

Africa Transport Technical Note

Road Management Initiative
RMI



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Improving Management and Financing of Roads in Sub-Saharan Africa

Summary Review for 47 SSA Countries

This note is based on the report "Review of the Road Sector in Sub-Saharan African (SSA) Countries," April 1999, prepared by Ole Kr. Sylte, a Norwegian consultant, with assistance from nineteen local consultants in the study area. The report builds on the four regional studies undertaken in connection with a series of RMI dissemination seminars conducted in 1995-97; in Pretoria, South Africa, in April 1995 for members of the SADC community; in Nairobi, Kenya, in November 1995 for other members of COMESA; and a third in Abidjan, Cote d'Ivoire, in April 1997 for members of ECOWAS. The fourth study for the UDEAC region was carried out in the last half of 1998. The UDEAC dissemination seminar was however replaced by specific events in individual countries due to unrest in the area.

The purpose of this series is to share information on issues raised by the studies and work of the SSATP. The opinions expressed in the notes are those of the authors and do not necessarily reflect the views of the World Bank or any of its affiliated organizations.

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This overview of the road transport sector in Sub-Saharan African (SSA) countries includes an analysis of current status, and developments since 1989. It examines 47 countries in four regions:

- The SADC region (Southern Africa Development Community), which includes 11 member countries: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. South Africa—since its economy is so large and more advanced compared to other countries—has been treated as a separate entity in this review.
- The COMESA region (Common Market for Eastern and Southern Africa,) which for the purpose of this review only includes 10 Eastern and Island Countries: Burundi, Comoros, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Sudan, and Uganda. Somalia was left out because of its difficult political situation, while Djibouti and Seychelles are included, even though they do not belong to the area.
- The ECOWAS region (Economic Community of West African States), which includes sixteen countries: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, the Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

- The UDEAC region (*Union Douanière et Economique de l'Afrique Centrale*), which for the purpose of this review includes the six members—Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea, and Gabon—as well as the Democratic Republic of Congo and São Tomé & Príncipe.

Most of these countries belong to the "low income economies" category, with GNP per capita ranging from US\$ 90 to 660; only a few countries with small populations (Botswana, Mauritius, Seychelles, and Gabon) and South Africa have GNPs per capita above US\$2,500. South Africa and its economy has, as noted above, a special position because of its size and diversity, with about 30 percent of the population and 80 percent of total GNP in SADC, and about 40 percent of total GNP for the whole of Sub-Saharan Africa.

The demand for road infrastructure services.

Road transport is the dominant mode of transport in all SSA countries, accounting for between 60 and 90 percent of all transport services in terms of passenger-and ton-km. Most countries experienced a steady growth in vehicle fleet and density per capita during the period from 1989 in line with economic growth, with total SSA fleet numbering about 10 million vehicles by 1997. Almost 60 percent of these vehicles were registered in



Profile of the Road Sector in Sub-Saharan Africa by Regions (1995-97)

Item	SADC (*) (10 countries)	South Africa (RSA)	COMESA (12 countries)	ECOWAS (16 countries)	UDEAC (8 countries)	All (47 countries)
Area, mill km ²	5.7	1.2	5.2	6.1	5.3	23.5
Pop., mill	92.5	41.5	161.2	208.2	57.3	560.7
GNP/Cap, \$US	318	2558	231	322	355	464
Vehicle fleet total in 1000's	1249	6250	1008	1479	390	10376
>> in veh/1000 population	17.1	156.1	6.2	7.4	6.8	18.5
Total road network:						
in 1000km	437	526	243	441	256	1903
>>in km/1000 km ² of area	77	438	47	72	48	81
>>in km/1000 population	4.7	12.7	1.5	2.1	4.5	3.4
Total road maintenance requirements in \$USmill./yr	545	463	318	690	260	2266
>>in \$US/veh/yr	436	73	315	445	853	218

(*) excluding South Africa

South Africa. Main exemptions to this tale of growth in economy and vehicle fleet were Congo and the Democratic Republic of Congo (DRC), where the fleets declined due to civil wars. By 1997, the vehicle density per 1000 population was 156 in South Africa, 17 in SADC, excluding South Africa, and on average only around 7 in the other regions.

Altogether, 15 of the 47 SSA countries are landlocked; 6 in SADC, 4 in COMESA, 3 in ECOWAS, and 2 in UDEAC, and thus dependent on transit road traffic through neighboring countries. The international routes are lifelines for these countries import and export flows, and often a common source of problems in regard to international trade. Changing regional political and economic environments have often caused dramatic shifts among competing routes, and in the competitiveness of exports and final price of imports. Heavy international traffic may also be a burden on the main roads of transit countries like Benin, where 15 percent of all traffic is international, of which half is transit traffic.

The road network

The total road network in SSA include almost 2 million km according to available figures, with some 450,000 km or 24 percent being counted as main roads. While the majority of SSA countries may have adequate road network coverage compared to estimated transport requirements, there are exceptions like Sudan, Eritrea and Ethiopia where the networks are not providing reasonable coverage of main roads nor access roads for communities in the rural areas. A high percentage of the population in these countries are denied access to road transport with the consequent isolation, which not only limits economic activities but also results in poor social services. Only 20 percent of the land area of Ethiopia is within 10 km of an

all-weather road; only 30 percent is within the same distance of any kind of road. Health services and education have been almost absent in large parts of these countries.

The current (1997) condition of the main roads in each country has been assessed by the main road agencies using the following standard definitions for road conditions: *Good* = needs only routine maintenance within the next 3 years; *Fair* = needs periodic maintenance within three years, and *Poor* = too damaged to be fixed by routine and periodic maintenance alone; needs rehabilitation. The resulting assessments for the main paved and unpaved roads by regions are illustrated in the figures below. A comparison with similar assessments made in 1989 indicate that the condition of the main paved network has remained fairly stable, due mostly to externally financed road rehabilitation rather than to improved maintenance. For the main paved roads, the average percentage of "good" roads for the whole of SSA has remained at about 40 percent whereas the percentage of "poor" roads has gone up from about 20 to 30 percent. For the unpaved network, however, there appears to be a clear trend of further deterioration. The average percentage of "poor" roads went up from 40 in 1989 to about 55 in 1997. The main causes of this alarming trend seem to be lack of funds for road maintenance, poor management, and perhaps less funds available for rehabilitation compared to paved roads. Unsatisfactory maintenance management is more rapidly exposed on unpaved roads since gravel roads deteriorate much faster than a paved road without proper maintenance. Increasing traffic loads may also be an important factor because gravel roads exposed to heavy loads become at times almost impossible to maintain in areas with heavy rains and poor soil conditions.

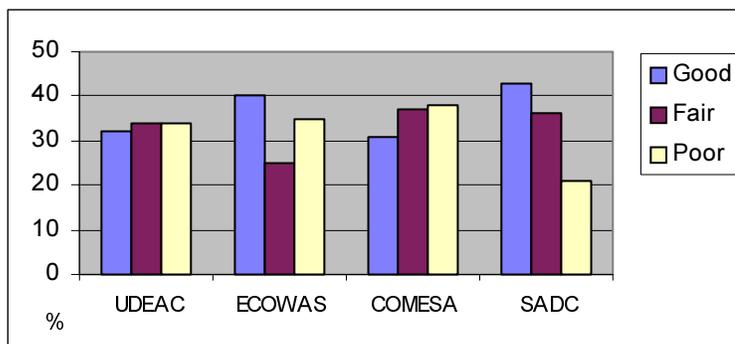


Fig. 1. Condition of main paved roads 1997

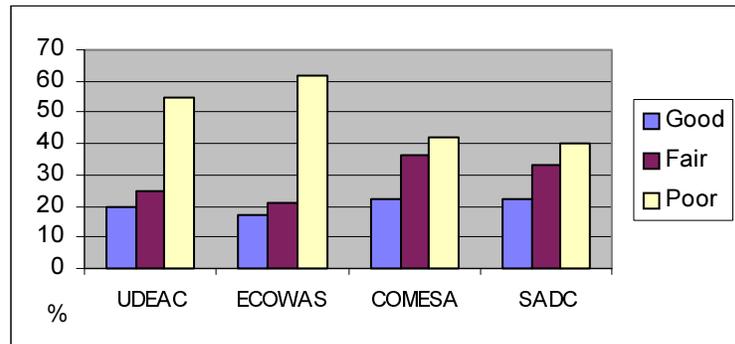


Fig. 2. Condition of main unpaved roads 1997

While the deteriorating conditions of a large part of the main roads in all regions is a matter of great concern, the conditions of the local rural and urban roads may be even more alarming. Some highly trafficked and important urban roads have been neglected, and—in the absence of firm data—the assessment is that access to all-weather roads in many rural areas is declining.

Financing of road maintenance.

The often poor and deteriorating condition of the road network in all regions of SSA, may to a large extent be explained by insufficient funding for maintenance. Budget allocations, which overall are still provided by or controlled by the Ministry of Finance, are often cut without any warning and rarely released on time, which makes it difficult to use available funds effectively. Botswana is one of the few exceptions that seems to allocate enough funds for maintenance. While the average maintenance expenditures for main roads amounted to some 25-45 percent of estimated requirements in each the four regions in 1997, the average expenditures for all roads was probably even less.

Governments in most SSA countries have introduced or indicated interest in restructuring financing arrangements for road maintenance through the establishment of road funds based on dedicated revenues from user charges. As many as 31, or two-thirds of all SSA countries, have either a functioning road fund already or are in the process of establishing one. As of 1997 road funds in operation were:

- SADC: Malawi, Mozambique, Tanzania, South Africa, and Zambia;
- COMESA: Comoros, Ethiopia, Madagascar, and Kenya;
- ECOWAS: Benin, Ghana, Guinea, and Sierra Leone;
- UDEAC: Central African Republic and Chad.

The most important charging instrument in all cases is a levy on automotive fuel (petrol and diesel), mostly in the range of 3-6 US cents per litre.

Early road funds and fuel levies (introduced prior to 1994) were mostly no more than earmarked taxes that were managed by the Ministry of Finance and/or the Ministry responsible for roads, or boards made up of civil servants. While these funds in principle could and did generate additional funds for road maintenance, large parts of the proceeds were often diverted to other purposes or mismanaged due to lack of appropriate management arrangements. All new, and increasingly existing road funds, are now being structured/re-structured to be autonomous legal entities with management entrusted to a Board with broad stakeholder representation. Examples of such “second generation” road funds are found in Ethiopia, Ghana, Malawi, and Zambia.

Management of roads.

Main roads are still managed by government departments in the majority of SSA countries, although several governments are actively pursuing the concept of an autonomous road agency responsible for main roads. Civil service roads departments face the same constraints as other government departments, with poor conditions of service and salaries that generally are only one half to one fifth of salaries in the private sector. While senior staff in such road agencies found the role and objectives of government and road agencies clearly defined, the impression was that this probably was more due to a lack of understanding of what managerial autonomy and accountability really means for the road agencies. Only a few of the agencies in SSA countries have any clearly specified objectives or mission statements, and correspondingly defined targets that can be monitored. One example is the Ghana Highway Authority, which prepares a rolling three-year corporate plan and uses the first year program to draw up a draft performance contract, which is then agreed upon with the parent ministry. Similar arrangements were also used by the Sierra Leone Road Authority before the recent

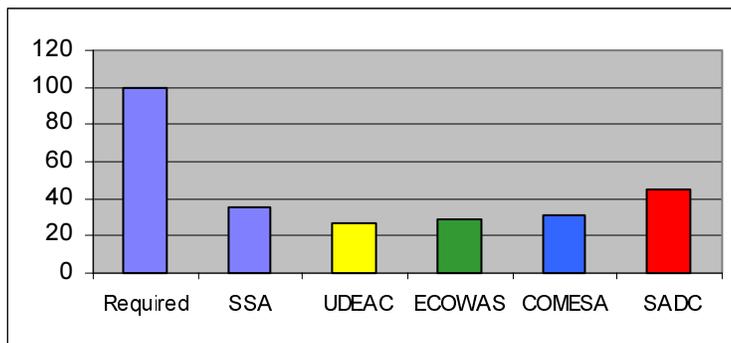


Figure 3. Maintenance expenditures as percentage of estimated requirements for main roads

disturbances. Only South Africa in SADC has established an autonomous main roads agency. While both Sudan and Ethiopia have main roads agencies separated from the parent ministry, these agencies operate very much the same as government departments.

The current situation is also unclear with respect to responsibility for maintenance of lower level roads in a number of countries. District administrations, which most often are supposed to look after these roads, are in practice doing very little maintenance or other road works due to a lack of resources and technical capacity.

Works execution

There has been a dramatic change in the way road maintenance activities are performed in SSA countries in recent years, with a very clear and fast trend towards replacement of force account brigades with private sector contractors. Almost all periodic maintenance is now being contracted out, and small scale contractors are increasingly being trained to take over routine maintenance. Also, the ownership and management of equipment is changing in step with the increased use of contractors. Many countries are in the middle of disposing of publicly owned fleets of plant and vehicles to public/private commercial plant pools, and private contractors with their own equipment. A driving force of this development is the documented experience that public plant pools have without exception failed to satisfy the road authorities as users of the plant.

Traffic management and road safety.

Few SSA countries are exercising traffic management at any acceptable level, with a highly unsatisfactory traffic safety situation as the direct result. A total of almost 40,000 people are killed on the roads in SSA each year which corresponds to a fatality rate per 10,000 vehicles some 20 times that in industrialised countries. The direct and indirect costs of road accidents to the SSA societies are thus huge. Another unsolved problem is rampant overloading of vehicle axle loads which leads to premature deterioration of road pavements, in particular on the main road networks.

Involvement of road users in management and financing of roads

Provision and management of public services, including roads, have until recently been controlled by highly centralized governments in SSA countries. However, with the shift towards more open democracies, also in SSA, the civil society has increasingly been able to take a more active role in the debate about generation and use of funds in the road sector. Road user involvement is generally being developed through the establishment of roads boards, in particular boards for management of road funds. Experience shows that road boards create a useful environment for influence by users on funding for maintenance and on the accountability of the road agencies. Sixteen SSA countries have now established boards with road user representation that have varying degrees of influence on road management, and several other countries are in the process of establishing such boards or considering the concept. Among these are the Gambia, Guinea, Kenya, Nigeria, and Zimbabwe.

Road Management Initiative

The RMI was launched in 1988 by the United Nations Economic Commission for Africa (UNECA) and the World Bank, under the auspices of the Sub-Saharan Africa Transport Policy Program (SSATP). The countries taking part in the RMI are Cameroon, Kenya, Madagascar, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe. Others receiving assistance from the program include Benin, Ethiopia, Ghana, Lesotho, Malawi, Mozambique, and Togo. RMI is administered by the World Bank's Africa Region, and is co-financed with the governments of Denmark, France, Germany, Japan, the Netherlands, Sweden, Switzerland, and the European Union. France, Japan and Norway provide senior staff members to work on the Program.