Review of the Implementation Status of the Trans African Highways and the Missing Links

Volume 1: Main Report

Final Report

SWECO International AB, Sweden
Nordic Consulting Group AB, Sweden

Stockholm, August 14th 2003

In Association With:
BNETD, Ivory Coast
UNICONSULT, Kenya
REPORT LAYOUT

The amount of information collected under this project is quite large. Major efforts have been made to concentrate the presentation in this Draft Report to the most relevant aspects but the volume remains substantial. In order to make the material as accessible as possible we have opted to organize the presentation in four separate volumes as follows:

**Volume 1, Main Report**

In this volume the major aspects of the TAH scheme are presented, divided into subject matters rather than geographic corridors (although corridor information in summary form is included in Volume 1).

**Volume 2, Description of Corridors**

This volume contains the detailed description of the 9 TAH corridors, based on information collected at country, REC and regional levels.

**Volume 3, Way Forward**

This volume contains the background and presentation of what needs to be done to the Trans African Highways and the conditions for the road traffic and transport using the network. It also formulates a vision for the future and suggests a Work Programme for the coming years.

**Volume 4 Appendices**

In this volume background information, detail survey data, etc are presented.

It is only thanks to the kind co-operation and support from a great number of people in Ministries, Highway Administrations, RECs, ECA and last but not least the African Development Bank that it has been possible to produce this report within the short time-span available for the field work activities. For that the Team is most grateful.

The study has been carried out by an international group of consulting firms comprising SWECO and NCG of Sweden, Uniconsult of Nigeria and BNEDT of Cote d’Ivoire. The work was carried out by two teams. The members of the Anglophone team were Messrs Kisslig, Mbau, and Sedin. The francophone team comprised Messrs Biagone, Meyer, and Vasur. Mr Sedin has been the Team Leader.
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<tr>
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<th>DESCRIPTION</th>
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<tr>
<td>ADB</td>
<td>African Development Bank</td>
</tr>
<tr>
<td>CEMAC</td>
<td>Communauté Économique et Monétaire d' Afrique Centrale</td>
</tr>
<tr>
<td>CEN-SAD</td>
<td>Community of Sahel and Saharan States</td>
</tr>
<tr>
<td>CLRT</td>
<td>Comité de Liaison de la Route Transsaharienne</td>
</tr>
<tr>
<td>COMESA</td>
<td>Common Market for Eastern and Southern Africa</td>
</tr>
<tr>
<td>EAC</td>
<td>East African Cooperation</td>
</tr>
<tr>
<td>ECA</td>
<td>Economic Commission for Africa</td>
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<tr>
<td>CEEAC / ECCAS</td>
<td>Communauté Économique des États de l’Afrique Centrale / Economic Community of Central African States</td>
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<tr>
<td>ECOWAS</td>
<td>Economic Community of West African States</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<td>NEPAD</td>
<td>New Partnership for Africa’s Development</td>
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<tr>
<td>OAU</td>
<td>Organization of African Unity</td>
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<tr>
<td>REC</td>
<td>Regional Economic Community</td>
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<td>SADC</td>
<td>Southern Africa Development Committee</td>
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<tr>
<td>SATCC</td>
<td>Southern Africa Transport and Communications Commission</td>
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<tr>
<td>Sida</td>
<td>Swedish International Development Agency</td>
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<tr>
<td>TAH</td>
<td>Trans African Highways</td>
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<tr>
<td>TRLC</td>
<td>Trans Saharan Road Liaison Committee</td>
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<tr>
<td>UEMOA</td>
<td>Union Economique et Monetaire Ouest Africaine</td>
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<td>UMA</td>
<td>Union du Maghreb Arabe</td>
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<tr>
<td>UNTACDA</td>
<td>United Nations Transport and Communications Decade</td>
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**Note:** UMTA (United Nations Transport and Communications Agency) is not listed in the ACRONYMS section. However, it is mentioned in the main report as SWECO INTERNATIONAL / NCG / UNICONSULT / BNE. The document is part of the Review of the Implementation Status of the Trans-African Highways and the Missing Links. The page number is 5.
EXECUTIVE BRIEF

1. TAH NETWORK

The system of Trans African Highways consists of 9 main corridors with a total length 59 100 km. The concept as originally formulated in the early 1970s, aims at the establishment of a network of all weather roads of good quality, which would a) provide as direct routes as possible between the capitals of the continent, b) contribute to the political, economic and social integration and cohesion of Africa and c) ensure road transport facilities between important areas of production and consumption.

The physical lay out of the TAH network turned out to be a compromise between these objectives. Available financial resources have basically been used to improve the roads serving important population and production centers, while the most direct route between capitals have in a number of case been neglected. About a quarter of the TAH network consists of missing links, and the cost of completing the Trans African Highways are estimated at about 4.2 billion USD.

The Regional Economic Communities have over the years worked on identifying sub-regional road networks that are of importance for the economic and social development and the political integration of the sub-region. In some cases this has lead to proposals for alternative alignments for sections of the TAH network. Furthermore, with majority rule in South Africa it could be argued that the TAH network should be extended to include that country as well. The completion and development of the TAH concept would require:

- Determination of a minimum standard for TAH and a gradually harmonising of the axle load and total weight regulations.
- The very high cost of completing the TAH network makes the application of a least cost approach and a careful priority setting (through feasibility studies) a must in the planning for the improvement of existing links in the system, including the completion of missing links.
- The role of the private sector in the funding of the TAH network needs to be given more attention.
- Establishment of the procedures needed for the modification of the TAHs that including the extension of the TAH concept into South Africa.
2. TRANSIT TRANSPORT FACILITATION

There are numerous sub-regional agreements in a number of areas related to the TAH network and its functioning. These agreements are generally considered as quite reasonable but their application varies considerably from area to area. While most purely technical issues have been both accepted and introduced in many sub-regions, agreements pertaining to e.g. transit traffic and transport have been less commonly implemented.

The lowest level of implementation of sub-regional and regional agreements is found in the trade facilitation area. Instead of functioning multilateral agreement, this area has seen the development of a number of bilateral and national rules, which in reality govern the activities in the road transport sector. It appears that improvements in this field would have to be based on political interventions from the highest government levels as a prerequisite for sustainable solutions. New approaches are required in order to ensure that discussions taken at regional and sub-regional are translated into effective action in member countries. Measures in this field could include:

- Encouragement of competition among the transit corridors
- The inclusion of commitments for the reduction of the non-physical barriers among the loan conditions to be met for new loans and grants from international lending institutions and aid organisations.
- The use of a “bottom–up” approach to the problems in the trade and transport facilitation field. Instead of starting with a decision at a ministerial meeting, works should be initiated at the working levels and only when agreements of a concrete nature have been arrived at that level would the proposals be codified at ministerial level.
- Use of the TAH (individually or as a network) as focal points for the fight against the non-physical barriers.
3. INSTITUTIONAL ISSUES

The Trans-African Highway Bureau, established in the 1970s for the management of the Trans-African Highways ceased to exist in the 1980s and the major efforts made in the early 1990s to re-establish have failed. The main reason for this failure has been the lack of support among member states for such a re-establishment of the Bureau. This lack of support is the result of different developments and considerations.

The Governments of Africa consider decisions regarding their road network a purely national issue. This prerogative extends to the part of the TAH that falls within the borders of the individual country. This does not imply isolation from regional and sub-regional considerations. The individual countries are open to ideas by e.g. the RECs about standards in the technical fields although they tend to unilateral decide the timing and extent of their application and use.

The RECs play an important role in the sub-regional road sector. Their close contacts with the individual countries, interest and competence in technical matters in the road infrastructure and the road transport fields are generally appreciated. The practical outcome is e.g. the designation of sub-regional networks of high priority roads knitting together the countries of the sub-region. The RECs do not only work closely with their member governments. They also try to keep each other informed, organize joint working group, borrow worthwhile ideas and concept from each other. This means that they also ensure a certain degree of co-operation and harmonization across sub-regional borders.

The informal co-operation and co-ordination of the RECs should be supplemented with some kind of a regional capacity to monitor the activities of the RECs and promote measures of harmonization and integration between the different organizations operating on a sub-regional basis. This type of fairly modest activities would not require an elaborate institutional structure as a Trans-African Highway Bureau, but could most likely be made part of the responsibilities of an existing regional body. Such regional responsibilities could also be made to cover the establishment and operations of a GIS based Road Data Bank for the TAH network.
4. THE TAH VISION

The Trans African Highway concept could be seen as a physical representation of a strongly felt African vision of a dynamic continent striving to focus and direct its natural and human resources into a process of sustained growth, development and regional co-operation. The creation of NEPAD and AU provides the basis upon which this vision could be realized. The TAH network could play an important role in realizing this Pan-African vision, which would require:

- The sovereignty of the African countries and their growing competence and capacity to handle their national road networks means that the ownership and management of the national road networks, including TAH links, are functions best handled at national level.
- The RECs have a proven capability of handling sub-regional issues dealing with technical standards, transport requirements, etc.
- The replacement of the apartheid regime with one based on majority rule has made South Africa an integral part of modern Africa.

The TAH concept must be a dynamic one, capable to adjust to social, economic and political development of the continent but without loosing the vision upon which the concept is based.

For the future this will require a constructive dialogue between the Region, the RECs and the individual countries where local and national interests are balanced against the interests of integration and co-operation at sub-regional and regional levels. The extent and alignment of the TAH network must be reviewed and changes introduced to the network if required. This is of particular importance in the southernmost part of the network where the network must be extended into South Africa. Last but not least urgent and efficient measures are needed to facilitate the trade and transport moving along the TAH network (as well as along other international, national, provincial and local roads). Without substantial improvements in the conditions for trade and transport it may be difficult to secure the funds needed to improve and complete the TAH network.
5. ACTION PLAN

The different activities for future implementation have been divided into three main groups of activities and an Action Plan identifying the main areas of activities needed to consolidate and develop the Trans African Highway network has been prepared, containing:

- Activities aimed at defining the TAH Network, procedures for adjustments and extension to the network as well as questions of minimum standards.
- Ways and means to promote trade and transport facilitation.
- Institutional measures

It is expected that this action plan will form the basis for the work on the completion and development of the Trans African Highways and the traffic moving on these highways for the years to come.
1 DESCRIPTION OF STUDY

1.1 BACKGROUND

Africa is poorly serviced with roads. The road density is on the average 5 km per 100 square km, which is low when compared with other developing regions, such as Latin America and Asia with 12 km and 18 km respectively per 100 square km. This difference is partly the result of different levels of development in general, but it also reflects the basic geographic fact that Africa is a very large continent, often with vast distances between the main population and production centers. Connecting the different parts of Africa through road networks is thus, in the best of circumstances, a Herculean task.

The relatively spares road network does not signify a lack of importance of road transport. On the contrary. Decades of under-capitalization, poor management and general neglect of the railways have propelled road transport to the most important means of transport in Africa, by far. Road transport accounts for over 80% of all freight and passenger movements in Africa and there are no signs that this position will be threatened during a foreseeable future.

Furthermore, the existing road networks were originally established to service the specific needs and interests of the colonial powers, that had developed export/import markets for Africa in the industrialized parts of the world. At the time of independence Africa thus inherited transport and communication structures that were outward looking rather than geared to improved trade and transport with neighbouring African countries. One of the early goals of the independent African nations was to break this pattern of dependence and create new, closer African ties. The formulation of the Trans African Highway (TAH) concept in 1970 forms an integral part of this political vision of closer pan-African integration and co-operation.

The work on integration and increased co-operation in Africa has in many ways been a slow and painful process. However, the creation of the African Union and the formulation of NEPAD have provided new encouragement as well as concrete proposals for actions in the field of African integration and co-operation. African countries are expected to focus on the expansion of roads and road transport in the future, both at national and sub-regional levels as a basis for regional co-operation and integration.

Against this background the African Development Bank and ECA developed a project to review the “Implementation Status of the Trans-African Highways and
“the Missing Links”. With assistance from the Swedish International Development Agency (Sida) a Swedish/Ivorian/Kenyan team of consultants was recruited in mid 2002 to carry out the study.

1.2 STUDY OBJECTIVES

The objectives of the study are described as follows in the Terms of Reference:

- The Trans-African Highway network had played a significant role in integrating the road transport infrastructure and services and therefore enhanced physical integration and co-operation among African Countries, as it has contributed to the promotion of better relations and economic cooperation among them.

- In order to achieve the different regional and sub-regional goals the Trans-African Highway Programme, which was the component part of UNTACDA I& II, should be re-formulated and its implementation further continued in order to promote and accelerate the physical integration of Africa through coordinated efforts. This requires that the institutional basis should be set up, such as the centralized Trans- African Highway Bureau that would be the focal point for the TAH authorities. This proposal in particular has focused on the review of the current status of existing TAH network and missing links, which is considered as a precondition to the future effort towards revitalizing the TAH Bureau and Authorities in order to lay down the necessary institutional basis.

- This revitalization of TAH Network and the ultimate goal towards the re-establishment of a single Bureau will provide the basis for the full coordination of plans and programs formulated at the sub-regional levels into a coherent continental network.

- The proposed assessment study will therefore be the beginning for the upcoming enormous work ahead of us in order to re-activate the functions of the TAH system and the reformulation of the program. This will in turn allow effective and dynamic servicing of the activities of the anticipated Trans-African Highway Authorities and Coordinating Committees and help reduce and minimize the cost borne by member states.
The Trans-African Highway Programme has aimed at:

- Establishing an institutional framework (the regional co-ordination office, namely the Trans-African Highway Bureau), which would enable African Countries to develop a coordinated and integrated continental highway network, which shall form the basis for a sound regional road transport development;

- Coordination and harmonization of the road planning processes at the national and sub-regional levels;

- Reconciling any divergences towards the promotion of a unified and integrated regional network.

### 1.3 STUDY METHODOLOGY

The study has been carried out during the period August-December 2002 and the work has been organized in three distinct phases as further outlined below:

#### 1.3.1 Preparatory Work

After a short mobilisation period preparatory work started in Sweden in early August 2002. The main tasks during this preparatory phase were:

- A careful review of the Terms of Reference and the contents of the Sweco/NCG proposal leading up to the preparation of a Work Programme together with a first draft of six lists of questionnaires to be used during the field work.

- Discussions with GIS specialists in order to determine the viability of building a database for the TAH network based on GIS supported electronic maps.

- Preparation of maps (paper copies) clearly outlining the location of the existing TAH network.

#### 1.3.2 Field Trip

The field trip started and ended in the Ivory Coast at the headquarters of the African Development Bank. During the initial stay in Abidjan the details of the fieldwork were agreed upon and all the logistical matters related to the field trip planned and organised. During this initial stay a first round of meetings took place.
with concerned Bank staff and a Draft Inception Report was completed and submitted.

The team of consultant was divided into an Anglophone and an Francophone group, each with their own travel schedules but with a joint session in Addis Ababa basically for discussions with staff of the UN Economic Commission for Africa. The Anglophone group visited Nigeria, Libya, Egypt, Ethiopia, Sudan, Namibia, Mozambique, Zambia, and Kenya. The Francophone group covered Burkina Faso, Algeria, Morocco, Mali, Mauritania, Gabon, DR Congo, Central African Republic, and Chad. The selection of countries visited was guided by the double objective to visit a representative sample of TAH countries and to meet as many RECs as possible. During the field trips meetings were arranged with the road administrations of the respective country, Ministries of Transport, Custom Officials, Truckers Association (or other road user associations). In countries with RECs considerable time was set aside for meetings and discussions with their staff and management.

At the end of the field trip the two groups returned to Abidjan for wrap-up meetings with staff of the African Development Bank and also to finalise the administrative parts of the field trip arrangements.

1.3.3 Reporting and Working Group Activities

The team returned to Sweden in the third week of October for the preparation of a Draft Report which formed the basis for the discussion at a Workshop in Addis Abeba in early 2003. The agenda and proceedings of this Workshop are enclosed in Volume 4.
2 TAH NETWORK

2.1 ORIGIN AND BASIC CONCEPTS

2.1.1 Background

Article II of the Charter of the Organisation of Africa Unity (OAU), adopted in 1963, defines economic integration as a prerequisite for political unity. In order to achieve this goal the policies in fields like trade, transport and communications must be properly co-ordinated and harmonised. Improving the African road network was considered a priority and the Trans African Highways were defined as the basic elements of such a network.

2.1.2 Extent of the Network

The System of Trans-African Highways consists of the following 9 main links, see map 2.1.

<table>
<thead>
<tr>
<th>Highway</th>
<th>Destination</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CAIRO-DAKAR</td>
<td>8,640 km</td>
</tr>
<tr>
<td>2</td>
<td>ALGIERS – LAGOS</td>
<td>4,500 km</td>
</tr>
<tr>
<td>3</td>
<td>TRIPOLI – WINDHOEK</td>
<td>9,610 km</td>
</tr>
<tr>
<td>4</td>
<td>CAIRO – GABORONE</td>
<td>8,860 km</td>
</tr>
<tr>
<td>5</td>
<td>DAKAR – N’DJAMENA</td>
<td>4,500 km</td>
</tr>
<tr>
<td>6</td>
<td>N’DJAMENA – DJIBOUTI</td>
<td>4,220 km</td>
</tr>
<tr>
<td>7</td>
<td>DAKAR – LAGOS</td>
<td>4,010 km</td>
</tr>
<tr>
<td>8</td>
<td>LAGOS – MOMBASA</td>
<td>6,260 km</td>
</tr>
<tr>
<td>9</td>
<td>BEIRA – LOBITO</td>
<td>3,520 km</td>
</tr>
</tbody>
</table>

Total length 54,120 km  
Overlapping 1,670 km  
Total net length 52,450 km

With some of the links overlapping, the total net length of the highway network amounts to 52,450 km. In addition, for each highway also a system of feeder roads, with an extent far surpassing the main highways, was defined.
2.2 OBJECTIVES

Although it has been difficult to find a clear description of the more precise objectives of the TAH concept as originally formulated, it would appear that the aim was to establish a network of all weather roads of good quality, which would:

- Provide as direct routes as possible between the capitals of the continent;
- Contribute to the political, economic and social integration and cohesion of Africa;
- Ensure road transport facilities between important areas of production and consumption.

The physical layout of the TAH network turned out to be a compromise between these objectives and the improvement of the roads serving important population and production centers at national and sub-regional levels. The roads providing the most direct route between capitals have in a number of cases been neglected (at present belonging to the “missing links” sections of the TAH network).

2.3 ROLE OF THE TAH NETWORK

Since the notion of the Trans African Highways was first defined in the 1970’s there has been a lot of developments in the roads sector in Africa. While the network of Trans African Highways is far from completed (about a quarter of the total foreseen network is still missing) the sub regional networks have been considerably expanded. They provide today in many sub regions, although not in all, reasonable connections between the capitals.

2.3.1 Relevance of TAH Concept

One of the underlying visions of the TAH network was that it would act as an integrating and cohesive force between the countries, on a continental scale. This has partially been achieved, but primarily on national and sub regional levels. It is inherent that these developments first take place on lower levels. There would be very few through trucks from Tripoli to Windhoek even if there would be an excellent road all the way, while there is an apparent need for a reasonable road connection between say N’Djamena and Douala. Thus, even if for integration and economic development the real actions and results are achieved on lower levels, the actions need to be underpinned by broader concepts and visions. In this respect the TAH has played an important role in providing that framework.
2.3.2 Impact on Economic and Social Development

The degree to which road networks in general and the TAH network in particular contribute to economic development and political cohesion has no single and simple answer. Although functioning roads are a prerequisite, their existence is not sufficient to generate economic development. Other development factors are required. Thus despite the important improvements in the road networks that have been achieved in Africa as attested to by the evaluation of UNTACDA II, the development of inter African trade has not shown particular advances. Of the 13 RECs for which data is available, 6 show a decrease in the proportion of exports going to Africa and only one an increase, with the remaining being more or less unchanged. The picture is basically the same for imports.

Another reason why the Trans African Highways have not been more successful since they were first defined, despite the important advances in network extension, is that their use is severely hampered by the numerous controls, illegal taxation and harassment of traffic. In this respect they are in no way possible to distinguish from the other main roads. Furthermore, in a number of countries they are not perceived as having any special status and the Trans African epithet is hardly remembered.

The Trans African Highways, by definition, are conceived as extremely long transcontinental corridors. It can be argued that the co-ordination needed for these corridors, mainly alignments and standards, has already been achieved. True, there are sections for which it is argued that the alignment should be different, but the decision whether one or another road should be denoted as being on a TAH does not change the realities on the ground. There is furthermore the question of who does officially designate a road as being part of a TAH and what it actually means. The procedures and routines to be applied in such cases remain to be established.

The implied importance of designating a particular road link as being part of the TAH network seems to be in the belief that once a section is so designated, financing for it will come much easier. This however is not supported by experience nor by the practices and procedures employed by the financing institutions. What is needed, and this irrespective of whether it is a TAH or not, is that the road fits into a reasonable context and that it has a high degree of priority as demonstrated by an acceptable economic rate of return. As to standards, it is debatable if this needs to be done on a continental scale or if this should not rather be done on a sub regional basis.
2.3.3 Strengthening the TAH Concept

It has been noted that the TAH concept has provided a useful political vision for future developments for African roads. However, over the years the TAH concept has lost much of its original significance. One way of regaining relevance for the Trans African Highways concept would be to eliminate the non physical barriers on them. As has been argued elsewhere in this report, one possibility to achieve this would be for the financing institutions to require as a condition of financing that the non physical barriers be eliminated. As this will be a long and arduous process at best, it could be argued that a start be made with the Trans African Highways. If this were to be achieved, the notion of Trans African Highways would gain relevance.

2.4 TAH MANAGEMENT AND FINANCING

2.4.1 Background

In 1971 the Trans-African Highway Bureau was established within the Transport, Communications and Tourism Division of ECA. With the assistance of external aid a number of studies and surveys were carried out resulting in the construction and improvement of sections of the TAH network. In 1980 ECA established the Lagos-Mombasa Trans-African Highway Authority (with a secretariat in Bangui, Central African Republic) followed by the establishment of a similar Authority for the Cairo-Gaborone Highway. However, these authorities are no longer functional, with the exception of the Trans Sahara African Road Liaison Committee in Algiers.

The lack of a firm institutional structure for the Trans-African Highway scheme does not mean that the concept as such has lost its political support. The TAH theme formed a part of UNTACDA I, and continuing efforts have taken place during the implementation of the Second Transport and Communications Decade for Africa (UNTACDA II, from 1991 to 2000). The long-term objective of UNCTADA II for the roads and road transport sub-sector was the abolishment of physical and non-physical obstacles to inter African trade and transport, and, in addition, to improve services in this sub-sector.

ECA, as the prime mover behind the implementation of the Trans-African Highway theme, together with ADB, OAU and other partners, has been trying to revitalise the TAH Bureau and Authorities since the late 1980s. A number of meetings have been arranged and resolutions passed over the years to achieve this goal, but none of these efforts has resulted in any concrete actions on the ground.
2.4.2 Management Issues

The main reason for the above mentioned failure to re-establish the TAH Bureau has been the lack of support among member states for such a re-establishment of the Bureau. The cost involved in setting up and running a TAH Bureau has certainly been a factor in the rejection of the concept, but also other factors have played a role in this case. Prominent among these was that it was considered that the tasks were not clearly defined and that much of the co-ordination and planning needs, which were proposed as tasks for the TAH Bureau, could be better handled on a sub regional level. This could be done together with some body on the sub regional level, e.g. the transport divisions of the relevant RECs.

2.4.2.1 Prerogative of the National State

It has been quite obvious to the project team during the fieldwork that the Governments, through their relevant ministries and responsible road authorities, consider themselves fully capable of establishing the priorities in the road sector. The results tend to be that there is a considerable area of agreement between the individual countries and the RECs in regard to the priorities of roads forming part of major development corridors. The problem appears when the sub-regional body identifies e.g. road improvement projects, which could have an interesting, long term regional development potential, but which are of limited national interest to one of the concerned governments.

The Highway Authorities tend to consider decisions regarding what road to build, rehabilitate and maintain and at what time as a purely national issue. They are usually more open to external discussions in areas such as design standards, maximum vehicle weights, axle loads, etc.

This being said, it should still be noted that individual countries are most interested in ideas for specific road projects if such ideas also included the provision of funding of the project.

2.4.2.2 Role of the Regional Economic Communities

The RECs play an important role in the sub-regional road sector. Their close contacts with the individual countries, interest and competence in technical matters in the road infrastructure and the road transport fields are generally appreciated by the member Governments. The fact that the RECs also provide a natural basis for discussions on common sub-regional issues adds to their usefulness.
The RECs do not only work closely with their member governments. They also try to keep each other informed, organise joint working groups, borrow worthwhile ideas and concepts from each other. This means that they also ensure a certain degree of co-operation and harmonisation across sub-regional borders.

2.4.3 Sources of Funding

The question of funding the construction, rehabilitation and maintenance of the Trans African Highways has over the years become the full responsibility of the individual countries. Regional and sub-regional bodies can assist and promote specific projects but have very limited funds of their own. This means in planning and programming terms that the TAH roads have to compete with all other types of roads for available funds in each and every country traversed by the TAH network. The different sources of funds and the general situation in the financial field are discussed in Chapter 5 below.

2.5 TECHNICAL ISSUES

The inventory work of the TAH’s has dealt with a number of technical issues. In the case of the TAH network the question of standards are of particular importance. At present there are a wide range of road standards, mainly regarding the cross sections and the basis for pavement design. Although each country is responsible for the road standards applied in that country, there are important potential benefits to be gained from common standards, especially for the international road links, as for example the Trans African Highways. Of all the parameters which affect the road from an operational and a maintenance point of view, two, pavement width and axle load limits, are commented upon here.

2.5.1 Pavement Width

For major roads that passes more than one country, uniformity of cross-sections should be aimed at. The present situation in Africa shows a variation in both the width of the carriageway and the width and type of the shoulders. Even though the cause of these variations can easily be explained by for example old road sections, vehicle types, speed limits, etc., efforts should be made to update the cross-sections to some agreed upon minimum standards, considering traffic safety as an important element.
The minimum standards should be decided taking into account various parameters, as for example:

- The composition and volume of traffic, especially the amount of heavy vehicles and the occurrence and amount of pedestrians and cyclists;
- The speed limit and the type of terrain;
- Drivers’ behaviour.

As international road links normally support high speed traffic (except for in mountainous areas) and are used by many heavy vehicles, a certain minimum standard for carriageway widths should be considered, and reference is made to the SATCC-standard for southern Africa. This corresponds quite well to international practices. This standard foresees a carriageway width for high-speed roads of 2*3.7 m, i.e. 7.4 m in total, which allows two trucks to meet with a high degree of safety. A wider carriageway would not provide better safety. On the other hand, a narrower carriageway would require a reduction of speed for two trucks meeting. A narrower carriageway may of course be considered where the amount of heavy vehicles is low.

The width of the shoulder is not as important as that the carriageway. Many widths may be considered, depending mainly on traffic volumes, but also on the amount of pedestrians or cyclists using the road. A shoulder narrower than 1,0 m should however be avoided for the TAH’s. A shoulder width 1.0 m or more will allow two vehicles to meet next to a stopped vehicle. Road links with high traffic volumes should be designed with shoulders of 2,5 to 3 meters. A paved shoulder will provide a better surface for pedestrians and thus keep them off the carriageway.

In the countries visited a variation in the width of the carriageways between 6 meters to 7.5 meters was observed.

### 2.5.2 Axle Loads

The most important parameter for the life expectancy of a road is the axle load allowed. Each road structure is designed for a maximum number of axle passages. If the real axle load is higher than foreseen, the damage factor increases exponentially and the life expectancy of the road decreases. If different countries allow different axle loads, this will lead to complications at border crossings.

The axle load limit for single axles varies in the visited countries between 8.2 and 13 tons. Many countries have adopted an axle load limit of 11.5 tons. A move towards harmonisation in this area, starting within the REC’s, would be welcomed and productive.
3 TRANS AFRICAN CORRIDORS

This chapter contains a short description of each of the nine Trans African Highways corridors. More information is provided in Volume 2 about the physical features, road traffic conditions and safety, management issues, operational and funding aspects, etc. for each of the corridors.

3.1 CAIRO-DAKAR

The Cairo-Dakar Trans African Highway has a total length of 8640 km. Several other Trans African Highways connect to it and it has an important divergence of its characteristics ranging from a totally missing link to motorways in many of the other countries traversed. Apart from the missing section Nouadhibou-Nouakchott in Mauretania, 569 km, the rest of the corridor, 8067 km, exists in paved condition and is in many sections being extended to motorway standard.

A subset of the Cairo-Dakar Highway is the Nouakchott-Tripoli Highway in the Arab Maghreb Union. The spur from Rabat to Tanger constitutes a possible future fixed connection to Europe. The conditions of the terrain vary considerably in the corridor. Long sections are located in the desert while other sections, primarily in Morocco and Algeria, are in mountainous terrain.

Map 3.1 Cairo-Dakar Corridor. Link number 1
3.2 ALGIERS-LAGOS

This corridor, also called the Trans Saharan Highway, constitutes the oldest of the Trans African Highways. The main alignment, from Algiers through Niger to Lagos in Nigeria, a distance of more than 4500 km, is paved on about 85% of the length and with more pavement works presently underway. The Trans Saharan Highway is linked to several other Trans African Highways; in Algiers to Cairo-Dakar, in Kano in Nigeria to Dakar-N’Djamena and in Lagos to Lagos-Dakar and Lagos-Mombasa highways.

The idea behind the Trans Saharan Highway is to enable road traffic from Algiers to Lagos has made considerable progress in the last 30 years. Road transport is now possible, although the middle sections present problems and are appropriate for specialised vehicles only.

Map 3.2 Algiers – Lagos Corridor. Link number 2.
3.3 TRIPOLI-WINDHOEK

The Tripoli-Windhoek Trans African Highway has a total length of some 9600 km and is the longest Corridor. For most of its extension it traverses sparsely populated areas (deserts and tropical forests) with modest economic activities, generating only limited volumes of road traffic. The main exception to this general picture of low traffic volumes are found in the extreme north and south of the corridor (Libya and Namibia) which contains sections of the TAH with average daily traffic figures of up to a few thousand vehicles.

The corridor has also a very big proportion of its Trans African Highway network consisting of missing links. There is as much as 3 700 km of such missing links or about 40% of the total length of the TAH belonging to the corridor. Furthermore, there are a number of alternative alignments, which are being discussed at present. These alternatives are found in Chad, Cameroon, Central African Republic and Congo. One of these alternatives shifts the alignment into Gabon, a country at present not forming part of the Tripoli-Windhoek corridor.

War and civil disturbances, in combination with difficult terrain and climatic conditions have deterred the development and up-keep of the Tripoli-Windhoek highway, particularly in the central and southern sections of the corridor. Similarly, road traffic movements are very limited in the affected areas and countries.

Only with peace and improved security conditions will it be possible to generate funding and other resources needed for the up-keep and development of the road sector.
Map 3.3  Tripoli - Windhoek Corridor. Link number 3
3.4 CAIRO-GABORONE

This corridor is the second longest among the TAH Corridors, covering a total distance of 8,860 km between Cairo and Gaborone, see map 3.4. The standard of the Cairo-Gaborone Trans African Highway is high in Egypt (except for a missing link at the border with Sudan) and in the Southern most sections of the corridor.

The highest level of traffic is found in Egypt, particular in the vicinity of Cairo. However, all major capitals in the corridor generate average daily traffic figures of 4,000-5,000 vehicles or above. Most of that traffic is local to its character but there is also a fair level of long-distance, international movements of passengers and freight along the corridor, particular in the central and southern sections of the corridor.

The Cairo-Gaborone Highway provides in the south an important transport route for export and import through the South African and Namibian ports. It also handles regional trade between South Africa and the countries to the North. Similarly, the central sections of the Highway play an important role in the transport of locally produced goods as well as for overseas imports and exports. There are indications that the trans-border traffic in this part of the corridor is growing.

There are only a few major missing links and the total extent of such links amounts to about 20% of the total length of the Cairo-Gaborone TAHs. For about a third of the length of the missing links there are alternative alignments in existence. These alternatives consists of fairly high class, paved roads but tend to be much longer than the existing TAH alignment.
Map 3.4  Cairo – Gaborone Corridor. Link number 4
3.5 DAKAR-N’DJAMENA

This corridor, also called the Trans-Saharan Highway, runs from Dakar to N’Djamena, covering a distance of about 4600 km. thus constituting a natural and main road link in the sub region. It intersects with four other Trans-African Highways and runs parallel to the Senegal-Mali railway in long sections between Dakar and Bamako. The topography of the region does not represent any major difficulties with generally flat terrain with few rivers crossings. About 800 kms are being paved at present (or planned to be paved). The remaining 3 800 km of the road is a paved two lane highway. Except from where the highway runs through major urban areas, traffic is rather modest at about 1000 vehicles par day, of which about 40% consist of heavy vehicles.

Map 3.5 Dakar-N’djamena Corridor. Link number 5
3.6 N’DJAMENA-DJIBOUTI

This corridor transverses desert or semi-desert areas in the west and mountains in the east, with Sudan in the centre, see map 3.6. The corridor functions as an artery for goods and passengers between the landlocked parts of Sudan, Ethiopia and Chad to the capitals of the three countries as well as to the ports of Nigeria in the west and main ports in the east like the Ports of Sudan and Djibouti.

The N’Djamena-Djibouti Trans African Highway consists of some 4 300 km of highway of which some 40% is paved. Nearly 50% (or some 2 100 km) is earth tracks or gravel roads in a poor condition. The standard of these 2 100 km fall within the definition of missing links. The traffic volumes are small or modest with a high proportion of heavy vehicles (up to 70-80 %)

Map 3.6 N’Djamena - Djibouti Corridor. Link number 6
3.7 DAKAR-LAGOS

The Lagos-Dakar Trans African Highway, also called the Trans Coastal West African Highway, traverses all the eleven coastal countries between Nigeria and Senegal.

The main importance of the Highway is that it provides the most direct, and in some cases the only, road connection between the capitals of the countries along its alignment. It also provides the starting points for the roads leading form the ports to the landlocked countries in the hinterland. It has a total length of 3900 km of which about 3135 km are paved, in various conditions. The remainder, 765 km, constitutes the 9 missing links, which are distributed among 7 of the countries. Their present condition is usually earth roads or tracks standard.

Map 3.7 Lagos - Dakar Corridor. Link number 7
### 3.8 LAGOS-MOMBASA

The Lagos-Mombasa Trans African Highway, provides a road connection between the East African port of Mombasa with the ports of Nigeria and Cameroon in West Africa. The flow of traffic along this highway reflects the limited trade between East and West Africa. The Highway consists for all intents and purposes of two separately functioning sub-sections. a) one connecting the landlocked countries around the Great Lakes with the East African Coast, and, b) the other providing access to north-western DR Congo and the Central African Republic with the Atlantic Coast.

The highway has a total length of about 6260 km of which about 38 % is paved, in various conditions, with the remainder as either gravel or earth. Most of these earth and gravel sections fall within the group of missing links.

Map 3.8 Lagos - Mombasa Corridor. Link number 8
3.9 BEIRA-LOBITO

The Lagos-Mombasa Trans African Highway provides a road connection between the East African port of Mombasa with the ports of Nigeria and Cameroon in West Africa. The flow of traffic along this highway reflects the limited trade between East and West Africa. The Highway consists for all intents and purposes of two separately functioning sub-sections. a) one connecting the landlocked countries around the Great Lakes with the East African Coast, and, b) the other providing access to north-western DR Congo and the Central African Republic with the Atlantic Coast.

The highway has a total length of about 6260 km of which about 38% is paved, in various conditions, with the remainder as either gravel or earth. Most of these earth and gravel sections fall within the group of missing links.

Map 3.9 Beira - Lobito Corridor. Link number 9.
4 FUNDING

4.1 NATIONAL ROAD NETWORK EXPENDITURES

4.1.1 General

The funding situation for the road sector in most of the countries visited is strained. Most road administrations have a reasonably good idea of how much money would be required to maintain and develop the national road network, but they are not provided with the amounts they consider necessary. This is a global phenomenon and in no way limited to Africa or the road sector. Most government ministries, agencies and organisations see a gap (big or small) between the funds they actually get and the funds they require. The distribution of government funds between and within sectors is a political issue and normally handled as such. However, in the road sector there are possibilities to apply more objective criteria for important parts of these requirements (basically in the field of maintenance and rehabilitation) and if such criteria were applied, the road sector budgets of most African countries would be found wanting.

When there is inadequate funding for rehabilitation and periodic maintenance a backlog starts to build up. Road deterioration is normally a fairly slow process and it is possible to neglect, e.g. periodic maintenance, without major problems in the short and medium terms. However, such neglect would ultimately lead to a maintenance backlog and growing requirements for rehabilitation. If this process is allowed to go on for too long roads will deteriorate beyond repair, which tends to be a very expensive affair for both the road users and the responsible road administrations. The general impression is that most, if not all, road administrations in Africa are struggling with rehabilitation and/or period maintenance backlogs of varying length and severity. A problem in the practical handling of such backlogs is to try to determine the speed with which they should be eliminated and how to balance the effort to reduce one type of backlog against the other.

Another, and in many ways more difficult question is how to divide available funds on new or improved roads versus the maintenance and rehabilitation of existing ones. There are examples of countries where the number of km of existing roads deteriorates beyond repair faster than new roads are built. This being said, it should also be pointed out that modern Road Sector Development Programmes (RSDPs) tend to give priority to maintenance and rehabilitation,
keeping down the construction of new roads to a minimum.

4.1.2 **Budgets and Disbursements**

Budgets seem often to be more a function of the level of funds being made available the previous year than based on objective assessments of requirements. The problem is not only that there is not enough funds budgeted for maintenance and rehabilitation activities. Budgets are frequently adjusted and it is far from certain that budgeted amounts actually are made available.

The disbursement of funds is another source of problem. In addition to the common problem of long waiting times for the first release of funds during a financial year, the road sector tends to have considerable fluctuations in their monthly cash-flow requirements. This is something the government disbursement systems have difficulties to handle. The importance of these problems tend however to fade when compared to the situation when a smaller or larger portion of the budget is not made available at all, which happens frequently in countries with poor budget discipline and/or generally weak government finances.

4.1.3 **Priority Issues**

With limited financial resources at their disposal road authorities tend to concentrate them on the main road network, which leads to a situation where the rural road networks and roads administrated by urban authorities are hit disproportionately. This reduction of funds made available to the local authorities tend to be most pronounced in countries with Road Funds. For instance, the Urban Councils in Mozambique are expected to receive 10% of the road fund revenue, they receive nothing. Similarly, the revenue of the Road Funds in Zambia and Kenya are basically used for maintenance and rehabilitation of the main road network. The emphasis given to the main road network in most countries works to the benefit of the TAH network, as most of the links and sections of the Trans African Highways form an integral part of the main roads of the individual countries.

4.2 **DEVELOPMENT AND RECURRENT COSTS**

The funding of roads in Africa is a country responsibility and the TAH network is treated as an integral part of the road system of the individual countries. Although there is a wide variety of funding arrangements in Africa today (from consolidated budget funding to road user charges based arrangements) the dominating sources of funding could be summarized as follows:
a) External assistance sources for road construction, rehabilitation and in a number of cases also for periodic maintenance;

b) Central government financing of counterpart funds and the construction, rehabilitation and period maintenance work not covered under the different external assistance programmes;

c) Road Fund resources or financing from the consolidated budget for road maintenance in general and a routine maintenance in particular.

The externally provided resources play a very important role in most countries. In a majority of countries, most of the available funds (sometimes as much as 90% of the total road sector budgets) are provided as external loans or grants.

Most of the RECs have clear recommendations to their member state to arrange the funding and operations of the road sector along the lines of semi-independent Road Funds and Road Agencies, with the funding of the maintenance activities based on road user charges. These ideas are being implemented in a number of countries, but often in a half-hearted and piece-meal manner.

The use of road tolls as a source of revenue is of growing importance in parts of Africa. Where the volumes of traffic are adequate for road toll arrangements this type of road sector funding might become important in the future.

4.3 FUNDING OF MISSING LINKS

An important aspect of the present study is to review what links are missing in the Trans African Highways and make recommendations about how to complete the network.

4.3.1 Types of Missing Links

At first sight the concept of missing links may appear to be fairly straightforward, either there is a link or there isn’t. There are cases where this applies. For the Tripoli-Windhoek Trans African Highway the section in the Republic of Congo between Salo and Ouesso is really missing as there is not even a track that can be followed on the ground. Nor are there plans to construct a road there in the foreseeable future. For the Dakar-Cairo Trans African Highway the section between Nouakchott and Nouadhibou in Mauritania is likewise missing, but the contracts have been signed and works are under way to construct a paved road, expected to be ready by 2004. Thus, these two cases are not equivalent from the point of view of missing links.

In the majority of cases the concept becomes more blurred. In Niger, between the
Algerian border and Arlit, a distance of 370 km in desert conditions, there is no constructed road but the section is passable with adequate vehicles for most of the year. It is thus a missing link, but given the very low traffic volumes and the possibility to pass, it is not self evident that it would be advisable to build a paved road there. There are other alignments in the same category, e.g. on the N’djamena to Djibouti Trans African Highway the sections in eastern Chad and western Sudan, as well as parts of the connection between Tripoli and N’Djamena.

Finally, there are sections, which exist as earth roads, in varying degrees of upkeep and passability during different times of the year. A good portion of the western part of the Beira-Lobito corridor is one example.

In order to decide the standard to which a particular road should be built, studies of alternative standards must be carried out. Thus, if the present study describes all non-paved road sections as missing links, this does not imply a recommendation to pave them but it is used in order to provide a useful benchmark against which to measure the completeness of the Trans African Highways.

For the non-paved sections this study describes their physical condition and makes recommendations as to future interventions.

In order to provide a consistent terminology throughout the report, the following definitions have been used.

- A section for which a contract has been signed to be paved is not considered as missing, and the expected completion year is indicated;
- A section for which financing has been secured but no contract signed, is considered as missing with indication of the existing nature and amount of financing and the expected year of completion;
- All other sections that are not paved all weather roads are considered as missing. A description is given as to whether there is no connection, a track, an earth road or a gravel road.
4.3.2 Cost Estimates

Using the above definition of the missing links the cost estimates of completing the Trans African Highways are given below. The estimates are those described in the corresponding corridor chapters of Volume 2.

<table>
<thead>
<tr>
<th>TAH Corridor</th>
<th>Estimated Cost MUSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Cairo-Dakar</td>
<td>0</td>
</tr>
<tr>
<td>#2 Algiers-Lagos</td>
<td>70</td>
</tr>
<tr>
<td>#3 Tripoli-Windhoek</td>
<td>1,110</td>
</tr>
<tr>
<td>#4 Cairo-Gabarone</td>
<td>470</td>
</tr>
<tr>
<td>#5 Dakar-N’Djamena</td>
<td>135</td>
</tr>
<tr>
<td>#6 N’Djamena-Djibouti</td>
<td>695</td>
</tr>
<tr>
<td>#7 Dakar-Lagos</td>
<td>280</td>
</tr>
<tr>
<td>#8 Lagos-Mombasa</td>
<td>1,080</td>
</tr>
<tr>
<td>#9 Beira-Lobito</td>
<td>460</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,300</strong></td>
</tr>
</tbody>
</table>

It should be noted that the above refers to the main alignments only, no feeder roads are thus included. Also, as mentioned above, the definition used for missing links does not necessarily imply that all the presently non-paved roads should be paved as there might be good reasons, like lack of economic justification, for leaving these sections in their present condition or improving them in some other way.

The total estimated cost of USD 4.3 billion does not pretend to have any high degree of accuracy or certainty. Most of the missing links have not been seriously studied so the cost estimates are very preliminary, based on estimated costs from similar projects. Nevertheless, these estimates give an order of magnitude of the resources required to complete the TAH network. It is noted that two of the corridors, Tripoli-Windhoek and Lagos–Mombasa account for more than half of the total cost. This is natural considering the long sections missing in difficult terrain. Another observation is the relatively modest amounts required to complete the corridors in West Africa as well as the Trans Saharan, about 8% of the total cost for these four corridors which comprise about 35% of the total TAH network length.
4.3.3 Within Countries

The fact that the funding of roads, TAH and others, is a national responsibility also means that national priorities determine which roads are built, rehabilitated and maintained and at what level. The fact that there are still a considerable number of km of missing links in the more than 30 years old TAH schemes, means basically that there are sections of the network that are not considered of importance from a national point of view. There are in principle two types of missing links.

a) Where there is little or no trade and other types of contact and communications between the two areas. Sometimes this lack of contact is caused by or exaggerated by difficult terrain or vast distances (roads through the Sahara Desert);

b) The other situation is one where there is trade and other types of communications, but where alternative alignments have been given priority. A case in point is the TAH link between Arusha and Iringa in Tanzania. The TAH link provides by far the most direct route between the two towns, but the Government has given priority to the Arusha-Dar es Salaam and Dar es Salaam-Iringa roads instead. The reason is simply that there is limited trade and passenger traffic between Arusha and Iringa and that the more direct Arusha-Iringa section transverses a sparsely populated area, with little productive activities at present.

4.3.4 Connecting Countries

The other alternative is the situation where the TAH alignment passes through a border area between two countries with little trade, and where the area itself is of limited interest to one or both countries. The missing links on the border between Egypt and Sudan and Ethiopia and Kenya are both examples of this type of missing links.

4.3.5 Funding Options

As a general rule the RECs are acutely aware of both these types of missing links and also working hard to convince the individual countries to do something about the problem. However, their possibilities to influence developments differ between the two above-mentioned types of missing links.
4.3.5.1 Internal Country Links

There are a number of missing links, located inside a country and not extending to a border e.g. the Arusha-Iringa section of the Cairo-Gaborone TAH mentioned above. Both Comesa and EAC argue strongly for an early upgrading of this missing link, but the government of Tanzania has over the years had other priorities. In such a situation the priorities of the government must prevail. What the RECs can do is basically to keep the issue alive and actively review the possible funding options available to the national government.

4.3.5.2 Linking Countries

The situation is a bit different when it comes to missing links that directly hinder regional development by making traffic between two countries difficult or impossible. Provided the up-grading of such a link could offer reasonable economic returns, there are external assistance organisations, like EU and the African Development Bank, that pay special attention to projects with specific regional development profiles.

Projects of this type are normally strongly supported by the respective REC(s) and in such cases the REC(s) could play an important role in assisting the concerned country(s) with the application for funding, agreement on common standards, procurement of design, construction and supervisory services, etc. It should still be remembered that the “ownership” of this type of project remains firmly with the individual country(s).
5 TRADE AND TRANSPORT FACILITATION

5.1 TRENDS IN TRADE

Trade determines to a considerable degree the level of transport between countries. Africa trades as a whole a very small portion of its production (subsistence farming does not generate much trade). This is particularly true for trade across borders. Furthermore, export and import are activities which for many countries are basically directed to overseas markets.

The development of inter African trade has not shown particular advances. Of the 13 REC s for which data is available, 6 show a decrease in the proportion of exports going to Africa and only one shows an increase, with the remaining being more or less unchanged. The picture is basically the same for imports. The picture is however neither uniform nor stationary. In southern Africa, particular within the Southern African Customs Union there is a relatively large and growing trade between the countries of the union and their neighbours outside the union. Something similar is happening, but on a more modest scale in Eastern Africa where the Comesa countries have become the most important export market for Kenya (overtaking EU).

5.2 EXISTING SITUATION

The situation with respect to trade and transport facilitation constitutes a major problem in the whole of Africa. The problems are not uniform across the sub regions with West and Central Africa having the most pronounced difficulties, but in one form or another all the African countries are affected.

5.2.1 Roadblocks

The unsatisfactory situation for road transport manifests itself in many forms. A common observation is that of frequent roadblocks, some of which are formally and legally established, while others, the majority, are not. Police, customs officers, gendarmes and other officials are all involved. Although the justification for these controls is said to be to check a variety of things like vehicle condition, permits, adherence to laws and regulations, etc, in reality most of them are there simply to extort money from mainly trucks and buses.
The checks are numerous, for example between Abidjan and Ouagadougou, a distance of about 1,000 km, a recent count found some 65 such controls. The payment at these varies but is usually between 1,000 and 5,000 FCFA. On the Trans Sahelian Highway between Ouagadougou and Niamey, 529 km, the payment by a loaded truck is estimated at about 100,000 FCFA (about 150 USD). On the Douala-Bangui road the total cost of passage is estimated at 380,000 FCFA (580 USD). This situation on these two roads is not unique, they just illustrate a common reality facing transport in Africa.

The required payments vary with the type of vehicle, type of goods transported, nationality of the transporter, etc. These payments cover the whole spectrum from legal to illegal, without a clear demarcation. It is a continuum and thus a most serious aspect is that it involves corruption, and therefore is difficult to come to grips with. The table below illustrates the payments on some of the corridors.

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Distance km</th>
<th>Checkpoint payments</th>
<th>In FCFA</th>
<th>in FCFA/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abidjan-Ouagadougou</td>
<td>1122</td>
<td>370,000</td>
<td>330</td>
<td></td>
</tr>
<tr>
<td>Lagos-Abidjan</td>
<td>992</td>
<td>345,000</td>
<td>348</td>
<td></td>
</tr>
<tr>
<td>Cotonou-Niamey</td>
<td>1036</td>
<td>170,000</td>
<td>164</td>
<td></td>
</tr>
<tr>
<td>Lome-Ouagadougou</td>
<td>989</td>
<td>340,000</td>
<td>344</td>
<td></td>
</tr>
<tr>
<td>Accra-Ouagadougou</td>
<td>972</td>
<td>150,000</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Niamey-Ouagadougou</td>
<td>529</td>
<td>100,000</td>
<td>189</td>
<td></td>
</tr>
<tr>
<td>Douala-Bangui</td>
<td>1580</td>
<td>383,000</td>
<td>242</td>
<td></td>
</tr>
</tbody>
</table>

Not only are these payments heavy for each trip, their overall effect is even more important. Assuming 100 trucks/day on the above roads on the average, the total annual cost on these roads from the various roadblock amounts to about 80 M USD.

In addition, the loss of time and the increase in vehicle operating costs that these stops cause is considerable. The trip from Bangui to Douala usually takes between 7 and 10 days. This is caused primarily by the numerous roadblocks and controls since the trip itself, 1600 km, can be done in three days.
5.2.2 Border Crossings

Border crossings are another time consuming difficulty. That it takes more than 24 hours to pass a border appears to be the norm rather than the exception. In a study from 1988 SADC estimates that 3.3 million vehicle-hours are spent annually passing the borders in that sub region, the cost of which is estimated at 48 M USD.

An even more severe problem than the long delays when crossing a border is the situation when the border or an area is closed to traffic. This situation exists on the Trans African Highways in several locations like the border between Morocco and Algeria and the connections through eastern DRC and Angola. As the cause for these situations are of a purely political nature they fall outside of the focus of the present study.

Another contributing factor is the variety of regulations and forms that each country applies and which is often not coordinated with those in effect in the neighboring states. This leads to long waiting times at the borders, with the border posts and customs offices being physically separated and in effect meaning two complete sets of controls for each border, a multitude of forms and documents to be filled and checked, and additional costs for required escorts and convoys.

5.2.3 Harmonization Efforts

The problems of the unsatisfactory conditions and high costs for road transport are not primarily due to a lack of agreements and protocols aiming at harmonizing trade and transport between two countries or in the whole of a sub region. As described in the preceding chapters, there is a rather comprehensive coverage of these areas by numerous sub regional agreements. These agreements are generally considered as quite reasonable, but they are very seldom applied. Instead, there have been a number of bilateral and national rules, which in reality govern road transport. Their numbers have grown so much that it has become uncertain which agreements really are applicable in the individual case. Such a situation obviously does not lead to a unified and coordinated transport market but rather contributes to confusion with many rules covering the same areas, with ensuing uncertainty and a multiplication of forms and procedures. This also increases costs. An ECA study estimates that the non application of the TRIE convention for about one million tons of freight from the landlocked countries of Burkina Faso, Mali and Niger to the West African ports costs these countries about 3 M USD annually in road block payments and inefficient use of trucks and drivers.
5.2.4 Impact on Road Transport Costs

The problems of the unsatisfactory conditions for road traffic are not new. They have been noted since a long time and been the subject of numerous studies by various organizations such as ECA, the REC’s, truckers’ and transport associations. Africa’s high transport costs are well known. The share of transport costs of total import value has been estimated at about 11% to be compared to a worldwide average of 5%. The reasons for this are many and the non-physical barriers are important among these.

5.3 RULES AND REGULATIONS

Measures to improve the situation have been proposed. They cover a wide spectrum of possible actions, like simplification of customs procedures, introduction of computerized tracking systems, close location of all offices involved in border crossing procedures, extended opening hours for the border stations, setting up of observatories to report on actual conditions in terms of delays and illegal payments on the roads.

The implementation of such measures has in some instances led to positive results, mainly in southern and eastern Africa. The northern Corridor Transit Transport Coordination Authority has introduced simplifications in the field of customs procedures and handling through computerized systems. In the COMESA area there has also been progress in the same fields as well as with third party insurance schemes and common rules and formats for drivers’ licenses. Generally, however, even in eastern and southern Africa where conditions on the whole are better than in many other sub regions, progress, if any, is thought to have been very slow and characterized by “two steps forward, one step backward”.

In western and central Africa where conditions are generally considered as worse than in other sub regions, the improvements have been more spotty and temporary. For the transport of oil products from Lomé to Ouagadougou it has been possible to introduce a system where the total amount is paid in one location. This avoids the inconvenience of stopping and negotiating the payment at every roadblock. More often the improvements have been rather temporary. When the situation has become so bad and the protests so loud that they can no longer be ignored, it has been decided at the highest political level that the checkpoints have to be reduced. This has improved the situation, but after some time the old conditions have been reestablished.
5.4 IMPROVEMENT MEASURES

The problems of the non physical barriers are thus extensive, deep-rooted and inherently difficult to come to grips with. They have been observed since a long time and studies and proposals how to improve the situation are numerous. They range from additional studies to decreasing the number of controls and increasing the adherence to and application of the already existing agreements and conventions. The concrete measures underway, on a pilot basis, include the construction of unified border control facilities in one common area so as to shorten the time for border crossing and controls, the introduction of an observatory function to continuously report on the delays and other conditions on the roads and the borders.

Basically, however, the problems and their solutions have relatively little to do with technical and legislative improvements. Rather it appears that improvements have to be based on political agreements and interventions from the highest government levels, as a prerequisite for sustainable solutions. New approaches and ideas are required to move this complex set of problems towards its resolution. Both short- and long-term measures are required as further discussed below.

5.4.1 New Approaches

5.4.1.1 Competition among the Transit Corridors

One of the more effective means to combat the non-physical barriers would be to foster competition among the different corridors connecting the land-locked areas of the continent to the sea. There is growing understanding among the landlocked countries that the access to two or more alternative corridors to the sea would over time give them the choice of routes, which if used wisely, could foster competition among the individual corridors. Such competition would measure speed and safety in port operations, customs handling, road standards and road traffic security (including number of roadblocks and roadblock operations), railway efficiency and costs, etc. To the extent improvements in the above mentioned fields would include opening up new road links or improve existing ones, improving border facilities, etc, the RECs could play an important role. They could assist with the identification of such links and help find suitable funding for projects that could help bring more competition to the transit corridors and their operators.
5.4.1.2 Lending Conditionalities

One proposal for how to mobilize political interest and intervention is for the financing institutions to introduce a conditionality dealing with the reduction of the non physical barriers. As most of the countries finance all the rehabilitation activities and new construction from loans and grants from international lending institutions this could be an efficient method. In order for this to be effective there needs to be an understanding and coordination among the financing institutions. This could be reviewed and decided through a donors’ conference. There are already a number of conditions tied to road sector financing, such as environmental protection measures, AIDS prevention, adequate routine maintenance funding, and others.

The issue of non physical barriers is of such importance to the functioning of not only the Trans African Highways but of the whole transport system, that it seems to be fully justified to introduce such a conditionality for all operations in the road sector. It might also be interesting to look at the consequences for the viability of road projects if the amounts paid by the truckers at the illegal barriers were taken into account as cost items. A successful example of a similar conditionality can be found in Central Africa where the European Union, which is a dominant financing institution for roads in the sub region, has imposed strict requirements for maximum axle loads as a condition for financing. If a similar approach to the problem of non physical barriers will lead to a real decrease in the gross inefficiencies now prevailing, only time and experience will tell. The likelihood of the governments being willing and capable to respond seems probable and at any rate well worth trying.

5.4.1.3 “Bottom –Up” Approach and Private Sector Involvement

The difficulties experienced in translating protocols and decisions into consistent laws, regulations and procedures at country levels has made SADC to try to approach the problems in the trade and transport facilitation field in a “bottom-up” fashion. Instead of starting with a decision at a ministerial meeting the approach has been to start at the working levels. The process is initiated with identification and analysis of the problems encountered, followed by the formulation of concrete proposals by working groups consisting of specialists from both the public and private sectors. Only when agreements of a concrete nature have been arrived at would, according to this approach, the necessary bilateral or trilateral agreements be codified in a suitable agreement at ministerial level.

A pilot project has recently been initiated, arranged along the above-described lines. The pilot activities – The SADC Transit System on the Trans-Kalahari - aims at improving the transit conditions along the Trans-Kalahari Highway
(basically connecting Walvis Bay in Namibia with the Johannesburg/Pretoria area in South Africa). The project\(^1\) is a joint effort involving both the public and private sectors, with the Walvis Bay Corridor Group, a private sector initiative, providing the secretarial services required.

It is too early to make any definitive judgments on the relative advantage and success of this new approach. The different RECs should, however, ask SADC to provide them with information about the implementation of the concrete measures agreed upon in the Memorandum. If this approach works in Southern Africa it should certainly also be tried in other parts of Africa.

### 5.4.2 Conclusions

The problems of the non-physical barriers are thus extensive, deep rooted and inherently difficult to come to grips with. They have been observed since a long time and studies and proposals how to improve the situation are numerous. They range from additional studies to decreasing the number of controls and increasing the adherence to and application of the already existing agreements and conventions. The concrete measures underway, on a pilot basis, include the construction of unified border control facilities in one common area so as to shorten the time for border crossing and controls, the introduction of an observatory function to continuously report on the delays and other conditions on the roads and the borders.

Basically, however, the problems and their solutions have relatively little to do with technical and legislative improvements. Rather it appears that improvements have to be based on political agreements and interventions from the highest government levels, as a prerequisite for sustainable solutions. New approaches and ideas are required to move this complex set of problems towards its resolution. Both short- and long-term measures are required as further discussed below. In section 5 above three possible approaches to improve the situation are outlined. These approaches center around:

* Competition Among the Transit Corridors
* Lending Conditionalities
* "Bottom-Up" Approach and Private Sector Involvement

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\(^1\) As a part of this effort SATCC and the Southern African Custom Union through its Transport Liaison Committee carried out a study to determine the causes for the under-utilization of the Trans-Kalahari Highway and prepare recommendations on how to improve the utilization of the Highway. The study was a joint effort involving senior staff of the Ministries of Transport in Namibia, Botswana and South Africa. The concrete result of the study was a Memorandum of Understanding signed by the concerned Ministers of the three governments in the Autumn of 2002.
6  RECOMMENDATIONS

6.1  INSTITUTIONAL STRATEGY

6.1.1  Analysis

As a part of the efforts in the early 1990s to re-establish the Trans-African Highway Bureau, the ECA proposed in 1993 statutes of the new Bureau. These statutes cover basically organizational and administrative provisions but contain also a description of the aims and objectives of the Bureau.

In determining the need for such a Bureau it is important to try to determine what tasks and responsibilities could and should be handled at the country, sub-regional and regional levels. One way of doing this is to review the aims and objectives of the Bureau and see to which extents existing institutions already adequately cover these aims or objective.

The responsibilities of the Bureau as perceived in 1993 together with comments based on the existing situation at country and REC levels are outlined below:

<table>
<thead>
<tr>
<th>Proposed Bureau Aims and Objectives</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Preparation and implementation of its work programmes and co-ordinating those of the various Highway Authorities.</td>
<td>While there is no doubt that the Bureau must prepare and implement its own work programme, it is unlikely that the individual Highway Authorities would allow the Bureau to co-ordinate theirs.</td>
</tr>
<tr>
<td>(b) Establishment of unified standards for research, programming, construction and maintenance of highway infrastructure.</td>
<td>A lot of useful work has already been completed by the RECs in this field. Most of the technical issues are best handled at country and REC level but there is also a certain need for regional co-ordination and harmonization actions.</td>
</tr>
<tr>
<td>(c) Promotion of national manpower training in road transport including the development and strengthening of sub-regional and regional highway training institutes.</td>
<td>To the extent that there is a lack of training facilities in the road transport field in Africa a regional body could be of some help.</td>
</tr>
</tbody>
</table>
Proposed Bureau Aims and Objectives | Comments
--- | ---
(d) Harmonization of traffic rules, regulations and procedures | The RECs are doing a good job in this field and the level of co-operation between the RECs appears adequate. However, regional level promotion of sub-regional harmonization could be useful.
(e) Establishment of information systems including the African Road Data Bank | The establishment and operation of an African Road Data Bank must by definition be handled at regional level. In addition such a data bank requires functioning road data banks at national level. The regional level has therefore an important function to support and promote the road data bank concept at country level.

There is no doubt a considerable need for contacts and co-ordination in the road sector in Africa. It is questionable if this should be focused on only the TAH corridors and comprise the whole continent as is inherent in the concept of a Trans African Highway Bureau. Furthermore, to centralize the co-ordination and management, whatever the meaning and content of it, to one bureau seems impractical. As to standards, it is debatable if this needs to be done on a continental scale or if it should not rather be done on a sub regional basis. The example of the Trans Maghreb Motorway provides a good example of this. There the need for co-ordination of standards, alignments and other aspects was obvious and this was achieved on a sub regional basis among the countries concerned, with no need to refer this to an Africa wide study and debate,

Apart from the above, another considerable advantage of having the REC’s being responsible for the co-ordination activities is that they are already set up to do this. There are existing Transport Departments that are in contact with the countries and know the situation. There are thus considerable economies and a better contact with the realities on the ground in continuing these arrangements. The question of overlapping REC’s is a general problem, well noted and studied, which is also reflected in the transport sector. The study has not attempted to make recommendations in this area, since this needs to be part of more general agreements regarding the co-ordination and tasks of the REC’s.

The comments above indicate that many of the tasks originally included among
the aims and objectives of the proposed re-established Bureau, are today adequately handled by the individual countries and the RECs. There are, however, certain functions that are best handled at regional level.

6.1.2 Recommendations

The analysis above indicates a few areas where it would be useful with some kind of regional capacity to monitor the activities of the RECs and promote measures of harmonization and integration between the different organizations operating on a sub-regional basis. The functions would also include activities like the promotion of Africa wide exchange of experience and contacts in the road sector. Such activities could be arranged through gatherings such as the African Highway Congresses.

The fairly modest set of activities outlined above would not require an elaborate institutional structure such as a Trans-African Highway Bureau. It could most likely be part of shared responsibilities involving only a few people, with other tasks as their main responsibilities.

6.1.3 GIS Map Presentation of Road and Road Traffic Data

The study has resulted in a great amount of information, which can be utilised for various purposes. The most common way to present information like this in a report is to produce tables, containing figures from the inventory phase, and maps illustrating geographically conditions along a road. With access to modern software a more sophisticated coordination between the information and its presentation can be achieved. For example, the collected information about the condition of the road pavement and the traffic volumes along a specific road link can be connected via a database to a map, illustrating the current information. Certain variations in line types, colours, thickness of lines etc are chosen for illustration of all recorded parameters. The advantage of the described coordination will be the automatic updating of the illustration, when recorded figures are revised. The only limitation for the database is that the illustration should be distinct and readable. Information can of course be illustrated in various sheets, like pavement type and condition in one sheet, traffic volume/composition in another sheet, alignment parameters in a third sheet etc.

The illustration on maps in this report is based on a datasheet, serving as input data for information on the map. This system could be developed further in order to make other data available for illustration on maps. However, for the purpose of this study, results are presented in analogue form only.
6.2 REMOVAL OF NON PHYSICAL BARRIERS

It is recommended that the three proposed measures in the transportation facilitation field be discussed and turned into concrete programme of actions at sub-regional level. Over time and by building on the co-operation among the different RECs functioning systems for the removal of non physical barriers to trade and transport could in such way gradually spread throughout Africa.

6.3 REVISIONS IN COMPOSITION OF TAH NETWORK

6.3.1 Sub-Regional Road Networks

The RECs have over the years worked on identifying sub-regional road networks that are of importance for the economic and social development and the political integration of the sub-regions. On maps 6.1 and 6.2 the sub-regional networks of SADC and ECOWAS respectively are shown. These sub-regional networks coincide, support and supplement quite well the TAH network.

Map 6.1: SADC sub-regional road network
6.3.2 Alternative Alignments

There are areas where the existing alignment is being contested and alternative alignments promoted. The most clear-cut examples of this are found in Central Africa. They concern the Lagos-Mombasa Highway through the Central African Republic where it has been argued that part of this section could be located in northern DRC as an alternative. For the Tripoli-Windhoek Highway there are sections in Chad, Central African Republic and the republic of Congo, which have been proposed to be relocated. These alternative alignments are shown on maps 6.3 - 6.7 and are described in detail in the respective sections of Volume 2.
Map 6.3: Alternative Alignment of Tripoli-Windhoek Highway in Niger / Chad

Map 6.4: Alternative Alignment of Tripoli-Windhoek Highway in Congo/Gabon
Map 6.5: Alternative Alignment of Tripoli-Windhoek Highway Cameroon Chad

Map 6.6: Alternative Alignment of Lagos-Mombasa Highway in Cameroon
Map 6.7: Alternative Alignment of Lagos-Mombasa Highway in CAR/DR Congo
6.3.3 Extension of the TAH in South Africa

The TAH concept was developed during the apartheid period and RSA is therefore not included in the scheme. With majority rule in South Africa the Cairo-Gaborone TAH should be extended to Pretoria and the Tripoli-Windhoek TAH to Cape Town.

Map 6.8: Extension of Tripoli-Windhoek and Cairo-Gaborone Highway into South Africa

6.4 PRIORITY SETTING AND FUNDING OF MISSING LINKS

The very large amounts of money needed to complete the TAH and the relative lack of investment funds for major infrastructure investments, makes many of the missing links impossible to fund in the short and medium term (irrespective of the potential source of funding). With most countries struggling to generate enough funds for the maintenance requirements the only available source of funding is the external assistance programs and international lending institutions. This combination of limited resources and large requirements clearly indicates that priority on country, sub-regional and regional basis must be given to least cost solutions and projects with a limited total cost.
6.5 PLAN OF WORK

The practical implications of the conclusions and recommendations presented above have been formulated into a concrete Plan of Work, which constitutes the core section of the separate Volume 3 Way Forward.