data to authorities on progress in facilitating trade for small traders, this information also draws attention to the opportunities for peer-to-peer learning.

Figure 5.7 Reported time to cross border



Source: World Bank.

Figure 5.8 Proportion of traders reporting bribes and harassment



Source: World Bank.

34. The three pilot studies confirm the potential of crowdsourcing techniques to generate new indicators of trade integration. Some of the data generated, such as information on product prices and the costs of services trade barriers, are directly relevant for regional integration monitoring. The large number of outliers in the raw data, due to input error, call for a careful verification and cleaning of the data sets. The approach naturally lends itself only to issues that can be assessed through simple, clear questions that do not need explanation.<sup>9</sup> Issues concerning the representativeness of the sample and the necessary sample size to obtain meaningful results also need to be carefully addressed. While keeping these challenges in mind, the cost advantage and the capacity to deliver new and timelier data relative to traditional face-to-face surveys is such that crowdsourcing holds substantial promise for enriching the indicator set available to monitor regional integration and to fill important information gaps in Africa.

## The way forward

35. Formal regional integration efforts in Africa have been ongoing for more than 50 years and important poverty reduction and economic development outcomes depend on an effective implementation of the existing RTAs. Hence, regional integration monitoring cannot wait until a perfect set of indicators has been assembled. Instead, analysts and policy makers have to work with the information that exists for their particular integration arrangements while trying over time to expand and supplement the informational basis on which their monitoring assessment is built.

36. At the same time, integration monitoring should be comprehensive, such that it covers all the different dimensions of trade integration (merchandise trade, services trade, trade facilitation, and factor movements), and effective, in the sense of making it possible to assess the extent to which regional policy reforms have lowered trade transactions costs and facilitated the cross-border operations of private sector firms. In Africa, these requirements of comprehensiveness and effectiveness can hardly be met with the currently available indicators from traditional data. Therefore, the pursuit of high-quality integration monitoring immediately suggests the need for major efforts by regional economic communities and the donor community to develop new indicators.

37. First, the priority for indicator development in particular RECs will be determined by the currently available monitoring information and the existing indicator gaps. All the main aspects of trade integration—tariff barriers, non-tariff barriers, services trade regulations, and logistics performance impediments—should be covered by appropriate indicators. If there are monitoring gaps, addressing this complete lack of information in a particular area should be high on the list. A second consideration for the prioritization of indicator development is the relative importance of different trade transaction cost components. For example, if transport and logistics costs account for a substantial share of total trade costs, but are poorly covered by existing monitoring efforts, the focus of indicator development might usefully fall on this area. A third aspect for the prioritization of indicator development efforts is related to ongoing and prospective regional trade reforms. If some major new policy reform is in the pipeline, the set of monitoring indicators should be designed such as to make it possible to capture the impacts of the policy change. Hence, regional integration monitoring and indicator development should be forward looking and responsive to the policy agenda.

38. Linking trade outcomes to particular policy changes is, of course, difficult, as trade is driven by many policy and non-policy factors. As a result, in some cases indicators might provide spurious or erroneous information on integration progress. To guard against this risk of interference from non-integration factors, the development of disaggregate indicators should be given priority. The more specific an indicator is, the fewer factors will tend to influence it and the more trustworthy it will likely be in tracking integration policy outcomes. Moreover, having several indicators for a particular policy

area at hand is highly desirable, as the various measures will provide a more comprehensive account of the situation. If different indicators provide conflicting information, analysts will be alerted to investigate the underlying developments.

39. One particular attribution problem arises from non-tradables. Some parts of total trade transactions costs will likely be related to non-tradable cost components, such as some services or land-related costs. By definition, these components will not be influenced by trade and trade policy reforms, but will be driven by other factors. Thus, non-tradables will introduce “noise” into the measurement of transaction cost indicators. While this issue cannot be entirely avoided, having several disaggregate indicators for different trade transaction cost components available will mitigate the problem and help to extract the correct signal from the data. Consideration of some indicators that capture the evolution of non-tradables, such as wage developments in services or land prices, could help in identifying potential measurement problems and taking their effects into account.

Lessons from the review of new indicators

40. The earlier analysis discussed the potential of new regional integration indicators from existing and new data sources. Table 6.1 provides a schematic overview of the prospective usefulness of different new indicator sourcing methods and their respective strengths and implementation challenges. While all the indicator sources might help to enhance the effectiveness of regional integration monitoring, they differ markedly in their relative ease of operationalization and resource demands.

Table 6.1 Potential for new indicators from different data sources

Data sourcing method	Indicator(s)	Strengths	Challenges
Corridor monitoring	Time and costs of transport	Operator perspective of trade facilitation	Consistency and quality of survey instrument
Firm-level customs data	Exporter characteristics and dynamics	Microeconomic perspective of trade relations	Confidentiality concerns
Price comparison data	Prices of food staples/commodities	Data to assess convergence of prices over time	Comparability of observations; impact of different levels of competition among intermediaries
Trade in value-added information	Degree of integration into international supply chains	Possibility to evaluate network effects	Need for up-to-date input-output matrix
Mystery shopping	Prices of standardized services; costs associated with non-tariff barriers	Firsthand data on otherwise difficult to assess integration aspects	Costly to achieve representative sample size; high variability of results in (pilot study) findings
Crowdsourcing	Prices of goods and services; satisfaction with goods and services over time	Data to assess convergence of prices	Verification of the quality of the data

Source: World Bank.

41. If these new indicators were to become available, the process of regional integration monitoring would certainly be enriched and extended into aspects of integration that were previously not assessed via quantitative information. The new indicator sources are not equally advanced and the development of some new indicators will take more time and resources than others. Data from transport corridor monitoring committees as well as commodity price data seem readily available and could be used for integration monitoring at relatively low costs. Meanwhile, information on firm-level trade transactions and trade in value-added is still in the process of being collected and formatted for a sizeable sample of countries and consistent time-series are missing. The pilot studies undertaken by the World Bank revealed substantial potential for indicator development with the use of crowdsourcing surveys, while the pilot mystery shopping surveys highlighted several issues and

challenges that have to be overcome before the method can be confidently used to track progress on regional integration.

42. Tables 6.2 and 6.3 provide an overview of a set of existing and new indicators that could be used in an integration monitoring report and list the associated data sources. This collection of indicators is, of course, not exhaustive and could readily be amended according to a particular REC's access to supplementary indicators.

Table 6.2 Data sources for trade transaction cost indicators



Indicator(s)	Principal source(s)
<u>Tariff barriers</u>	
Preference margin accorded to regional trade (by sector)	Customs/Ministry of Finance
Tariff revenue from intraregional trade	Customs/Ministry of Finance
Share of intraregional trade that pays MFN duties	Customs/Ministry of Finance
Amount of informal payments required to cross border	Trader survey/corridor information
<u>Non-tariff barriers</u>	
Number of tariff lines that are subject to import/export bans	Customs
Number of tariff lines that are subject to import/export quotas	Customs
Cost and time to obtain certificate of origin	Customs/trader survey
Percentage of certificates of origin that are rejected at the border	Customs/trader survey
Time and cost of obtaining import/export permit	Trader survey/mystery shopping
Time and cost of obtaining SPS certificate	Trader survey/mystery shopping
Time and cost of standard test for aflatoxin in food staples	Trader survey/mystery shopping
<u>Trade and transport facilitation issues</u>	
Average cost per mile to transport goods to neighboring markets	Trader survey
Number of roadblocks on key trade routes	Corridor monitoring committee
Number of weigh stations on key trade routes	Corridor monitoring committee
Number of transport operators that traders can choose from	Industry association
Cost of trade transport and insurance (fob/cif difference)	Firm-level data from Customs
Number of documents required for import/export	Doing Business database
Time required for import/export	Doing Business database
Perception on the performance of the logistics sector	LPI database
<u>Services barriers</u>	

Restrictiveness of services regulations	STRI database
Time and cost to start a foreign business	Doing Business database
Time and cost to obtain a banking/insurance license	Foreign affiliate survey
Time and cost to obtain a business visa for neighboring markets	Crowdsourcing/trader survey
Time and cost to get a foreign degree recognized	Crowdsourcing
Time and cost to obtain a work permit for neighboring markets	Crowdsourcing/trader survey
Number of joint meetings held by sector regulatory bodies	Ministry of Commerce

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*Source:* World Bank.

*Note:* CIF = cost, insurance, and freight; FOB = free on board; LPI = Logistic Performance Index; MFN = most-favored nation; SPS = sanitary and phytosanitary; STRI = Services Trade Restrictiveness Index.

Table 6.3 Data sources for trade outcome indicators

Indicator(s)	Principal source(s)
<u>Merchandise trade</u>	
Imports/exports/net exports (regional/global and by sector)	Customs/Statistical Office
Merchandise trade-to-GDP ratio	Customs/Statistical Office
Diversification indexes (across products and markets)	Customs/Statistical Office
Number of exported products (regional/global)	Customs/Statistical Office
Technology content of exports (regional/global)	WITS
Export survival rates (regional/global, by product and market)	Firm-level Customs data
Number of firms that are exporting to regional partners	Firm-level Customs data
Number of products exported to regional partners per exporter	Firm-level Customs data
Value of exports to regional partners per firm	Firm-level Customs data
Degree of supply chain integration (regional/global)	TiVA database
Prices of homogeneous food staples/commodities	Statistical Office/crowdsourcing
<u>Services trade</u>	
Imports/exports of services (regional/global, by mode and sector)	Central Bank
Services trade-to-GDP ratio	Central Bank/Statistical Office
Number of firms that are exporting to regional partners	Central Bank
Fees charged by service providers for standardized services	Mystery shopping survey
Number of professionals working abroad under MRAs	Ministry of Commerce
Number of university students from partner countries	Ministry of Education
<u>Foreign direct investment</u>	
Amount of FDI (regional/global, green/brownfield, and by sector)	Central Bank
FDI-to-GDP ratio	Central Bank/Statistical Office
Number of foreign affiliates in the country	Central Bank/Statistical Office

Labor movement

Number of foreigners working in partner country (by sector)	Statistical Office
Share of the workforce that is of foreign origin	Statistical Office

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*Source:* World Bank.

*Note:* FDI = foreign direct investment; GDP = gross domestic product; MRAs = mutual recognition agreements; TiVA = trade in value-added; WITS = World Integrated Trade Solution.

Frequency and structure of integration monitoring

43. How frequently should an integration monitoring report be published and what form and structure should it take? It is desirable to provide stakeholders with near-term information on the progress with regional integration and release new information as soon as it becomes available. For example, the USAID-supported Borderless project in West Africa publishes the results from its surveys of transport impediments along major corridors on a quarterly basis. Such high-frequency reporting is resource-intensive, however, and many trade indicators will become available only on a less frequent, often annual basis.

44. A once-a-year stocktaking publication might be the most appropriate setup for many regional integration initiatives in Africa. This annual report could be supplemented by higher frequency newsletters or Internet-based updates on integration indicators that become available intermittently. The yearly cycle also provides the author team with an opportunity to plan and undertake in-depth analysis on selected issues, rather than just reporting indicator outcomes. A longer biannual or pluri-annual publication cycle – although better than no integration monitoring—would risk missing the timely assessment of developments and keeping the attention of policy makers focused on the issue of effective regional integration. Experience suggests that effective and timely dissemination of indicator information has helped to focus attention on the issue of trade barriers and led to efforts to remove them, such as roadblocks in West Africa. Hence, indicators should be used as part of regular dialogue with stakeholders to sustain the momentum toward barrier removal.

45. One question that all authors of an integration monitoring report will have to face concerns the format and structure of the report. Trade is an area where there are a lot of data available—even without considering new indicators—and this information can be analyzed at various levels of aggregation and orientation. Hence, just describing trade outcomes could span many, many pages, so that an integration monitoring reports risks becoming too long to be an effective communication tool that busy decision makers will read and use. Moreover, the basic structure of trade outcomes and trade relations tends to change only gradually from year to year, so that the report might appear

repetitive to the loyal reader. Similarly, the REC's provisions on particular integration issues only change occasionally and do not need to be recited in the main text every year. These challenges of keeping an integration monitoring report short and interesting call for the extensive use of annexes to report on data and information that does not necessarily need explanation and interpretation.

46. The main body of the report could then focus on a summary of progress made toward regional integration. In the interest of presenting fresh content every year, it could usefully open with a section on recent policy changes affecting regional integration, followed by a special theme that provides a more in-depth treatment of a particular integration issue and that would change from report to report. These sections would then be followed by short discussions of the different aspects of integration—trade transactions costs, trade outcomes, and national compliance—and possibly culminate in a concluding section with a scoreboard that provides an easy-to-grasp overview of the status of integration. Hence, an outline of an integration monitoring report might look like the template presented in table 6.4.

Table 6.4 Template for an Annual Integration Monitoring Report

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Executive summary	
1.	Recent policy developments concerning regional integration
2.	Special theme of the edition
3.	Trade transactions cost analysis
1.	Tariff barriers
2.	Non-tariff barriers
3.	Trade and transport facilitation issues
4.	Services barriers
4.	Trade outcomes analysis
1.	Merchandise trade
2.	Services trade
3.	Foreign direct investment
4.	Labor movement
5.	Compliance with REC's integration provisions
1.	Merchandise trade
2.	Services trade
3.	Foreign direct investment
4.	Labor movement
6.	Conclusion and scoreboard
Data and information annexes	

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Source: Author.

Note: REC = Regional Economic Community.

7. Inspiration for the special theme part of the report could come from different sources. A conference or workshop that the REC has organized might have generated information from member countries on particular aspects of regional integration that was not available earlier. The findings from

a survey that an REC, donor, or research institution has undertaken could be presented, as could analysis on the prospective impacts of upcoming regional trade policy changes. There seems to be no shortage of relevant topics that could be taken up, so that the author team should find it relatively easy to give the report a fresh identity every year.

8. Even with a compact report, having a good executive summary would be important for making the information more easily accessible. Indeed, the executive summary, perhaps in combination with the report's conclusions and scoreboard, could be published as a self-standing policy note for wider dissemination to member countries, civil society, and the press. A widespread distribution of the findings among stakeholders seems critical to foster a lively, evidence-based policy dialogue about progress toward regional integration, or the lack of it.

#### Role of development partners

9. The poor implementation of regional trade arrangements after decades of integration efforts and the rudimentary status of integration monitoring suggest that a more active engagement of the donor community might be necessary to strengthen regional integration monitoring in Africa. Interventions might be particularly productive in two areas, indicator development and editorial guidance within an overall context that stresses the importance of staying focused on outcomes rather than outputs.

10. First, given the substantial information gaps in “nontraditional” areas of trade, such as services trade, trade facilitation, and factor movements, as well as the quasi-absence of information on trade transactions costs at the firm level, support from donors for indicator development could have a critical enabling effect for effective integration monitoring in Africa. Upgrading the statistical apparatus, undertaking surveys, and developing data products is expensive and often beyond of the means of RECs. Hence, technical assistance, launch aid, and possibly even continuing support might be required from donors to help RECs assemble the indicator base required. Naturally, where equivalent lower-cost indicators from existing data or existing sources are available, these should be given priority over the development of expensive new indicators from new sources. Yet, in some cases, the expenses associated with a mystery shopping or crowdsourcing data product might be justified by the additional insights these indicators could provide. Exactly which indicators or groups of indicators warrant the support of development partners very much depends on the informational situation of the REC and the feasibility of generating the desired data in a budget-friendly manner and is thus very region specific.

11. The second area where development partners could usefully play a role is editorial guidance. Some RECs currently already prepare integration monitoring reports, which, however, are often neither very discerning in identifying the progress made toward regional integration nor very effective

in stimulating policy dialogue. Technical assistance and capacity building to enhance the quality of the reports might, thus, be warranted. Such assistance could take different forms. For example, a donor could take the lead in drafting an integration monitoring report for an REC to provide the latter with a template to follow and develop in future years. This approach, which was pursued during the production of the Association of Southeast Asian Nations (ASEAN) Integration Monitoring Report (ASEAN-World Bank 2013), has the advantage of generating a comprehensive, high-quality document that reflects the latest data and analytical tools available.

12. On the downside, the reference document approach might appear over-engineered from the REC's perspective, such that the local author team does not identify with the report and does not have the resources and technical capacity to reproduce a comparable document in future years. An alternative form of cooperation in this context could be to build more gradually on the existing monitoring process by enhancing capacity in the local author teams with respect to integration monitoring and to provide selective editorial assistance in the drafting of "new" sections, as well as peer-review support. This gradual approach has been pursued in the World Bank's support to UEMOA (UEMOA 2015). It will likely take longer to reach the targeted scope and analytical depth in the integration monitoring process and success will be contingent on the retention of the trained local author team, but the ownership of the report within the REC will likely be higher, with benefits for a more effective dissemination and policy dialogue.

13. Another type of editorial donor support could consist in the organization of peer learning events. Bringing the author teams from different RECs together for information sharing and capacity building workshops could add impetus toward updating existing integration monitoring paradigms and expose participants to global and regional best practices. This peer learning support could, of course, complement the two forms of editorial guidance mentioned earlier.

14. Finally, a donor or a combination of donors could launch a new annual flagship report on regional integration monitoring in Africa. This report might assess progress toward regional integration using transaction cost and trade outcome indicators across all the major RECs on the continent in a consistent and comprehensive manner. Such a report would thereby not necessarily entirely replace the existing integration monitoring efforts in RECs, but could, for example, actively seek input from RECs for REC-specific chapters on integration compliance within the report. However, the resource needs of this flagship-type assistance would exceed those of the other forms of editorial guidance and require longer-term commitments from donors to ensure the sustainability of the undertaking.

Dissemination and next steps



15. Following the Bank review meeting of this report, the team will engage with RECs in Africa to discuss and validate the approach proposed here. Attention will focus on the secretariats of COMESA, ECOWAS, SADC, and UEMOA. The discussion will look for entry points to influence the design and associated data collection of regional integration monitoring reports and explore support for the production of such reports. A pilot with one of the RECs to test the recommendations from the report may be the most sensible way to proceed. Through initial dialogue with UEMOA, the project has provided inputs into the forthcoming UEMOA annual report on regional integration. The team will also engage with the relevant donors and, in particular, the European Union and Department for International Development to discuss the methodological issues and the potential for collaboration in supporting modernized regional integration reports in the context of regional support programs.

16. Dissemination events that engage with a wider group of stakeholders in Africa will also be pursued and in particular efforts will be made to include those who are typically excluded from discussions about regional integration policies and the monitoring of policies. Efforts will be made to partner with other institutions that are already engaging with the RECs and stakeholders around the issue of regional integration and associated monitoring of impacts. The team will also discuss with telecoms and other relevant companies about how they could become actively involved in crowdsourcing initiatives, including under corporate social responsibility initiatives.

## Annex A Utility and limitations of official trade data<sup>10</sup>

The opportunities for Sub-Saharan Africa (SSA) to boost economic growth, improve food security, and fight poverty through increased regional trade are well known. And greater regional integration has been the focus of policy makers and development organizations for years—evidenced primarily by the proliferation of regional economic and trade communities and other preferential trade agreements. The rationale is clear: regional trade integration enables greater economies of scale; provides access to new markets, products, and services; allows food staples to move from surplus areas to areas of deficit; and reduces prices for consumers. Nevertheless, intraregional trade in SSA remains low relative to other regions around the world (Acharya and others 2011).

One of the keys to improving regional integration is comprehensive and systematic monitoring of the movement of goods, services, and people within the region. With effective monitoring, policy makers will be able to target policies and interventions more appropriately to address specific issues and make needed improvements. As Walkenhorst (2013) points out, however, most of the integration monitoring conducted in Africa is based on measuring *compliance* with various economic policies enumerated in regional trade agreements. A more adequate monitoring system would focus on *outcomes*—increased trade among SSA countries, reduced travel and transit times, improved access to imported inputs, and lowered transaction costs (official and unofficial), among others. These are more *direct* indicators reflecting the factors that impact the day-to-day operations of businesses and traders on the ground.

At this time, however, the data needed to adequately benchmark and measure changes in regional economic integration are lacking. The World Bank is currently engaged in efforts to improve data collection and monitoring that extends well beyond what is currently available to develop new regional integration indicators that capture trade facilitation metrics, informal trade, trade in services, and agricultural integration, among others. Further, the Exporter Dynamics Database developed by the World Bank's Research Department offers far more granular, firm-level data that allow fantastic new trade analysis opportunities—although coverage in SSA remains limited.

In the meantime, the measures of regional trade integration most widely cited by policy makers remain aggregate indicators based on official trade data, such as changes in total volume and value of intraregional trade, intraregional trade-to-GDP ratios, and the share of regional trade in total trade with the world.

On their face, regional trade integration indicators based on official trade data are simple to calculate and straightforward to understand, but they also have obvious limitations. For instance, they fail to

capture important informal trade that occurs between neighboring SSA countries—trade that is critical for poverty reduction and, in particular, for female traders (Brenton and Isik 2012b). And cross-border smuggling is not captured in formal trade statistics. Aggregate indicators are also impacted by variables outside the region, such as demand shocks originating in major external markets. Thus, their utility in advising specific and targeted policy interventions can be limited.

Nonetheless, given the continued widespread use of trade data for indicators of SSA regional integration and the present dearth of viable alternatives, it is important to understand what exactly regional integration indicators based on official trade data *can* tell us and where difficulties associated with official trade data remain. Thus, the remainder of this policy note seeks to shed light on (i) the availability of trade data and what gaps exist in SSA, (ii) the challenges presented by issues with accuracy and consistency, and (iii) methods for drawing more detailed and helpful insight from trade data in SSA.

#### A.1 Availability of official trade data in SSA

The UN Comtrade database is the most comprehensive source for data on global trade flows. The database compiles official trade statistics from reporting governments. Typically, these statistics are reported and updated annually and include breakdowns of trade values and volumes (by weight) by commodity/product and trade partner. The database does, however, rely on each economy's government to report the data before they can be validated and included in the database. For this reason, gaps in data availability exist. A country may not report any data for a given year, and it is up to the country to determine how to classify its traded goods and the level of aggregation (e.g., a country may report its trade at the HS 4-digit level rather than the 6-digit level). Gaps and differences in reporting standards, therefore, can complicate efforts to measure the trade of groups of countries accurately.


Sub-Saharan Africa, in particular, suffers from gaps in officially reported trade data. Table A.1 provides an overview of the availability of trade data in the Comtrade database for SSA countries across 2001–12. As is evident, for any given year over the last decade, the trade statistics for between 19 and 48 percent of the 48 SSA countries remain unavailable. While nearly all countries provide data for at least some years during this period, no direct data have been reported from Angola, Chad, the Democratic Republic of Congo, Liberia, Sierra Leone, Somalia, or South Sudan.<sup>11</sup> Thus, any given year, simply using reported exports to measure total or intraregional trade may dramatically underestimate the actual total—and the discrepancies may be even more pronounced at the level of Regional Economic Communities (RECs).

Table A.1 Availability of import/export data, Sub-Saharan Africa (Comtrade, HS1996)

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Often, intraregional trade in SSA is measured not at the SSA level, but at the level of the RECs. SSA consists of a network of individual RECs, each with different levels of economic and policy commitments intended to encourage greater trade, integration, and policy cooperation. For the illustrative purposes of this policy note, we focus on four of the major SSA RECs: the Economic Community of West African States (ECOWAS), the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA), and the Southern African Development Community (SADC). Table A.2 lists the countries for which direct trade data are unavailable through Comtrade in 2011 by REC (the Association for South East Asian Nations is included for comparison purposes).

Table A.2 Non-reporting countries by REC, 2011



In all but the EAC, at least one-third of REC member countries do not have trade data available in Comtrade. Thus, using direct exports to generate indicators of intraregional trade among SSA RECs will drastically understate actual trade.

#### A.2 Direct and mirrored data

One method commonly used to fill in gaps in export or import data is to look at *direct* and/or *mirrored* data. The difference between the two is best illustrated by an example. For instance, Ghana's exports to Nigeria can be determined in one of two ways: (i) we could look at Ghana's reported *exports to* Nigeria (the direct data); or (ii) we could look at Nigeria's reported *imports from* Ghana (the mirrored data). In theory these two numbers should be equal; however, in practice, the direct and mirrored numbers almost always differ by some amount—sometimes dramatically.

Looking at mirrored versus direct export data between the countries of ECOWAS bears this out. Table A.3 shows the difference between direct exports reported by an exporter and the imports recorded by the partner country. The degree of difference can be startlingly high. For instance, Burkina Faso reported more than US\$48 million in exports to Ghana in 2011. That same year, Ghana reported imports from Burkina Faso of just US\$15 million – a US\$33 million discrepancy. This could in part be due to differences in cost, insurance, and freight (CIF) and free on board (FOB) valuations, smuggling, and/or poor record keeping. Differences may also reflect goods transited through Ghana bound for

external markets that Burkina Faso recorded as exports to Ghana, but that Ghana did not record as imports. And as can be seen in table A.3, this is not the most egregious case.

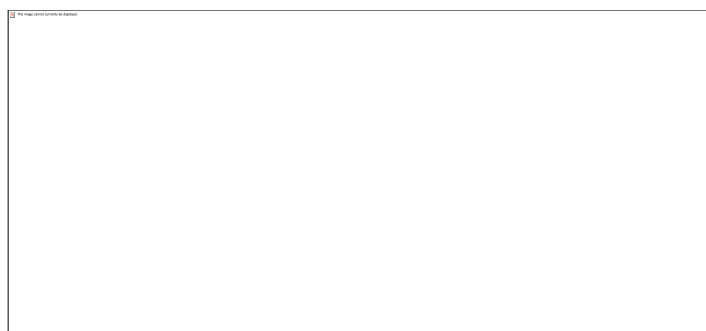
Table A.3 Difference between exports and mirrored data in ECOWAS (for those bilateral pairs for which both countries report: negative number indicates mirrored data are greater, in 1,000 US\$)

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Whether to use direct or mirrored data to determine trade flows is a subject of debate. The International Trade Centre (ITC) gives preference to direct data when compiling the statistics for its TradeMap database, only using mirrored data to fill in gaps, explaining that mirrored statistics may incorrectly report the origin of transshipped goods and discrepancies can arise in the valuation processes as imports are recorded CIF whereas exports are recorded FOB. However, there is a strong argument to be made that government customs agencies take greater care to accurately collect import valuations, as it is on these valuations that import duties are calculated. But given the number of non-reporting countries in SSA, the best way forward may be to combine direct and mirrored data to fill in the gaps.

By combining mirrored and direct data when looking at intraregional trade within the RECs, gaps can be filled for most bilateral trade pairs except for trade between two non-reporting countries (e.g. between Liberia and Sierra Leone in ECOWAS) or between countries that did not trade with one another in a given year. For 2011, this method reduces missing bi-lateral trade data by nearly 50 percent for ECOWAS, 26 percent for COMESA, and 64 percent for SADC. And it eliminates all missing trade pairs in EAC. Table A.4 summarizes the differences between using only mirrored Comtrade data and using direct data to fill in the gaps. ASEAN is included for comparison purposes.

Table A.4 Missing trade data within RECs, 2011



While this process helps to reconcile zero values for non-reporting countries, it is not a perfect solution. First, many gaps remain, particularly in COMESA and ECOWAS. And second, because the differences between direct and mirrored data for a single trading pair can vary dramatically, using direct data primarily and filling in the gaps with mirrored data may yield a dramatically different result from using mirrored data primarily and filling in the gaps with direct data. Thus, the method used when creating an indicator of intraregional trade rates can have an impact on the resulting statistic (see table A.5). While the intraregional trade rate is relatively unaffected in COMESA (remaining 9 percent in both cases), the intraregional trade rate for ECOWAS, EAC, and SADC each changes by 4 percentage points just by using direct data and filling gaps with mirrored data rather than the other way around.

Table A.5 Intra-REC trade, primarily direct vs. mirrored trade data, 2011 (1,000 US\$)



Furthermore, inconsistency between using direct and mirrored data can make comparing changes over several years problematic, especially if some countries report certain years but not others. Nevertheless, despite its imperfections, a combined approach that uses primarily mirrored data with gaps filled in with direct data should yield results that more closely approach the actual intraregional

trade flows than would be the case if just mirrored or direct data is used—and most importantly, using a consistent methodology across time is critical.

Finally, source matters. As discussed, different methodologies for compiling international trade data can have strong effects on the resulting statistics. Thus, it should be little surprise that statistics on intraregional trade in SSA can vary considerably depending on the source. Four common and reputable sources for trade data (some of which have already been discussed) include Comtrade, the ITC TradeMap, United Nations Conference on Trade and Development (UNCTAD), and the International Monetary Fund (IMF) Direction of Trade Statistics. To exhibit the differences in intraregional trade indicators based solely on source of data, table A.6 summarizes intraregional trade totals as well as the intraregional trade rate (share of intraregional trade in total trade) in each REC across each of these sources in 2011.

As can be seen, differences in the same statistic can vary depending on source. For instance, the value of intraregional trade in ECOWAS in 2011 ranged from US\$7.5 billion (Comtrade) to US\$18 billion (IMF DoTS). And the intraregional trade rate (the share of intraregional trade in total exports) for EAC might be either 15 percent or 20 percent, depending on whether you consult Comtrade, UNCTAD, the ITC TradeMap, or the IMF. In contrast, numbers for ASEAN across sources are more consistent, likely owing to greater availability and consistency of data in that region.

Table A.6 SSA intraregional trade and intraregional trade rates by source (1,000 US\$)

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As should now be apparent, using official trade data to monitor regional trade integration is not as straightforward as it may seem at first glance, and different methodologies can yield vastly different results. And depending on the source used, the picture of intraregional trade in Sub-Saharan Africa's RECs can vary dramatically. This is a particularly important issue given that policy makers often use these numbers to track changes and chart progress—and differences depending on source could allow policy makers to cherry-pick which statistics they highlight to serve their own purposes. *Thus, when*



*building indicators to make comparisons across regions and look at trends over time, methodological consistency is critical for strong analysis.*

### A.3 Regional integration indicators from trade data: Opportunities

So, given the limitations and issues raised so far in this policy note, how *can* official trade data be used to help measure and benchmark intraregional trade in Sub-Saharan Africa? First, as mentioned previously, absent better alternatives and given the lack of consistent, reliable data needed to construct other regional integration indicators, the use of official trade data may at present remain the best option. Second, provided that the methodology remains consistent, indicators built from official trade data can still be used to compare regions and view trends over time. And finally, disaggregating the trade data and looking at specific sectors (or excluding sectors) can yield interesting analytical insight. The following analysis is intended to provide examples of the possible uses of official trade data in developing integration indicators, but it is by no means exhaustive. Certainly, many other indicators can be developed from trade data depending on the scope and purpose.

First, the value of intraregional trade within SSA's RECs can be analyzed relative to global trade. Figure A.1 displays intraregional trade in 4 RECs in comparison with total world trade during 2001–11. As can be seen, intraregional trade in SSA has followed a similar overall upward trajectory as global trade and, in fact, based on compound annual growth rates during this period, intraregional trade has expanded at a faster clip than has global trade (see table A.7). This is largely because intraregional trade was much less dramatically impacted by the great trade collapse of 2008–09, which saw global trade contract by over 20 percent. In fact, intraregional trade in SADC fell by only 1 percent during the collapse.

Figure A.1 Intra-regional trade relative to world trade, 2001–11

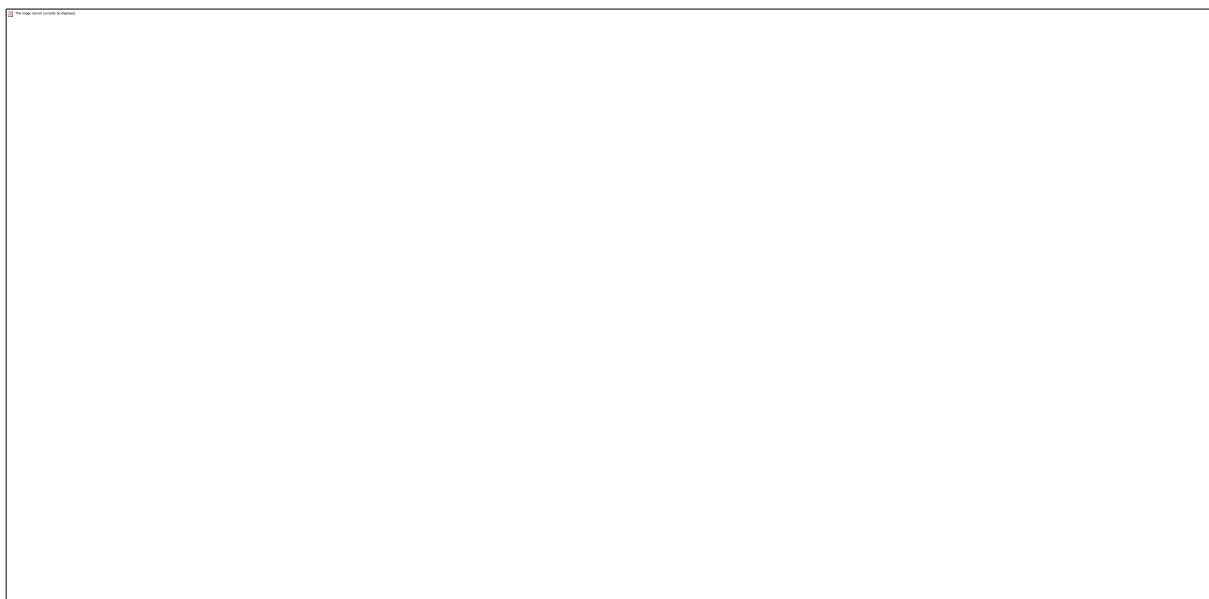


Table A.7 Intra-regional and world trade growth, 2001–11 (million US\$)

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Another way to analyze intra-regional trade data to provide more detailed insight is to disaggregate the data to analyze trade in specific sectors. Figures A.2 to A.5 chart intra-regional trade rates in each REC from 2001 to 2011 for the following: (i) total intra-regional trade, (ii) intra-regional trade excluding minerals, (iii) intra-regional agriculture trade, and (iv) intra-regional trade in manufactured goods.<sup>12</sup>

Breaking out specific sectors enables more detailed analysis that may be more useful on a practical level for policy makers and provide a more holistic understanding of intra-regional integration trends. Minerals exports (including mineral fuels such as petroleum) are disproportionately destined for non-regional markets for further processing and refining, and they are a major export of many SSA countries. By excluding minerals, therefore, a slightly more nuanced understanding of intra-regional trade is possible. Similarly, food security and trade in agricultural goods between SSA neighbors is of utmost concern for policy makers and development professionals. Using trade data focusing strictly on trade in agricultural goods allows for monitoring of intra-regional trade trends specific to this sector.

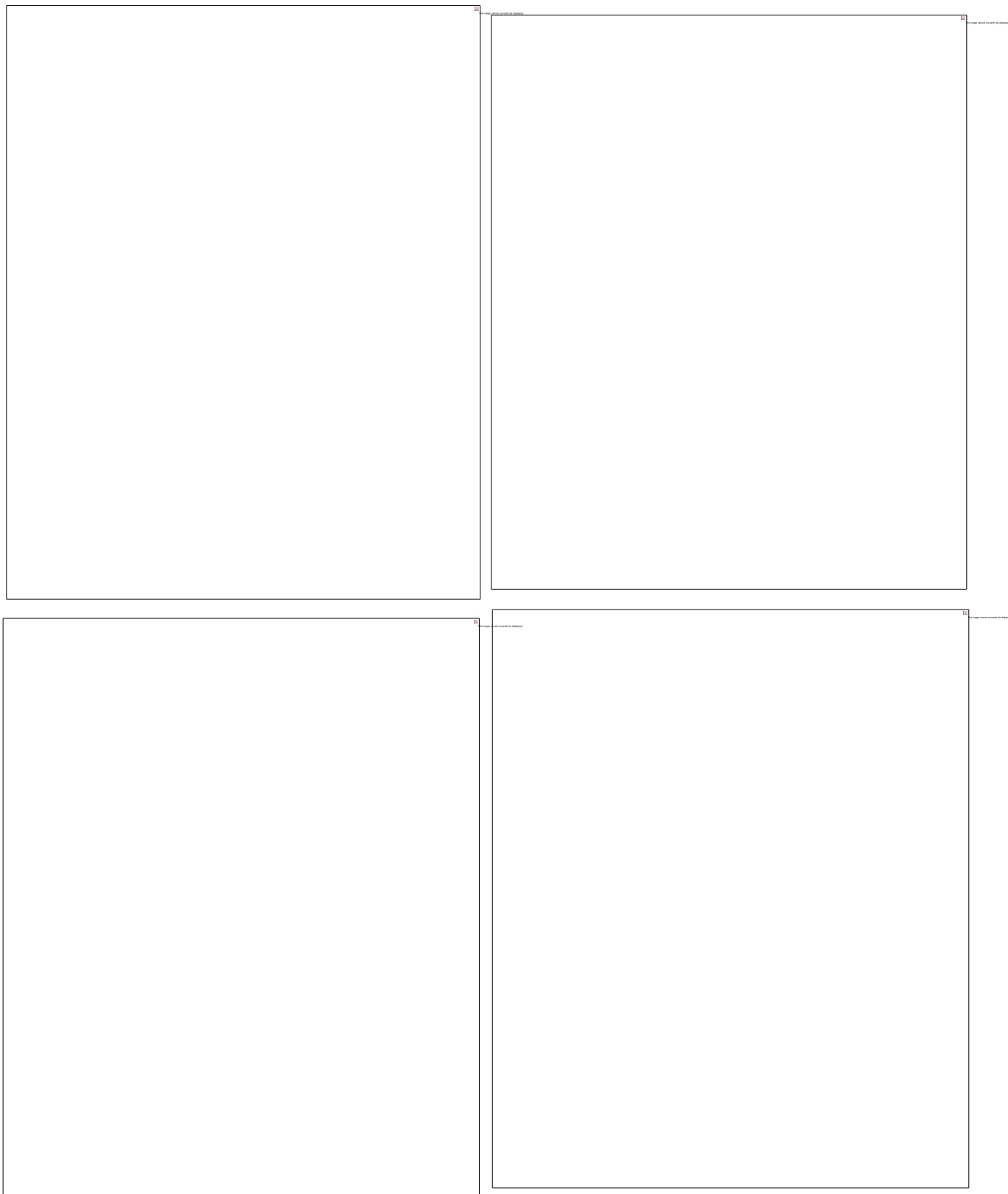
Finally, changes in intraregional trade in manufactured goods could signify greater integration along regional supply chains and/or movement into greater value-added production processes.

For instance, in each of the RECs, except for EAC, by excluding mineral exports, intraregional trade rates increase, emphasizing the degree to which minerals represent important exports and are largely bound for destinations outside the region. Further, in ECOWAS and EAC, intraregional trade rates in manufactured goods are significantly greater than rates for total trade, although the absolute amount of trade in manufactures remains low. And in SADC, intraregional trade rates in manufactured goods have been increasing since 2005, despite total intraregional trade rates staying flat at around 11–14 percent. Finally, looking at agriculture trade, analysis of EAC presents an interesting case. Among the four RECs, only EAC has an intraregional trade rate among agricultural goods that is lower than its total trade rate; however, since 2008, the agriculture trade rate is steadily increasing, whereas the REC's total trade rate has remained largely flat.

Again, these are only a few of many possible ways to use existing official trade data to monitor and benchmark regional integration in Sub-Saharan Africa. Others, such as analyzing changes in the *extensive* margin of trade by looking at the variety and diversity of traded goods (rather than just value), can also be of use in analysis.

Nevertheless, it remains clear that a greater effort must be made by governments and international organizations to collect accurately, organize, and report official trade data in SSA to provide the reliable, accurate, and consistent data needed to monitor trade and economic relationships in SSA. This, combined with other efforts to develop outcome-oriented regional integration indicators, will assist governments, policy makers, development organizations, traders, and businesspeople in better understanding where opportunities and challenges lie.

ECOWAS, EAC, COMESA, and SADC intraregional trade



## Annex B Corridor monitoring indicators for transaction costs and trade volumes<sup>13</sup>

### B.1 Objective

The first objectives of this review of corridor monitoring indicators in East Africa, is to see what monitoring indicators are currently available. The second is to consider if these indicators can provide, or be adapted to provide, assessments of the outcomes of policy measures and reforms aimed at reducing trade transaction costs for traders. The third is to use these new indicators as the basis of a guide on how to implement those measures. These indicators may in turn be used to improve the more aggregate indicators.

### B.2 Context

The currently available monitoring indicators for East African trade performance are too general and unspecific to be useful in helping the impact assessment of various measures that might be taken to increase regional trade. In contrast, at the other extreme, most of the transport performance indicators are too detailed and specific for this purpose.

The assessment provided here is of the corridor-monitoring indicators that are available for trade and transport corridors, one in East Africa and eight in West Africa. Corridors in some other sub-regions have also provided data on indicators, but these are less complete and less regularly measured. They do not provide any data that are not included in the indicators for the corridors described here.

### B.3 Monitoring and performance indicators

A distinction is made between *monitoring* and *performance* indicators. There are many similarities between them, and both are aimed at providing an understanding of the impediments to trade arising from movement of goods through the corridor. Measures of *performance* indicators are often accompanied by detailed descriptions of how trade and logistics function in the corridor, assessments of volumes of trade, and times and costs of transport in the corridor. These assessments are then used to assess the relative trade impedance of activities in the corridor at that point in time and how they might be reduced.

In contrast, measures of monitoring indicators are less often accompanied by details of how the corridor functions or of total logistics costs and times. However, changes in *monitoring indicators* over time are often the basis of assessments similar to those made with performance indicators. Monitoring indicators have the added advantage that they can be used to assess the impact of measures aimed at improving corridor performance.

The most significant difference between the indicators is that monitoring indicators are measured at regular intervals of time, whereas performance indicators tend to be measured only once. Performance indicators can be expanded to become monitoring indicators when they are measured several times, preferably on a regular basis, so that changes in the performance of the corridor can be assessed over time.

#### B.4 Corridor monitoring Indicators

As they are measured only once, much more effort can be put into measuring performance indicators, so they are not subject to the same operational and financial constraints as monitoring indicators. The range and scope of monitoring indicators are much more restricted by the need for frequent measurement. One-off special surveys of transport operators and corridor traders that might be feasible for the collection of performance indicators are not feasible for the regular collection of monitoring indicators. However, if the value of a particular performance indicator is established, it is often possible to find a less costly and less demanding comparable indicator that can be used as a monitoring indicator.

For both types of indicator it is useful to have benchmarks against which their values can be compared. For performance indicators, these might be the values for the corridor in question if it had no impediments and all the transport operations were undertaken with maximum efficiency. More often, values are used for the same indicators from what are considered comparable corridors for which performance is in some sense considered “best practice” or corridors that convey products that are in competition with the corridor in question. Benchmarks for monitoring indicators can be the same, but more often are measures of the same indicators for the corridor in question over time.

The following are among the characteristics that are necessary for the sustainability of measuring monitoring indicators:

1. Easy to measure and collect
2. Based on consistent and defined parameters that are readily understood
3. Able to capture formal and informal transport costs or time
4. As much as possible, already collected by a public agency (such as customs).

#### B.5 Baseline monitoring indicators

Although the objectives of measuring monitoring indicators might be different between corridors, there is a core set of indicators that are nearly always included:

1. Total transit time from port to an inland destination
2. Port delays
3. Land border crossing times
4. Informal transit control times and costs (bribes).

Other frequently measured indicators include:

1. Time spent at formal weigh stations and other legal control points
2. Numbers of trucks leaving and entering ports
3. Numbers of trucks crossing land borders.

Few corridor monitoring systems provide a complete makeup of the times and costs (and their variability) between the port and an inland destination, and none provides even total times and costs between intermediate locations as would be needed to assess corridor improvement impacts on bilateral trade. Most of the monitoring systems provide total time and/or cost between the corridor port and one inland destination, but only partial indicators of the makeup of the time and/or cost. Usually the indicators are provided for containers and sometimes also for bulk and break-bulk cargoes.

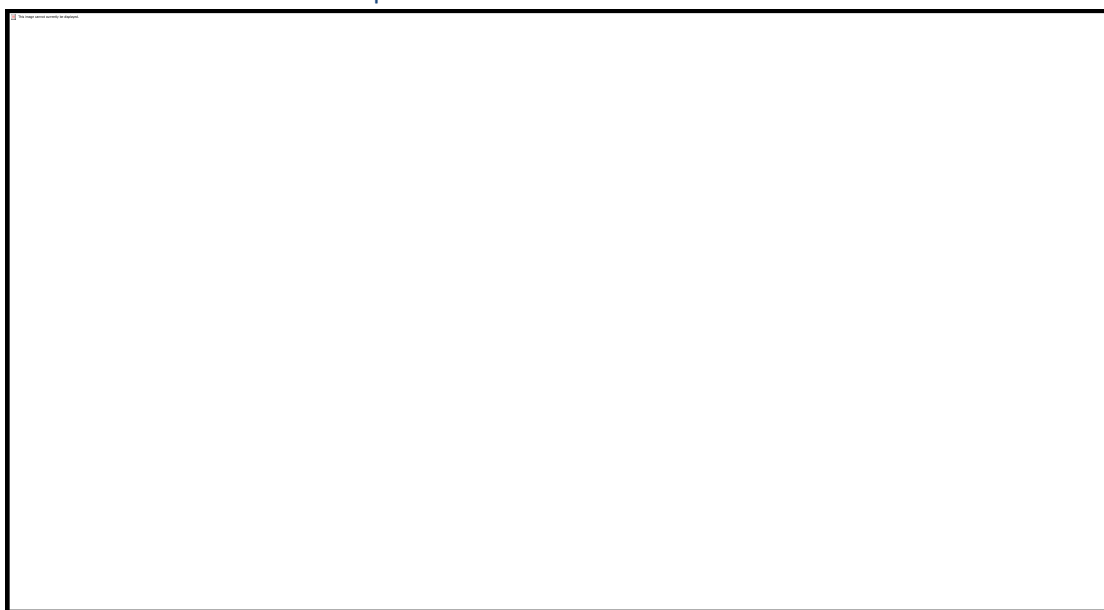
#### B.6 Indicators from selected corridors

There are two groups of trade corridors in Sub-Saharan Africa that provide information on trade and transport indicators. One is the Northern Corridor in East Africa<sup>14</sup> and the other is a group of corridors in West and Central Africa. The first only provides monitoring indicators but the second provides monitoring and performance indicators. Consideration of the performance indicators is important as the monitoring indicators in the East and West African corridors do not provide the information that is needed to measure changes in all transaction costs or changes in intraregional trade. The method used to collect the performance indicators gives guidance as to how similar indicators might be measured on a regular basis as monitoring indicators to provide this missing information.

#### B.7 Northern Corridor

A Northern Corridor Transport and Trade Coordinating Agreement was signed in 1985 and the Committee that it established now operates a Transport Observatory. The Corridor transport system links the Port of Mombasa with Burundi, the Democratic Republic of Congo, Kenya, Rwanda, South Sudan, and Uganda (map B.1). The Corridor Committee has a remit not only to foster trade in its own corridor, but also to develop trade links with other countries in the region, such as Ethiopia and Tanzania. The Committee's Permanent Secretariat has a mandate to coordinate activities along the corridor to facilitate trade, and the movement of people, vehicles and goods, and hence stimulate regional integration through economic and social development. The Northern Corridor has also been mandated to initiate programs aimed at turning the Transport Corridor into an Economic Development Corridor.

Map B.1 East Africa Northern Corridor



Source: Northern Corridor Transit and Transport Coordination Authority.



Monitoring of transport performance, and to a minimum extent also trade performance, of the Northern Corridor has been undertaken for at least 15 years, much longer than for any other corridor in Africa. The quality of the monitoring has dramatically increased since a regular source of funding has been available to the Northern Corridor Transit and Transport Coordinating Committee, which undertakes the monitoring tasks.

The Transport Observatory helps in identification of the causes of delays in the corridor—at ports, borders, weighbridges, informal checkpoints, and in transit). It aims to provide information to support decision-making by the users of the corridor, regulators, and policy makers, which in turn would implement measures to address the causes of delays.

Despite this wide mandate to facilitate trade in the corridor and specifically to promote regional trade integration, very few of the monitoring indicators that its Observatory collects and publishes are directly related to trade. Rather, they mostly relate to its other responsibility, which is to identify causes of delays. It does little to measure the impact of measures aimed at solving bottlenecks other than in the straightforward sense of monitoring delay times and seeing how they reduce in following the implementation of specific measures. There is an implied but not demonstrated cause and effect between the measures and reduced delays, but no attempt is made to measure or assess the trade impacts.

The monitoring indicators published by the Observatory are categorized in four ways:

1. Category (trade volumes and transport capacity)
2. Level of disaggregation (transport capacity and performance)
3. Data source (electronic, surveys, and transport node audits)
4. Location (for specific ports and border crossings).

Only the first is considered here, as it includes all the indicators that are collected and is the most useful for considering how the indicators can be used to assess transaction costs and trade volumes. The four categories of the indicators are:

- i. Volume and capacity

1. Total cargo through-put of the Port of Mombasa versus transit traffic in tons
2. Volume per country of destination
3. Rate of containerization of transit traffic in percentage, annual basis, at the Port of Mombasa
4. Evolution of licensed fleet of trucks per country
5. Average annual distance per truck in km per year
6. Transport capacity by rail (locomotives and wagons)
- ii. Rate and costs
  7. Transport costs per route and per model (including transit charges)
  8. Rail freight charge
  9. Road freight charge
  10. Port transit charges
  11. Return of empty containers (grace period, penalties, and deposit)
- iii. Productivity and efficiency
  12. Number of checkpoints, (weighbridge, police, customs, road toll) per country per route
  13. Rate of fraud or declared damage for transit of sin goods (percentage of total transit)
  14. Quality of the transport infrastructure
  15. Gross moves per ship per hour at the Port of Mombasa
  16. Volume of containerized and general cargo handled per day, month, and quarterly at the Port of Mombasa
  17. Number of accidents per route
  18. Weighbridge traffic against time
  19. Weight compliance
- iv. Time and delays
  20. Transit time per route per mode of transport (by country)
  21. Transit time in Burundi, Democratic Republic of Congo, Rwanda, and Uganda (road)
  22. Transit time in Kenya (road through Malaba or Busia)

- 23. Transit time origin to destination by country
- 24. Ship turnaround time
- 25. Vessel waiting time before berth
- 26. Average cargo dwell time in Mombasa Port
- 27. Time for customs clearance at the document processing center
- 28. Transit time at Mombasa One-Stop Centre
- 29. Transit time after customs release at the Port of Mombasa
- 30. Border post-crossing time
- 33. Weighbridge crossing time.

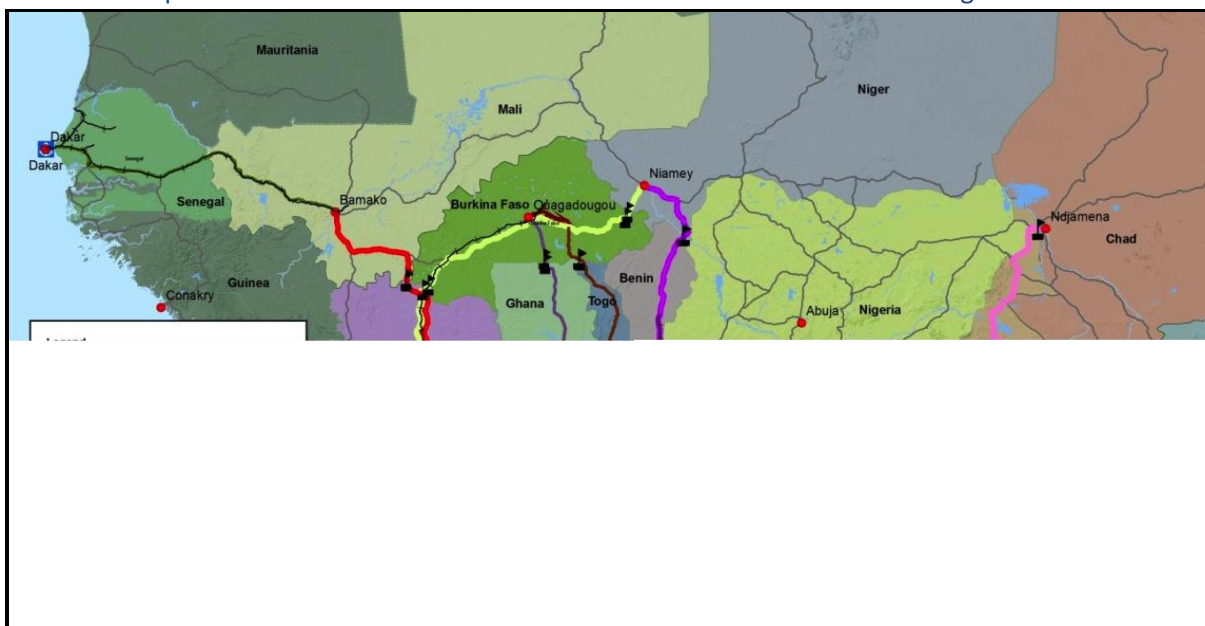
#### B.8 West Africa trade and transport corridors

West Africa trade and transport corridors lack an organization equivalent to the Trade and Transport Coordinating Committee in the Northern Corridor (except for the Abidjan-Lagos Corridor). Without such a focus for the collection of monitoring data, the collection is not so well planned and tends to be left to aid agencies to organize and finance.

The Observatory for Abnormal Practices (OPA) has evolved into a project for Improved Road Transport Governance. It is an UEMOA/ECOWAS coordinated project aimed at collecting data on selected abnormal practices experienced along international corridors in West Africa (map B.2). The objective is to publish and disseminate the results as part of an advocacy to bring about improvements in corridor performance. The Observatory started collecting data in 2006 with the financial and technical support of the USAID West Africa Trade Hub.

Given the origins of the OPA, the indicators that are collected focus on one specific aspect of performance, which is the incidence of informal “abnormal practices.” This refers to the incidence of formal and informal checkpoints and who operates them, the time taken to pass through them, and the amount of any bribes that are paid to pass through or to pass through more quickly.

Map B.2 West and Central African corridors that have some monitoring indicators

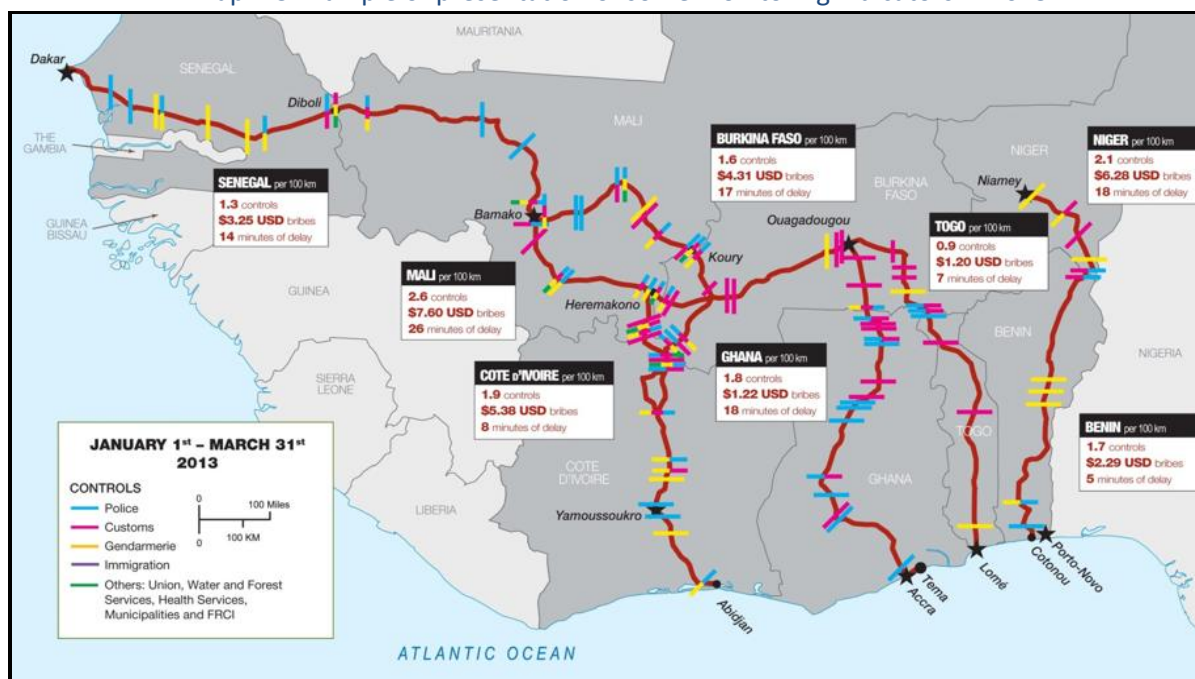


Source: Logistics Cost Study of Transport Corridors in Central and West Africa, Final Report, Nathan and Associates for World Bank 2013.

The monitoring indicators that have been collected over a period of more than six years are in three groups:

1. The number of checkpoints, including border posts manned by official agencies (customs, police gendarmerie, health and forestry, immigration ), usually expressed as the number of checkpoints per km of route
2. The time taken to conduct controls at these checkpoints, usually expressed as a time per km of route
3. The amount of bribes and unofficial payments paid and collected at the checkpoints, expressed as US\$ per km of route.

Map B.3 Example of presentation of some monitoring indicators in 2013



Source: 23rd Road Governance Report, Union économique et monétaire ouest-africaine (UEMOA).

The indicators are collected for eight corridors (map B.3):

- Tema-Ouagadougou (pilot corridor)
- Lomé-Ouagadougou
- Dakar-Bamako
- Abidjan-Ouagadougou
- Abidjan-Bamako
- Bamako-Ouagadougou via Koury
- Ouagadougou-Bamako via Hermankono
- Niamey-Cotonou.

There is an intention to extend the monitoring to at least three more corridors: Dakar-Bissau, Cotonou-Ouagadougou, and Lomé-Niamey.

#### B.9 Abidjan-Lagos corridor indicators

The Abidjan-Lagos corridor is unlike most of the others in that it is a coastal corridor rather than a corridor from a single port to one or more landlocked countries. The Abidjan-Lagos Corridor Organization (ALCO) was set up with rather different objectives and has a different organization and financing structure to the corridors covered by the OPA. It was an ECOWAS project supported by the World Bank that evolved into an ECOWAS established corridor management institution, which started its activities in 2007.

Its mandate is the collection, processing, and publication of data relating to selected indicators. The indicators are intended to show progress in reducing trade and transport barriers in the corridor ports and roads. Another very specific objective that attracts attention is the collection and dissemination of data relating to the incidence of HIV among those active in the corridor.

*The indicators that are collected include some that are the same as in the Northern Corridor (port dwell time, border crossing time, number of roadblocks, and road condition). However, additional indicators relate to the level of HIV/AIDS awareness and prevention measures by transporters.*

The main source of funding for ALCO is the World Bank Abidjan-Lagos Transport and Transit Facilitation Project. The corridor transits five countries (Benin, Cote d'Ivoire, Ghana, Nigeria, and Togo) and includes seven ports (Abidjan, Accra, Cotonou, Lagon, Lomé, Porto Novo, and Tema) (map B.4). ALCO has not been as successful as OPA in publishing and disseminating its monitoring indicators, and it is difficult to find values for them.

#### Map B.4 Abidjan-Lagos Corridor



Source: Sub-Saharan Africa Transport Policy Program (SSATP) Road Safety Program, Abidjan-Lagos Corridor Pilot Project in Ghana, Workshop Report, July 1, 2012.

#### B.10 Logistics Cost Study of Transport Corridors in West and Central Africa

The regular monitoring indicators collected for the West Africa trade and transport corridors do not provide the basic information needed to assess the trade impacts of measures to improve corridor performance. However, there have been several one-off measures of performance indicators that come close to this objective.

One of the most comprehensive of these was the *Logistics Cost Study of Transport Corridors in West and Central Africa*, prepared for the World Bank in 2013.<sup>15</sup> The objective of the study was to “enable regional economic communities and individual countries to formulate policies that result in reduction of transaction costs along the main West and Central African corridors.” This study made use of a microeconomic approach first developed by Arvis and others (2007) for landlocked developing countries and previously applied in Eastern Africa.

In this approach, the total logistics supply chain costs paid by the shipper/consignee to or from a landlocked country are the sum of two components. First are the financial costs of logistics services, which include gateway costs paid directly or indirectly through freight forwarders, clearing agents and/or shipping agents by landlocked shippers at the port and inland transport costs paid to truckers or rail operators for actual transit transportation. This component also includes inland processing costs incurred when crossing the borders and at final destination. Second are costs related to the

economic impact of delays and uncertainties (called “hidden costs” in the report). These include transit inventory capital cost (related to transit time) and costs incurred as part of hedging against unreliability. The study provided results for five gateway corridors in West and Central Africa as well as for the Abidjan-Lagos Corridor.

Since the performance indicators provided in this study were aimed at assessing changes in transaction costs, they should be adaptable to the objectives of this review. The five gateway corridors were

1. Abidjan-Bamako
2. Abidjan-Ouagadougou
3. Cotonou-Niamey
4. Douala-Bangui
5. Douala-Ndjamena.

The four West African corridors are also covered by OPA or ALCO, so it should be possible to combine the indicators from the two exercises to produce a more comprehensive assessment of the corridors.

Table B.1 shows the total logistics costs for two corridors (Abidjan-Ouagadougou and Abidjan-Bamako) and for road and rail in each corridor. The total costs are distinguished between financial and “hidden” costs, with the details of each available in other tables in the report. The costs are presented for four case studies, each of which is a combination of a type of product and a type of transport operator (box B.1 and table B.1). The share of “hidden” costs varied from 7 percent (Case Study 2, road transport, Abidjan-Ouagadougou) to 31 percent (Case Study 3, rail transport, Abidjan-Ouagadougou and Case Study 3, road transport, Abidjan-Bamako). A notable feature of these results is the difference in costs per ton (costs per ton/km are not provided) between the four different types of operator represented by the case studies.

**Box B.1 Specification of Four Case Studies for the West Africa Corridor Logistics Study**

•**Case Study 1a:** A medium-large size, formal transporter with large and new purchased fleet transporting a 40-foot container of high-value household appliances.



•**Case Study 1b:** A medium-small, formal transporter operating a small and new purchased fleet transporting edible oil in two 20-foot containers.

•**Case Study 2:** A small, informal transporter with a small and secondhand purchased fleet transporting low-value cargo (rice) in 50-kilo bags.

•**Case Study 3:** A large, formal, specialized transporter with a large and secondhand purchased fleet transporting high-value spare parts equivalent to two stripped 20-foot containers.

Table B.1 Total logistics costs for transport along Abidjan-Ouagadougou by road and rail and to Bamako by road for each case study (CFA francs)

Component	Case Study 1a		Case Study 1b		Case Study 2		Case Study 3	
	FCFA	%	FCFA	%	FCFA	%	FCFA	%
<b>A B I D J A N - O U A G A D O U G O U B Y R O A D</b>								
Financial logistics costs	3,534,188	80.9	3,767,930	91.3	2,909,653	93.0	3,992,086	72.0
Hidden costs	834,386	19.1	357,594	8.7	217,838	7.0	1,555,989	28.0
Total logistics costs	4,368,574	100	4,125,524	100	3,127,491	100	5,548,075	100
Total logistics costs per ton (FCFA)	182,024		103,138		71,079		132,097	
Total logistics costs per ton (US\$)	369		209		144		268	
<b>A B I D J A N - O U A G A D O U G O U B Y R A I L</b>								
Financial logistics costs	3,027,409	73.2	3,236,571	87.2	2,789,627	91.3	3,930,315	68.6
Hidden costs	1,106,211	26.8	474,090	12.8	266,342	8.7	1,795,156	31.4
Total logistics costs	4,133,620	100	3,710,661	100	3,055,968	100	5,725,471	100
Total logistics costs per ton (FCFA)	172,234		92,767		69,454		136,321	
Total logistics costs per ton (US\$)	349		188		141		277	
<b>A B I D J A N - B A M A K O B Y R O A D</b>								
Financial logistics costs	3,447,905	79.0	3,601,447	90.1	2,900,853	92.5	3,781,370	69.0
Hidden costs	919,242	21.0	393,961	9.9	237,637	7.5	1,697,406	31.0
Total logistics costs	4,367,147	100	3,995,408	100	3,138,489	100	5,478,776	100
Total logistics costs per ton (FCFA)	181,964		99,885		71,329		130,447	
Total logistics costs per ton (US\$)	369		203		145		265	

NOTE: US\$1=FCFA 493

SOURCE: Nathan Associates' calculations.

## B.11 Indicators for transaction costs and regional trade integration

The data that are being sought are of two types, relating to transaction costs and relating to intraregional trade flows. There is an expectation that reductions in transaction costs will lead to increases in trade flows, so if these two types of data are collected over time as part of a corridor monitoring process, they could provide some of the data on which cause (change in transaction costs) and effect (change in intraregional trade) might be estimated. Controls would be needed for all the other variables that impact intraregional trade flows.

### Transaction costs

Although the monitoring indicators for the Northern Corridor, OPA corridors, and Abidjan-Lagos corridor serve the purpose for which they were designed, they cannot be used to assess transaction

costs. They only provide data on some of the components of total transaction costs, but with some additional monitoring indicators it might be possible to come close to measuring total transaction costs. The way that this might be done is indicated by the methodology used to produce the performance indicators (total logistics costs and their components) in the *Logistics Cost Study of Transport Corridors in West Africa*.<sup>16</sup> This report provides total logistics costs for several corridors and for several different types of transport companies, but for only a selected range of products.<sup>17</sup>

The formal and informal transaction cost data were derived from a combination of transport company accounts and interviews with staff and drivers of the same companies. The methodology is not easy to apply, as it involves interviewing representatives of transport companies, and as indicated in the report, they do not always have the data available and if they do, are not always willing to provide it. If a panel of interested transport companies could be established in the corridor under investigation, they could facilitate the provision of consistent transaction costs over time.

### **Trade data**

The report on the West Africa transport corridors also provided data on regional trade flows. These came from four sources:

1. *National trade statistics*. These by definition refer to all the trade between countries regardless of the corridor or route used for that trade.
2. *Port statistics*. These are usually based on shipping manifests, which may not fully measure actual transit volumes, particularly exports of agricultural products. Port statistics relate more specifically to corridor trade since most of it passes through the corridor's port or ports.
3. *Shippers' councils*. These usually monitor land transport between country pairs in application of bilateral transit agreements. However, these data again relate to national rather than corridor trade.
4. *Customs data, through customs declarations*. Obtaining corridor-specific information requires special analyses of customs statistics.

But what these sources miss are data on intraregional trade, which uses the corridor for only part of its distance and does not pass through the corridor port. It should be possible to collect more location-specific customs data at inland border crossings, and this can provide additional insight into intraregional trade flows. With considerable further effort, roadside interviews can be made with truck drivers, who can be asked about their trip origin and destination, or for the waybills for their freight, which provide the same data as well as the value and volume and type of product they are transporting.

### **Frequency of measurement**

The logistics data for the West Africa Corridor Logistics Study was only collected once, although some of the data were derived from the OPA monitoring data, which are collected more regularly. Given that most of the financial cost data come from rather lengthy interviews with transport companies, it is unlikely that such data can be collected more than once every few years, although if a panel of corridor operators can be established, they could perhaps provide that part of the data that comes from their annual accounts on an annual basis. Small truck operators would need to be represented on their panel by their trade association, and even then it is possible that annual data would not be available.

The national trade data are published annually, but they are also available on a monthly basis in some countries. The regional trade data collected by ports are also published on an annual basis, but they are often available monthly.

### **B.12 Proposed monitoring indicators**

The data needed for these purposes go beyond that currently being collected and analyzed for the Northern Corridor. However, the data from the Northern Corridor Observatory can provide an important input to the indicators that are needed.

For transaction costs, the method used in the West Africa Corridors Logistics Costs study can be adapted for use in East Africa and on a regular if infrequent basis. The total logistics costs would be estimated in two parts, financial costs and “hidden costs.” They would also be collected only for specific products or supply chains.

The indicators of financial costs would be the following:

*Gateway charges (port costs).* These are charges for the handling of freight within the port. For imports, they include all the costs once the freight has been offloaded from the ship until it exits the port gate. For exports, they include all the charges for entering the port and for all the activities within the port until the freight is loaded onto the ship. These charges can usually be provided by shipping agents and/or freight forwarders.

*Truck or rail tariffs.* Although there are reference truck tariffs (and published rail tariffs in corridors that have rail freight services), these are only an approximate reflection of the tariffs that are

actually paid by traders to truck operators. As has been found in many studies trying to relate truck tariffs to vehicle operating costs, this is only another very approximate relationship and vehicle operating costs cannot be used to reflect actual truck tariffs. There is no reliable alternative to asking representative truckers what tariffs they are paying, and to have some form of verification with other operators or trucking associations. Average rail tariffs can sometimes be derived from railway financial accounts (if these are available); otherwise the best sources are shipping agents and freight forwarders.

*Inland freight handling charges.* These are often equivalent to the gateway charges, but might be incurred at the border, at an inland freight terminal, or even at the importers' own premises. The charges include customs and other formal agency charges, as well as those to freight handling agents. The charges can sometimes be found in the financial accounts of the traders, but more often it is necessary to rely on interview information.

*The indicators of "hidden" charges.* Hidden charges are even more difficult to measure. All sets of the corridor-monitoring indicators include some measure of these costs. These measures do not necessarily include all of these costs, but, as in the Northern Corridor and OPA corridors, they probably include those that make up most of this category of cost. What is often missing are the bribes that are paid for faster processing of documents and those relating to the financial costs of traders having to hold additional inventories because of the uncertainties of transit times in the corridor.

The indicators that are currently collected and that would be useful for this purpose include (from the West Africa corridor monitoring indicators, which are more complete than those for the Northern Corridor):

5. Number of checkpoints, including border posts manned by official agencies (customs, police gendarmerie, health and forestry, immigration), expressed as number of checkpoints per km of route
6. Time taken to conduct controls at the checkpoints, expressed as total and time per km of route
7. Amount of bribes and unofficial payments paid and collected at the checkpoints, expressed as a total in US\$ and US\$ per km of route.

*Trade monitoring indicators* are also difficult to obtain, other than those derived from port and customs data and national trade statistics. The missing element is data on trade that does not pass through the port and whose data are not collected at the inland border crossings. These data can be measured through specific analysis of land border customs data or from roadside surveys of truck operators.

Suggested trade indicators from inland border customs agencies are the same as from port customs agencies: a matrix of trade flows (volume and value) between the countries involved in the corridor and some of their close neighbors (such as Tanzania for the Northern Corridor). The matrix can be for all trade or for specific product groups (based on HS or SITC codes).

From truck surveys more detailed data can be obtained on origins and destinations of traded products, but only on a sample basis compared with the population basis for customs data. In contrast, there is a chance of finding some evidence and quantification of otherwise unrecorded trade flows from these surveys.

## Annex C Banking, Insurance, and Accounting Services Indicators<sup>18</sup>

### C.1 Introduction

Regional trade in services offers enormous opportunities for African countries to diversify their exports, pursue new opportunities for dynamic growth, increase investment, promote efficiency, and widen access to services in the domestic economy. Reducing cost, raising quality, and increasing access to key services, such as telecommunications, energy, financial, and business services, can have economy-wide impacts, as these services are often inputs into the most productive activities, including manufacturing. A range of other services, including health, education, water, and sanitation, are crucial to assisting in poverty reduction and improving the quality of life of the population as a whole. Increasing the availability, affordability, and quality of these services is crucial for economic growth and poverty reduction in all African countries.

Monitoring of progress in regional integration of services in Africa is severely hampered by lack of comprehensive data on trade in services between African countries and sparse information on regulatory policies and their application. The available studies are typically case studies of particular sectors in particular regions. Comprehensive comparisons across sectors and regions are not possible. New measures of the external trade policy stance on services are becoming available (for example, the Bank has developed a services trade restrictiveness database); however, it is clear that to support and monitor the opening up of regional markets for services in Africa, we need to go beyond trade measures to look at regulatory policies and their impact.

This annex explores the applicability of new methods, such as a combination of mystery shopping visits and traditional interviews, to obtain data on performance indicators in banking, insurance, and accounting services in six Sub-Saharan African countries, namely Kenya, Malawi, Rwanda, Tanzania, Uganda, and Zambia. The mystery shopping method involves the use of mystery shoppers who are trained to act as prospective customers and undertake a series of predetermined visits to assess performance against specific criteria and report back on their experiences in a consistent and comparable way. Such disguised evaluations are often used to assess customer service, merchandising, brand representation, and transactional process and efficiencies, and evaluate compliance with safety and security procedures, corporate and franchise standards, and industry regulations. An advantage of the data collected through mystery shopping methods is that they are firsthand and do not rely on secondary accounts or self-reports.

### C.2 Objectives

The survey commissioned by the World Bank and carried out by Research Solutions Africa (RSA) aimed at identifying (i) the key services offered by banks, insurers, and accounting firms to micro and small enterprises (MSMEs) in the selected countries, and (ii) the prices for selected standardized services charged by banking, insurance and accounting services providers in the selected countries.

### C.3 Data collection and sample

In addition to the mystery shopping visits and the traditional interviews with employees of banks, insurance companies, and accountancy firms, RSA collected information from brochures and other official documents that were provided by the respondents. Data were collected using a semi-structured questionnaire, designed by RSA in collaboration with the World Bank team. Walk-ins and prearranged appointments were used to secure interviews.

A total of 216 interviews were conducted with services providers across the six countries.<sup>19</sup> The sample composition for services providers is presented in table C.1. More details on the pilot and the fieldwork are provided in box C.1.

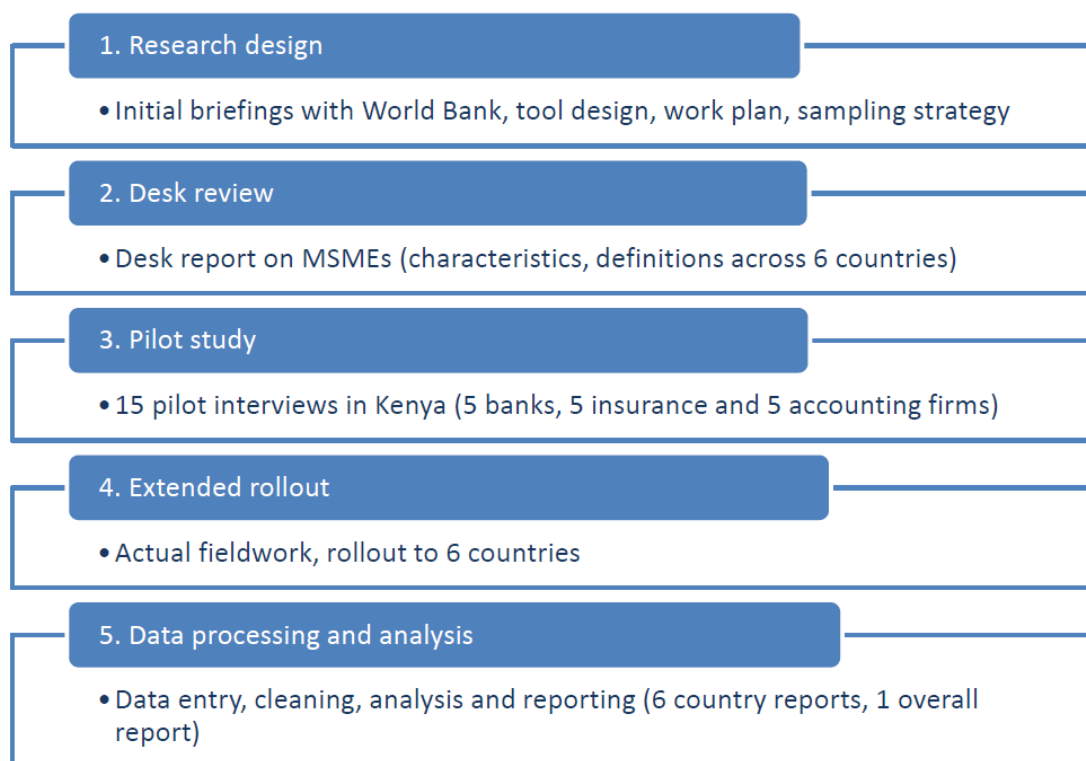
**Table C.1 Sample distribution: Services providers**

COUNTRY y	Banks	Accounting	Insurance	Total
<b>Kenya</b>	20	8	8	36
<b>Tanzania</b>	20	8	8	36
<b>Uganda</b>	20	8	8	36
<b>Rwanda</b>	20	8	8	36
<b>Malawi</b>	20	8	8	36
<b>Zambia</b>	20	8	8	36
<b>TOTAL sample</b>	<b>120</b>	<b>48</b>	<b>48</b>	<b>216</b>



**Box C.1 Survey methodology**

The key steps for the survey are presented in the following figure:



In addition, RSA interviewed several MSMEs to check the consistency of the information provided by the services providers. The selected MSME users had a monthly turnover of up to \$5,000 (micro) or between \$5,001 and \$100,000 (small). The sample composition of users is presented in table C.2.

**Table C.2 Sample distribution: Services users**

COUNTRY	Micro enterprises	Small enterprises
Kenya	2	8
Uganda	5	6
Tanzania	3	5
Rwanda	7	2
Malawi	1	7

*Indicators to Monitor Deeper Regional Trade Integration in Africa*

Zambia	3	7
<b>TOTAL sample</b>	<b>21</b>	<b>35</b>

#### C.4 Key results: Clients by size

The level of engagement of services providers with MSMEs varies widely by country. For example, only about 9 percent of the interviewed banks in Zambia offer banking services to microenterprises, compared with 65 percent of the interviewed banks in Kenya. Banks were significantly more engaged with micro enterprises than insurance companies or accountancy firms were (table C.3).

**Table C.3 Level of engagement with micro enterprises (percent)**

Service provider	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia	Average activity
<b>Banks</b>	66.7	32.1	24.3	28.3	46.4	9.2	34.5
<b>Accounting</b>	32.3	28.3	34.0	36.1	9.5	10.4	25.1
<b>Insurance</b>	18.3	26.2	18.8	46.9	9.7	20.8	23.5
<b>Weighted average</b>	48.9	29.7	26.6	36.5	22.5	11.0	

While more than 46 percent of the interviewed insurers in Rwanda offer services to small and medium enterprises (SMEs), only about 10 percent of insurers interviewed in Malawi have SMEs as clients. Compared with micro enterprises, there is a significant increase in the engagement of banks and accounting firms, but virtually no change for insurance companies (table C.4).

**Table C.4 Level of engagement with small enterprises (percent)**

Service provider	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia	Average activity
<b>Banks</b>	70.8	42.9	31.3	33.3	47.6	11.7	39.6
<b>Accounting</b>	35.4	40.0	43.8	38.9	35.7	10.4	34.0
<b>Insurance</b>	21.7	25.0	17.7	46.9	9.7	20.8	23.6
<b>Weighted average</b>	52.6	37.3	32.6	39.2	32.1	12.5	

Most clients come from sectors such as trade and distribution, hospitality, transport, and construction for micro and small enterprises.

## C.5 Standardized services and prices by sector

### C.5.1 Banking services offered to MSMEs

As expected, the most common banking services offered by banks are current and savings accounts, secured loans, fixed deposits, debit cards, and asset finance; and to a slightly lesser extent mortgages and invoice discounting. Interestingly, unsecured loans are offered by a surprisingly high proportion of banks; it would be useful to gain further insight into the banks' approaches to risk mitigation. The relatively low number of accounts held by women suggests that the banks are not specifically targeting female clients (table C.5).

Table C.5 Services offered by banks (percentage of service by country)

Services offered by banks	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia	Country average
<b>Current &amp; savings</b>	100	100	100	100	100	100	100
<b>Recurrent deposit</b>	63	38	33	40	43	40	43
<b>Call accounts</b>	88	46	25	10	100	40	51
<b>Loans</b>	100	15	100	100	100	80	83
<b>Unsecured loans</b>	56	100	58	50	29	40	56
<b>Mortgages</b>	94	54	50	90	71	20	63
<b>Fixed deposit accounts</b>	100	69	92	80	100	60	83
<b>Credit cards</b>	63	92	42	50	29	50	54
<b>Debit cards</b>	88	23	58	90	100	50	68
<b>Invoice discounting</b>	75	77	58	60	43	30	57
<b>LPO finance</b>	88	38	50	10	71	30	48
<b>Asset finance</b>	100	77	58	40	100	30	68
<b>Investment products</b>	88	54	25	40	43	40	48
<b>Women accounts</b>	50	15	17	0	43	30	26
<b>Local bank draft</b>	88	92	92	90	100	60	87
<b>Foreign bank draft</b>	81	92	75	40	57	60	68
<b>RTGS</b>	94	85	83	70	71	60	77
<b>Letters of credit</b>	94	77	67	80	100	70	81
<b>Foreign exchange</b>	88	92	83	100	100	60	87
<b>Money transfer services</b>	94	92	92	90	86	60	86
<b>Performance bonds</b>	69	69	58	50	86	50	64
<b>Electronic funds transfer</b>	94	77	92	50	86	70	78
<b>Mobile banking</b>	94	92	67	90	86	50	80

<b>Internet banking</b>	81	77	92	70	100	100	87
<b>Regional a/c access OTC</b>	50	46	50	20	0	20	31

*Note:* LPO = local purchase order; RTGS = real-time gross settlement.

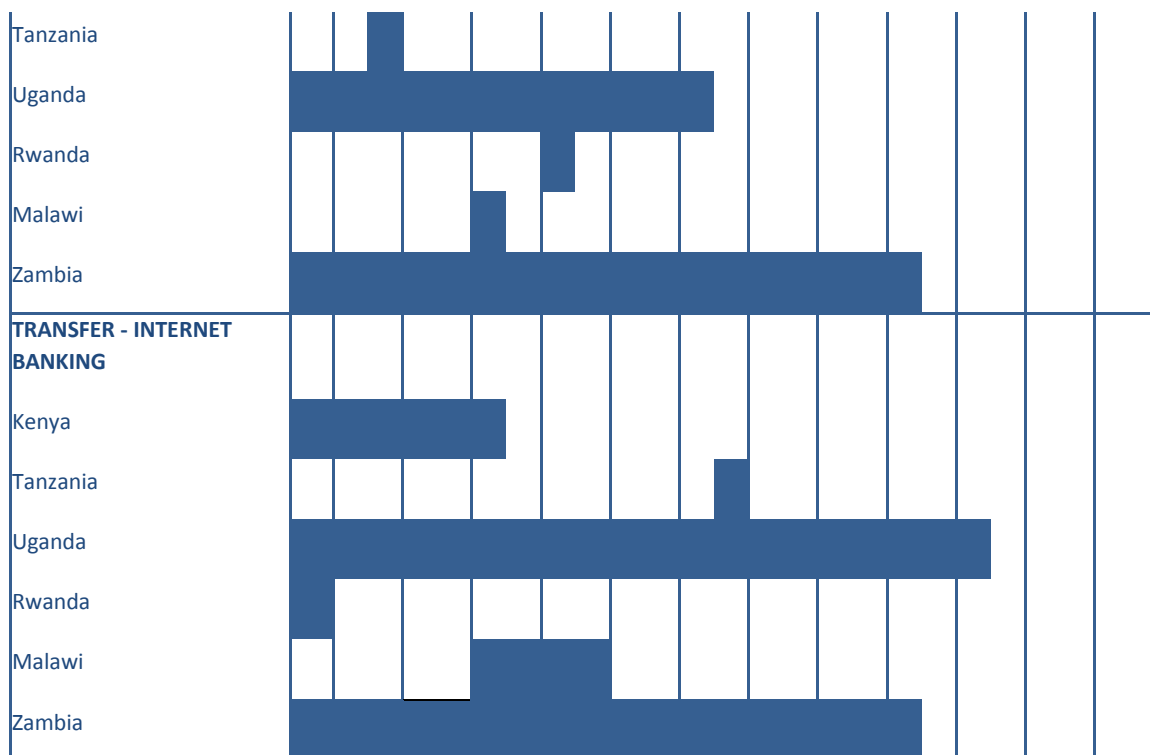
#### C.5.2 Prices for selected standardized banking services

The survey responses provide broad information on price ranges of standardized banking services, such as domestic transactions, foreign funds transfers, and business account transactions in the examined countries.

The results on prices for domestic transaction costs show wide variation within and between countries. For example, Ugandan prices for outward mobile payments range from zero to US\$5.60 per transaction. Similarly, Rwandan real-time gross settlement (RTGS) costs vary between zero and US\$0.75, while in Malawi and Zambia RTGS costs are in excess of US\$6.30 (table C.6).

Table C.6 Prices for selected domestic transactions

DOMESTIC TRANSACTIONS COSTS (US\$ per Transaction)														
	US\$	0	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
CHECK PAYMENTS														
Kenya														
Tanzania														
Uganda														
Rwanda														
Malawi														
Zambia														
TRANSFER BY RTGS														
Kenya														
Tanzania														
Uganda														
Rwanda														
Malawi														
Zambia														
TRANSFER outwards - RTGS														
Kenya														
Tanzania														
Uganda														
Rwanda														
Malawi														
Zambia														
TRANSFER inwards - RTGS														
Kenya														



Given the extensive variation within and between countries, it is difficult to identify clear trends. However, it seems that Zambia has the least competitive prices when it comes to domestic transactions, with exceptionally high costs for RTGS transfers. Ugandan prices are less consistent, but are often at the upper end. Malawi exhibits a moderate level of cost consistency (with the exception of RTGS costs, which are uncharacteristically high), with most prices at an intermediate level. In Tanzania, prices are generally within a tight range (with the exception of check payments), but show little consistency between services, varying for different products between high and low prices. Finally, Kenya and Rwanda show the greatest level of consistency, with tight ranges and relatively low prices.

Additional information on prices for foreign funds transfers is provided in table C.7. Malawi seems to be the top performer in this category.

Table C.7 Prices for foreign funds transfers

Country	Cost range – US\$500 transfer (combined sender and receiver costs)
Kenya	US\$33 – US\$40
Tanzania	US\$30 – US\$36
Uganda	US\$2.50 – US\$42 (23% higher costs for South Africa and Nigeria)
Rwanda	US\$10 – US\$45
Malawi	US\$7.40 fixed (US\$5 for South Africa)
Zambia	US\$35 – US\$80 (33% less for South Africa)

In terms of prices charged by banks for business account transactions, we note a relatively wide variation for monthly fees—from zero to \$18. There seems to be greater consistency with regard to ledger fees (table C.8).

Although about 83 percent of banks across all the survey countries stated that they offer loan accounts to clients, the survey obtained little real detail on actual loan accounts (e.g., interest rates, etc.) (see table C.9). Most banks will have a base rate, probably referenced to Treasury bill rates and/or to the bank's cost of funds, and will then add to the base rate a margin for individual clients, reflecting country, credit, and other risks, supplemented by an allowance to cover bank costs. While the base rate is likely to be published, the possible range of margins that may be added to the base rate to reach a total interest rate is likely to be confidential, particularly as the actual margin, and



therefore the final interest rate, will depend on the details of the project or borrowing requirement and the identity of the borrower.

Table C.8 Prices charged by banks for a business accounts transaction (US\$)

Characteristics	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia
Monthly fee	Zero to \$0.35	\$0.60 to \$1.00	Zero to \$10	Zero	Zero to \$2.50	Zero
	\$2.30 to \$4.00	\$6 to \$30		\$1.50 to \$2.20		\$7.50 to \$17.90
	\$4.60 to \$6.30	\$30 to \$90				
Minimum amount for opening an account	Zero to \$23	\$6 to \$30	\$4 to \$20	\$4.40 to \$5.90	Zero to \$1.30	Zero
	\$46 to \$60	\$30 to \$60	\$40	\$11 to \$14.70	\$7.60 to \$25.50	\$75
					No pattern	
Ledger fees	Majority of banks did not charge.	Majority of banks did not charge.	Zero to \$4.	Zero to \$0.40.	\$0.30 to \$1.30.	Zero to \$0.50.
	Those charging were in range \$2.50 to \$5.00 per month.	Those charging were in range \$3 to \$6 per month.	\$6 to \$12.	\$1.00 to \$2.20.	Outliers \$10.1 to \$11.4.	\$3.50 to \$7.50.

Table C.9 Prices charged by banks for savings account transactions

Characteristics	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia
Business savings	<p>3 accounts – minimum balance below which no interest would be paid (\$57, \$230, \$570)</p> <p>One account quoted interest of 3.5% per annum</p> <p>Minimum opening balance: range \$6 to \$57</p> <p>No monthly charges</p>	<p>Minimum balances between \$3 and \$30</p> <p>One account = interest rate of 6%</p> <p>Most accounts charged monthly fees; range \$1.20 to \$14.50</p>	<p>Fee to open an account: range of \$2 to \$10 (excluding outliers)</p> <p>Ledger fees of \$1 to \$4</p>	<p>Charges for opening an account: half do not charge, others a range of \$15 to \$27</p> <p>Minimum opening balances: range of \$6 to \$29</p> <p>One account: interest rate of 8%</p> <p>Ledger fees: zero to \$1.30</p>	<p>Minimum balance: zero to \$2.50</p> <p>Cost of opening an account: zero to \$12.70</p> <p>Ledger fees: zero to \$1.30</p>	<p>Annual account fees: zero</p> <p>Monthly ledger fees: \$0.60 to \$0.90</p>
Fixed deposit	<p>Minimum balance ranged from \$57 to \$2,300</p> <p>No monthly charges</p>	<p>Minimum balance ranges: \$6 to \$30</p> <p>\$60 to \$600</p> <p>Most accounts: fees of \$7.30 to \$73 per annum</p>	<p>Only 2 accounts. Opening balances were \$8 and \$3,961</p>			
Investment account	<p>Explicitly linked to improved access to loans; one loan interest rate quoted was 1.5% per Month; opening balance required for 2 of the accounts was \$57; monthly charges</p>	<p>Opening balance of \$60</p> <p>No fees</p>				



## C.6 Insurance

As expected, most insurance companies offer group accident, property, and automotive insurance. Many insurers offer liability, indemnity, and health insurance. However, it is quite surprising that none of the interviewed insurers offers insurance for agricultural foodstuffs in transit and livestock in Tanzania. Rwanda scored surprisingly high for livestock insurance (table C.10).

**Table C.10 Services offered by insurance companies (percentage of service by country)**

Services offered	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia	Average
<b>Agriculture – Foodstuff in transit</b>	20	0	25	38	50	71	34
<b>Agriculture – Crops</b>	20	0	25	13	17	43	20
<b>Agriculture – Livestock</b>	20	0	25	63	33	43	31
<b>Health</b>	100	71	25	25	0	0	37
<b>Funeral</b>	0	43	13	25	0	14	16
<b>Group accident</b>	80	86	75	63	83	71	76
<b>Property</b>	80	71	50	75	67	57	67
<b>Credit</b>	20	14	50	63	17	14	30
<b>Automotive</b>	100	57	50	75	33	71	64
<b>Liability</b>	40	0	50	25	83	57	43
<b>Indemnity</b>	40	0	50	25	83	29	38
Average engagement of insurance companies by country	37	24	31	35	33	34	

Insurance premiums are compared across providers of personal accident insurance, personal health insurance, automotive insurance, and credit insurance. Two typical agricultural insurance services were included: crops insurance and livestock insurance. The results show that the rates for personal accident insurance are reasonably consistent for most countries, except Tanzania and to some extent Zambia. There is a certain level of consistency for automotive and crop and livestock insurance rates, but the coverage for crops and livestock seems irregular (not available in Tanzania and Malawi). The rates for personal health insurance display a higher variation, probably reflecting different details of coverage provided (table C.11).

Table C.11 Annual premia charged by insurance companies (US\$)

Characteristic	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia
Personal accident	Range \$40 to \$80	Range \$164 to \$303 (outlier \$607)	Range \$46 to \$230	Rates not provided, as depend on employment status, nature of job, etc.	Range \$46.50 to \$63.40	2 companies quoted \$103 and \$135 2 companies quoted \$370 and \$690
Personal health	Range \$138 to \$220 (outlier \$20) n- & out-patient	Range \$164 to \$303	Only one company quoted: \$349	Only 2 companies provided rates: \$16.60 and \$764	—	—
Comprehensive automotive	7% to 8% of value insured	3.1% to 5.0% of value insured	4% to 5.2% of value insured	5.4% to 8.2% of value insured	7.6% to 9.9% of value insured	7.1% to 8.3% of value insured
Credit insurance (coverage of \$23,256)	Range 1: \$115 to \$126 personal coverage Range 2: \$2,300 Group coverage	Only one company, \$231	\$523 to \$891 (outlier \$140 covers loss of stock or cash from fraud)	2 quotations: \$1,076 and \$3,488	—	Only one company, \$538
Crop insurance (maize, 1 acre)	Range \$38.10 to \$44.80 (outlier \$65.10)	—	One quotation: \$35	\$27	—	\$25 or less (\$15/\$20) based on rates for 5 acres)
Livestock insurance (1 dairy cow)	Range \$32.20 to \$40.30	—	One quotation: \$49	\$24.40	\$37.30	Range \$33 to \$38

Note: — = not available.

## C.7 Accountancy

Fees for accounting services are quoted separately for clients with a turnover of US\$5,000 and clients with a turnover of US\$100,000. The results show a degree of consistency for prices quoted to companies with a turnover of \$5,000 (loosely equated to micro enterprise) —see table C.12. There is nonetheless a significant difference in costs between countries—for example, between Kenya and Malawi, most notably at the upper end of the quoted ranges. There is a greater degree of variation in fees quoted to enterprises with a turnover of \$100,000 (table C.13). This may reflect a greater variability in the size of the client and the complexity of the business. The main criteria for determining the fees are the amount of work (man-hours) and complexity (or risk) involved. A few firms, however, referred also to turnover and profitability. Most of the firms were prepared to negotiate fees for audit, verification of solvency, and loan application support, although the criteria on which negotiations would be based varied between firms (new customer, customer growth potential, etc.).

Table C.12 Fees for accountancy services offered to clients with a turnover of US\$5,000

	(US\$)					
Characteristic	Kenya	Tanzania	Uganda	Rwanda	Malawi	Zambia
Verification of solvency	\$115 - \$290	\$600 - \$1,800	\$150 - \$1,300	\$174 - \$265	\$625 - \$2,000	\$150 - \$536
Support loan application	\$172 - \$230	\$600 - \$1,800	\$375 - \$1,125	\$147 - \$882	\$2,250 - \$5,000	\$150 - \$536
Audit	\$115 - \$580	\$480 - \$1,800	\$375 - \$1,300	\$150 - \$441	\$345 - \$626	\$322 - \$536
File tax returns	\$115 - \$230	\$600 - \$2,100	\$75 - \$562	\$36 - \$735	\$123 - \$492	\$134 - \$ 536

Table C.13 Fees for accountancy services offered to clients with a turnover of US\$100,000

Characteristic	Kenya		Uganda	Rwanda	Malawi	Zambia
Verification of solvency	\$230 - \$1,150	\$1,030 - \$3,900	\$562 - \$2,630	\$520 - \$7350	\$10,000 - \$30,000	\$1,100 - \$5,500
Support loan application	\$290 - \$580	\$1,030 - \$3,900	\$940 - \$1,900	\$520 - \$10,000	\$4,250 - \$51,250	\$890 - \$5,500
Audit	\$290 - \$920	\$12,100 - \$29,500	\$1,125 - \$1,900	\$294 - \$10,300	\$6,900 - \$ 37,500	\$1,100 - \$8,850
File tax returns	\$115 - \$920	\$600 - \$2,400	\$187 - \$3,750	\$220 - \$2,940	\$2,460 - \$9,850	\$1,100 - 3,870



## C.8 Conclusion and next steps

The pilot survey, which aimed to gather data on the usage and prices of standardized services, delivered valuable insights into the three examined sectors. The banking survey results seem to be the most reliable outcomes. By contrast, it seems that the insurance and accounting survey results are less dependable. For example, there was a wide variation in the responses of accountancy firms, possibly driven by different underlying assumptions regarding the services offered to clients. And although the survey looked at the formal supply side, in practice many MSMEs will use a local accountant informally, paying much lower prices than those quoted here.

To increase the reliability of the data, it is therefore proposed to focus any follow-up surveys on banking services and concentrate on the key areas of interest in the following table:<sup>20</sup>

Indicators	Products and services
1. Trade	Letters of Credit (LC), Structured Trade Finance, Forex transactions, etc.
2. Credit	Invoice discounting, SME value chain finance, asset finance, working capital.
3. Payments	Counter transactions, mobile banking, internet banking, etc.
4. Savings	Savings accounts, fixed deposits, other structured savings products

In addition, the following issues would need to be factored in:

1. Minimum opening and/or monthly balance requirements provide a useful indicator regarding the banks' interest in providing services to MSMEs.
2. Transaction fees provide probably the most critical data for SMEs (RTGS, domestic and foreign transfers, spread on buying and selling US\$500 foreign exchange) and MMEs (cost of mobile money transfers).

3. A major factor that frequently inhibits MSMEs' access to credit are the requirements for collateral, which the majority of MSMEs are unable to provide. The surveys should therefore include specific queries relating to the following:

1. Loans: typical, collateral required
2. Working capital: what collateral is required and/or what other risk mitigation is undertaken
3. Unsecured lending: if this is offered, the risk mitigation undertaken.

4. The survey questions about bank lending elicited little useful information. One possible explanation is that any individual lending transaction will depend on the specific characteristics of the loan application (quality of client, type of application, industry or sector, amount, collateral, existing client relationship, etc.) It is therefore difficult, or impossible, to provide meaningful responses on lending to a generic survey questionnaire.

5. However, it would be possible to obtain useful information on the cost of lending, real lending rates, by collecting the following data:

1. Bank base rate for each bank in the country (perhaps calculate the weighted average)
2. An indication obtained from each bank on the range of margins they might charge over the base rate.

6. To obtain more useful information on how banks deal with MSMEs, it is suggested to develop "standard situation" surveys. For example, a survey would ask how the bank would respond to a small enterprise (existing client with no real estate assets) for the following: (i) interest rate, (ii) collateral requirements, (iii) fees, and (iv) time required to process and approve the support requested, where the client enterprise:

1. Seeks working capital of US\$50,000
2. Seeks to open a letter of credit (LC) for imports of US\$100,000
3. Asks for document financing for goods of US\$100,000 to be imported under the LC
4. Asks for export finance (shipment under LC to, say, the Middle East).

7. For future collection of data, it is recommended to continue to use a mix of mystery visits and face-to-face interviews.

## Pilot

Prior to the fieldwork, a pilot was done in Kenya, targeting 15 businesses (5 banks, 5 insurance companies, and 5 accounting firms). The pilot was used for the following:

1. The pilot tested the questionnaires and evaluated which information should be collected and whether the questions were designed correctly to capture complete and essential information.
2. The pilot identified the right target respondents. Which firm representatives should be approached for an interview, and what was the most efficient way to get price information?
3. The pilot checked the comparability of the data. Which products and services are standard and which values (transaction values, insurance covers, turnover, etc.) should be used to compare products and services across providers and countries?

After the pilot, the tools were revised and best practices were implemented.

## Fieldwork

During the extended rollout, some of the providers were visited twice. In addition to the regular interviews at the main branches, mystery visits as well as interviews at other branches were undertaken. During mystery visits, enumerators posed as clients (MSME businessmen) and collected similar information to those who conducted the regular interviews to cross check the validity of the replies.

Table C.14 is an overview of the sample. Because of local market conditions in some countries, the sample is smaller than initially planned. Malawi, Rwanda, and Zambia have fewer banks compared with the other three countries. And there are fewer insurance firms in some of the countries.

Table C.14 Crosschecks by mystery visits and branch interviews

Countries	Bank			Insurance Firm			Accounting Firm		Total
	Regular	Mystery/branch	Total	Regular	Mystery/branch	Total	Regular	Total	
Kenya	4	16	20	2	6	8	8	8	36
Tanzania	8	12	20	2	5	7	5	5	32
Uganda	4	16	20	2	8	10	12	12	42
Rwanda	5	10	15		8	8	6	6	29
Malawi	7	7	14		6	6	7	7	27
Zambia	2	10	12	7	1	8	8	8	28
Total	30	71	101	13	34	47	46	46	194

## Methodologies used

We used face-to-face interviews with pen and paper questionnaires and mystery visits at main branches and sub-branches.

The advantages and disadvantages of the mystery visits compared with face-to-face interviews are summarized in the following table:

Advantages	Disadvantages
- An easier way of getting access to information, especially on types of accounts and loan facilities (banks)	- Not all information could be captured, as some general questions (client base, characteristics of the provider) could not be asked by a mystery shopper (all)
- Personnel is readily available to assist prospects while securing an appointment for a face to face interview can take some time to convince and get authorization (banks, insurance)	- As the questionnaire was lengthy, not all questions could be asked (insurance, banks)
	- Too many and specific requirements needed in order to apply for accounting services (financial statements, ledger books for businesses, in some countries like Rwanda registration certificates, yellow card)

## **Annex D Crowdsourcing with SMS technology: The case of farmers in Sub-Saharan Africa<sup>21</sup>**

### **D.1 Introduction**

In the past decade, the use of mobile phones has spread rapidly all over the world. In 2013, there were almost as many mobile phone subscribers (6.8 billion) as people in the world (7.1 billion), with more than half of the users coming from developing countries.<sup>22</sup> In regions like Africa, in 2012 there were almost 650 million mobile subscribers, more than in the United States or the European Union, making Africa the fastest growing region in mobile phone users in the world, with a penetration rate of 89 percent.<sup>23</sup>

The increasingly high rate of penetration and usage of mobile phones in Africa has given the market the opportunity to move the story to a new level. Mobile phones now offer major opportunities to advance economic and social development—from providing basic access to education or health information to making cash payments and even in stimulating citizen involvement in democratic processes.

In some countries of Sub-Saharan Africa, the use of mobile phones offers new possibilities for rural agricultural households, as this technology allows users to overcome important barriers related to physical distance and access to information and services. The increasing use of mobile phones has helped disseminate information such as daily prices of agricultural commodities. This type of timely information has improved small farmers' bargaining position on prices and competition between traders in countries like Ghana. Another interesting case is Kenya, where mobile phones are being used to provide financial services, or South Africa, where this technology is used to show how to file taxes electronically.

### **D.2 Mobile phone applications in development**

Timely and high-quality information about services, income, education, and health is not readily available in many developing countries. But the application of mobile technology is nowadays helping governments overcome this limitation. One reason for the lack of available information is because data are typically collected with face-to-face household surveys. Such surveys are expensive and time-consuming and therefore not implemented very frequently. Since policy makers and the private sector need timely data to monitor development initiatives and make important managerial decisions, the use of mobile technology has extended its impact to new areas of development.

The availability of mobile technology is opening new opportunities to assess the impact of development interventions not only more frequently and at a lower cost, but also with a higher level of accuracy. For instance, McKenzie (2011) argues that when outcome measures are relatively noisy and weakly auto-correlated, such as is the case with business profits, product prices, household incomes, and episodic health outcomes, impact evaluations that use smaller samples and multiple follow-ups are more efficient and accurate than the traditional baseline and follow-up model. This is when the use of mobile phones becomes very handy. The use of this technology is facilitating access to more readily available information at a lower cost than traditional surveys and with higher levels of accuracy.

### D.3 Survey research using cell phone technology

More and more researchers who seek to collect data to assess the impact of a specific initiative or to understand the motivations behind decisions and behavior are using short message service (SMS) text messaging as their main tool for data collection. Now research queries can come to the participants in real time through their mobile devices to glean more reliable and complete information.

Researchers and companies around the world have been collecting survey data via mobile phones for almost a decade. Mobile devices are becoming more versatile in their use and features, and consumers are becoming increasingly comfortable using third-party mobile applications, including the ones used by companies specialized in facilitating research using mobile technology.

Research via mobile phones is generally conducted in three ways, via SMS text messages, Wireless Application Protocol or mobile Internet, or downloading a small application onto the phone that collects survey data. Given that the use of smartphones has not yet proliferated in rural areas of the developing world, among these three methodologies, the one that is being increasingly used in research is SMS text messages.

Although there is a lot of debate about the effectiveness of this novel method, many pilot initiatives have shown accurate results in the implementation of surveys using SMS. In 2009, Ipsos—a global research company specialized in marketing, opinion polls, and social research—carried out a survey in the United Kingdom via SMS in parallel with a standard survey to understand the survey rate of response and behavior of participants. The results of this study not only showed a higher level of respondents' acceptance, but also helped establish a list of advantages and disadvantages related to the application of this methodology versus traditional survey methods.

The disadvantages of applying SMS surveys in research were found to be

1. Typing through a keypad is slow in comparison with the implementation of traditional paper-based surveys.
2. Given the difficulty of typing complete words or sets of numbers using a keypad, the possibility to make typos is high.

3. Although acceptance rates to answer these surveys are higher than in traditional surveys, completion rates are lower.
4. It takes a longer time for respondents to complete a full survey on their own in comparison with a traditional method of data collections, where surveyors are walking the respondent through all the questions in the survey.

The advantages of applying SMS surveys in research are the following:

1. Costs are lower. Surveys can be sent directly to mobile phones remotely without the need of deploying surveyors in the field.
2. Survey quality and progress can be tracked in real time.
3. If necessary, questions can be changed remotely and in real time.
4. Data cleaning can be completed automatically with the features built into the survey platform.
5. Results can be analyzed almost immediately.
6. The use of mobile technology permits the researcher to obtain geographic data consisting of the latitude, longitude, and altitude of a point, allowing the analysis of: (i) *locations and verifications*: mapping the location, path, area, or boundary to a geographical region at the time of the survey and showing on a district-level map; (ii) *prevalence and density*: presence of certain activities within a geographical boundary, for example, the number of farmers concentrated in a specific area; (iii) *areas*: physical space occupied by certain structures, land, or activities; (iv) *proximity and spread*: distance between locations, respondents, and activities; (v) *terrain*: geographical attributes of locations and regions, such as average rainfall in areas with high production of specific agricultural products; (vi) *networks*: identifying and quantifying connectivity, for instance, the duration and distance measuring road connectivity and density in total length and crossings; and (vii) *change and progression*: changes over time in (or between) a given location or group of respondents like rural-urban migration during the year, progression of students from primary school to university vis-à-vis location, etc.

Although SMS may have some limitations, the advantages and new features that it offers are considerable and it represents an opportunity for rapid collection of a rich set of accurate information at a much lower cost than traditional surveys.

#### D.4 Farmers' pilot study using SMS survey

This pilot study focused on obtaining information on the downstream outcomes of intraregional trade in Africa. It aimed to obtain novel and real-time data on the prices and quality of maize, seeds, and fertilizers through the implementation of an SMS survey. To obtain these data, our team hired the services of Text to Change24, a company specialized in the implementation of surveys applying a mobile technology platform. In this pilot study, farmers from Burkina Faso, Cameroon, Ghana, Kenya, Malawi, Mali, Tanzania, Uganda, and Zambia were targeted with an 11-question SMS survey.

The survey was divided into four main groups of questions. The first one aimed to obtain information about the unit price of maize sold in the open market (US\$/kg). The second group aimed to obtain information about unitary price of seeds, taking into account the type of seed sold in the open market (e.g. OPV, hybrid, etc.) and the type of venue where the seeds were sold (e.g. licensed store, open market, etc.). The third set of questions identified the unitary prices of fertilizers also by type of fertilizer (e.g. urea, basal, etc.). And the last group of questions aimed to identify the level of satisfaction of customers with the variety and quality of seeds and fertilizers available for them in the market, with a scale that ranged from 1 to 5, being 5 the highest level of satisfaction and 1 the lowest.

The two end goals of this pilot survey are: (1) Verify the accuracy of this novel, low-cost and rapid turnaround data collection methodology; and (2) fill the gaps in available information. To do so, we compared these novel results with official data of market prices for these products in the countries where this data is available. Additionally, we used qualitative information from country reports and experts' knowledge to analyze the story behind the variability of the results we found applying this methodology.

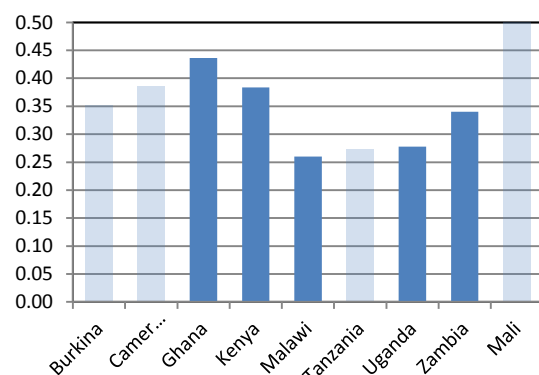
## D.5 Results

### D.5 1 Maize

After cleaning the database of outliers,<sup>25</sup> the results showed that the median prices of maize for all countries (except Mali) remained within reasonable margins. Malawi had the most affordable price per kilogram of maize (US\$0.26), whereas Ghana had the highest price (US\$0.44 per kg). When comparing these results with official data from the Food and Agriculture Organization Global Information and Early Warning System (FAO/GIEWS) database,<sup>26</sup> the values were practically the same in the five countries where official data were available (see figures D.1 and D.2).

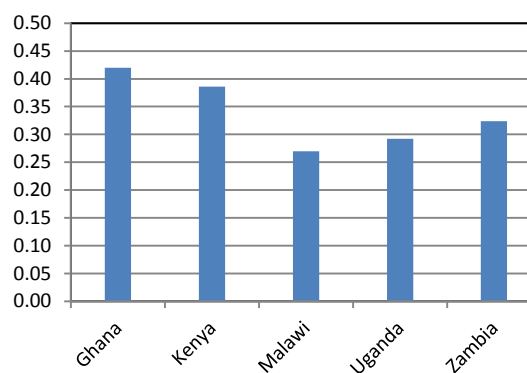


Figure D.1 Price of maize (US\$/kg)



Source: Authors' calculations.

Figure D.2 Maize: Average country price (US\$/kg)



Source: FAO/GIEWS official food price data.

## D.5.2 Fertilizers

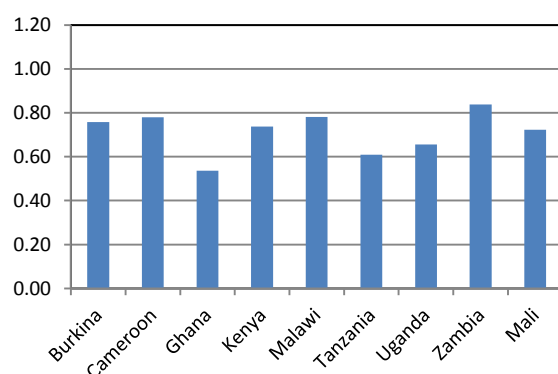
Statistics on prices, quality, and consumption of fertilizers in Sub-Saharan Africa are poor. This pilot study gives us the possibility to fill this information gap. Although some studies have shown that consumption of fertilizers has markedly increased since 2003, reaching a maximum of almost 1.6 million tons in 2010,<sup>27</sup> possibly due to the introduction of fertilizer subsidies in many countries, overall consumption remains low. Sub-Saharan Africa accounts for less than 1 percent of global fertilizer consumption, mainly because of the high prices in comparison with other regions.

Since the majority of Sub-Saharan African countries are not producers of fertilizers, importers have to face a number of constraints. First, given the size of their markets, they usually acquire relatively small quantities compared with the size of global trade flows. Therefore, their bargaining power to negotiate better rates is very limited. And high financial charges associated with letters of credit and interest can limit the ability of importers to secure additional volume or larger loads. In addition, freight rates to most of these countries are high, mainly because of limited port capacity, which causes delays of 7–10 days, increasing the prices for consumers by almost 100 percent.<sup>28</sup>

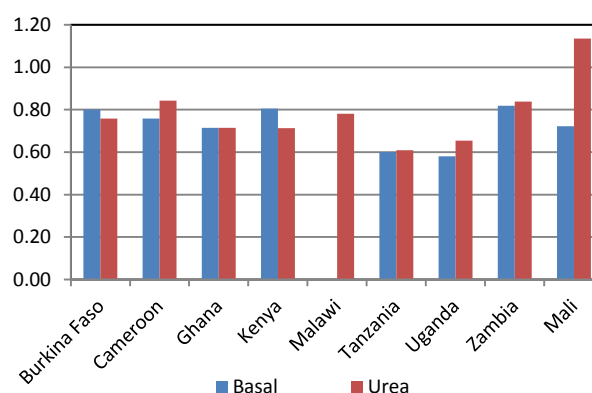
Data from IDFC for 2013 shows that imports of urea for local consumption gave the market a total price of US\$620/ton or US\$0.62/kg. When we analyze the price of fertilizers obtained for Tanzania applying our SMS survey, the results show very similar values. Figures D.3 and D.4 show a total price of US\$0.6/kg for the average price of fertilizers as well as for the price of urea.

Given the limited volatility in the results presented in all the countries, it can be assumed that prices obtained in our pilot project could be used as a reference or proxy for market price. Having said that, we can also observe that Ghana, one of the few countries in Sub-Saharan Africa that produces fertilizers, has one of the lowest prices for this product (see figure D.3).

Figure D.3 Prices of fertilizers (US\$/kg) Figure D.4 Prices of basal and urea (US\$/kg)



Source: Authors' calculations.



Source: Authors' calculations.

### D.5.3 Seeds

The average price of seeds per country shows a high level of volatility (see figure D.5). Since the nature and characteristics of the various types of seeds available in each market are very different, it is difficult to have an average price similar for every country. However, it is important to note that some differences in our results might be strongly associated with a low number of valid observations in some countries. In table D.1, when we analyze the price of new OPV seeds—one of the types of seed with the fewest observations in our database—we observe an important difference between Zambia, the country with the highest seed price (US\$2.33/kg) and Cameroon (US\$0.53/kg).

Figure D.5 Price of seeds (US\$/kg)

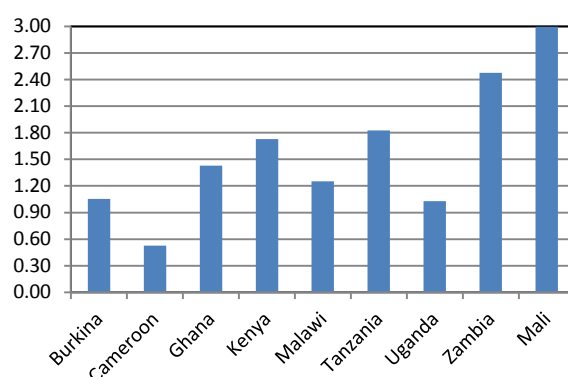


Table D.1 Price of seeds by type of seed (US\$/kg)

New OPV		New hybrid		Recycled OPV		Recycled hybrid	
Zambia	2.33	Mali	2.99	Kenya	2.30	Zambia	2.47
Tanzania	2.28	Zambia	2.47	Tanzania	2.28	Malawi	1.95
Kenya	1.73	Tanzania	1.97	Burkina Faso	1.26	Tanzania	1.83
Ghana	1.28	Kenya	1.73	Ghana	1.07	Kenya	1.73
Malawi	1.20	Ghana	1.52	Zambia	0.95	Burkina Faso	1.16
Uganda	1.19	Uganda	1.39	Uganda	0.79	Ghana	1.07
Burkina Faso	0.95	Malawi	1.28			Uganda	1.00
Cameroon	0.53	Burkina Faso	1.05				
		Cameroon	0.39				

Source: Authors' calculations.

#### D.5.4 Seed prices by type of venue

When we analyze seed prices by type of venue where seeds were bought, we also observe a high level of volatility (see figure D.6 and table D.2). As expected, seed prices in licensed shops tended to be among the highest. When farmers traded their seeds with another farmer, prices tended to be on average 20 percent lower than in licensed shops. This difference seems to be rational, given the logically higher price in licensed stores associated with the costs of running a formal business. Our results show

that Malawi, Tanzania, and Zambia have the highest prices when seeds are purchased in a licensed store (US\$2.5/kg on average), whereas Burkina Faso, Ghana, Kenya, and Uganda have the lowest prices.<sup>29</sup>

Figure D.6 Price of seeds, by type of venue for purchase (US\$/kg)

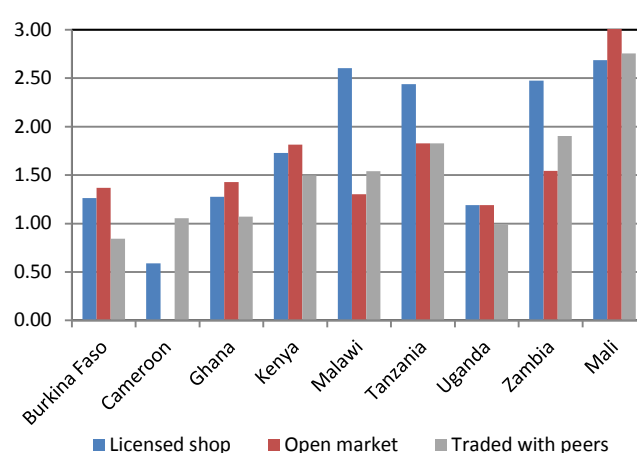


Table D.2 Seed price by location of purchase

	Burkina Faso	Cameroon	Ghana	Kenya	Malawi	Tanzania	Uganda	Zambia	Mali
Licensed shop	1.26	0.59	1.28	1.73	2.60	2.44	1.19	2.47	2.69
Open market	1.37		1.43	1.81	1.30	1.83	1.19	1.54	3.10
Traded with peers	0.84	1.05	1.07	1.50	1.54	1.83	0.99	1.90	2.75

Source: Authors' calculations.

In addition to the element of volatility in some of the results obtained using SMS surveys, it is important to highlight that this type of information is very novel. As far as we know, no other project or study has collected this type of information in real time using this methodology. Although there is a lot of room for improvement in the preparation of these types of surveys, it is clear that their applicability offers many opportunities to obtain relevant data faster and at a lower cost than with traditional methods.



## Annex E Education and health services indicators

### E.1 Introduction

Sub-Saharan Africa is witnessing an increasing international mobility of students and health professionals. For instance, the 2009 outbound mobility ratio of Sub-Saharan African students was 4.9 percent—more than two times higher than the world average of 2 percent. In health, the outflow of middle and highly skilled professionals is significant in all African countries. For example, the World Health Organization estimates that across 10 Sub-Saharan African countries, 23 percent of the locally trained doctors emigrate to various Organisation for Economic Co-operation and Development countries.

The mobility of African students and health professionals has recently been complemented by the mobility of educational and medical programs and institutions. Innovative cross-border institutional arrangements create new commercial opportunities, such as franchising and twinning of academic programs and health services. There are also new forms of private sector involvement and increased foreign participation in the provision of medical services. Technological progress is facilitating various forms of distance education or health services supply such as telemedicine. These relatively new forms of trade are beginning to gain in importance in Sub-Saharan Africa and have high potential for further expansion. However, data on such flows remain scarce on the African continent.

Monitoring of progress in regional integration of health and education services in Africa is severely hampered by lack of comprehensive data on trade in services between African countries and sparse information on regulatory policies and their application. This annex explores the applicability of new methods, such as a crowdsourcing, to obtain data on performance indicators in health and education services in nine Sub-Saharan African countries, namely, Cameroon, Ghana, Kenya, Malawi, Nigeria, Rwanda, Tanzania, Uganda, and Zambia.

Crowdsourcing is the process of getting information, work, or funding, usually online, from a crowd of people. Crowdsourced data come from the collective voices of consumers and can provide insights and opinions quicker and cheaper. Given that social networking and applications of mobile technology are dominant features of African mobile life, we are planning to use mobile phone surveys to gather information from providers and consumers of education and health services about trade patterns, determinants for trade, quality of and satisfaction with various services, and barriers to trade in these services.

### E.2 Objectives

The survey commissioned by the World Bank and carried out by the firm Text to Change aimed at obtaining (i) data on health and education professionals, as well as students and patients involved in

trade in health and education services; (ii) information on differences in the cost and the quality of education degrees and medical treatments across countries; and (iii) information on the recognition of foreign academic degrees and medical qualifications. The main objectives were to shed some light on the magnitude and the potential of trade in education and health services in Sub-Saharan Africa, and identify the main barriers to trade in these services in the region.

### E.3 Data collection and sample

Data were collected using the crowdsourcing method based on a questionnaire designed by the World Bank in collaboration with Text to Change.

More than 2,000 health professionals, hospital representatives and patients were surveyed across eight Sub-Saharan African countries. The sample composition for the health services surveys is presented in table E.1.

**Table E.1 Sample distribution: Health services**

<b>Total sample</b>	<b>Cameroon</b>	<b>Ghana</b>	<b>Kenya</b>	<b>Malawi</b>	<b>Rwanda</b>	<b>Tanzania</b>	<b>Uganda</b>	<b>Zambia</b>	<b>Total</b>
<b>Hospital reps</b>	20	21	25	22	20	21	32	20	181
<b>Doctors &amp; nurses</b>	35	43	45	53	52	32	95	46	401
<b>Patients</b>	151	193	155	243	177	152	208	153	1,432
<b>Total respondents</b>	<b>206</b>	<b>257</b>	<b>225</b>	<b>318</b>	<b>249</b>	<b>205</b>	<b>335</b>	<b>219</b>	<b>2,014</b>

Source: Text to Change.

A total of 1,967 providers and consumers of education services were surveyed in nine Sub-Saharan African countries using the crowdsourcing method. The sample composition for the education services surveys is provided in table E.2.

**Table E.2 Sample distribution: Education services**

<b>Total sample (Including outliers)</b>	<b>Cameroon</b>	<b>Ghana</b>	<b>Kenya</b>	<b>Malawi</b>	<b>Nigeria</b>	<b>Rwanda</b>	<b>Tanzania</b>	<b>Uganda</b>	<b>Total</b>
<b>University representatives</b>	31	34	39	33	46	40	32	45	300
<b>University students</b>	151	192	184	179	242	150	158	205	1,461
<b>Professionals with foreign degrees</b>	24	32	34	20	30	22	21	23	206
<b>Total</b>	<b>206</b>	<b>258</b>	<b>257</b>	<b>232</b>	<b>318</b>	<b>212</b>	<b>211</b>	<b>273</b>	<b>1,967</b>

Source: Text to Change.

Data were collected between April and July 2014. Sampling was done through filtering existing databases of phone owners. Most questions were asked and answered via SMS, but several target

groups—such as foreign patients and professionals with foreign degrees—were surveyed through face-to-face interviews using smartphones.

Outliers can significantly influence the distribution of statistics, especially in a small sample. To reduce the effects of possibly spurious outliers, we use two different techniques in combination to eliminate such outliers. We begin with trimming our data by eliminating extreme values of variables such as costs for tuition, housing, transportation, food, books and visa in the home as well as the host countries. Any value of these variables that is over four times the average costs or below 1 percent of the average costs is dropped. Averages are taken by country and the disaggregate category for which the data are being presented. For example, in education services, these disaggregate categories are the type of student (domestic or foreign), the type of university (public or private), and the type of degree (business/finance, engineering, medical, teaching, others).

Next, we use winsorization to transform the statistics by limiting extreme values in the sample data. A usual winsorization strategy involves replacing all outliers with a specified percentile of the data. In our case, we winsorize across the category for which the data are presented. For instance, when we present a comparison of tuition cost across local and foreign students, then the data are winsorized across the category “type of students.” We choose to winsorize the top and bottom 10th percentile of our data. Thus, any value of the data below the 10th percentile or above the 90th percentile in a given category is replaced by the 10th percentile value and 90th percentile value, respectively.

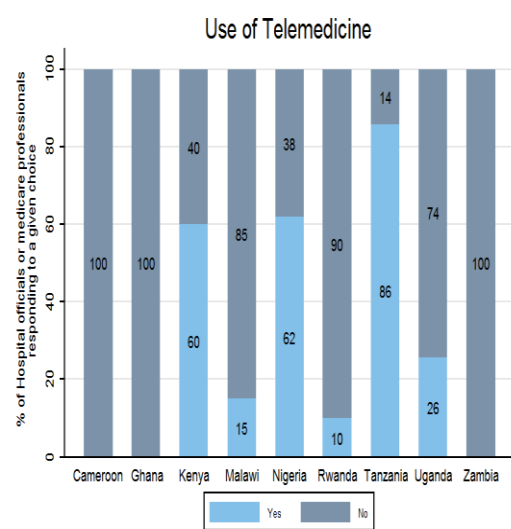
#### E.4 Key results: Trade in health services

Data gathered from hospital representatives, doctors and nurses, and foreign patients who received medical treatment in the surveyed countries, as well as from domestic patients who purchased health services abroad, provide some information on which countries engage in trade in health services via different modes of supply.<sup>30</sup>

For example, hospitals in Kenya, Malawi, Tanzania, Nigeria and Uganda report using telemedicine, while Cameroon, Ghana, and Zambia do not seem to engage in cross-border trade (Mode 1) in health services (figure E.1). Hospitals in Kenya, Malawi, and Tanzania seem to be the most frequent users of telemedicine (figure E.2).

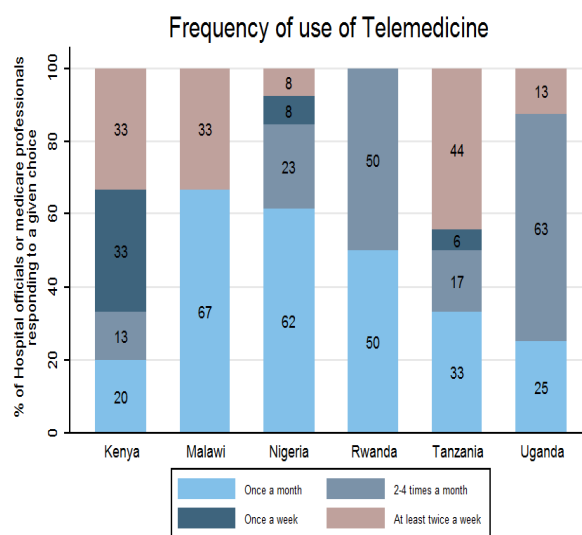


Figure E.1 Use of telemedicine



Source: Authors' calculations based on survey responses

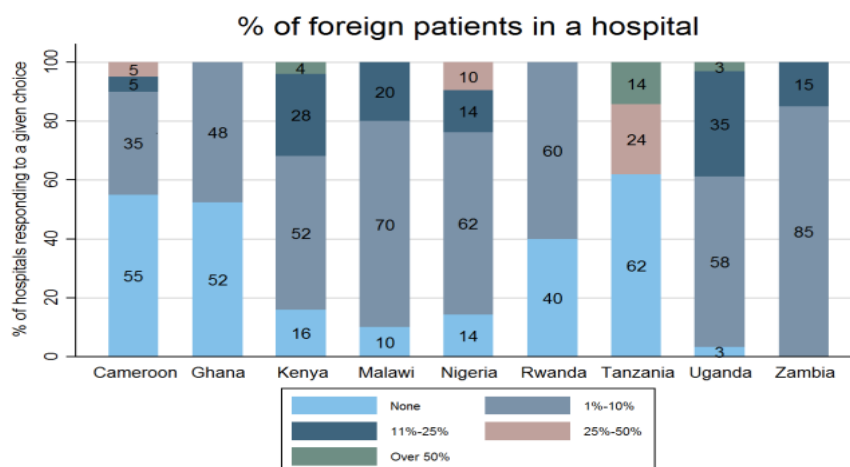
Figure E.2 Frequency of use of telemedicine



Source: Authors' calculations based on survey responses

Most of the responding hospitals seem to treat foreign patients, with several hospitals in Kenya, Tanzania, and Uganda reporting that foreign patients represent more than 50 percent of their total patients (figure E.3). This suggests that most of the examined countries engage in trade in health services via Mode 2. Top source countries of foreign patients are Burundi, Cameroon, Chad, China, Democratic Republic of Congo, India, Kenya, Mozambique, Nigeria, Rwanda, Somalia, Sudan, Tanzania, Togo, Uganda, and the United States.

Figure E.3 Proportion of foreign patients treated by hospitals



Source: Authors' calculations based on survey responses

By surveying foreign patients who received treatment in the selected countries as well as domestic patients who purchased health services abroad, we are able to derive some information on imports and

exports of health services via Mode 2. Information on the top source countries of foreign patients receiving treatment in the nine examined countries and the top destination countries for patients from the examined countries reveals that trade in health services is dominated by exchanges with neighboring countries (table E.3).

**Table E.3 Main source and destination countries for exports and imports of health services**

Reporting country	Trade flow	Partner country
Cameroon	Exports to	Chad, Central African Republic, Senegal, Nigeria
	Imports from	Gabon, Central African Republic, Nigeria, Chad, Guinea Conakry
Ghana	Exports to	Nigeria, Liberia, Togo, Benin
	Imports from	Nigeria, South Africa, Togo, Benin, Tunisia
Kenya	Exports to	Uganda, India, Tanzania, Sudan, Somalia
	Imports from	South Africa, India, Egypt, Nigeria, Sudan
Malawi	Exports to	Mozambique, Zimbabwe, Zambia
	Imports from	South Africa, Egypt, Tanzania, Kenya, Ghana
Nigeria	Exports to	Ghana, China, Togo, Cameroon
	Imports from	Ghana, Togo, Benin, Kenya, Cameroon
Rwanda	Exports to	Uganda, DRC, Burundi
	Imports from	Uganda, Kenya, South Africa, DRC, Burundi
Tanzania	Exports to	India, UK, USA, Uganda, Rwanda
	Imports from	Kenya, Uganda, South Africa, Senegal
Uganda	Exports to	Kenya, Sudan, Rwanda, Tanzania
	Imports from	Kenya, South Africa, Tanzania, Rwanda, South Sudan
Zambia	Exports to	Namibia, Kenya, Burundi, China
	Imports from	South Africa, Algeria

## E.5 Determinants of trade in health services

Differences in the cost and quality of services and the institutions providing the services are typical determinants of trade. In several cases, domestic patients from the surveyed countries pay more for

treatment received abroad than do foreign patients undergoing treatment in the selected countries (figures E.4 and E.5). This may suggest that the cost of medical services is not the decisive factor for trade in health services.

Figure E.4 Cost of treatment received by foreigners in the examined countries

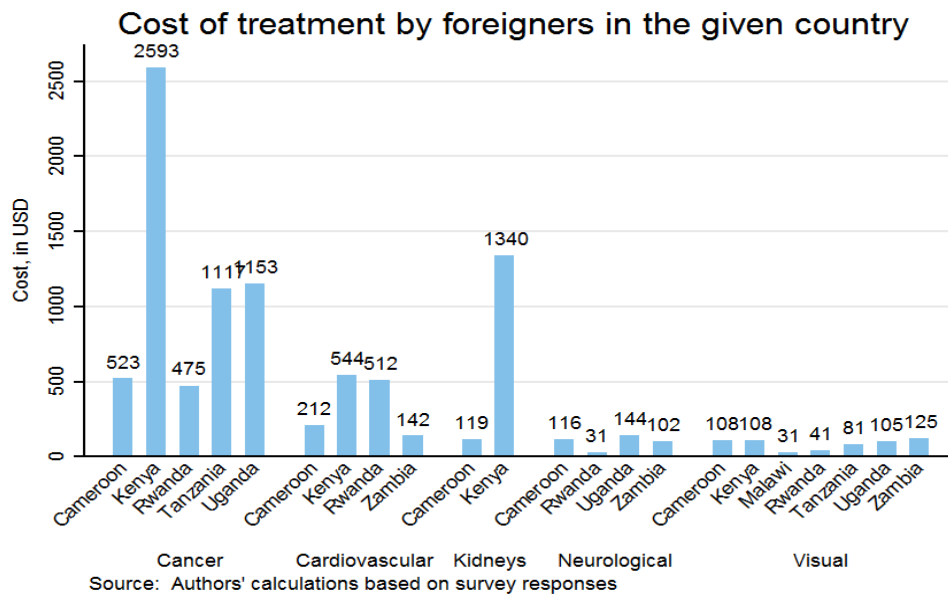
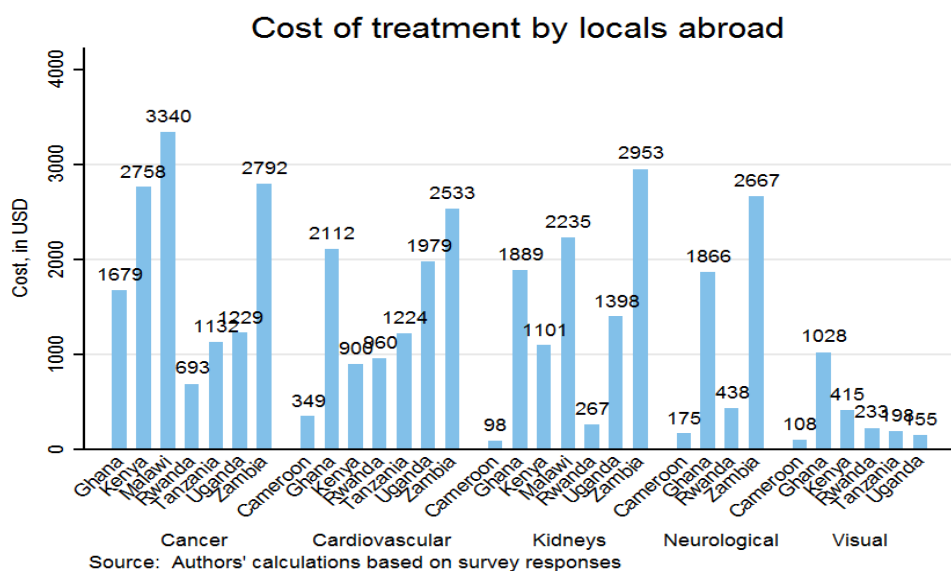


Figure E.5 Cost of treatment received by patients from the examined countries abroad



Although differences in the quality of services may explain this outcome, the non-availability of certain specialized cures (within the broader treatment category) could be an additional explanatory factor (figures E.6 and E.7).

Figure E.6 Reasons for foreign patients to seek treatment in the examined countries

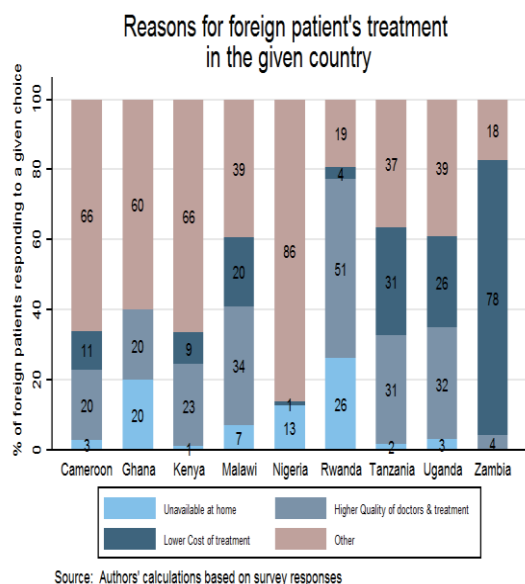
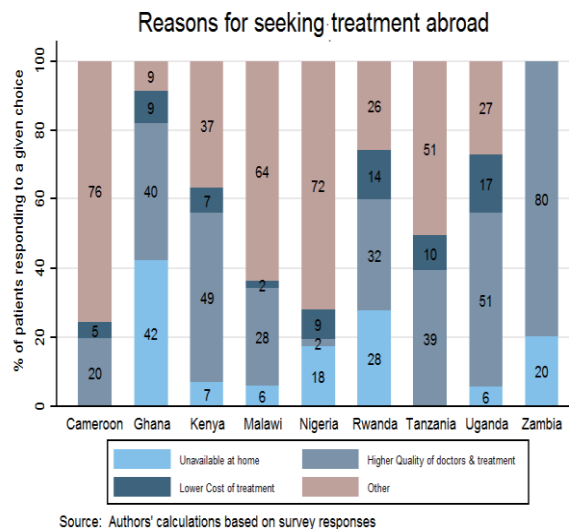
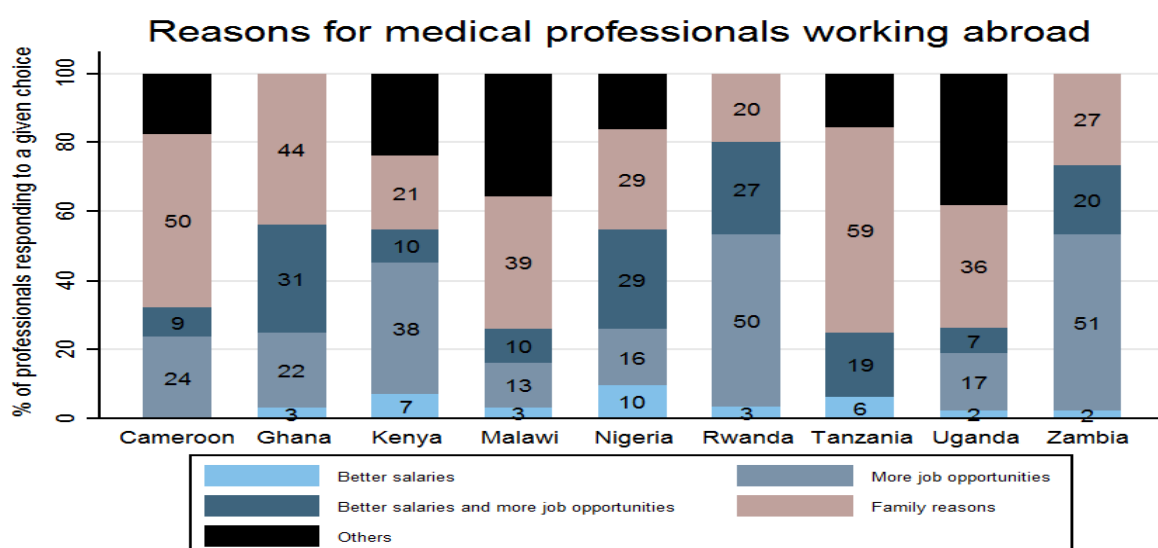


Figure E.7 Reasons for domestic patients from the selected countries to seek treatment abroad



Push factors, such as inadequate remuneration in the home country, the desire to work in a better managed health system and to continue education and training, and family reasons, encourage health care professionals to seek employment abroad. This leads to trade through the temporary presence of health professionals (Mode 4) or to permanent migration (figure E.8). Additional pull factors such as shortages of doctors and nurses in the host countries, further encourage the outflow of African health professionals.

Figure E.8 Reasons for medical professionals working abroad



## E.6 Barriers to trade in health services

The survey results confirm that exports and imports of health services via consumption abroad are hampered by the high cost of travel and visas needed to receive treatment in a foreign country (figures E.9 and E.10).

Figure E.9 Cost of travel and visa for foreign patients seeking treatment in the selected countries

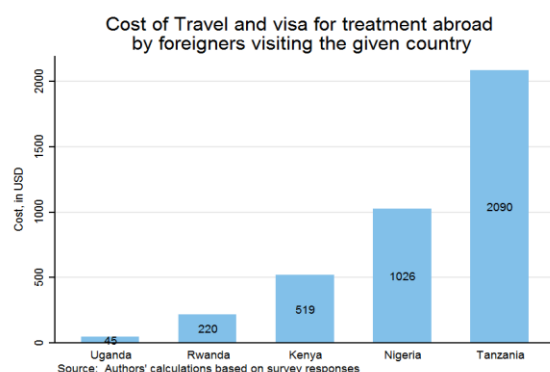
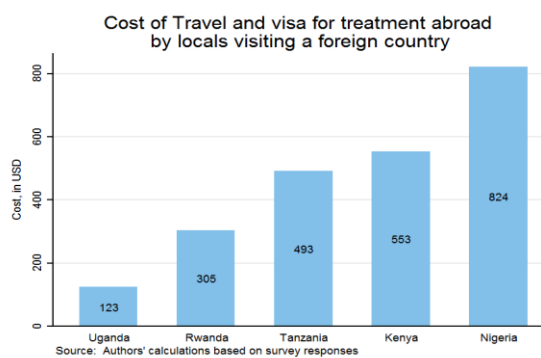


Figure E.10 Cost of travel and visa for domestic patients originating in the selected countries seeking treatment abroad



The limited availability of insurance for treatments abroad further limits these trade flows (figures E.11 and E.12).

Figure E.11 Percentage of treatment covered by insurance for the foreign patients seeking treatment in the examined countries

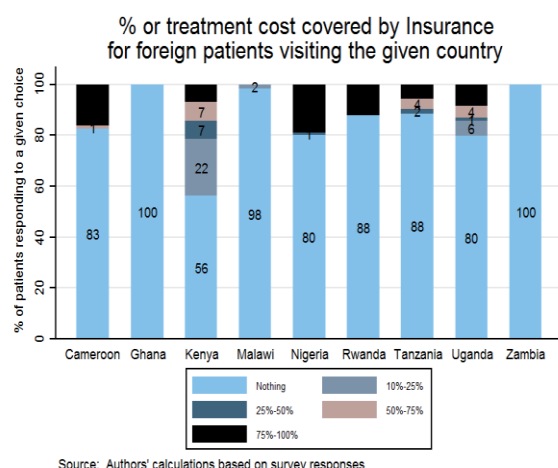
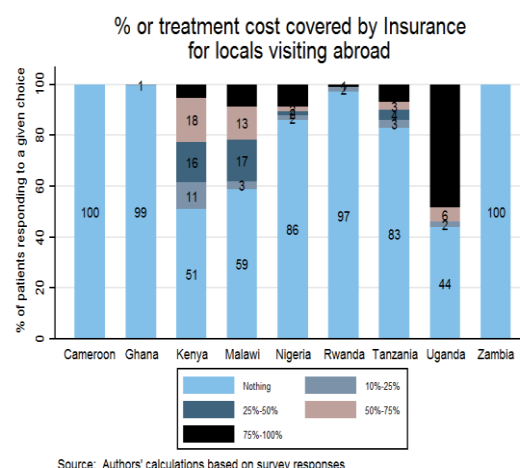


Figure E.12 Percentage of treatment covered by insurance for domestic patients originating in the selected countries seeking treatment abroad

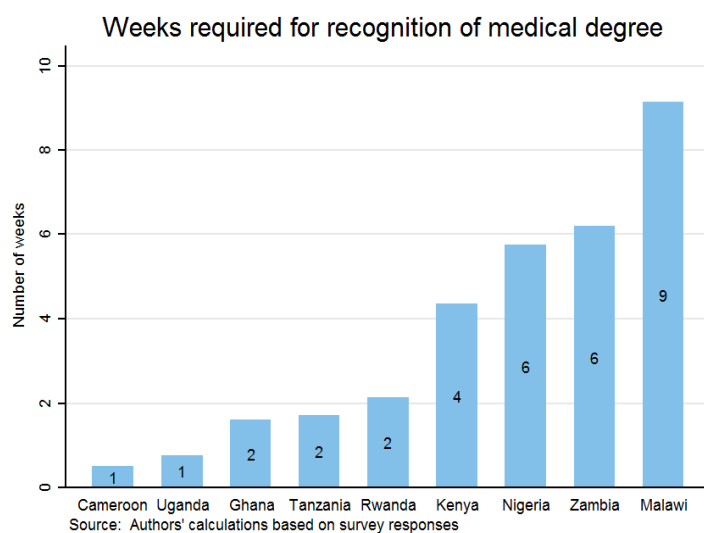
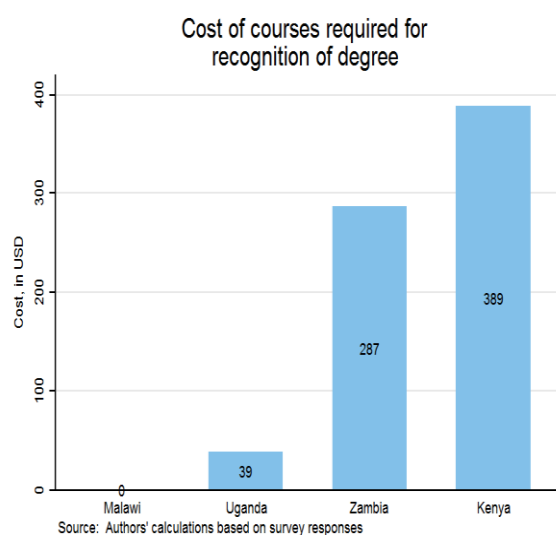
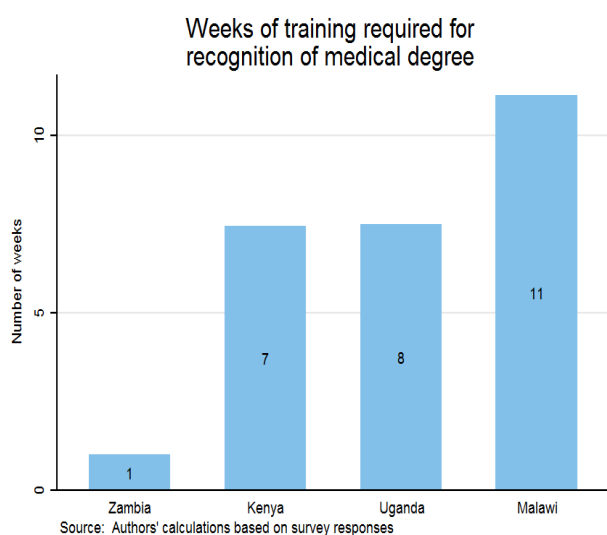


The main barriers to the movement of health professionals relate to the lengthy recognition of medical degrees obtained abroad (figure E.13), the additional training required for the recognition of degrees obtained abroad (figure E.14), and the cost of courses required for the recognition of degrees obtained abroad (figure E.15).

Figure E.13 Weeks required to recognize medical degrees obtained abroad

Figure E.14 Additional training required for recognition of degrees obtained abroad

Figure E.15 Cost of courses required for recognition of degrees obtained abroad

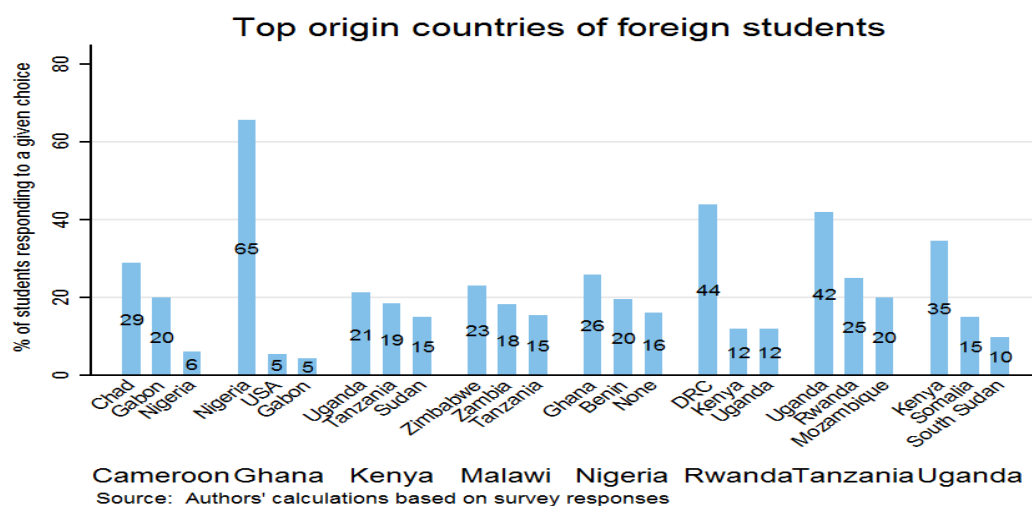


## E.7 Key results: Trade in education services

Data gathered from foreign students who study in the nine selected countries provide information on the main sending countries (figure E.16). The regional dimension seems equally important for trade in education services via Mode 2 as it is for health.

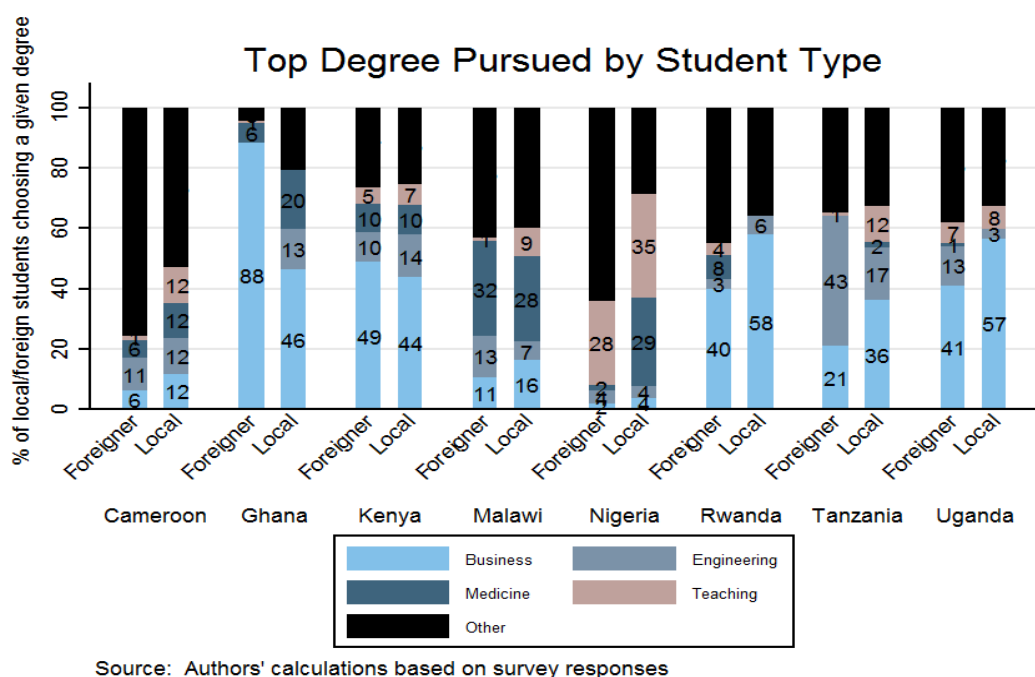


Figure E.16 Main source countries of foreign students



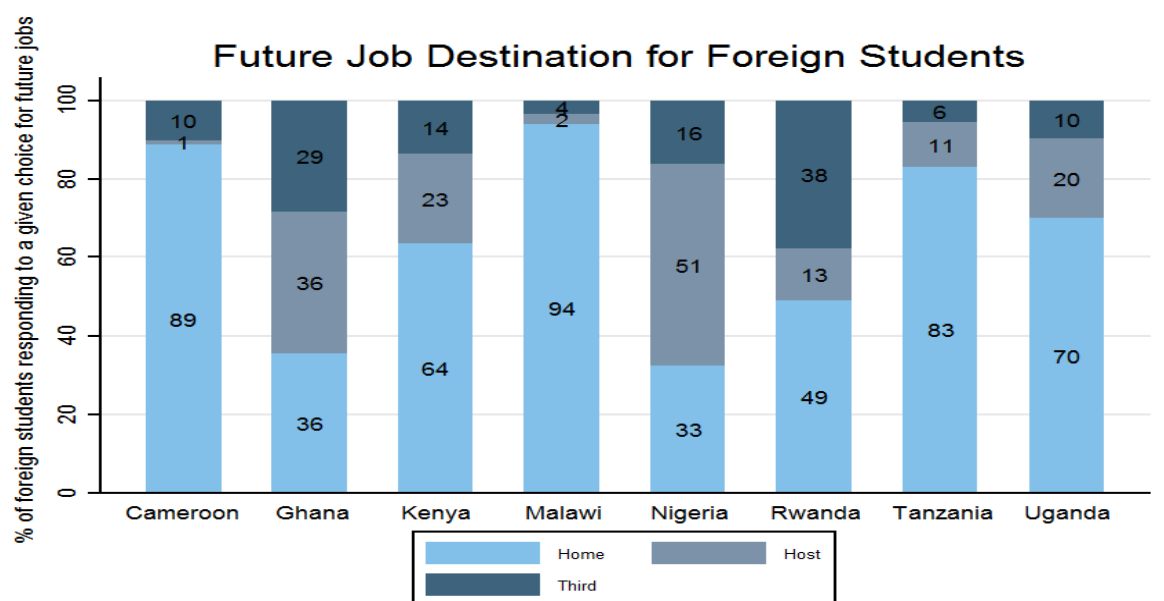
In most of the examined countries, business is the top degree pursued by domestic and foreign students (figure E.17).

Figure E.17 Top degrees pursued by domestic and foreign students



Few foreign students plan to remain in the host country after obtaining their degrees (figure E.18)

Figure E.18 Where do foreign students look for jobs?



## E.8 Determinants of trade in education services

Differences in endowments as well as differences in the cost and the quality of services and institutions providing the services are typical determinants of trade. Countries such as Uganda and Kenya have taken advantage of the quality and reputation of their universities to attract foreign students and have emerged as regional education hubs despite higher costs. Most other Eastern and Southern African countries have attempted to improve the quality of their education systems and increase the number of their graduates through imports of educational services in the form of increased mobility of students and academics (figure E.19) or sometimes through branch campuses of foreign universities. Details about the cost of tuition, books, food, housing, and transportation for domestic and foreign students are provided in figures E.20 to E.25. A summary of the costs shares across the different categories for local and foreign students is presented in figure E.26.

Figure E.19 Cost of tuition by degree

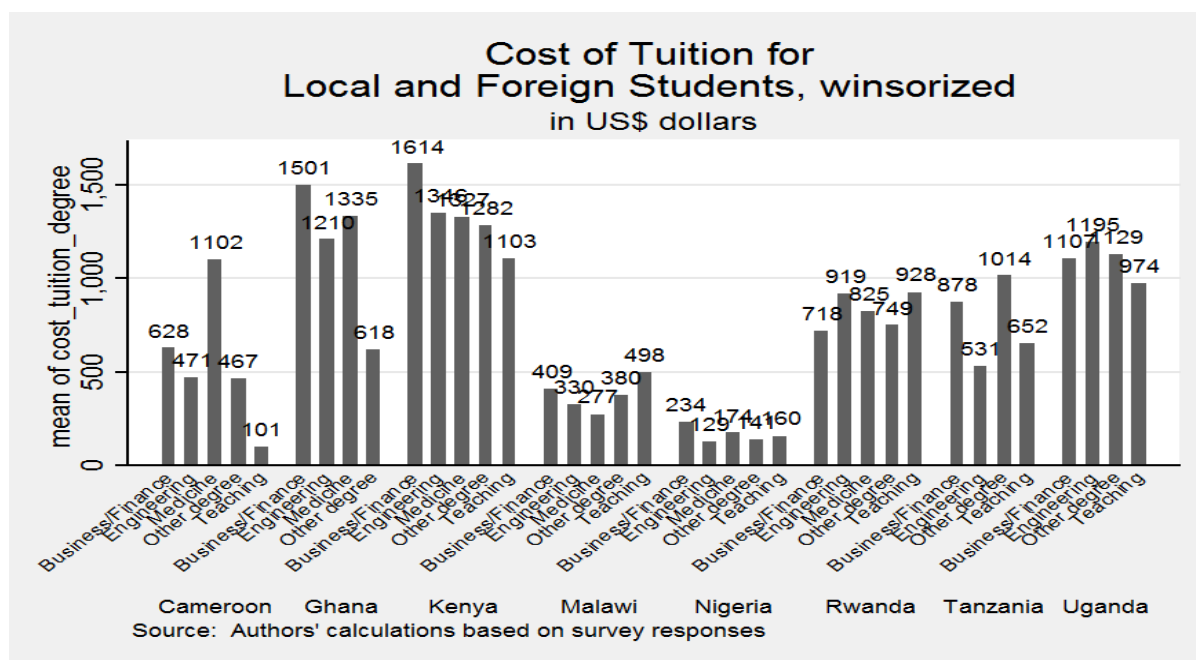


Figure E.20 Cost of tuition for local and domestic students

Figure E.21 Cost of tuition by university type

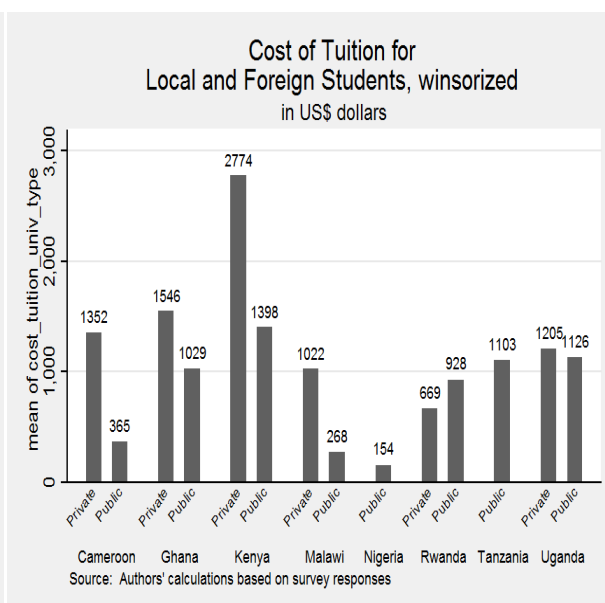
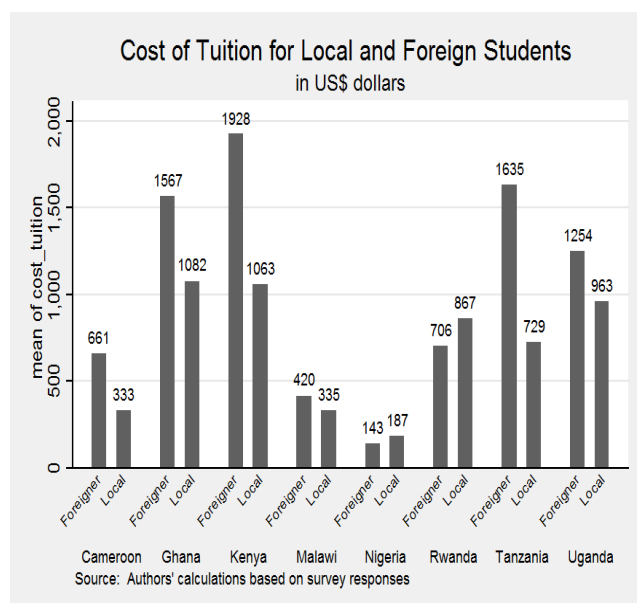


Figure E.22 Cost of books for local and foreign students

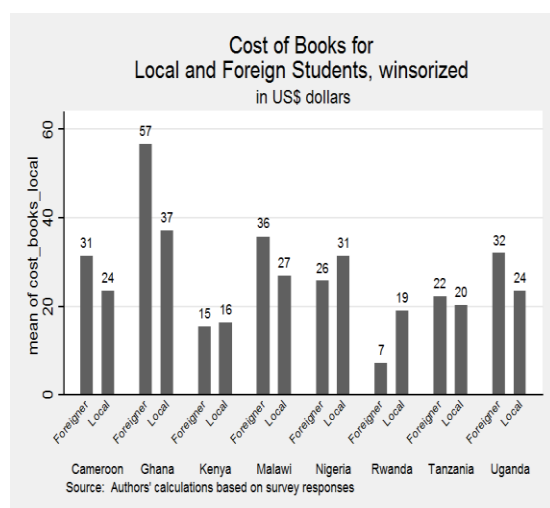


Figure E.23 Cost of food for local and foreign students

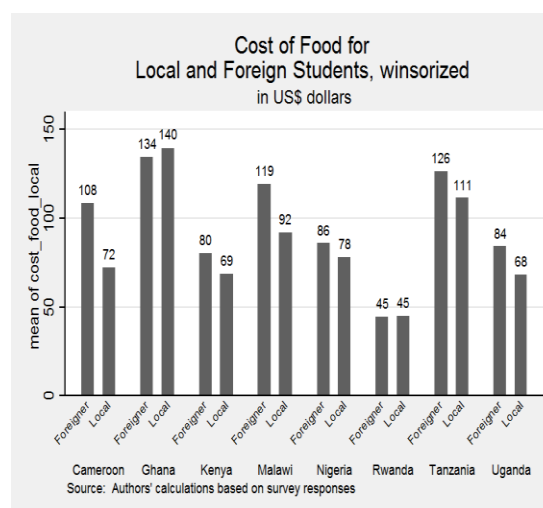


Figure E.24 Cost of housing for local and foreign students

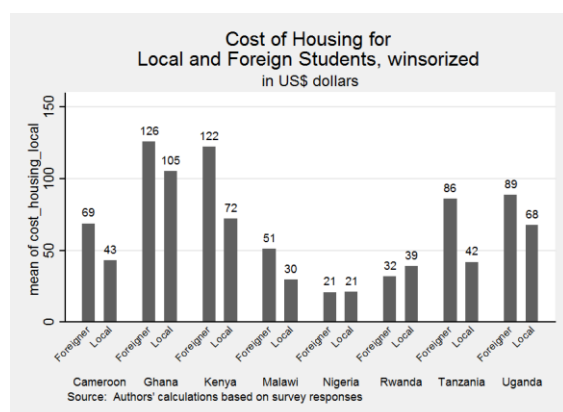


Figure E.25 Cost of transportation for local and foreign students

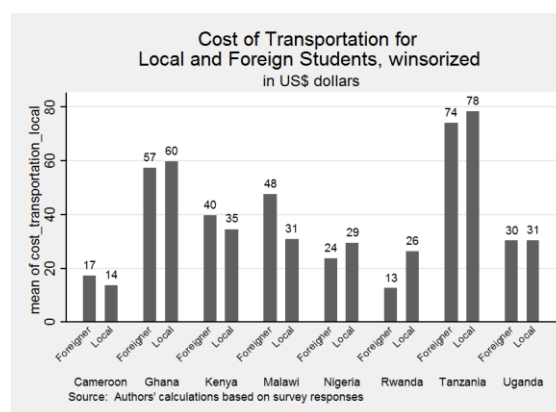
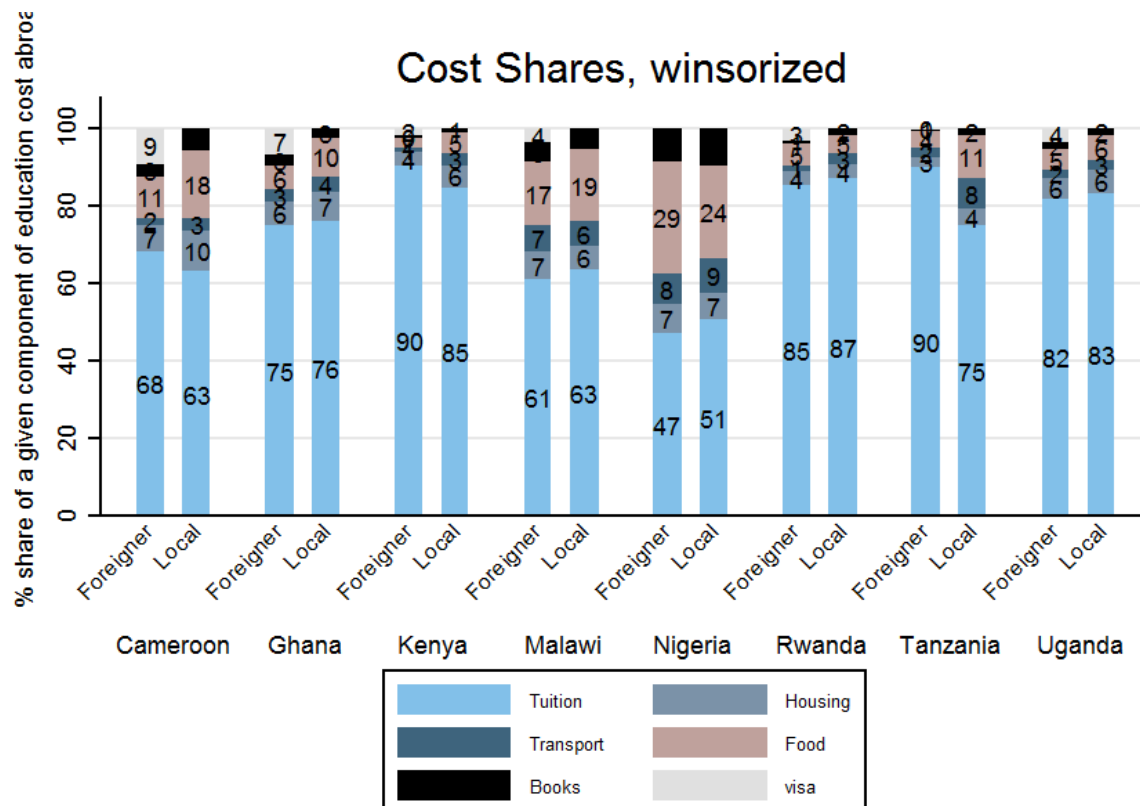


Figure E.26 Costs shares across categories, foreign vs. domestic students



Source: Authors' calculations based on survey responses

## E.9 Conclusion and next steps

The pilot survey aimed at gathering quantitative data on trade in health and education services in Sub-Saharan Africa through the use of mobile phones. The pilot survey delivered valuable insights into the examined sectors. Both surveys highlight the importance of regional trade in health and education services. Furthermore, the surveys suggest that the cost is not decisive; rather the availability and quality of services seem to be more important for trade in health and education services. The surveys generated new data regarding the costs of various treatments or degrees across countries as well as information on the cost to access health and education services across borders. This exercise therefore shows that phone-based surveys are not only feasible, but also useful, given that they enable the collection of new data sets. Phone-based surveys are often superior to the more costly and expensive traditional data collection methods based on field interviews.

Despite their usefulness in generating new knowledge, there remain several challenges related to the implementation of mobile phone-based surveys to collect data on trade in services.

First, sampling issues need to be clarified. Although sampling from available lists of mobile phone users is easily justifiable for the providers and users of education and health services given that phone ownership is almost universal within this category, it has proven rather difficult to reach certain target groups, such as professionals with foreign degrees. This has resulted in very small sample sizes for several categories of respondents. Furthermore, even among the reachable respondents, rates of attrition and nonresponse were extremely high in several countries (for example, in Nigeria), generating delays and increasing the survey costs.

Second, data quality issues have hampered the implementation of the surveys. For example, despite formulating short questions and requesting the answers in local currency, the data set contained a high number of outliers. Unrealistic results (for example, the cost of recognition of degrees reported for Rwanda was more than 100 times higher than the cost of recognition in Tanzania and Uganda) show that questions were misunderstood by respondents, enumerators, or both. A more interactive participation of surveyors and a streamlined data entry process would help address such challenges in the future.

## Annex F Indicators currently used outside Africa

There exist some significant gaps in trade integration monitoring in Africa, in particular with respect to the monitoring of trade outcomes. In this context, the question arises whether RTAs in Africa can learn from the experiences and practices in other regions of the world. The following discussion surveys several relevant trade monitoring arrangements in East Asia, Europe, and Latin America.

Similar to the situation in Africa, compliance monitoring is the dominant form of assessment for regional integration agreements. Yet, the scope of the evaluation is often broader and more ambitious. For example, the European Union in its Internal Market Scoreboard has set a target for each member state of implementing at least 99.5 percent of all directives. The Association of Southeast Asian Nations (ASEAN) uses a scorecard approach for its members, which gives equal attention to integration in goods, services, investment, capital, and skilled labor (table F.1).

Table F.1 ASEAN Economic Community Scorecard

Key Areas	Phase I (2008-2009)		Phase II (2010-2011)		Total Measures	
	Fully Implemented	Not Fully Implemented	Fully Implemented	Not Fully Implemented	Fully Implemented	Not Fully Implemented
Free Flow of Goods	9	0	23	24	32	24
Free Flow of Services	10	3	13	17	23	20
Free Flow of Investment	5	1	5	8	10	9
Free Flow of Capital	1	0	5	0	6	0
Free Flow of Skilled Labor	-	-	1	0	1	0
Priority Integration Sectors	28	0	1	0	29	0
Food, Agriculture and Forestry	8	0	5	6	13	6
<b>Total Number of Measures</b>	<b>61</b>	<b>4</b>	<b>53</b>	<b>55</b>	<b>114</b>	<b>59</b>
<b>Implementation Rate</b>	<b>93.8%</b>		<b>49.1%</b>		<b>65.9%</b>	

Source: ASEAN.

With respect to overall trade outcomes, the Eurasian Economic Community is tracking not only aggregate intraregional trade volumes, but similarly trade between country-pairs within the region and between every individual country and the region (table F.2). This can make it possible to identify asymmetries in the degree of integration, in particular if some countries trade intensively with regional partners while others do not. A region-wide average could in this case be misleading.

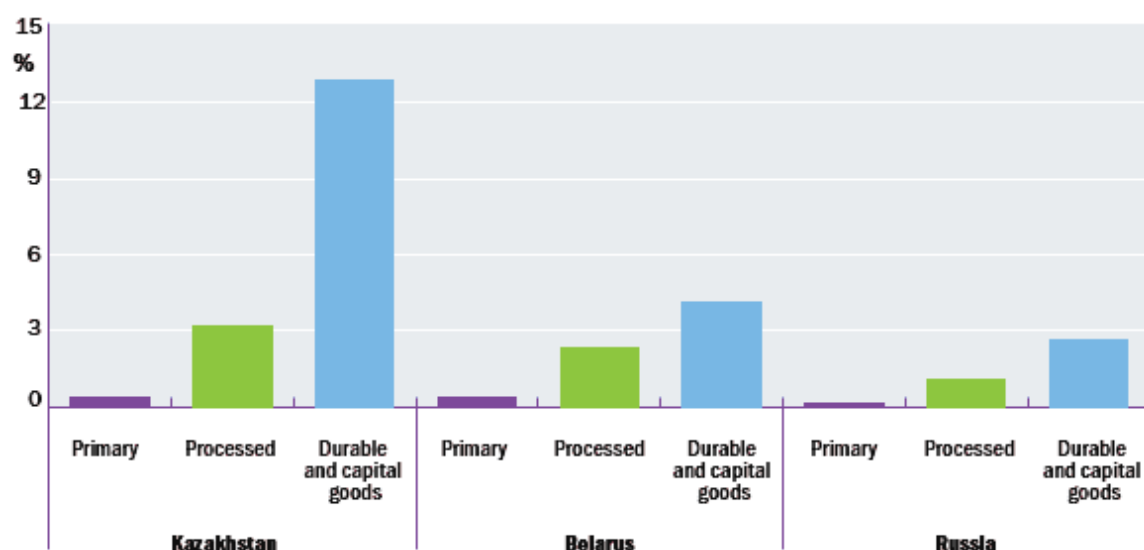
Table F.2 Indicators of market integration in the Eurasian Economic Community

Indicator	Country pair	Country-to-region	Region
<b>A. General market integration</b>			
Mutual trade	(Country's share in the total foreign trade turnover of the country pair + country's share in the total GDP of the country pair) * 100 / 2	(Country's share in trade with the region in the total foreign trade turnover of the country + country's share in trade with the region in the country's GDP) * 100 / 2	(Share of the countries' mutual trade in their total foreign trade turnover + share of the countries' mutual trade in the region's total GDP) * 100 / 2
Migration	Share of labour migrants from each country of the pair working in the other country in the total population of the country pair	Share of labour migrants from the country working in the region in the total population of the country	Share of labour migrants from all countries of region working in other countries of the region in the total population of the region

Source: Eurasian Development Bank 2010.

Another refinement of overall trade volume analysis is to assess the composition of trade. The latter can be analyzed, for example, by product groups (figure F.1) or by technological content (figure F.2). The Andean Community tracks the number of products that are being exported to regional partners and to the world market (figure F.3).

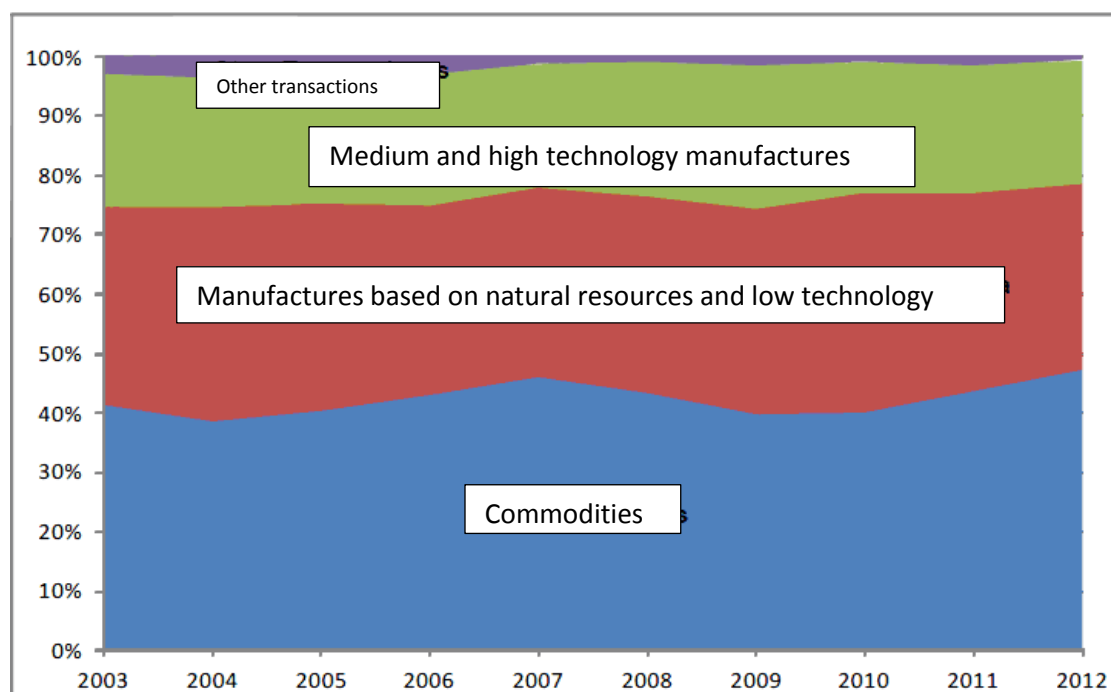
Figure F.1 Goods solely exported within the Eurasian Economic Community



Source: EBRD 2012.

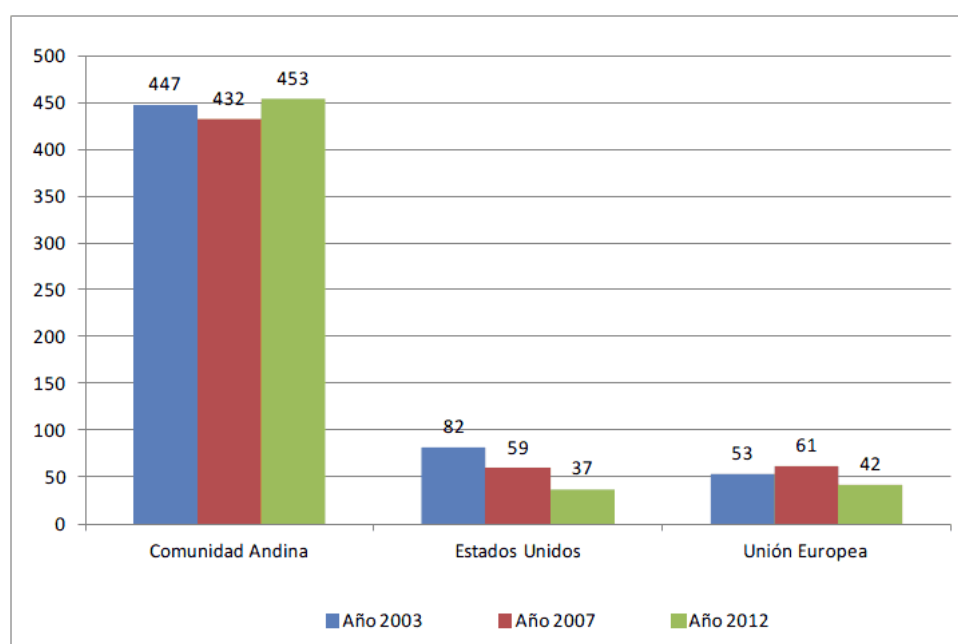


Figure F.2 Technology content of intraregional trade in the Andean Community



Source: Andean Community 2013.

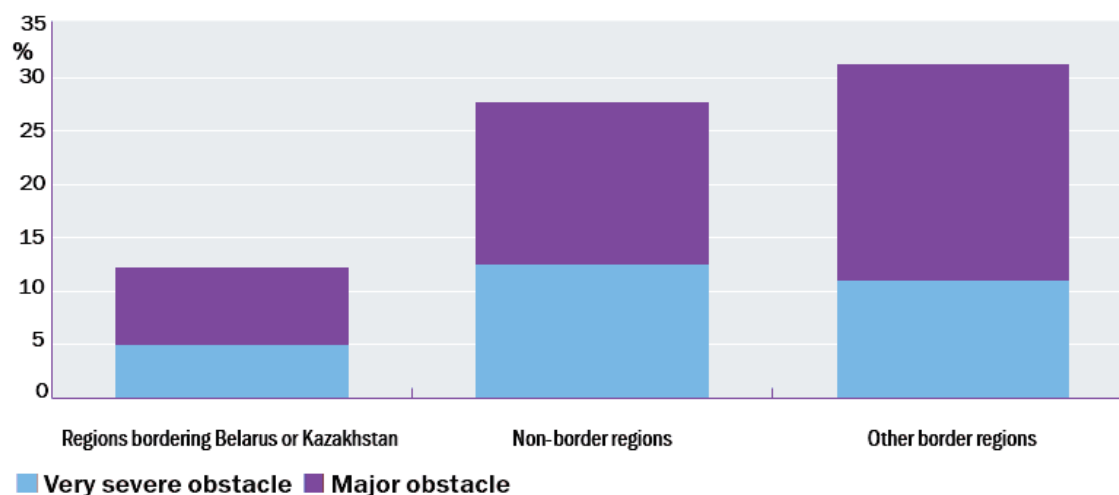
Figure F.3 Number of products exported within the Andean Community and to external partners



Source: Andean Community 2013.

Concerning non-tariff barriers, many RTAs maintain inventories of business complaints and provide institutionalized mechanisms for complaint resolution or dispute settlement. Examples include the Central America Free Trade Agreement, the Andean Community, and Mercosur. Surveys are equally used to collect structured feedback on potential trade impediments. For example, Russian businesses were asked to assess the extent to which border procedures within the Eurasian Community are easier to comply with than other border crossings (figure F.4).

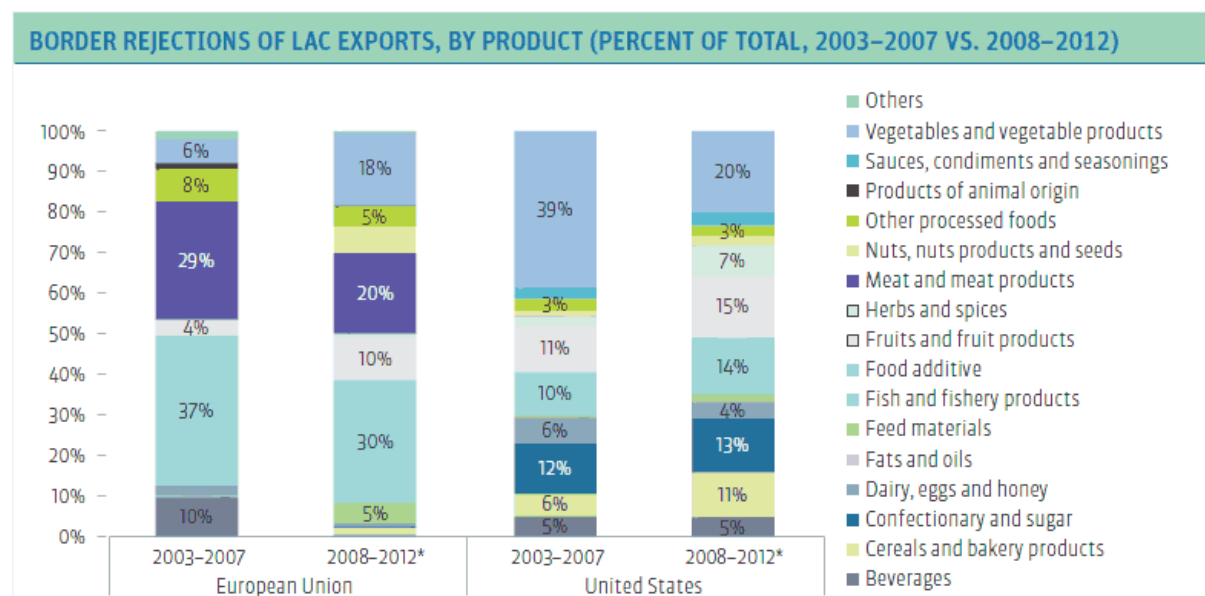
Figure F.4 Percentage of Russian firms viewing cross-border trade regulations and customs as serious obstacles



Source: EBRD 2012.

Moreover, the Inter-American Development Bank tracks border rejections for exports from Latin America to key export markets (figure F.5) as a proxy for problems that exporters face with respect to compliance with international standards. While implemented by the IDB for the entire subcontinent, similar monitoring schemes could also be established at the level of individual RECs.

Figure F.5 Export standards monitoring in Latin America



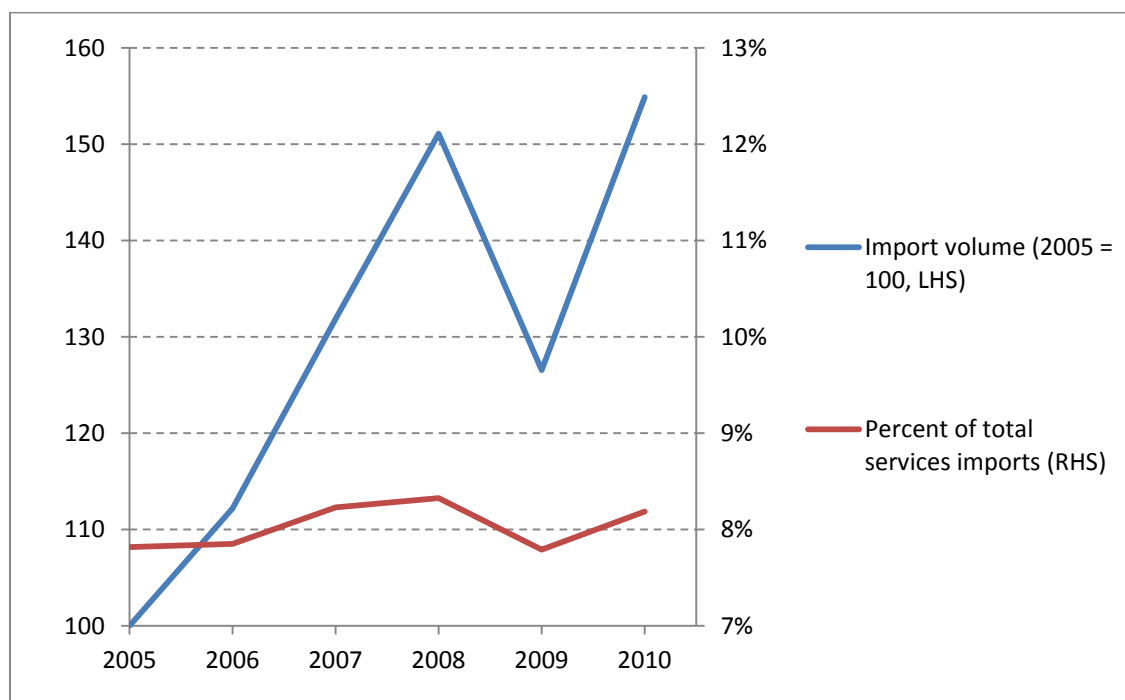
Source: IDB 2012.

Intraregional services trade is explicitly monitored by the ASEAN Secretariat. It reports on the evolution and share of regional in total services imports (figure F.6). Moreover, the monitoring process also tracks

regional services trade at the sub-sector level for member countries (e.g., Singapore) that make the respective information available.

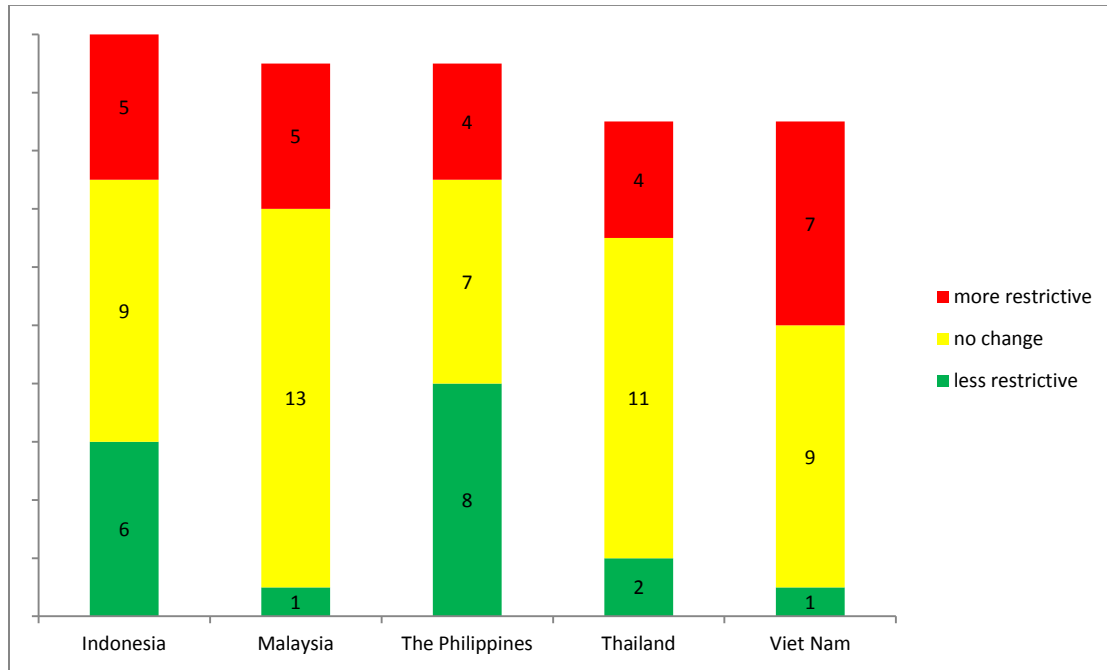
With respect to policies vis-à-vis the services sector, ASEAN has been working with the World Bank on using the Services Trade Restrictiveness Index (STRI) for monitoring purposes. For example, it has been assessing changes in member countries' regulations over time using the STRI methodology (figure F.7). Another form of monitoring has consisted of establishing to what extent commitments under the ASEAN Framework Agreement on Services go beyond multilateral liberalization commitments, thus providing regional partners with preferential treatment. Figure F.8 provides a snapshot of the findings for the case of the Philippines.

Figure F.6 Intra-ASEAN services imports



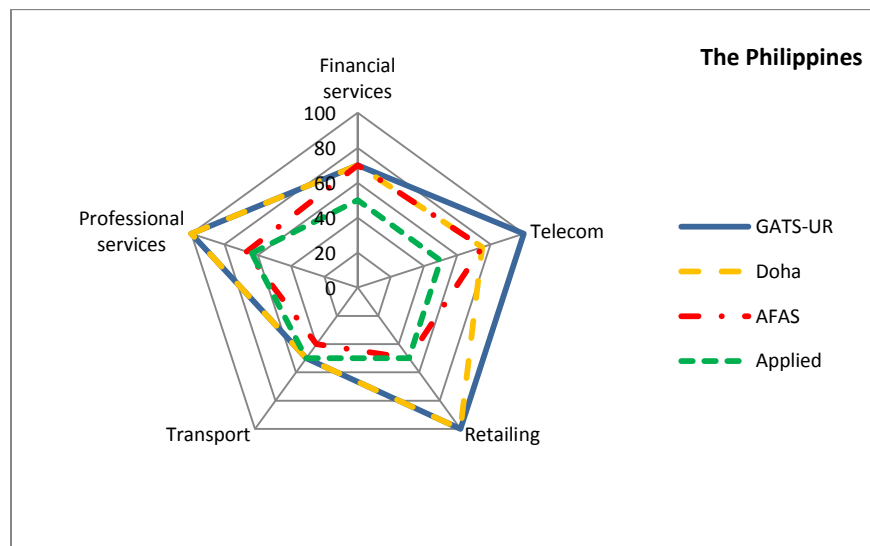
Source: ASEAN and World Bank 2013.

Figure F.7 Changes in services trade restrictiveness between 2007/08 and 2010 (number of subsector-mode combinations undergoing reform)



Source: ASEAN and World Bank 2013.

Figure F.8 Comparison of services trade commitments and policies (higher value indicates more restrictive policy measures)



Source: ASEAN and World Bank 2013.



## Endnotes

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1 The key inputs to this report were provided by Peter Walkenhorst (Consultant). Additional material came from Robin Carruthers (Consultant), Nora Dihel (World Bank), Mario Gutiérrez-Rocha (Consultant) and Bruce Thomson (Consultant). Essential advice and comments were provided by Nora Dihel, Mombert Hoppe, John Keyser and Andrew Roberts (World Bank). The project was led by Paul Brenton. We are very grateful for the comments and guidance of the following peer reviewers: Ian Gillson, Sanjay Kathuria (World Bank) and Jaime De Melo (University of Geneva). This work was funded by the Multi-Donor Trust Fund for Trade and Development supported by the governments of the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom. The views expressed in this paper reflect solely those of the authors and not necessarily the views of the funders, the World Bank Group or its Executive Directors.

2 Annex A to this report discusses in more detail the trade data used to derive the share of regional trade in total trade and the key issues and challenges in using that data for monitoring purposes. The annex shows that the value of the indicator can vary significantly according to whether direct or mirror data are used and whether one or another data source is used. For example, for ECOWAS the share on intraregional in total trade is 7% using data from UN Comtrade, but is 13% if the IMF's Direction of Trade Statistics are used. In addition, informal regional trade is sizable and significant in Africa and so official statistics will understate the extent of regional integration in practice.

3 Annex F provides a discussion of indicators that are being used by Regional Economic Communities in other regions.

4 <https://www.wbginvestmentclimate.org/publications/eac-market-scorecard-2014.cfm>

5 Adoption of harmonized standards is, however, not a useful indicator per se. First, harmonized standards should only be pursued when differences in standards between partners causes a barrier to trade and when other, lower cost, methods of addressing this problem are not appropriate. Harmonization for the sake of harmonization, driven by revenue focused standards agencies, is unlikely to be good for poor traders and consumers or for regional integration. For more detailed analysis see Keyser (2015).

6 Corridors in some other sub-regions of Africa have also provided data on indicators but these are less complete and less regularly measured.

7 More details on these corridors and their monitoring committees are provided in Annex B.

8 Annex D to this report provides more details of the survey.

9 For example, rather than asking about actual prices paid a more effective approach may be to ask about price bands, such as, (a) less than \$1 per kg, (b) \$1-2 per kg, (c) \$2-3 per kg and so on to avoid (or at least minimize) the problem of outliers and having to clean the data. Similar considerations apply to questions about satisfaction. For example, on a scale of 1-5 how satisfied are you with the quality of seed; how satisfied are you with the border process etc.



10 Prepared by Bruce Thomson, Consultant in the Trade and Competitiveness Global Practice of the World Bank

11 South Sudan became independent in July 2011, so the unavailability of this data is to be expected.

12 For this analysis Minerals are considered ores and metals (SITC 27, 28, 68) and mineral fuels (SITC 3); agriculture items are SITC 0, 22 and 4; and manufactured goods are SITC 5, 6, 7 and 8 (excluding SITC 667 and 68).

13 Robin Carruthers, Consultant, Trade and Competitiveness Global Practice, World Bank Group

14 Although it has been in existence since 2005 it is only in the last year that the Central Corridor Transit Transport Facilitation Agency has begun to produce some results. However, as yet there are no monitoring indicators for this corridor.

15 Others include: Analytical Comparative Transport Cost Study Along the Northern Corridor Region, [http://www.competeafrica.org/Files/Analytical\\_Comparative\\_Transport\\_Cost\\_Study\\_on\\_the\\_Northern\\_Corridor\\_\(1\).pdf](http://www.competeafrica.org/Files/Analytical_Comparative_Transport_Cost_Study_on_the_Northern_Corridor_(1).pdf)

West Africa Transport Logistics Analysis Using FastPath: Tema–Ouagadougou Corridor Final Report <http://egateg.usaid.gov/sites/default/files/West%20Africa%20FastPath%20Analysis%20-%20Tema%20Ouagadougou.pdf>

16 Logistics Cost Study of Transport Corridors in Central and West Africa, Final Report, Nathan and Associates for World Bank (2013).

17 The products were not the same for all corridors and were selected to be representative of the products that make up a majority of those transported through the corridor. This representation was not designed to be statistically significant.

18 Prepared by Nora Dihel, Trade and Competitiveness Global Practice, World Bank Group.

19 Information was collected in April and May 2014. Sampling was done in the capitals of the countries only, where most providers have their branches and offices.

20 Based on follow up seminar undertaken by RSA with interviewed firms.

21 This note was prepared by Mario Gutierrez-Rocha, consultant, World Bank.

22 ICT facts and figures: <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf>.

23 The transformational use of information and communication technology in Africa: <http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/282822-1346223280837/MainReport.pdf>.

24 Text to Change is a survey service provider that develops customized mobile phone-based solutions to enable international organization like the World Bank to interact with people in emerging countries. These mobile phone-based platforms and surveys are scalable, cost-effective, easy-to-use and guarantee the measurability of results.

25 Outliers were observations that were part of the bottom 10 and top 90 percentiles.

26 Results from the FAO/GIEWS correspond to the average value for the months of February, March and April of 2014. This period coincides with the months where field data was collected using our SMS survey.

27 IFDC Africa fertilizer situation, December 2011.

28 The Fertilizer market Development in Sub-Saharan Africa Report, 2013.

29 Prices in Cameroon and Mali were not included in the analysis given their extreme values.

30 The definition of services trade under the General Agreement on Trade in Services is four-pronged, depending on the territorial presence of the supplier and the consumer at the time of the transaction. Pursuant to Article I:2, the GATS covered services can take four modes: (i) Cross border trade (i.e. from the territory of one Member into the territory of any other Member); (ii) Consumption abroad (i.e. in the territory of one Member to the service consumer of any other Member); (iii) Commercial presence (i.e. by a service supplier of one Member, through commercial presence, in the territory of any other Member); or (iv) Presence of natural persons (i.e. by a service supplier of one Member, through the presence of natural persons of a Member in the territory of any other Member) (WTO Website).

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