Lessons from the SSATP Observatories Work Program (2002-2007)

1. Introduction

Developing landlocked countries face many challenges in trying to compete effectively in the world markets. They experience high trade transaction costs, with logistics contributing a significant proportion of the GDP, at times more than double that of other emerging economies and three times that of developed countries. In Malawi for example, transport cost account for more than 50% of the value of imports. The majority of landlocked countries in the world, fifteen, also happen to be located in Sub-Saharan Africa.

Policy initiatives to reduce the high transport costs faced by these countries rightly focus on improving infrastructure and cross-border co-operation. Co-operation between states, through corridor-based actions and improved dialogue, can lead to significant transit benefits for landlocked countries. The SSATP has designed various activities to contribute to these efforts through measures aimed at supporting trade facilitation in the region.

The SSATP activities are a modest contribution to international proposals such as the Almaty Plan of Action, or realizing Target 14 of Goal 8 of the Millennium Development Goals. They also buttress the continental ideals defined by the New Partnership for Africa's Development (NEPAD) and the African Union (AU). The NEPAD regional integration initiative emphasizes the improvement of Africa's trade competitiveness while the AU's integration goal requires functional and effective connectivity across the continent. NEPAD recognizes the SSATP as one of its main instruments for promoting sound transport policies and strategies on the continent. The SSATP's activities therefore, seek to respond to both national and continental imperatives on trade facilitation and enhanced interconnectivity.

Since 2001 and the launch of the NEPAD, the SSATP has sought to:

i) Provide reliable and pertinent information on transit transport issues and practices along main regional trade corridors;
ii) Establish performance measurement systems for the major transport corridors and border crossings in Sub-Saharan Africa;
iii) Strengthen the capacity of regional associations or corridor management committees/structures to contribute to the design of feasible solutions for better trade facilitation; and,
iv) Support the RECs to develop and implement corridor-based transit facilitation measures.

1.1 SSATP Trade and Transport Facilitation Strategy

The SSATP strategy makes an obvious and deliberate link between regional integration and transport. The approach brings together the RECs, corridor institutions, national institutions, transporters, and international and regional organizations to define common objectives. The SSATP works actively with key regional economic communities (RECs), associations including the Federation of Eastern and Southern Africa Road Transport Associations (FESARTA) and the Port Management Associations and various corridor groups. The strategy has four main components:

i) Inter-regional coordination mechanism: the Program was instrumental in the formation of the Regional Economic Communities Transport Coordination Committee (REC-TCC). The REC-TCC is a forum through which the RECs, Sub Regional Organizations and private sector associations undertake joint programming of interventions and share knowledge on challenges, solutions and general experiences. The REC-TCC is the main driver of the SSATP regional strategy.

ii) Corridor management: The REC-TCC has actively promoted the establishment and strengthening of corridor management groups on all corridors. The groups serve as advisory bodies for facilitating transit traffic movement. The Program has mostly supported the update of the Northern Corridor Treaty, and the establishment of a consensus on strategies for the establishment of corridor management groups

iii) Establishing one stop border posts: Corridor management groups have a keen interest in one stop border posts (OSBP), which have the potential to significantly reduce delays at border posts. The SSATP contributes to the OSBP drive through carrying out pre and post-OSBP surveys on border crossing times. This was implemented mostly in Southern Africa.

iv) Monitoring performance of transit traffic movement (observatories): There is generally little information available on traffic flows through transit corridors. The SSATP has sought to fill the gap in data and provide sound information for decision makers wishing to improve corridor efficiency.

This last aspect of the SSATP strategy is the subject of the remainder of this note, which seeks to highlight the key lessons learnt from the SSATP work on observatories since their start in 2002.

2. Why Observatories?

Given the challenges facing landlocked countries, sensitizing and influencing policy makers on what actions to take requires accurate and specific data on impediments to the smooth flow of traffic. Equally, the design of all interventions intended to better facilitate transit movement also requires good baseline information. Appropriate data can assist in pin-pointing those components of the regional systems that are not working well so that infrastructure, regulatory

or institutional reform interventions can be better targeted. It is therefore important that data on corridor operations be collected systematically. In order to contribute to this objective, the SSATP developed a methodology for monitoring transport performance along transit corridors.

The monitoring activities take two forms: global corridor monitoring, and detailed monitoring at specific locations, or choke-points, within a corridor. Corridor wide monitoring takes the form of data collection and surveys covering the length of a corridor, typically between a port and an inland destination. Choke-point monitoring on the other hand, takes the form of detailed surveys at specific locations that work as constrictions to transit movement. Corridor wide monitoring (also dubbed "observatory pilot projects") has been carried out on the Northern Corridor and along corridors in West and Central Africa while detailed micro-scale monitoring has been implemented at Beit Bridge and Chirundu border posts on the North-South Corridor in Southern Africa. The design and main findings of these two types of monitoring are outlined below.

3. Observatory Pilot Projects

The salient features of the various observatory activities that have been implemented are presented below. Comparative data on the various initiatives are outlined in Annex A.

3.1 Northern Corridor Observatory

Monitoring on the Northern Corridor is led by the Northern Corridor Transit Transport Coordinating Authority (NCTTCA). The SSATP started supporting the NCTTCA in carrying out a baseline survey on non-physical barriers along the corridor which effectively started early in 2004. An initial survey was conducted in 2004 and 2005, to raise the awareness among stakeholders from the public and the private sector on the cost and impact of delays along the Corridor. This pilot phase yielded useful lessons in terms of data collection mechanisms (difficulty to obtain manually filled data from drivers through trucking companies) and the scope of indicators that could be used to monitor performance. It also pointed to the desirability of and requirements for a sustainable corridor performance monitoring mechanism.

As a consequence, in 2006 the SSATP provided technical assistance to the NCTTCA to build upon the experience that had been gained from the pilot survey and to design a more robust and sustainable observatory system, going above the initial methodology based on drivers questionnaires to include compiled data from various stakeholders. The Technical Assistance generated a significant body of knowledge on the design of effective, integrated corridor observatories and the indicators that could be employed. The following elements draw upon this latter assignment.

a) Corridor Performance Indicators

Two main categories of indicators were selected for the Northern Corridor, namely: volumes and capacity, and transit time and delays. The time-related indicators were further broken into activity specific indicators, to estimate the efficiency of the agents involved in each specific

logistics process. For each indicator the standard deviation was also estimated to measure the predictability of the service. Also, as a supplement to the quantitative indicators, some qualitative data on operator efficiency, tariffs and cost components are also captured.

b) Identification of the data sources

The nature of the indicators is such that numerous pieces of data, both quantitative and qualitative, are required. In addition, that data have to be collected over the same period of time. As such, the intention to have a Transport Observatory as a permanent and sustainable feature demands that existing operational data produced or maintained by operators involved in the transport chain be used as much as possible. This would minimize costs as supplementary data would only be collected to fill critical gaps.

c) The design of the Transport Observatory

The approach adopted for the design of the Northern Corridor Transport Observatory was to collect data corresponding as much as possible to the sequences of events in the transit chain along the corridor. This meant gathering information on individual consignments from a wide range of sources. The information could be either computerized or collected through primary means, and then reconciled.

The data pertaining to the series of events are stored in a relational database where they can be queried to calculate the identified indicators, making the Transport Observatory databank a powerful tool for diagnosis and analysis.

d) Feasibility and Sustainability of Observatory

Two critical issues were considered in assessing the feasibility of the Northern Corridor Observatory namely, the availability of the data on each of the events in the transit sequence and the ability to join the pieces of data from the discrete events into a chain so a single consignment can be tracked between the port and an inland destination. Through innovation, existing computerized data sources were complemented by primary data collection to satisfy both conditions. The Observatory design was therefore proved to be technically feasible. As much use as possible is made of existing and mainly computerized data sources already maintained by Port, Customs and Railway authorities. Fortuitously, a separate initiative was already underway to construct a cargo tracking system for the Northern Corridor. While the system under development is primarily for customs anti-dumping purposes, it can yield some of the data that could also be used for the Observatory purposes.

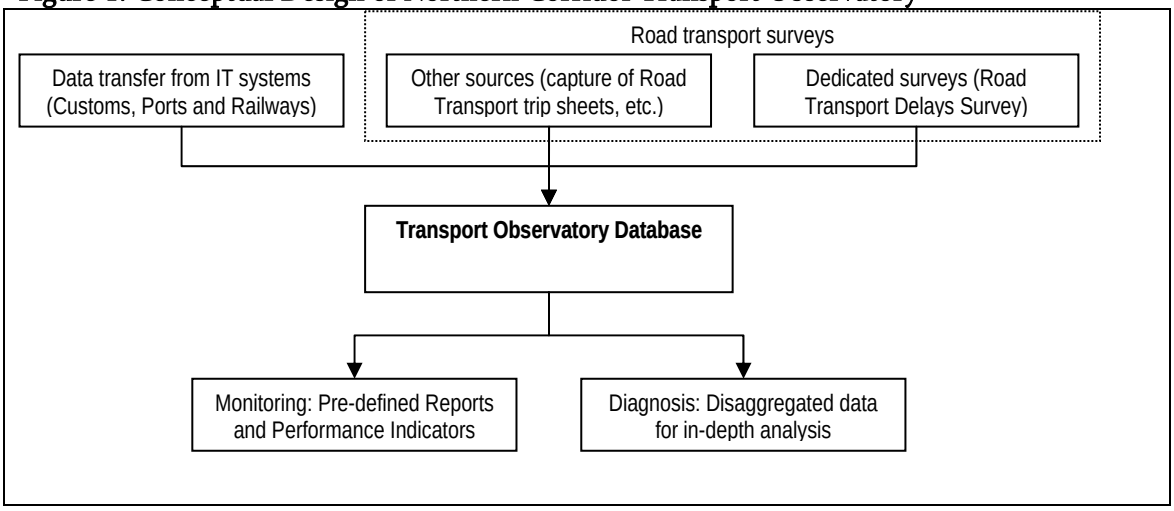
The main challenge with the Observatory initiative in general has been how to obtain data on road transport in an effective and sustainable way. In fact, the main criticism leveled against the pilot phase was the relative failure of the road survey effort. Still, dedicated collection of road transport data, mainly through a survey of trucking operations and to a lesser extent freight forwarders, is necessary for a functional corridor observatory.

Based on the above, the Northern Corridor Transport Observatory has two main building blocks:

- use of pre-existing data collected by corridor stakeholders, particularly computerized data from Revenue Authorities, Port Authorities and Railway operators); and
- primary data collection on road transport, typically through a survey on targeted operators in the road transport industry.

Consequently, the basic conceptual design of the Northern Corridor Observatory is illustrated in Figure 1. The main indicators and their data sources are shown in Box 1.

Figure 1: Conceptual Design of Northern Corridor Transport Observatory



Source: Hartmann[1] (2007)

The Northern Corridor Observatory work made three key recommendations to design corridor performance monitoring systems elsewhere:

i) The Performance Indicators monitoring framework

The main transit indicators can be calculated using both computerized sources (only for containerized cargo) and primary data surveys for the road transport sector. However, the reliance on computerized data from third parties requires formal and long term relationships and contracts which may not always be easy to develop, unless the providers can derive direct benefits from their contribution. In addition, some of the computerized data lack detail on consignment identity making it difficult to monitor the transit of individual shipments through the length of the corridor. Use of road surveys remains a weak aspect of the Observatory as they have proved to be unreliable and difficult to implement. It is all the more worrying for replication that East Africa has a structure of companies with large fleet (sometimes using GPS systems) which *a priori* were among the easiest to track in the continent.

[1] Hartmann, O. (2007) Development and implementation of a Transport Observatory on the Northern Corridor, Final Report for NCTTCA

ii) Maintaining an Observatory Database

The Observatory requires a database specialist to work with corridor managers and a database that can be shared with external partners (corridor stakeholders, RECs, and other corridor authorities).

iii) Stakeholder Sensitization and Awareness

The involvement of corridor stakeholders is important to the success of the Observatory work. Various stakeholders have to provide data, which when combined can be used to calculate the indicators of corridor performance. Developing and maintaining a partnership with all stakeholders is therefore critical. This part has not yet been carried out with the Northern Corridor stakeholders, as the final report of the expert has just been issued.

3.2 West Africa Checkpoints Survey

There have been two separate but related observatory activities in West Africa, one led by the West Africa Trade Hub (WATH) and the second by the Abidjan – Lagos Corridor Organisation (ALCO).

In the first case, the SSATP and its REC partners, UEMOA and ECOWAS, have collaborated with the USAID-funded WATH in collecting information on the number of barriers to movement along three corridors. The data collected include length of delays at road blocks, the agents involved and total illegal payments made. The surveys have used road surveys to collect the required pieces of data. The initiative has focused on three priority corridors: Tema – Ouagadougou, Ouagadougou – Bamako and Lome – Ouagadougou. The preliminary results are illustrated on the map below (Figure 2).

The WATH-led work has contributed to the quantification of the transit delays and costs and causing factors along the three corridors in West Africa. However, the method adopted is relatively more expensive than methods used elsewhere. In addition, due to the nature of the data collected, more precise definition of indicators that could allow comparisons across corridors cannot be made in a straightforward manner.

Still, there are indications that the results of the surveys in West Africa are already having a positive impact. Check points have a debilitating effect on the performance of the regional transport systems so their removal is of importance. Some practical steps have already been taken to remove some check points especially in Ghana where a new law was drafted to reduce the authorized check points between the port of Tema and the border with Burkina Faso. The complete analysis of accuracy of data and optimal ways of collecting them is not yet carried out.

While not included in the SSATP Program per se, the REC TCC has maintained constant links with the Abidjan Lagos Corridor Authority (ALCO) which has since 2005 carried out transit time and check point surveys between borders on the Abdijan Lagos corridor, leading to results

which can be linked to these carried out by the WATH. The methodology is based on a comprehensive quasi permanent survey carried out at border crossing with large teams of surveyors, complemented by sample trips to check number of checkpoints. As a result, the ALCO method is the most expensive of the observatory data collection exercises that have been implemented.

Box 1: Indicators and Sources of Data for the Northern Corridor Observatory

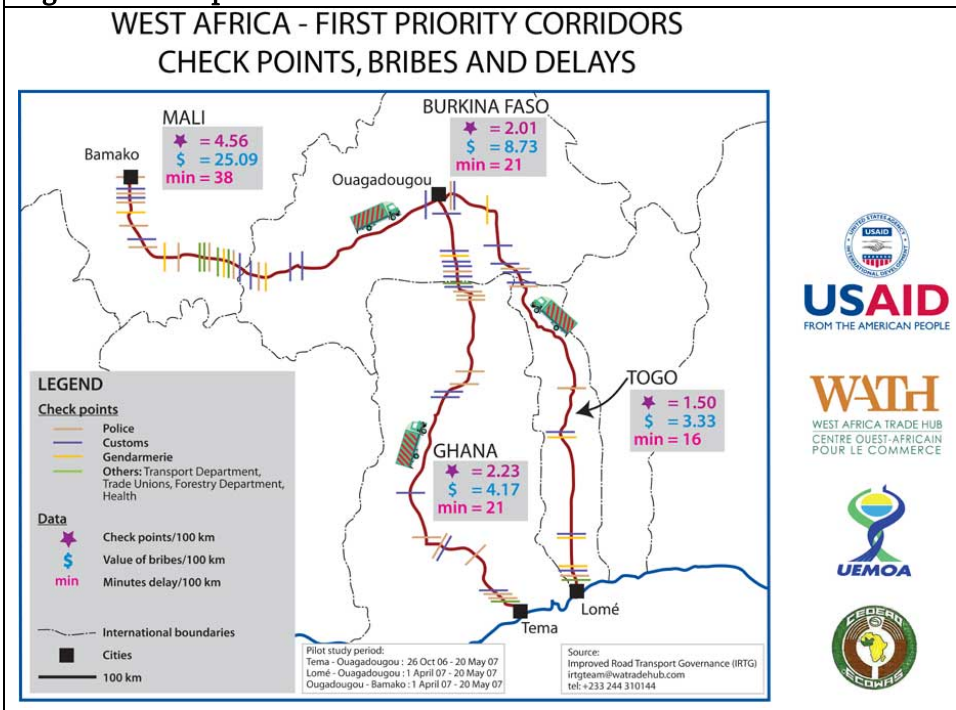
The Northern Corridor comprises transport infrastructure and facilities linking the port of Mombasa to the landlocked countries in the Great Lakes region. It covers the transport routes from the port to Uganda, Rwanda, Burundi, and Eastern DRC, as well as Northern Tanzania and Southern Sudan. It has various modes of transport and modal combinations, which include roads, railways and inland waterways.

Indicator	Source(s)	Remarks
Transit-time indicators		
Inland transport from Mombasa to inland destination, and vice versa	Road survey is the main source, but can be completed by: Customs data, provided the link between data relating to the same consignment as viewed by the various Customs systems is established; C&F data, but with the caveat that sources are limited in number and quality.	Transit time does not require a full road survey, it is often already contained simple trip sheets of road transport companies. If traffic passes through a transit yard the additional time spent in the transit yard is not adequately captured (it requires either Customs' data or C&F agents')
Transit time within countries (for example Malaba to Katuna)	Road survey, but also Customs data	Customs data is simpler
Port dwell time	Port authority	Monitored by port authority, but not for rail, although the data exists.
Traffic flows		
Transit volumes	Port authority, with two options: Statistical series or Raw manifest data, allowing more refined analysis but more time consuming	
Regional trade	Customs data is the only source	
Border crossing volumes at the main Northern Corridor borders	Customs authorities	This information is not yet computerized
Delays		
Border crossing time	Road transport survey, and to some extent, Customs though needs link between data relating to the same consignment as viewed by the various Customs systems is established	This information could still be included in a simpler version of the road delays survey or alternatively from C&F agents
Weighbridge delays	Road survey	
Terminal delays	Road survey delays, completed by	Requires further investigation

	Customs data	
Operator efficiency		
Port handling productivity	Port authority	
Railways	Railway companies	Covered in railways reports
Annual distance per truck	Road transport survey, or more simply regular interviews with operators	
Tariffs		
Delivery to destination	C&F agents, through interviews	
Cost factors	Operators	

Source: Hartmann[2], O. (2007)

Figure 2: Checkpoints on Three Selected Transit Corridors in West Africa



Source: www.watradehub.com

3.3 North-South Corridor Border Post Monitoring

The SSATP has carried out monitoring activities at two border posts on the North-South Corridor. The first border post, monitored in 2005/6, was Beit Bridge which is at the South Africa/Zimbabwe border and the second, monitored in 2006/7, was Chirundu on the border

[2] Hartmann, O. (2007) Development and implementation of a Transport Observatory on the Northern Corridor, Final Report for NCTTCA

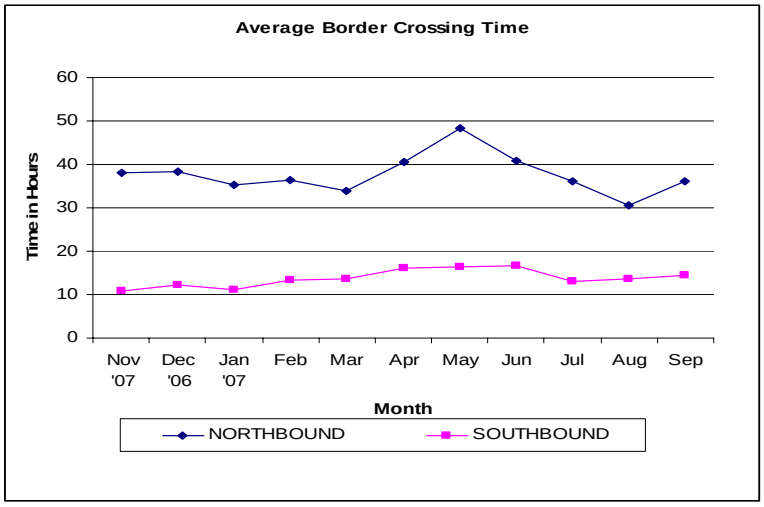
between Zambia and Zimbabwe. Monitoring at both border posts was managed by the SSATP's private sector partner, FESARTA and employed a contractor. The monitoring exercises recorded how long it took to complete border transit formalities on both sides of the border. It was therefore a detailed work, based on statistically significant samples, from which it was possible to calculate the contribution of individual state and private sector agents to border crossing times.

The work at Beit Bridge started when the border post became heavily congested in 2003. FESARTA then led an initiative to resolve the transit problems. Since the SSATP supported survey, a Beit Bridge Action Plan has been updated and a network of key stakeholders has been established. The consultative measures that followed the initial intervention are still in place and challenges at the border post, which is often congested, are now much more actively managed.

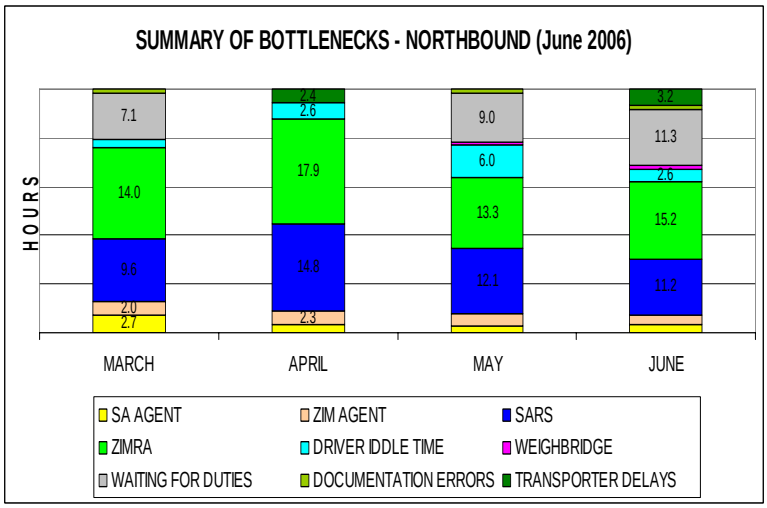
Box 2: Detailed Monitoring at Border Posts

The Beit Bridge border post handles more than 7,000 trucks each month, while Chirundu handles just over 6000 trucks, in both directions. In June 2006 the average northbound truck crossing time at Beit Bridge was 30 hours and for southbound traffic it was 17 hours. At Chirundu it was about 36 hours northbound and 14 hours southbound. The monitoring process collects disaggregated data on how long it takes to complete each border crossing formality, in both countries. It is therefore possible to get a global crossing time as shown below or the amount of time each formality took and the agent that was responsible.

Chirundu: Trends in Border Crossing Times



Beit Bridge: Contributory Factors to Border Crossing times



The monitoring at Chirundu has in recent months gained more significance. Zambia and Zimbabwe are planning to introduce one stop operations at the border before the end of 2007. DFID and JICA are jointly supporting the introduction of the OSBP. The data collected therefore are the pre-OSBP baseline against which the impact of the one stop operation will be

assessed. While the border post monitoring has generated valuable data, the results have generally not been fully exploited to influence border operations, especially at Beit Bridge. This has emanated from the weak involvement of the key border agencies in the dissemination efforts. Further, COMESA and SADC as the responsible RECs have also not fully exploited the data gathered. The sampling methods could also have been made more representative instead of the fixed number of vehicles monitored each day regardless of traffic volumes.

4. Lessons Learnt

4.1 Indicators

Based on Observatory work in East, Southern and West Africa, a set of core indicators for use by RECs and corridor groups in monitoring the performance of corridors is probably achievable (Box 3). They are however based on two diverging goals depending on the sub region. In Eastern and Southern Africa, the aim is to determine the Total Logistics costs for the whole corridor. Other studies have shown that it is important to have a measure of the reliability of performance to get this level of information. Clearly, some of the indicators, especially the ratios, require detailed analytical work which has not been addressed to a large extent in the current generation of observatories. This will be taken up under DP2. In West and Central Africa, the observatory work has focused mostly on delays at checkpoint and bribe and checkpoint monitoring, rather than on the total logistics costs themselves. The distinction between costs and prices was also not investigated. The REC TCC came up in July 2007 to a proposed set of indicators.

Box 3: Proposed Corridor Performance Indicators (from REC TCC Meeting in July 2007

- Transport US$/ton km
  - Time incl delays due to
  - Immigration
  - Weighbridges
  - Bribes
  - Sorted by Goods categories
  - Sorted by Direction of travel (imports/exports/return loads)
- Other Logistics costs
  - Port
  - Freight forwarding
  - Clearing agents
  - Customs
  - Damage
  - Insurance
  - Warehousing
- Ratios
  - Delays/transit time, for each of the main logistics chain elements
  - Corridor specific refinements e.g. No. of road blocks per 100 km, etc..
  - Cost/tariff, infrastructure condition
  - Relation between delay/time/uncertainty versus cost

In defining the above indicators, the REC-TCC accepted that though the ultimate goal of every corridor is to be competitive against international standards, the corridors in different parts of Africa can have different priority objectives, viz:

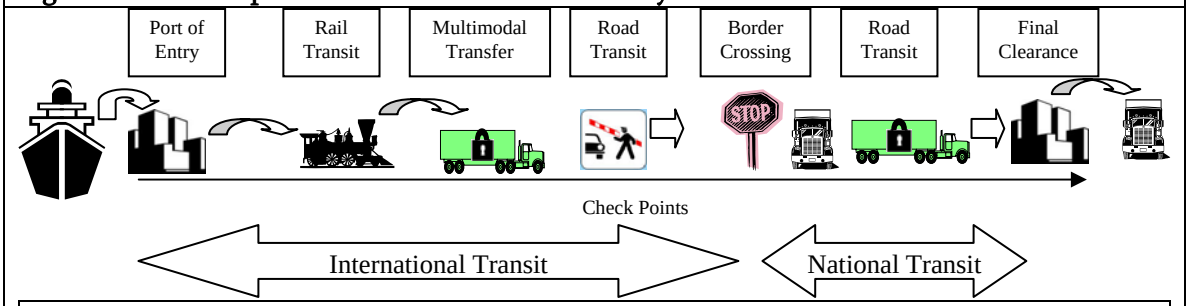
- West and Central Africa: governance, border crossing, briberies, passenger services;
- East and Southern Africa: trade competitiveness;
- Some corridors: main problems lie in Ports or at few selected borders; and
- Other corridors: problems along the corridor and in customs.

Based on this understanding, the REC-TCC recommended that the above indicators be treated as a suggested minimum platform rather than a blue print. The actual set for each corridor would have to be tailored to the priority issues on that corridor.

4.2 Sources of Data

Regardless of the actual indicators that are adopted for a specific corridor the typically sources of data for a Transport Observatory can be identified. These are illustrated in Figure 3.

Figure 3: Transit Operation and Possible Observatory Data Sources



Typical Sources of Data

	Port	Rail	Road	Road Transit	Border crossing	ICDs	Destination
Source	Customs Port operators	Rail operator	Truck operators	Drivers	Customs	ICD operators	Firms
Typical data	Volumes Disaggregate processing times SOUP indicators (Service, Output, Utilization, Productivity)	Volumes Length and cause of stops	Volumes Costs Overload control	Location, length and cause of stops	Disaggregate processing times (both sides)	Dwell times Mode of transport	Total trip time Costs Reliability

Source: *Developed from J-F Arvis, et al[3] (2007) and Hartmann[4] (2007)*

As earlier mentioned, the road and road transit data proved the most difficult to collect and require significant investigations means, or partnerships with operators which none of the current initiatives was able to sustain. The only alternative proxy is the one used by the ALCO initiative, requiring substantial human resources to constantly monitor borders and main transit points.

4.3 Cost versus results to be achieved.

The costs of each of the initiative has varied a lot, from $60k for the first try of the Northern Corridor and West Africa observatories (excluding dissemination workshops), to roughly the same amount for the second part of the NCTTCA observatories, but more than $200k for the WATH-SSATP initiative and $1m for the ALCO one (including dissemination). In each case, a permanent staff from the institutions involved (UEMOA, NCTTCA, ALCO) needed to spend a significant part of his time to support and orient the observatory process, and even to get and

[3] Arvis, J-F, Raballand, G. and Marteau, J-F. (2007) ibid.
[4] Hartmann, O. (2007) ibid.

maintain data collected as part of the NCTTCA exercise described above, there is probably a recurrent cost equivalent to 2-3 men months and significant IT services per year.

There is therefore a need to assess both the resources available and the results to be achieved before designing an observatory. More specifically:

- What level of details is wished on the road transport side;
- Is there a requirement for a statistically significant amount of data related to traffic volumes, bribes and checkpoints (which requires heavy surveys);
- What is the quality of customs and port data on the corridor to be studied?

Based on the answers to these questions, observatories will be designed either based on an interactive database, or based on the inputs from a large survey team.

4.4 Sustainability

As a result of the above mentioned cost issue, the sustainability of the Transport Observatories is still to be fully tested. What is apparent is that strong partnerships between public and private corridor stakeholders are critical, but need to be complemented by part time resources from the REC or corridor management group to make it work. The start that has been made with SSATP support has shown the usefulness of some of the indicators that have been calculated and were used in the preparation of several operations funded by IDA and other donors such as AfDB, or in current sector works. There is however still an issue on the reliability/sustainability of the road transport data collection.

The REC-TCC also observed that the sustainability of observatories is intricately linked to that of corridor management arrangement, and vice versa. Consequently, several proposals were made to sustain both corridor management groups and observatories including:

- User-pay principle, such as a commission on goods;
- Pledges by private sector and the port operators;
- Buy-in by governments, through lobbying by RECS; and
- Need a champion for the corridor, e.g. a port, or a corporate entity.

The link between corridor management and observatories is one of the main reasons why the SSATP strategy encompasses activities relating to both the prerequisites for viable corridor groups are relevant to transport observatories. Ultimately, the corridor groups use the observatory data to monitor the impact of their own interventions.

4.5 Disseminating Outputs

The outcomes of the monitoring processes have to be shared with the concerned institutions and serve as an input into designing measures to improve corridor performance. The weakness observed so far for both West and Eastern Africa is the flaws in road transport collect, which delayed the publication of many reports. A way to have a simpler (and possibly graphic like the one used in the WATH-SSATP concept) may be a way forward in this respect.

5. Conclusions

The ultimate objective of the SSATP is to reduce costs of trade for landlocked countries and to support intra-regional connectivity and external competitiveness. The approach places emphasis on the removal of physical and non-physical barriers along regional corridors. In this regard, the transport observatories play a critical role in designing interventions and monitoring their impact.

Categories of interventions that benefit from the observatories include:

- **Trade facilitation measures:** customs reforms removal of control posts and establishment of one stop border posts.
- **Improvements to transport infrastructure and regulations:** measures to enhance the cross-border interoperability of infrastructure and services, capacity improvements, road traffic regulations harmonization, impacts of interactions between transit and urban traffic;
- **Regional interconnectivity initiatives:** comparisons of levels and quality of service offered by different corridors, benchmarking operations.
- **Continental strategies**: the AU and NEPAD place high priority on regional interconnectivity. Corridor performance data provides a way of comparing performance and designing targeted interventions.
- **Integrated spatial development along corridors:** quantitative basis for assessing coherence between corridor flows and spatial development proposals.

The objectives as part of DP2 should probably aim at (i) sustaining economical ways of continuing the observatory work and (ii) extending it using other donors funding.

Annex A: SSATP Observatory Work in East, Southern and West Africa: A Comparison

REGION	Southern Africa	East Africa	West Africa: Abidjan - Lagos	West Africa - IRTG
Objective	• To determine the contributory factors to, and magnitude of transit times through border posts	• To develop a corridor performance monitoring system for use by the Northern Corridor Transit Transport Coordination Authority (NCTTCA)	• Identify obstacles to the free movement of people and goods • Make recommendations for the removal of obstacles	• Identify and publish irregularities on interstate routes • Disseminate findings • Advocate for corrective measures
Scope	• Choke point monitoring at two border posts ▪ Beit Bridge: 2006 ▪ Chirundu: 2006- 7	• Length of Northern Corridor including port, border posts and inland container depots (first surveyed 2005 and then in 2006)	• Length of the Abidjan-Lagos Corridor including 4 border posts	• 3 corridors at first: ▪ Téma-Ouagadougou (surveyed Oct 2006 – May 2007); ▪ Ouagadougou – Bamako (April – May 2007) ▪ Lomé-Ouagadougou (April – May 2007) • Another 3 to follow: ▪ Cotonou – Niamey ▪ Niamey – Ouagadougou ▪ Lagos – Cotonou – Lomé – Accra – Abidjan
Indicators	• Disaggregated processing time for each step and agent on both sides of the border • Total border transit time by type of load	• Corridor level: ▪ Transit Time Port to inland destinations ▪ Traffic flows: Corridor, Border posts, Port ▪ Weighbridge time ▪ Transport tariffs • Country level: ▪ Border crossing time ▪ Dwell time of cargo in the port (local, transit cargo) ▪ Traffic flows across borders ▪ Transit time • Operator productivity • Tariffs and costs	• No. of checkpoints per 100 km • Transit time for passenger and goods vehicles • Informal payments per 100 km • Condition of corridor infrastructure	• Number of check points • Time at checkpoints • Illicit payments • Abuse of authority

DATA COLLECTION, ANALYSIS AND DISSEMINATION METHODOLOGY				
Types of traffic monitored	• Goods traffic • Five types of load: ▪ Break-bulk, ▪ consolidated ▪ refrigerated ▪ tanker ▪ container	• Goods traffic • Focus on containerized and non-containerized traffic but not vehicles	• Passenger and goods vehicles: ▪ Private cars ▪ Buses ▪ Tankers ▪ Small trucks ▪ Light trucks ▪ Articulated trucks ▪ Others (motor cycles, tractors, etc.)	• Freight traffic • Vehicle types: ▪ standard 30 ton lorries, sealable for customs ▪ flatbed trucks to carry containers ▪ tankers
Data Collected	• Vehicle registration, country of registration and name of driver • 5 types of load (as above) • Origin and destination • For each side of the border: ▪ Document processing time: agents, customs, duty ▪ Time due to breakdown, weighbridge	• Road cargo volumes • Location, duration and cause of stops in road transit • Customs data • Clearing and forwarding data • Port dwell time and volumes • Railway volumes • Costs	• Identification and number of checkpoints • Volume of traffic, people and goods • Time to pass through border posts	• Vehicle country of registration • Citizenship of driver • Ownership type: ▪ Informal-sector transporters ▪ trucking companies • Date and time of departure at each point • Cause of stop • Payment made
Data Collection and Analysis Arrangements	• Consultant with fulltime staff • stationed at the border • Standard data collection sheet • Supervision by transporters association • Data captured in Excel • Quarterly stakeholder briefing note for Chirundu and border task force briefs for Beit Bridge	• Short-term technical assistance to design system • Reliance on computerized port, customs and railway data sources • Limited road survey • Access data base and spreadsheets • NCTTCA managed system design and hosts system	• Managed by a consultant with ▪ associations of transporters and drivers ▪ 4 border committees ▪ 5 national facilitation Committees ▪ Regional Facilitation Committees of EUMOA and ECOWAS • Sensitization of stakeholders • Condition of corridor road and border infrastructure • ALCO drafted proposals • Use of Access, SQL server, SPSS	• Survey sheets handed to driver at one of corridor, collected by agents at the other end • Training of data collection staff • Training of National Focal Point in each country • Software design • UEMOA – consolidated and analyzed data, and produced reports • Dissemination of findings through UEMOA, ECOWAS, workshops, media, NGOs, National Facilitation Committees, etc.

ASSESSMENT				
Resources	• $60k at each border post for 6 months monitoring	• $50k for system design and initial data capturing and integration	• ALCO grant resources	• USAID and SSATP • SSATP contributed c.$100k for report writing and dissemination activities
Strengths	• Obtained disaggregated data on time duration of process defined by type of causal agent • Pinpointed main contributors to border transit times • Provided ex-ante data for one stop border post at Chirundu	• Developed a full-fledged corridor level monitoring system • Relies on existing computerized data streams, ensures sustainability of data feeds • Showed viability of integrating data from different sources • Cost few resources given volume of data • Focuses on cargo and not vehicles and therefore generates information of critical value	• Strong corridor institution to manage data collection and analysis • Involvement of key national and regional stakeholders • Ability to identify constraints to movement • Contributed to reduction of checkpoints in Ghana	• Effective in gathering required data • Involved a critical mass of people for wide dissemination • Trained key players such that replication could be easier • Effective presentation of findings • Contributed to reduction of checkpoints in Ghana
Weaknesses	• Weak buy-in by stakeholders especially border agencies and RECs • Sampling method not necessarily representative of general traffic flows • Poor mechanism for dissemination of findings	• Requires formal and long term relationships and contracts with computerized data providers • Road survey proved unreliable but remains an important part of the system • Some computerized data lack detail on consignment identity making it difficult to monitor transit of individual shipments which can be aggregated to provide average data	• Sustainability of framework not tested • Expensive to repeat - requires 5 specialized staff to manage observatory (transport economist, sociologist, health specialist, statistician, sociologist not at focal point) • Utility of findings to corridor institution to be fully tested	• Adopted a global approach to corridors, not specific to a given corridor and without corridor specific institutions • Relatively more expensive - could be costly to replicate • Imprecise definition of indicators