

# SSATP Transport Indicator Initiative

## Concept Note

### I. Background & Objectives

#### A. Objectives

At the occasion of the Annual Meeting of the SSATP in Kigali in May 2003, the SSATP was requested by its members to take the lead in coordinating and promoting efforts to establish a common set of key transport sector performance indicators, and to assist to build up capacity to collect the required data in a sustainable manner. These indicators should satisfy four different purposes:

- (i) They should help to measure the contribution of the transport sector to the achievement of the Millennium Development Goals (MDGs).
- (ii) They should encourage countries, RECs, and agencies in SSATP countries to collect a common set of data, which is needed for planning purposes.
- (iii) They should give an indication as to where intervention in the transport sector is necessary in relation to the “minimum infrastructure platform” (MIP) notion.
- (iv) They should allow comparing sector performance over time and between countries

#### B. Background

The SSATP transport indicator initiative liaises strongly and draws from two on-going initiatives in the transport sector:

- The Transport Experts Group of the European Commission and EU Member States have focused on transport performance indicators for some years, and have agreed a set of indicators to be promoted and used by their development agencies in transport related programs in Sub-Saharan Africa. The databases to be promoted by the SSATP, and the collection regimes to be supported, will include the data requirements of these indicators;
- The World Bank has commenced a global transport indicator initiative, and all regions have started generating indicators based on currently available data. However, SSA is poor in such data, and it is hoped that the SSATP work will improve the situation, as well as satisfying the need to ensure alignment with the set of Global indicators being promoted by the Bank which are intended to be clearly linked to MDG targets.
- Other donors and organizations are also promoting better evidence-based policy design such as the OECD PARIS21 initiative, or gather some specialized data such as the International Road Federation.

In a large extent, the SSATP initiative on indicators will take others into consideration. More specifically, it will include all EC indicators thus expanding the scope of this SSATP partner initiative.

Furthermore, the SSATP initiative differentiates between data and indicators. Although the latter represent the purpose of this work, underlying raw data that will be collected in participating countries can be recombined to compute other indicators. Therefore indicators presented in this note should not be considered as set in stone but rather as a first attempt to appropriately picture the situation of the transport sector in a given country. It is likely that other indicators will be built out of those basic data by SSATP partners to better fit their specific needs.

### II. High level indicators

To meet the objectives of this SSATP exercise, a set of high-level indicators has been designed that span the main critical areas of transport in SSA.

They summarize the situation of transport through 4 focus areas, which are deemed crucial for poverty alleviation and growth: Road Network Management; Rural Accessibility; Urban Transport Effectiveness; Corridor Effectiveness. They are detailed in the table below.

Rationale:	Proposed Indicators:	Comments	Data Requirements and Methodology
<b>Road Network Management</b>			
<p>Road network building and maintenance represent a huge burden on SSA national budgets. This often leads to maintenance deficit and as a result, poor roads. Such poor roads impose huge additional cost on users, to an extent far greater than the savings on national budgets. Adequate road network management (both for construction and maintenance) is critical to allow any country economic potential to materialize.</p>	<p>For each type of classified roads (earth, gravel and paved):</p>		<p>For these indicators, network length, per type of road, surface condition and traffic will be required. These are crucial data, which any road agency requires for network management. Roughness data will be used to categorize surface condition into good, fair and poor condition.</p>
	<p><i>Road condition:</i> <b>Percentage of the network in good and fair condition</b></p>		
	<p><i>Network standard appropriateness</i> <b>Percentage of road carrying less traffic than the economic threshold of their type (50 vpd for gravel road and 250 vpd for paved road)</b></p>	<p>This indicator will give evidence of how the investment decisions are made and whether the government allocates appropriately its limited resources to cover objective needs.</p>	
<b>Rural Accessibility</b>			
<p>Poverty in Africa remains predominantly located in rural areas (although urban poverty is an increasing problem). Since poverty alleviation cannot succeed without easy access to markets and social services, an effective rural transport system is required to allow development.</p>	<p><b>Number of rural people who live within 2 km of an all-season passable road as a proportion of the 'total rural population'</b></p>	<p>Although this indicator is limited to road infrastructure, it is a good proxy of the capacity of the road transport system to reach the poorest and offer them some mobility.</p> <p>An "all-season road" is a road that is motorable by the prevailing means of rural transport (often a pick-up or a truck which does not have four-wheel-drive) all year round. Predictable interruptions of short duration during inclement weather (e.g. heavy rainfall) are permitted, particularly on low volume roads. For low volume of traffic (less than 50 motorized vehicles per day), well constructed, spot-improved earth roads provided with low cost structures are appropriate and these can, in most situations, be considered all-season roads if they are appropriately maintained (see WB TP no.496, Design and Appraisal of Rural Transport Infrastructure).</p>	<p>This indicator may be built with two sets of geographic data: the road network and demographic data.</p> <p>If those data are available in an electronic format i.e. as a GIS, the calculation should not present any difficulty provided that those two sets of data can be merged in a compatible electronic format. ("Digital mapping")</p> <p>In the absence of such electronic GIS databases, the computation can be made by hand on the base of maps and demographic tables. ("Graphical mapping")</p> <p>This indicator has already been calculated for some SSA countries as well as some non SSA countries.</p> <p>An alternative to such "mechanical" approaches may be to use household surveys in which the distance to any public transport service stop for each surveyed household would give a useful proxy.</p> <p>Additional data will be added using one of the above methods depending on the country.</p>

<sup>1</sup> EC indicator

Rationale:	Proposed Indicators:	Comments	Data Requirements and Methodology
<b>Urban Transport Effectiveness</b>			
<p>Cities are economic growth engines. The concentration of people generates efficient economic activities. However, it also leads to traffic congestion, which can become an obstacle to growth, particularly in cities with more than a million inhabitants. .</p>	<p><b>Average speed to formal and informal places of work by mode of transport</b></p>	<p>This indicator will give direct evidence about how difficult it is for people to move around in the city and an indirect one about goods transportation..</p>	<p>These indicators require household surveys during which time to work, distance to work, and mode of transport to work would be asked. SSATP is currently conducting such surveys in two major cities: Conakry and Douala. Lagos will be surveyed through the forthcoming Lagos Urban Transport Project household surveys are conducted for the World Bank's country economists on a regular basis (Living standard measurement surveys – LSMS) at the request of client countries. Questions regarding this indicator could be added to the usual questionnaires and therefore expand the data set.</p> <p>In the longer term, it may be useful to turn to the PRSP initiative, which promotes actively the implementation of adequate monitoring institutions. This should result in regular household surveys that could serve as regular vehicles to collect relevant data.<sup>2</sup></p> <p>Only larger metropolitan areas (over 1 million people) should be surveyed since in smaller ones it can be assumed that traffic is not a major issue.</p>
<b>Corridor Effectiveness</b>			
<p>Corridors are essential for all countries and particularly for landlocked countries whose vast majority of export and import are made on few corridors. Corridor effectiveness is therefore critical for trade and growth.</p> <p>An indicator combining cost and time will be sought providing a measure of effectiveness of the entire corridor – from port to center – independent of the mode of transport.</p>	<p><u>Cost:</u></p> <p><b>Weighted average of total transport cost between unloading from the ship to final city of destination for an imported container (standard 20-foot TEU)</b></p>	<p>The measure of cost on a corridor will be made by averaging the cost of transport of corridors on specific routes between the port and the considered economic center.</p>	<p>The reference for the indicators will be an imported container because the constraints are, in SSA, mostly on imports.</p> <p>Necessary cost data will be actual fees charged in the past year. Cost data will be obtained from consolidation of tariff charged by services providers from terminal operator to freight forwarders or carriers, until delivery at the receiving end of the corridor. Although preliminary data may be gathered from the service providers themselves, they will be thoroughly controlled with interviews of a sample of customers in order to ascertain that all cost are included.</p> <p>Time data will be obtained (i) from the corridor observatories when they are operating for the land part, and (ii) from the freight forwarders for the port part. Corridor observatories are currently being put in place in a few corridors (namely the Kenya Northern Corridor for the Northern Corridor Transit Transport Coordination Authority, and the corridors linking Ouagadougou to Abidjan, Lome and Tema under the auspices of the UEMOA) with the support of the SSATP. Their surveys will provide a first batch of data. Should other corridors be surveyed, they will have to follow the same methodology.</p>
	<p><u>Time</u></p> <p><b>Weighted average of total time from moment of ship readiness to unload to final destination for an imported container (standard 20-foot TEU)</b></p>	<p>The time origin will be the moment when the ship is available for unloading be it moored at the birth or off the shore. This should ensure that all delays occurring on the whole corridor are taken into account</p>	

<sup>2</sup> In addition such household surveys get data on income that will allow a specific focus on the poor.

### **III. Secondary indicators**

Besides the high-level indicators that will summarize the transport situation, an additional list of around sixty “secondary” indicators will be computed to allow a finer appreciation of the state of the transport system in a given country by sub-sector.

The goal of these secondary indicators will be to create a “dashboard” that can easily be updated on a yearly basis and give a precise and up-to-date picture of the transport sector situation.

As for the high-level indicators, numerous data are required for the computation of the secondary indicators. These data may serve as a base for the calculation of other indicators as desired.

The annex presents the list of indicators that is proposed to be computed by the SSATP as well as the data required for their calculation. They are clustered in the 6 following sets:

#### **A. Transport Sector Management Sustainability**

The purpose of this set of indicators will be to assess the burden represented on the country economy, its government as well as final users. They will give an indication whether the transport system is appropriate. Most indicators are sector wide. A few are road management specific.

#### **B. Road transport**

The road sector indicators will succinctly describe the road network, and will give some indices on how it users are impacted in terms of traffic, costs and safety. It will also be possible to assess how much human resources are devoted to the management of the road transport system..

#### **C. Urban transport**

The proposed 10 indicators will assist to pinpoint the urban transport situation by assessing: cost to users, road infrastructures, public road transport degree of organization, and extent of non-road urban public transport.

#### **D. Rail transport**

The set of twelve indicators will allow apprehending the size of the rail system in the country (infrastructure and traffic), its productivity and its commercial activities.

#### **E. Water transport**

The selected four indicators will measure traffic, cost and productivity of the main ports.

#### **F. Air transport**

The six indicators will measure traffic, cost and productivity of the main airport(s).

### **IV. Implementation Plan:**

#### **A. Step 1: Fine-tuning of the action plan**

The present concept note will be circulated by the end of October 2003 to the SSATP management team and get feedback about it

#### **B. Step 2: Submission of the agreed-on indicators to the SSATP member countries**

The above indicators will be circulated among all SSATP coordinators by the end of October 2003 and their response is expected before the end of November 2003. Based on their response a set of countries will be selected in which the collection of required data will be conducted.

#### **C. Step 3: Preparation of the survey tools**

In December 2003, the tools needed for data collection will be prepared in a generic format. They are the forms and their methodological annexes, the electronic database (in Excel format) as well as the terms of reference for local consultant to be hired.

For some specific indicators, which require additional surveying tools (such as household surveys), arrangements will be discussed with relevant persons and institutions.

**D. Step 4: Preparation of the data collection activities**

For each of the selected countries, the data collection methodology described above will have be discussed with coordinators and adapted in relation to the extent of availability of data. Locally based consultants will then be hired to collect the basic data from pre-identified agencies. These consultants will need to have a strong background in transport with a very good knowledge of the transport institutions in the countries where they will respectively work.

With the support of the lead consultant, they will finalize the data collection plan for each country by the end of January 2004.

**E. Step 5: Data Collection**

The local consultants will have 1-3 months to gather required data in the field. Depending on the indicators, a first computation may have to be performed.

**F. Step 6: Data centralization**

The collected data will be submitted to the lead consultant by the end of February – early May 2004.

**G. Step 7: Data treatment and presentation**

The data received will be processed and indicators will be computed. The results will be presented to the SSATP stakeholders at the annual meeting.

**H. Step 8: Proposal for sustainable collection of data and computation of indicators**

In each country, an appropriate institutional set-up for the collation, publication and dissemination of data will be suggested to ensure sustainability.

## Annex: Secondary performance indicators

#	Indicator	Unit	Required data <sup>3</sup> and comments
<b>A. Transport Sector Management Sustainability</b>			
<b>1. Costs</b>			
1.	Public expenditure on transport as percent of GDP	%	Government expenditure in the transport sector ; GDP
2.	Public expenditures on transport as percent of total expenditures	%	Public expenditure in the transport sector; Total government expenditures
3.	Total road expenditure as a share of GDP	%	Public expenditure in the road sub- sector (i investment and maintenance (including rehabilitation)
4.	Coverage road sector taxation	%	Road sector taxation and charges - taxation, user and other charges related to road sector, including taxation on fuel and lubricants used for road transport; Public expenditure in the road sub- sector
5.	Transport expenditure relative to household income <sup>4</sup>	%	Household expenditures on transport; household income
6.	Transport cost element of export/import and internally traded goods <sup>4</sup>	%	Cost of transport of exported/imported/internally traded good; cost of good to final users To be done though sample surveys
<b>2. Financial Autonomy</b>			
7.	Share of rail, ports and airports operations covered by user charges (or share of public subsidy)	%	Total user charges for transport by rail/air or port use; cost of transport by rail/air or port use
8.	Adequacy of cost recovery (total sector expenditure to total sector taxation)	Ratio	Public expenditure in the transport sector; total revenues from transport sector taxation
9.	External funds as a share of road expenditure	%	External funds (donor and private sectors) funds invested in the road sub-sector; Public expenditure in the road sub- sector
10.	Share of maintenance expenditures covered by in-country resources	%	Total road maintenance expenditures; government road maintenance expenditures
11.	Agreed sector strategy followed <sup>4</sup>	Yes/No	
12.	Annual review of road maintenance levy/Road User Charges <sup>4</sup>	Yes/No	
13.	Annual Govt. contribution to sector program sufficient <sup>4</sup>	Yes/No	
14.	Semi-autonomous road agency created <sup>4</sup>	Yes/No	
15.	Govt. effectively enforce axle load & traffic regulations <sup>4</sup>	Yes/No	
<b>3. Institutional Development/Governance</b>			
16.	Road administrative cost as a share of total road expenditure	%	Administrative costs of agency responsible for correspondent road network relative; total road expenditures
17.	Ratio of actual to required maintenance expenditure <sup>4</sup>	Ratio	Amount required for maintenance (amount needed to keep road in good and fair condition); routine and periodic maintenance expenditures (rehabilitation not included)
<b>4. Transport sector impact</b>			
18.	Employment levels in transport sector disaggregated by income groups <sup>4</sup>	Person/income group	Employment in the transport sector; average salary per type of employment
19.	Trade flows <sup>4</sup>	US\$	Imports; Exports; Domestic trade
<b>B. Road transport</b>			
<b>1. Road network</b>			
20.	Road network length (major, urban, classified rural and other rural roads)	km	Major roads include roads connecting cities and towns (e.g. national, regional, provincial) and are owned by national and regional/provincial governments Urban roads – roads within urban areas, owned by municipalities (main roads owned by higher level government not included) Classified rural roads – roads connecting villages with local government centers and major roads, owned by national or local governments Other rural roads – unclassified roads and other classified roads not corresponding to any of previous categories (e.g. Private/community roads, forestry roads and others)

<sup>3</sup> Left blank if indicator is self-explanatory.

<sup>4</sup> EC indicators.

#	Indicator	Unit	Required data <sup>3</sup> and comments
21.	Paved network	%	Percentage of network that is paved
22.	Road assets value	\$ m	Present value of road assets replacement depreciated according to asset age and condition
23.	Road density	km/ 1000 people	Road network length; country population.
<b>2. Road usage</b>			
24.	Traffic <sup>4</sup>	Vehicle/day	Traffic counts for all modes (motorized or not)
25.	Average bus fare per passenger-km <sup>4</sup>	\$	Rates for inter-city and rural transport are considered separately
26.	Average freight rate per ton-km	\$	Rates for inter-city and rural transport are considered separately
27.	Gas price	\$	
28.	Vehicle operating costs <sup>4</sup>	\$	most recent VOC in economic evaluation of road works.
<b>3. Road sub-sector management</b>			
29.	road km per professional staff	km	Road network length; Professional staff (including engineers, managers, accountants and so on.)
<b>4. Road Safety</b>			
30.	Annual fatalities (accidents) <sup>4</sup>	Fatalities (accidents) /100,000 veh.	Total road fatalities (accidents) in urban and non-urban roads; vehicle population
<b>C. Urban transport</b>			
<b>1. Mobility and costs</b>			
31.	Total number of trips per day per mode and per person <sup>4</sup>	#	Data to be collected though household surveys
32.	Fare structure per mode <sup>4</sup>	US\$ (Flat/per km./zones)	
<b>2. Road Infrastructure quality</b>			
33.	Road network density in the city per type of road (paved/unpaved) and per condition level (good, fare, bad)	Km/person & km/km <sup>2</sup>	Main city road network length per type and condition (regardless of ownership); Main city population; main city area
<b>3. Public road transport system</b>			
34.	Number of public transport vehicles (licensed or not) per type (moto-taxi, taxi, minibuses, buses) over total population/area of the metropolis	#/person & #/km <sup>2</sup>	
35.	Offered capacity on official lines with one operator per line over total population	#/person	For each operator, number of operational buses and average size; city population
36.	Offered capacity on official lines with more than one operator per line over total population	#/person	For each operator, number of operational buses and average size; city population
<b>4. Urban and suburban rail system</b>			
37.	Train.km/year <sup>4</sup>		
38.	Passengers/year <sup>4</sup>		
<b>5. Urban ferry system</b>			
39.	Number of passenger ships per type	Pass.	
<b>D. Rail transport</b>			
<b>1. Costs and Financing</b>			
40.	Average Freight tariff <sup>4</sup>	\$/ T.km	
41.	Average Passenger fare <sup>4</sup>	\$/ pass.km	
42.	Passenger Revenue	\$/pass-km	
43.	Freight Revenue	\$/ton-km	
<b>2. Infrastructures</b>			
44.	Rail lines, (total and electrified)	km	
45.	Main Line Locomotives (Electric, Diesel, Total)	#	Only operational locomotives have to be considered
46.	Passenger Coaches and Freight Wagons	#	Only operational coaches and wagons have to be considered
<b>3. Traffic</b>			
47.	Freight <sup>4</sup>	Ton-km & Tons	
48.	Passengers <sup>4</sup>	Pass-Km & Pass	
<b>4. Productivity</b>			
49.	Employee productivity	Traffic units per employee	
50.	Wagon Productivity	ton-km per Wagon	

#	Indicator	Unit	Required data <sup>3</sup> and comments
51.	Locomotive Availability (%)	%	
52.	Rail traffic density	Pass./km – T/km	
<b>E. Water transport</b>			
53.	Container port traffic	TEU	20 foot equivalent units
54.	Average dwelling time for containers in ports	Days	Average duration from moment the containers are on the docks to the moment they leave the port.
55.	Average ship waiting time in ports	Days	Average duration from moment the ships are available for unloading/loading to the moment they leave the port.
56.	Total port fee charged per imported container <sup>4</sup>	\$	Does not include custom taxes.
<b>F. Air transport</b>			
57.	Average daily number of international flights to country	#	
58.	Average cost to European cities <sup>4</sup>	\$	Weighted Average for all main airlines
59.	Average cost to neighboring countries <sup>4</sup>	\$	Weighted Average for all main airlines
60.	Total airport average fees per international passenger <sup>4</sup>	\$	
61.	Freight traffic <sup>4</sup>	Kg	
62.	Passenger traffic <sup>4</sup>	Pass.	Segregated between domestic and international