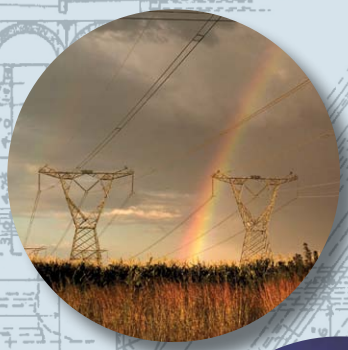

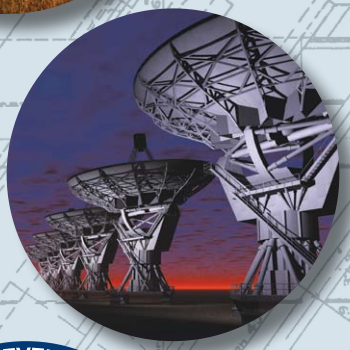

SOUTHERN AFRICAN DEVELOPMENT COMMUNITY
SADC
TOWARDS A COMMON FUTURE

Regional Infrastructure Development Master Plan

Transport Sector Plan

August 2012

Document Control

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List of Abbreviations

AASA	Airlines Association of Southern Africa
ACI	Airports Council International
AFI	Africa-Indian Ocean region (of ICAO)
ANSP	Air Navigation Service Providers
AtoN	Aids to Navigation
APIRG	AFI Planning and Implementation Regional Group
ARTIN	African Regional Transport Integration Network
ASA	Air Services Agreement
ASANRA	Association of Southern African National Roads Agencies
BBR	Beitbridge Bulawayo Railway
BEPEC	Built Environment Professions export Council
BGS	Best Guess Scenario Projects
CANSO	Commercial Air Navigation Service Organisation
CASSOA	Civil Aviation Safety and Security Oversight Agency
CBRTA	Cross-Border Road Transport Agency
CMC	Corridor Management Committee
CNS/ATM	Communication, Navigation and Surveillance/Air Traffic Management
COMESA	Common Market for Eastern and Southern Africa
COSCAP	Cooperative Development of Operational Safety and Continuing Airworthiness Programme in SADC States
CSTN	Core Strategic Transport Network Projects
EAC	East African Community
EASA	European Air Safety Authority
FAA	Federal Aviation Administration
FCFASA	Federation of Clearing and Forwarding Agents of Southern Africa
FESARTA	Federation of East and Southern African Road Transporters Associations
GATS	General Agreement on Trade in Services
GVM	Gross Vehicle Mass
HFV	Heavy Freight Vehicles
IALA	International Association of Lighthouse Authorities
IAPH	International Association of Ports and Harbours
ICD	Inland Container Depots
ICG	Implementation Coordination Group
IHO	International Hydrographic Organisation
IMO	International Maritime Organisation
IWT	Inland Waterway Transport
JCA	Joint Competition Authority
JRMC	Joint Route Management Committee
JRMG	Joint Route Management Group

LAS	Lower Airspace
MSP	Member State Projects
mpta	Mega Ton Per Annum
OECD	Organisation for Economic Cooperation and Development
OSBP	One-stop Border Post Project
PAP	Priority Action Programme
PAPC	Pan African Ports Conference
PIDA	Study on Programme for Infrastructure Development in Africa
PMAESA	Port and Management Association of Eastern and Southern Africa
PMAWCA	West and Central Africa Ports Association
Protocol	SADC Protocol on Transport Communication and Meteorology
REC	Regional Economic Community
RISDP	Regional Indicative Strategic Development Plan
RIDMP	Regional Infrastructure Development Master Plan
RMI	Road Management Initiative
RRMF	Regional Road Maintenance Fund
RTMC	Road Traffic Management Corporation
RTQM	Road Traffic Quality Management
RTRN	Regional Trunk Road Network
RUC	Road User Charge
SAR	Search and Rescue
SADC	Southern African Development Community
SAGNEP	Regional Cooperation Group on Safety of Navigation and Marine Environmental Protection
SARA	Southern African Railways Association
SARATA	Southern Africa Regional Air Transport Authority
SARPs	Standards and Recommended Practices
SASO	SADC Aviation Safety Organisation
SATCC	Southern Africa Transport and Communications Commission
SATCC-TU	SATCC Technical Unit
SIPO	Strategic Indicative Plan for the Organ
SMC	Standing Maritime Committee
SSATP	Sub-Saharan Africa Transport Policy Programme
TAH	Trans-African Highway
TSP	Transport Sector Plan
UACC	Upper Airspace Control Centre
UAS	Upper airspace
UNAP	North Africa Ports Association
WIO-MHP	Western Indian Ocean Marine Highway Project

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Executive Summary

Sector Purpose, Objectives and Vision

This Transport Sector Plan (TSP) presents the findings of the Regional Infrastructure Development Master Plan (RIDMP) Study for the Southern African Development Community (SADC) as it relates to the transport sector.

The TSP includes the different modes of transport namely road, rail, ports, maritime and inland waterways, as well as air transport. The report present an analysis of transport infrastructure, both current and first order future (2027) infrastructure requirements, as well as an analysis of the legal, regulatory and policy environment which regulates transport operations within the SADC region.

The key objective of the region is to identify key hubs and gateways for rehabilitation and development, in order to ensure that the passenger and goods markets are adequately catered for. In this way the region can positioning itself as a competitive hub and market. In response to demands for transport services, there is a need to develop appropriate, integrated, safe, secure and efficient infrastructure capacity along strategic transport and development corridors with regards to road and railway networks, and the TSP is crucial in this regard.

The vision for the SADC Regional Transport Master Plan is focussed on providing transport infrastructure, services, policy and legislature, enabling environmental and supportive institutions with the necessary human resource and institutional capacity to transform the transport sector. This will ensure a relevant transport sector with the ability to efficiently address the needs of the transport system users. The above is illustrated in the figure below.

The TSP is a dynamic document that must be continuously updated and expanded with additional detail and updated information, especially with regard to projects forming part of the Plan.

Situation Analysis: Overall Salient Issues and Infrastructure Concerns

The following list is the overall issues and concerns of infrastructure that cuts across all the sub-sectors:

- Lack of maintenance;
- Poor conditions;
- Missing links between key origins and destinations;
- Delays at cities where by-passes have not yet been built;
- Capacity and safety constraints;
- Delays at border posts;
- Trade and transport facilitation delays;
- High accident rates;
- Poor reliability;
- Lack of continuity and inter-regional connectivity;
- Poor modal integration;
- Need for modernisation; and
- Skills and capacity constraints.

Enabling Environment and Institutional Arrangements Challenges

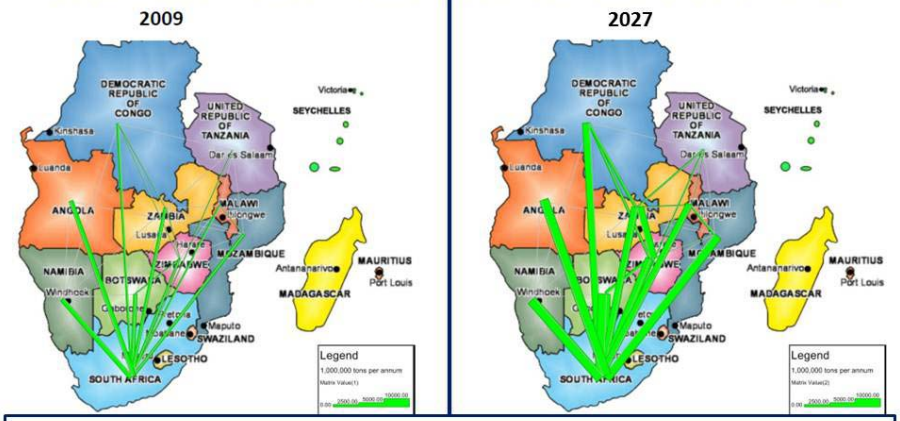
The following enabling environmental and institutional arrangements challenges exist in the sub-sectors:

- Lack of regional policies;
- Non-compliance with international conventions;
- Lack of harmonisation of policies, standards and guidelines;
- Lack of efficient and effective commercialised agencies;
- Practical application and management of the bilateral agreements;
- Application and enforcement of systems;
- Lack of law enforcement capacity;
- Compliance with international conventions;
- Lack of private sector participation;
- Require sustainable funding models;
- Attracting and maintaining required skills;
- Require commercialisation and de-politicisation; and
- Implementation of air services liberalisation.

Projections and Trends for 2027; Infrastructure Requirements

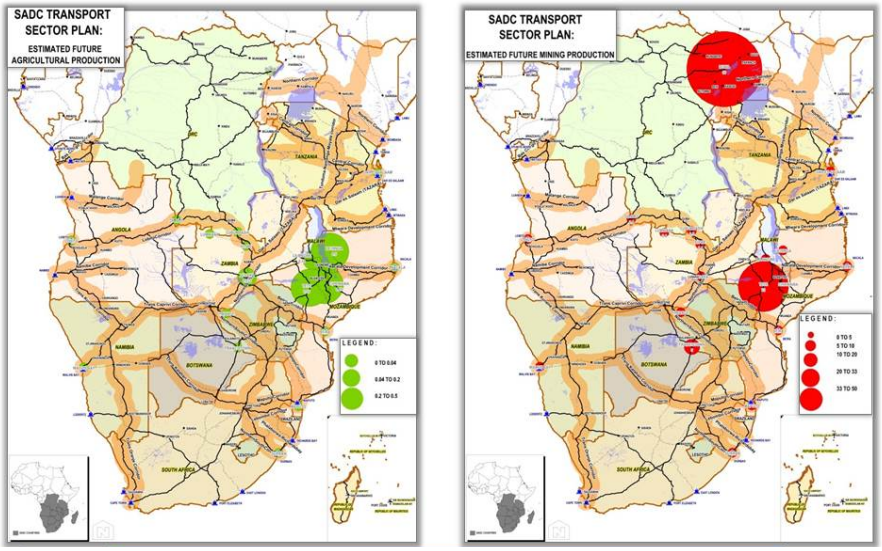
The demand for regional and transit transport was determined through a desktop exercise based on information obtained from the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa Project. The following figures illustrate the outcomes of those transit production projections and required infrastructure.

Estimated Trade Flows between SADC Countries

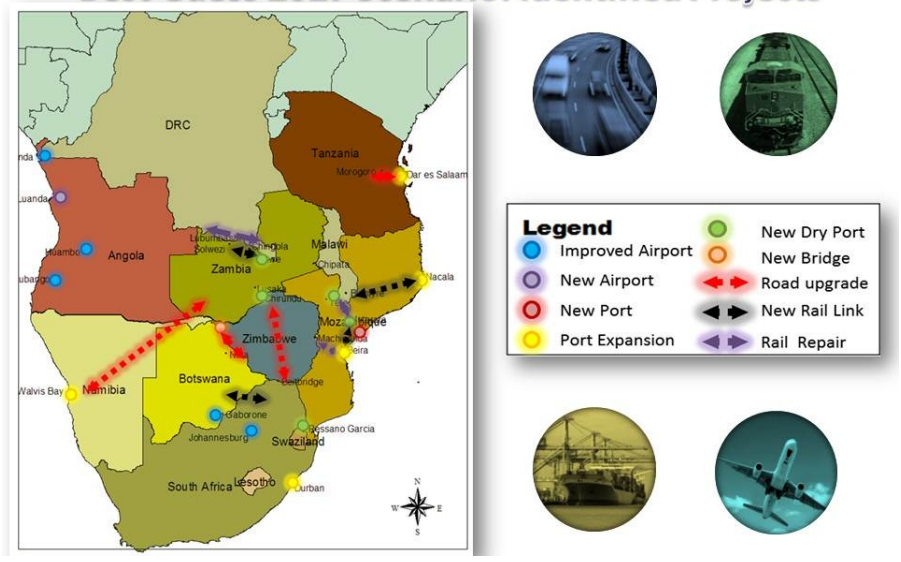


Imports:
South Africa (45 million tons), Angola (10 million tons), and Zimbabwe (7 million tons).
Exports:
South Africa (81 million tons), Angola (51 million tons), Botswana (7 million tons), and Zambia (4 million tons)

Estimated Regional Agricultural and Mining Production



Best Guess 2027 Scenario: Identified Projects



Strategic Framework – Policy, Regulatory Framework and Institutional Arrangements

The over-arching themes in the transport sector which should be highlighted include:

- The systemisation and implementation of the protocol;
- National regulations must conform to international and regional guidance; and
- The continued commercialisation of delivery.

The overarching transport institutional reform is based on:

- The reinstatement of a regional body that is mandated to perform policy and planning functions on behalf of the SADC region; and
- The establishment of regional regulatory oversight bodies (both economic and technical).

Modal Development Plan

A total of 208 projects are listed as part of the Transport Sector Modal Development Plan, consisting of:

- 18 border post projects;
- 72 road projects;
- 31 rail projects;
- 23 aviation projects; and
- 64 maritime and ports projects.

Implementation Action Plan

The institutional and capacity-building projects must be implemented in the short-term, thus parallel to the sub-sector infrastructure projects which are ready for implementation. Once implementation commence, the planning and preparation of the other projects can start in order to implement them in the medium- and long-term phases.

The anticipated action plan consists of six transport sector programmes, namely:

1. Enabling the policy/regulatory environment;
2. Border post infrastructure (new);
3. Road infrastructure (new, upgrade and maintenance);
4. Rail infrastructure (new, upgrade and maintenance);
5. Aviation projects (new, upgrade and maintenance); and
6. Ports and water transport projects (new, upgrade and maintenance).

The phasing and anticipated budgets for each phase are shown in the following figures:

	Transport Sector Programme	No. Proj.	Phase 1										Phase 2										Phase 3									
			2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027	
			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
1	Enabling Policy/Regulatory Environment	26																														
2	Border Post Infrastructure (new)	18																														
3	Road Infrastructure (new, upgrade and maintenance)	61																														
4	Rail Infrastructure (new, upgrade and maintenance)	26																														
5	Aviation Projects (new, upgrade and maintenance)	17																														
6	Ports and Water Transport Projects (new, upgrade and mair	60																														

Project Planning, Preparation and Implementation. Seeking different fuding options for projects in collaboration with member states, funding and other organisations and private partners (PPPs).

Note: Phase 1 (blue) is an indication of "ready" projects to commence.

Estimated Transport Sector Action Plan Phasing

	Transport Sector Project Programmes	Total Budget (million USD)	Phase 1	Phase 2	Phase 3
			2013 - 2017	*2018 - 2022*	*2023 - 2027*
1	Enabling Policy/Regulatory Environment;	38	100%		
2	Border Post Infrastructure (new);	79	20%	60%	20%
3	Road Infrastructure (new, upgrade and maintenance);	5982.3	10%	50%	40%
4	Rail Infrastructure (new, upgrade and maintenance);	9348	5%	35%	60%
5	Aviation Projects (new, upgrade and maintenance); and	996.2	20%	50%	30%
6	Ports and Water Transport Projects (new, upgrade and maintenance).	18862.25	10%	50%	40%
	Total Projects budget: 35.31 billion USD	**35305.75**	28%	41%	31%

Note: Costing was done on available project information or where first order cost estimates were possible

Approximate Budget Expenditure per Phase

Linkages to the 2020 PIDA PAP Programme

The overall transport sector outcome of the Programme for Infrastructure Development in Africa (PIDA) is to work towards an integrated continent where the transport infrastructure and services enable the free movement of goods and people as summarised by the following statements:

- Improving the connection between African capitals and major centres with modern, paved roads;
- Satisfying demand at the least cost and by prioritising landlocked countries, while minimising the environmental impact; and
- Developing modern African Regional Transport Integration Network (ARTIN) corridors and air transport services to bring the performance up to international best practice levels with regard to efficiency, cost, reliability and safety.

The SADC Transport Sector Plan (TSP) is in line with the PIDA outcomes as described above. Furthermore, the PIDA Priority Action Programme (PAP) for the transport sector contains four major programmes in the SADC region, namely:

- North-South Multimodal Corridor;
- Central Corridor;
- Beira and Nacala Multimodal Corridor; and
- Southern African Hub Port and Rail Programme.

The TSP contains significant projects around the North-South Multimodal Corridor, as well as the Beira and Nacala Multimodal Corridor. Most of the projects are, however, centred on the vicinity of Dar-es-Salaam in the Central Corridor, with a concentration of projects in the Southern African Hub Port and Rail Programme.

1. Introduction – Transport Sector as a Whole

1.1 Sector Vision, Purpose and Objectives

1.1.1 Sector Vision

The vision for the Southern African Development Community (SADC) Regional Transport Master Plan is focussed on providing transport infrastructure and services, as well as policy and legislature, enabling environmental and supportive institutions with human resource and institutional capacity to transform the transport sector. This will ensure a sector that is relevant in the future and has the ability to efficiently address the needs of the transport system users.

Figure 0-1: Transport Sector Vision

In order to achieve this vision, a conducive policy, legislative and regulatory environment is required. Such an environment needs to be harmonised among Member States to facilitate expedient transport infrastructure and service delivery. Furthermore, these policies, legislation and regulation tasks need to be performed by transport sector institutions that are appropriately staffed and resourced to support the provision of quality transport infrastructure and services. Figure 0-1 illustrates the foundation and pillars of the transport sector vision.

Apart from the foundation, the 2027 SADC transport system is underpinned by the following pillars:

- **Integrity:** The transport system's integrity relates both to infrastructure and services providers within the sector. Transport infrastructure integrity means that none of the transport system components may fall into disrepair and that all infrastructure components are maintained to

the highest standards. Transport system integrity refers to ethical transport service operations, underpinned by transparency, accountability and indisputable business ethics;

- **Sustainability:** Refers to the provision of transport infrastructure and services, which makes efficient use of available resources and limits environmental degradation to the greatest extent, by applying appropriate and innovative transport infrastructure and services technologies;
- Safety and security: The transport system of the future should emphasise the safety of the transport infrastructure and services, as well as the security of passengers and goods being transported;
- **Choice:** An efficient and effective transport system offers the transport user a choice in terms of transport modes, costs, reliability, service rates, turn-around times, etc.;
- Seamlessness: An efficient transport system provides seamless transport networks and services across geographical boundaries and transport modes. Seamless transport systems are enhanced by regional integration and harmonisation initiatives;
- **Capacity:** The SADC transport system of the future should provide sufficient capacity to meet the demand of passenger and freight transport modes. The transport system must respond to demand at all times in order to protect the integrity of the infrastructure and services; and
- **Connectivity:** The SADC transport system of the future should emphasise connectivity between key land-use nodes in order to further regional economic growth and trade, while focussing specifically on providing port access to land-locked countries within the SADC region.

1.1.2 Sector Purpose

The Transport Sector Plan (TSP) presents the findings of the Regional Infrastructure Development Master Plan (RIDMP) Study for the SADC as it relates to the transport sector.

The TSP includes the different modes of transport, namely road, rail, ports, maritime and inland waterways, as well as air transport. The Plan present an analysis of transport infrastructure, both current and first order future (2027) infrastructure requirements, as well as an analysis of the legal, regulatory and policy environment which regulates transport operations within the SADC region.

The diagnostic assessment is a cursory/strategic assessment of areas of concern, as well as the identification of first order mitigations based on available literature and knowledge of the region and transport modes. Once the system and enabling environment constraints have been identified, the Plan seeks to provide a strategic framework and implementation action plan for the transport sector as a whole. For each mode the “hard” infrastructure and “soft” intervention aspects are addressed as follows:

- “Hard” infrastructure aspects:
  - Transport infrastructure development;

- “Soft” transport sector interventions:
  - Harmonising policies and regulations;
  - Capacity building; and
  - Facilitating transport and trade.

1.1.3 Objectives

The key objective in SADC is to identify key hubs and gateways for rehabilitation and development to ensure that the passenger and goods market is adequately catered for, as a way of the region positioning itself as a competitive hub and market. In response to demands for transport services,

there is a need to develop appropriate, integrated, safe, secure and efficient infrastructure capacity along strategic transport and development corridors with regards to road and railway networks. The TSP is crucial in this regard.

The main objectives of the TSP are to:

- Conduct a situational analysis of the different modes of transport;
- Conduct a future (2027) projection of infrastructure by taking into account the anticipated future demand;
- Identify projects to fill in the demand gaps for the future scenarios without conducting detail analysis;
- List and complete information of transport projects received from the SADC member states;
- Ensure that projects mentioned in reputable secondary data sources provided to the project team are included;
- Assess the effectiveness and adequacy of the SADC transport policies/strategies and regulatory frameworks, institutional frameworks, capacity and financing opportunities to support transport infrastructure development,
- Developing a strategic framework with projects and other interventions to meet the priority goals in each sub-sector,
- Propose deployment and action plan projects and an indication where anticipated long term future priorities would be required.
- It must be emphasised that the Transport Sector Plan is a "live" document intended to stay dynamic which is to be updated continuously with new information and planning which must align with a monitoring and evaluation system that SADC will develop and implement.

1.1.4 Synergies with PIDA

The rationale for the PIDA is to:

- Have a common platform for infrastructure development in Africa;
- Rationalisation of a plethora of regional/continental initiatives;
- Harmonise donor intervention; and
- Fast tracking Africa development and integration.

Therefore the SADC TSP informs the PIDA to form part of the merging of development initiatives in Africa. PIDA's strategic framework is up to 2040, whilst the SADC RIDMP is up to 2027. The PIDA Transport Sector's overall outcome is to work toward an integrated continent where the transport infrastructure and services enable the free movement of goods and people, which are summarised by the following statements:

- Improving the interconnection of African capitals and major centres with modern paved roads;
- Satisfying demand at the least economic cost, with priority for landlocked countries, while minimizing the environmental impact; and
- Developing modern African Regional Transport Integration Network (ARTIN) corridors and air transport services to bring the performance up to international best practice in efficiency, cost, reliability and safety.

1.2 Policy and Legal Basis Guiding the Transport Sector

The policy and legal basis guiding the Transport Sector Plan (TSP) includes regional policy, regulatory and legal framework for transport which includes:

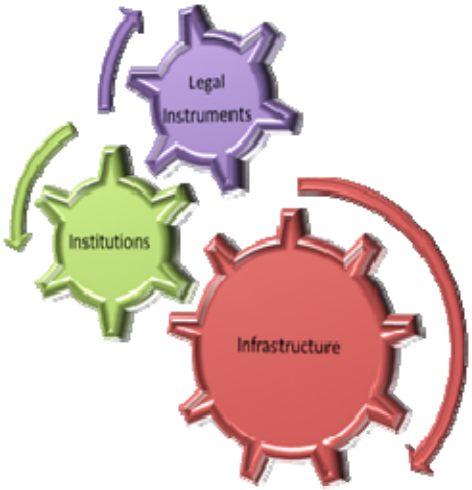
- A description of the existing policy, regulatory and legislative environment in the SADC region with reference to the transport sector;
- A definition of the long-term challenges for the cooperation and development SADC region's transport sector;
- Strategic priorities for regional transport development through cooperation; and
- An indication of further policy and institutional reforms (in the form of projects and initiatives) needed to promote regional traffic and improve the management and maintenance of the regional transport corridors.

1.2.1 Regional Indicative Strategic Development Plan

The region has developed strategic harmonisation frameworks and action plans which seek to establish an enabling environment for the development of an integrated transport infrastructure.

These include establishing:

- **Legal instruments:** For the joint governance of corridors;
- **Institutional frameworks:** For the joint and coordinated management of transport corridors; and
- **Infrastructure:** The development of critical corridor transport and logistics infrastructure.



The importance of addressing "soft" infrastructure issues (institutional reforms, laws and regulations) and "hard" infrastructure issues (roads, railways and ports) for transport and trade efficiency cannot be over-emphasized. Empirical evidence has shown that 25% of delays along worldwide transport corridors are a result of poor infrastructure, while 75% are related to poor facilitation.

Regional efforts are also geared towards cutting down on documentation and time spent at borders with the implementation of various programmes, including the one-stop border post concept and border efficiency management programmes.

There are also special requirements for navigability of the regional waterways. Transport services are provided on lakes Victoria, Tanganyika and Malawi/Nyasa, as well as on the River Congo. Consideration is being given to developing the Shire-Zambezi Rivers to provide a shipping link between Malawi and the Mozambican ports of Chinde and Beira.

Furthermore, the SADC Treaty states in its preamble the need to promote the interdependence and integration of Member States' economies for the harmonious, balanced and equitable development of the region.

The principal motive for managing transport in a more integrated regional manner is the expected benefits, including increased economies of scale, a reduction in agency and operator cost associated with seamless operations, increased responsiveness to transport user requirements and therefore a generally more competitive business environment.

Different "stages" or "degrees" of integration may be distinguished. Therefore, when carrying out an analysis, an integration reference stage must be identified in order to assess the nature and extent of the gap between the actual and desired situations.

Four stages of economic cooperation towards full integration may be distinguished. These are:

- **Stage 1:** Harmonisation of national policies and modes of conduct;
- **Stage 2:** Coordination of national policies and conduct with common rules and mutual national relations among Member States;
- **Stage 3:** Joint initiatives under regional decision-making with national resources/ implementation; and
- **Stage 4:** Regional initiatives pursued independently of nations.

To date the focus has been on integrating Member State activities in the first stage (harmonisation), while increasingly pursuing second stage activities (coordination). It is expected that SADC would gradually pursue a more complementary and coordinated programme towards regional integration. It is therefore expected that stage 3 integration opportunities will be explored in some areas.

1.2.2 Protocols, Institution and Statutes

The SADC Treaty provides that Member States conclude protocols as may be necessary in each area of cooperation (including infrastructure and services), which shall spell out the objectives and scope of, and institutional mechanisms for, cooperation and integration.

In the transport domain, the Protocol on Transport, Communications and Meteorology (August 1996) codifies these objectives and actions. The Protocol in effect states the Community's ambitions regarding regional integration in quite practical terms. It is therefore a key reference point in the TSP, and many comments on the status of and challenges to integration are made with reference to the Protocol.

There are two broad categories of transport-related functions: governance and delivery. Governance has to do with policy-making and planning, as well as oversight. Policy and planning provide the direction (the vision) for the sector. In the past, the regional transport sector was coordinated by the Southern African Transport and Communication Commission (SATCC) of SADC, but this institution was dissolved and its responsibilities passed on to the more general Directorate of Infrastructure and Services (I&S) of SADC.

Oversight entails ensuring that appropriate safety, security and technical standards are in place, market access regulation (the right to provide infrastructure or a service) and economic regulation (the setting of limits on incumbents, for example tariff setting). In a regional context, it is expected that as an increased degree of integration is pursued, policy and planning functions would migrate from the national to the regional level. Similarly, especially the market access oversight aspects (i.e. access to the 'regional' market), would increasingly be performed by regional bodies.

Delivery entails the provision of transport infrastructure and services. Infrastructure provision entails the physical transport nodes (airports, ports, etc.) and links (road and rail). From a regional perspective, it would be expected that there would be a layer of infrastructure that interconnects the region, that this layer would have a fairly common standard to promote integrated transport operations and that it would be provided, managed and funded in a similar manner.

Transport services are the provision of freight and passenger services. Except for local social services, it is expected that regional transport services would be provided on a deregulated, competitive basis by the private sector. From a regional policy perspective, the main issues would be:

- The right of transport operators from one Member State to uplift traffic to/from another;
- Whether a carrier from one Member State has the right to uplift cabotage traffic in another; and
- Whether carriage to/from the SADC region is regulated by the region or by Member States themselves.

Apart from market access regulation, regional transport services would be self-regulating and there would be no requirement for any other form of economic regulation (e.g. tariff setting). Transport services would therefore also be self-funding.

The key reference is the SADC Protocol on Transport, Communications and Meteorology. Each major transport sub-sector will be discussed separately and in detail in Section 0. These sub-sectors with their various main reference documents, apart from the Protocol, are:

- Roads infrastructure:
  - Transport Policy and Strategy, as prepared by COMESA (2010);
  - A number of corridor management committees' agreements;
  - Guideline for Harmonisation of Condition Reporting of the SADC RTRN;
  - SADC Specification for Road and Bridge Works (now translated into both French and Portuguese);
  - SADC Guideline on Low-Volume Sealed Roads;
  - SADC Geometric Design Standards;
  - SADC Pavement Design Manual;
  - SADC road traffic signs, markings and signals; and
  - Harmonised Road User Charges System in the SADC Region (2007).

- Road transport (which, although impacting on the roads domain, is an area planned and carried out quite independent of the planning and delivery of roads):
  - SADC strategic regional road transport corridors;
  - Joint Route Management Groups (JRMGs) agreements;
  - Joint Route Management Committees (JRMCs) agreements;
  - Bilateral road transport agreements between Member States;
  - Enabling Legal Reform: Control of Vehicle Load (third draft, March 1999); and

- Best Practices in Overload Control in Eastern and Southern Africa (2010).

- Railways:
  - SADC strategic regional rail transport corridors; and
  - Southern African Railways Association (SARA) Guidelines.

- Ports, Maritime Transport and Inland Waterway Transport:
  - International Maritime Organisation (IMO) conventions, protocols and codes;
  - African Maritime Transport Charter (2009);
  - Port Management Association of Eastern and Southern Africa (PMAESA) documents;
  - International Association of Ports and Harbours (IAPH) documents; and
  - Regional Co-Operation Group on Safety of Navigation and Marine Environmental Protection (SAGNEP);

- Aviation:
  - International Civil Aviation Organisation (ICAO) documents;
  - International Standards and Recommended Practices (SARPs);
  - African Civil Aviation Commission (AFCAC) documents;
  - Airlines Association of Southern Africa (AASA) documents;
  - Airports Council International (ACI) documents;
  - Commercial Air Navigation Service Organisation (CANSO) documents;
  - Southern African Regional Air Transport Authority (SARATA) documents; and
  - SADC Aviation Safety Organisation (SASO).

2. Situational Analysis

2.1 Current Sector Status

This section presents the current status of each sub-sector, which is made up of the different transport modes, namely:

- Roads,
- Railways,
- Ports, maritime transport and inland waterway transport, and
- Aviation.

2.1.1 Roads: Existing Infrastructure and Networks

According to the first draft of the Revised Regional Infrastructure Development Master Plan (RIDMP), the road sub-sector accounts for the vast majority of surface transport activity in the Southern Africa Development Community (SADC) region, and includes both passenger and freight transport. Road transport costs are competitive with rail for most general cargo, and service quality is generally better, therefore it is an important component of regional and international transport systems, linking landlocked countries with important ports.

2.1.1.1 Network

A Regional Trunk Road Network (RTRN), as indicated in Figure 0-1, was developed by SADC. The RTRN consists of:

- Reference roads (the principal roads framework);
- Intermediate roads; and
- Branch, link and connecting roads.

Island roads are yet to be included in the RTRN, but estimates for Madagascar, Mauritius and the Seychelles were developed and are included in the following table that provides an overview of the SADC road network:

Table 0-1: Regional Trunk Road Network

Header	Reference Roads (km)	Intermediate Roads (km)	Branch, Link and Connecting Roads (km)	Total (km)	Kilometres Percentage
Angola	4 600	300	3 600	8 500	14%
Botswana	1 700	1 200	100	3 000	5%
Democratic Republic of the Congo (DRC)	3 900	300	8 900	13 200	21%
Lesotho	200		900	1 100	2%
Madagascar	1 300				
Malawi	4 000	400	200	1 900	3%
Mauritius					
Mozambique		1 400	300	5 700	9%

Namibia	2 700	1 200	800	4 700	8%
Seychelles					
South Africa	4 200	2 100	2 400	8 700	14%
Swaziland	200		200	400	1%
Tanzania	3 300	1 900	1 900	7 100	11%
Zambia	1 400	1 700	1 400	4 500	7%
Zimbabwe	1 600	1 000	1 100	3 700	6%
Total	**29 300**	**11 600**	**21 700**	**62 600**	**100%**

Source: Revised RIDMP First Draft – Annexure 5.6 – Roads

Figure 0-1: Regional Trunk Road Network
Source: ASANRA

2.1.1.2 Road Condition

The SADC road network is one of the region's largest public sector assets. Productivity in virtually every sector of the economy is affected by the quality and related performance of the road system. It is therefore essential that this vital asset is managed efficiently and effectively, invariably within a constrained budgetary situation, in support of socio-economic growth and the development of the region.

In 2001, it was estimated that about 50% of the paved main road network in SADC is in good condition, with the remainder classified as only fair or poor. Botswana, Lesotho and Namibia have particularly good road standards and about two-thirds of South African and Zimbabwean roads are in good condition. In Malawi, Swaziland and Tanzania about 55% of roads are in good condition and the proportion is somewhat lower in Zambia at 40%. Road maintenance had been neglected in Mozambique and Angola and some 90% were in fair or poor condition. However, in Mozambique a major ongoing road rehabilitation programme has improved road condition. The unpaved main road network in the region is considerably worse than the paved road network with less than 40% in good condition.

Road condition is affected by traffic loading. Traffic volumes on most of the main regional roads are low, rarely exceeding 2 000 vehicles per day (vpd), except near urban areas, and are generally less than 1 000 vpd. The major exception is South Africa where up to 120 000 vpd are found on dual carriageways near the metropolitan areas, and to the order of 60 000 to 80 000 vpd between major cities1.

In the eastern and southern parts of the region, the road network is fairly dense and in reasonably good condition, albeit with an ongoing need for periodic maintenance, rehabilitation and upgrading. In the west, particularly in Angola and the DRC, there is a clear need for new roads, in addition to the urgent need to repair the damages of conflict and neglect, in order to promote economic growth and regional integration.

A major issue across the whole region is the cost of maintenance. Unfortunately, despite the substantial investments made in road transport infrastructure in the past, inefficient management, coupled with inadequate funding, has led to deteriorated road conditions and increased transport costs in many SADC countries. The limited introduction of user pays principles and fuel levies have, however, shown some success. The traditional approaches to road management and financing, which have relied on managing roads through a government department and financing it through general budget allocations, have generally not worked. New ways are sought to prioritise and fund the rapidly increasing demand for the supply and maintenance of a quality road transport infrastructure network. Figure 0-2 indicates the available information on road conditions in the Member States.

[1] Managing SADC Roads Agencies in the New Millennium: The Role of Road Asset Management Systems (M I Pinard and G Rohde)

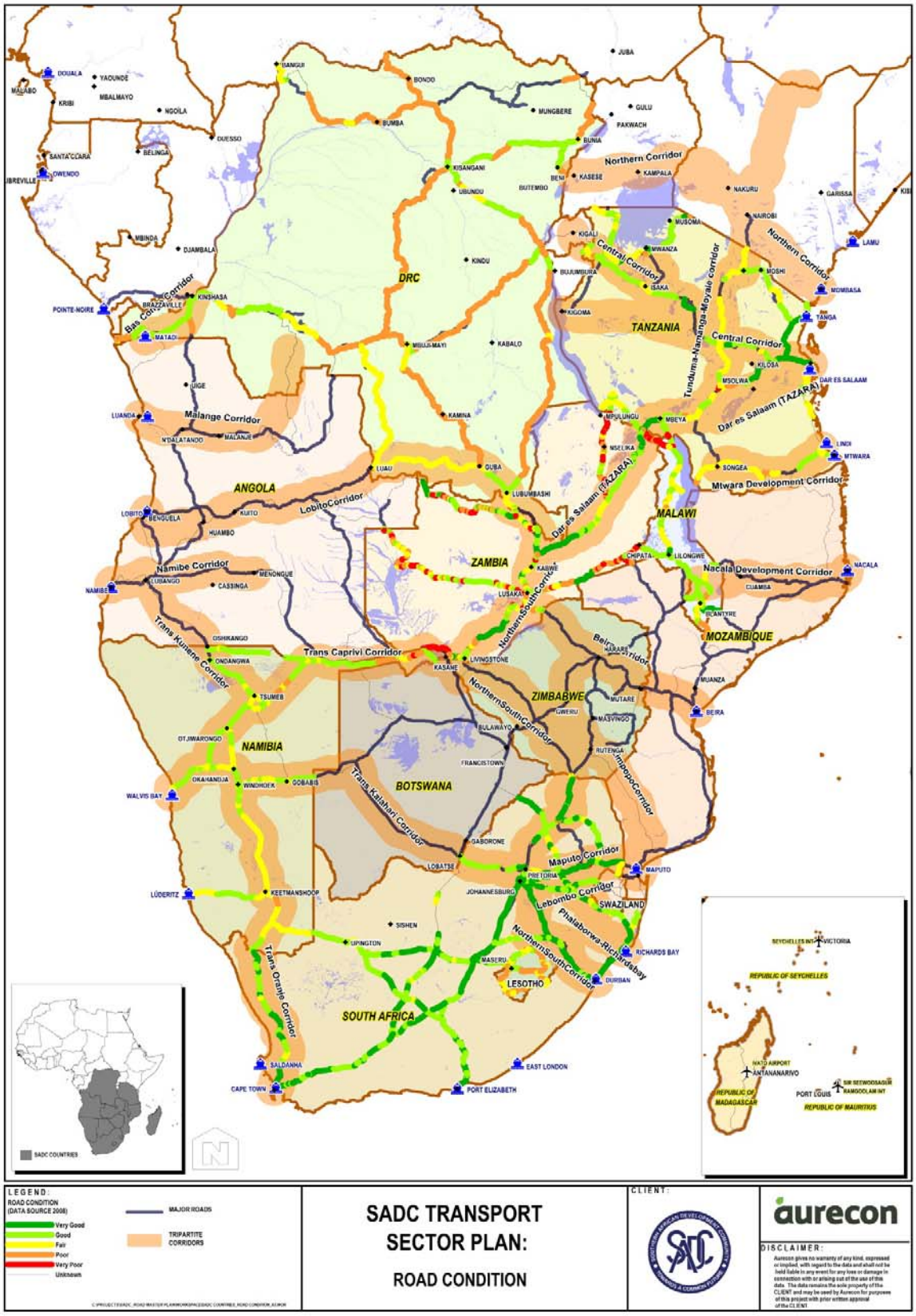


Figure 0-2: Road Conditions

2.1.1.3 Volumes

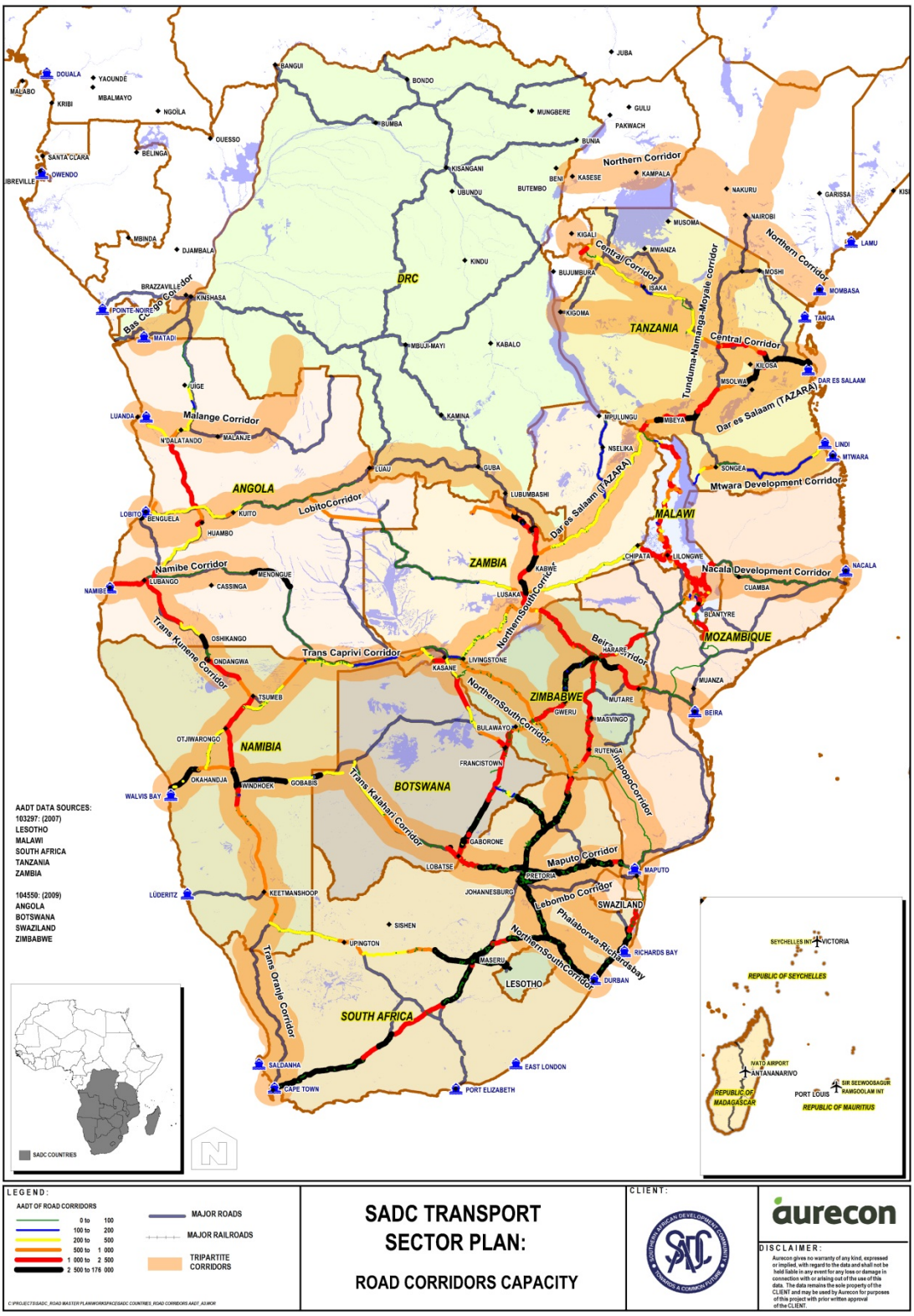


Figure 0-3 indicates the available regional traffic flows (annual average daily traffic - AADT).

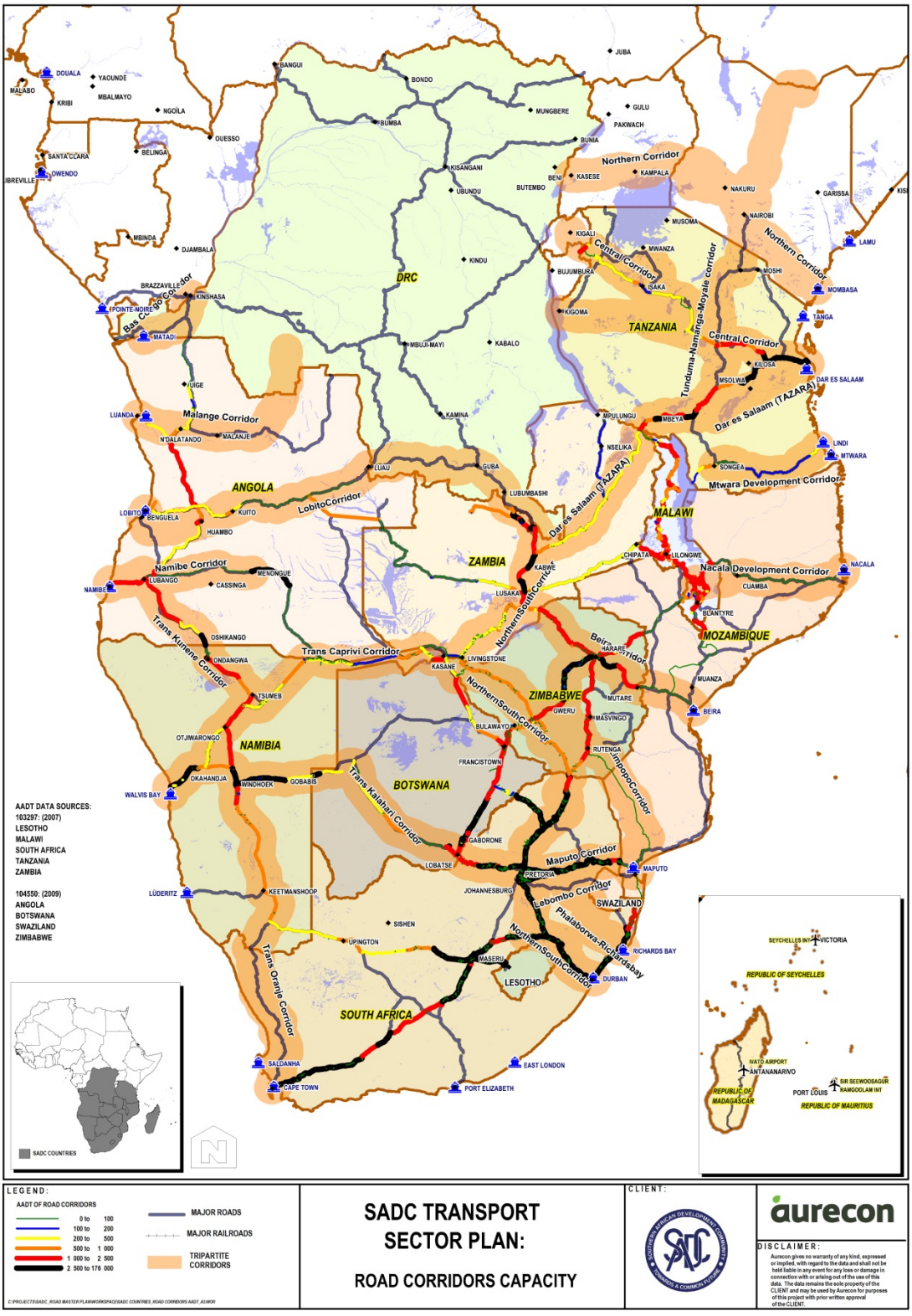


Figure 0-3: Regional Traffic Flows

2.1.1.4 Major Nodes

Major transport nodes include ports and the cities of strategic regional and economic importance. These nodes, as indicated in Figure 0-4, are linked to each other (mostly) by various development corridors.

The important ports in the region are:

- Durban;
- Maputo;
- Beira;
- Dar-es-Salaam;
- Walvis Bay;
- Nacala;
- Benguela;
- Luanda;
- Matadi;
- Lindi;
- Mtwara; and
- Luderitz.

The major cities in the region are:

- Lubumbashi;
- Lilongwe;
- Blantyre;
- Mpulungu;
- Harare;
- Lubango;
- Johannesburg;
- Lusaka;
- Cuito Canavale;
- Kitwe;
- Mongu;
- Kinshasa;
- Bukavu;
- Mzuzu;
- Bloemfontein;
- Cape Town; and
- Maseru.

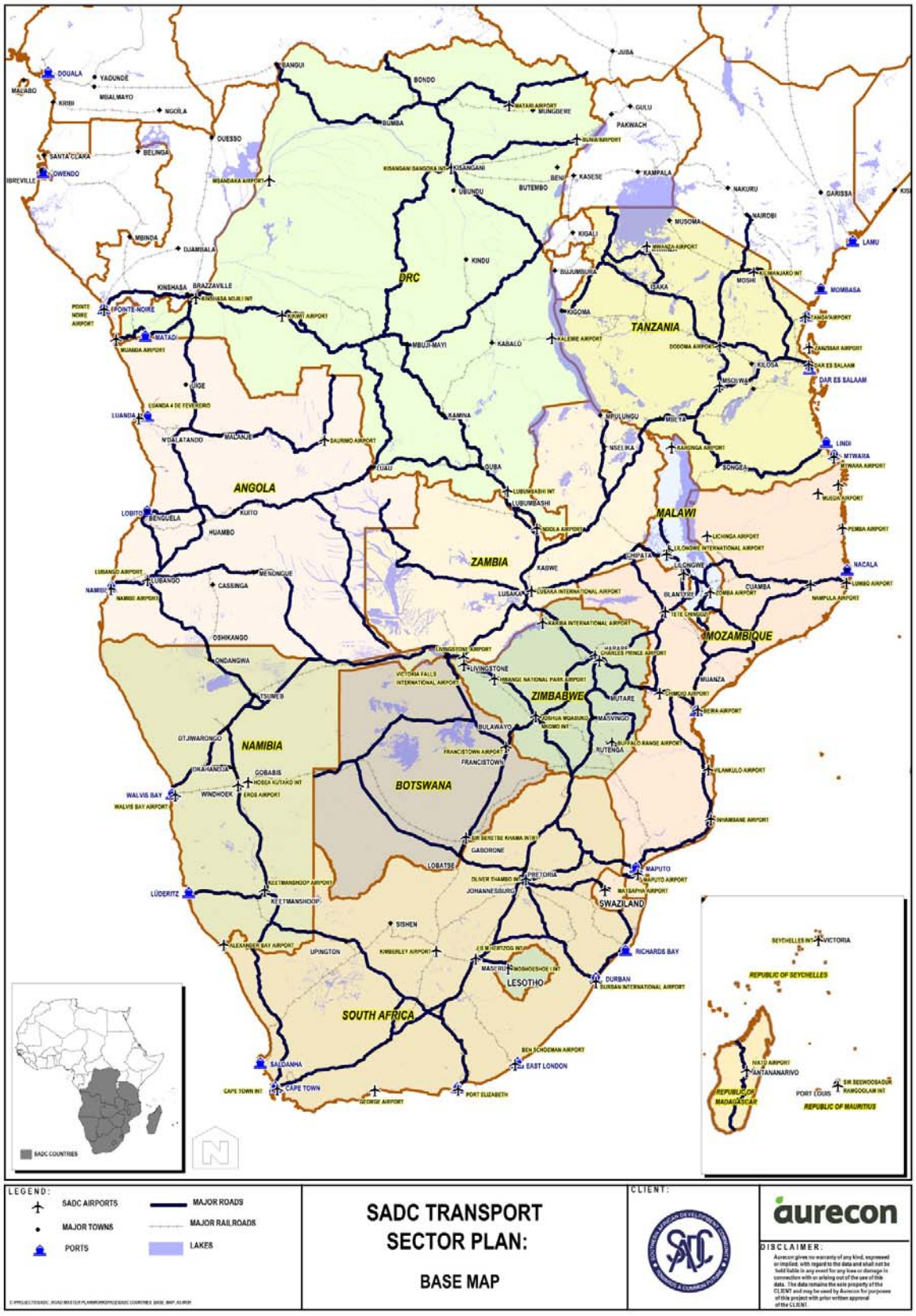


Figure 0-4: Major Nodes Connected by Road

2.1.1.5 Network Discontinuity

Network discontinuity is caused by missing links in the road network. In the RTRN a missing link is defined as either a path/earth road with no all-weather standard or with standard far below the minimum standard for the current traffic flow. Gravel roads are included in the list of missing links, as they are meant to be upgraded to fulfil the requirements of an international road.

The definition of missing links on the SADC corridors is the same as that on the RTRN network, with the addition of complete gaps in the corridors or sections where the road is not defined. Some of the missing links identified in the Revised RIDMP Draft Report in conjunction with SADC officers include:

- On the Namibe Corridor, east from Cuito Cuanavale; and
- On the Maseru-Durban Corridor, connecting the Lesotho border to the main South African road network.

The missing links in SADC identified in the 2003 Trans-African Highways (TAH) study are listed in Table 0-2. The current status of the missing links is not clear.

Table 0-2: Trans-African Highway Missing Links

Country	Section	SADC Corridor	Length (km)	Recommended Action
Angola	Noqui – Mepala		60	Gravel to paved
Angola	Mepala – M'banza Congo		79	New road
Angola	M'banza Congo – Negage		294	New road
Tanzania	Minjingu – Dodoma	None	246	New road
Tanzania	Dodoma – Iringa	None	229	New road
DRC	Likasi – Nguba		120	New road
DRC	Nguba – Kolwezi		65	New road
DRC	Kolwezi – Dilolo		428	New road
Angola	Dilolo – Luena		334	New road
Angola	Luena – Kuito		404	Gravel to paved

2.1.1.6 Capacity

Road capacity throughout the region and all the main corridor routes does not limit heavy vehicle or traffic density, except on some of the busy South African freeways such as the Durban-to-Gauteng toll road section of the North-South Corridor. Road traffic constraints in terms of capacity are:

- In major towns, such as Lusaka, Ndola and Harare, where bypasses have not yet been built;
- In road sections with significant grades and truck volumes, where climbing lanes have not been provided; and
- At border posts where truck parking spaces and coordination among agencies are required to expedite the clearance.

It can be reasonably assumed that the capacity of the route is equivalent to the current throughput for these bottlenecks

Table 0-3 shows the road infrastructure capacities as estimated in the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa (2011). These capacities were determined from projected trade on the roads, expressed in tonnes, which was translated into heavy freight vehicles (HFV) per day on the network.

Table 0-3: Estimated Road Infrastructure Capacity

Roads	Design Capacity (HFV per day)	Current Throughput (HFV per day)	Capacity Constraints
Voi – Moshi – Arusha (Tanzania)	100	17	No constraints
Dar-es-Salaam – Dodoma – Bujumbura	+ 50	8 to 10	Main constraint at border post
Dar-es-Salaam – Isaka – Kigali	+ 50	10 to 12	Main constraint at border post
Dar-es-Salaam – Tunduma – Kapiri	100	70 to 100	Main constraint at border post, but no road congestion
Mtwara –	N/A	N/A	Very little traffic, inter-connectivity is the only constraint due to the poor link to Unity Bridge/Mozambique
Nacala – Malawi	± 20	Less than 5	Not a preferred route yet , but a good road between Nacala and Nampula. An AFDB project has been approved for the construction of a regional highway to Malawi with extension to Zambia
Beira – Tete – Blantyre	100	40 to 50	Main constraint at border post
Beira – Machinpanda – Mutare – Harare	± 40	15 to 20	Main constraints at Machipanda and Forbes Reef border posts
Harare – Tete – Blantyre – Lilongwe		± 40	Main constraint at border post
Maputo – Komatipoort – Nelspruit – Gauteng	+ 200	100	No constraints
Durban – Gauteng	13 000 total vehicles, ± 1 500 HGVs	11 000 total vehicles, 1 100 HGVs	Occasional congestion and high accident rate
Gauteng – Beitbridge – Chirundu – Ndola	± 1 500 HGVs	850 reducing to 200 at Beitbridge and Chirundu	Very high partial traffic flow in South Africa (dual carriageway, four lanes)
Gauteng – Francistown – Kazungula – Livingstone	55	100	Capacity constraints at ferry/border post, poor road north of Nata
Gauteng – Beitbridge - Victoria Falls – Kafue – Lusaka	+ 150	55 to 60	Constraints at Beitbridge and Victoria Falls border posts
Gauteng – Skilpadshek – Mamuno – Windhoek – Walvis Bay	+ 150	70	Congestion outside Pretoria, Johannesburg and sometimes Walvis Bay/Swakopmund, otherwise no road constraints.

Roads	Design Capacity (HFV per day)	Current Throughput (HFV per day)	Capacity Constraints
Walvis Bay – Katima Mulilo – Lusaka – Ndola – Lubumbashi	+ 150	10 to 12	Main constraint is congestion around Lusaka where a bypass is needed, as well as constraints at the Katima Mulilo, Livingstone and Kasumbalesa border posts
Walvis Bay – Angola	± 100	45 plus traffic from Cape Town and Gauteng	No congestion on route, but constraint at Oshikango border post
Lobito – Huambo	N/A	200	
Luanda – Malange	N/A		

Note: Heavy freight vehicles (HFV) per day – 48t to 56t GVM in each direction

2.1.2 Railways: Existing Infrastructure and Networks

2.1.2.1 Network

Many of the regional railway systems in Eastern and Southern Africa are not functioning as they should in virtually all respects, from poor reliability, high accident and failure rates, high costs and low volumes, to financially losses and unsustainable operations. The reasons for this have been debated and studied for many years, and are now well understood. The initial loss of volumes and income from road transport deregulation, followed by lack of investment and deferred maintenance, lead to a decline in reliability and further traffic losses.

Railways will all have to substantially increase their freight volumes in order to become viable, as there is simply not enough traffic to go around. Building new lines and linkages will not alleviate the situation, unless linked to specific contracted anchor projects (such as Moatize coal). Prior to the 1980's, railways were partially protected in respect of volumes and tariffs charged. This is no longer the case, unless there is market interference through governments. In most cases, there is not enough bulk traffic to sustain the railways, and it will have to win back both bulk and intermodal traffic from road transport. This will require much improved reliability and associated investment.

The Programme for Infrastructure Development in Africa (PIDA) Study states that Southern Africa's rail network extends with a homogenous gauge (cape) across considerable distances through twelve different countries (Lesotho has a limited railway compared to other non-island SADC countries). This situation gives the regional railway system the best leverage to compete with other transport modes. In reality, however, existing cross-border services are limited to only a few corridors, and railways have deteriorated in recent years due to a lack of investment, disruptions and damages caused by armed conflicts.

Of the 15 SADC countries, only Lesotho, Mauritius and the Seychelles do not have railways. The SADC railways are closely linked to the ports, as shown in Figure 0-5 below, which also indicates the SADC mainland rail network.

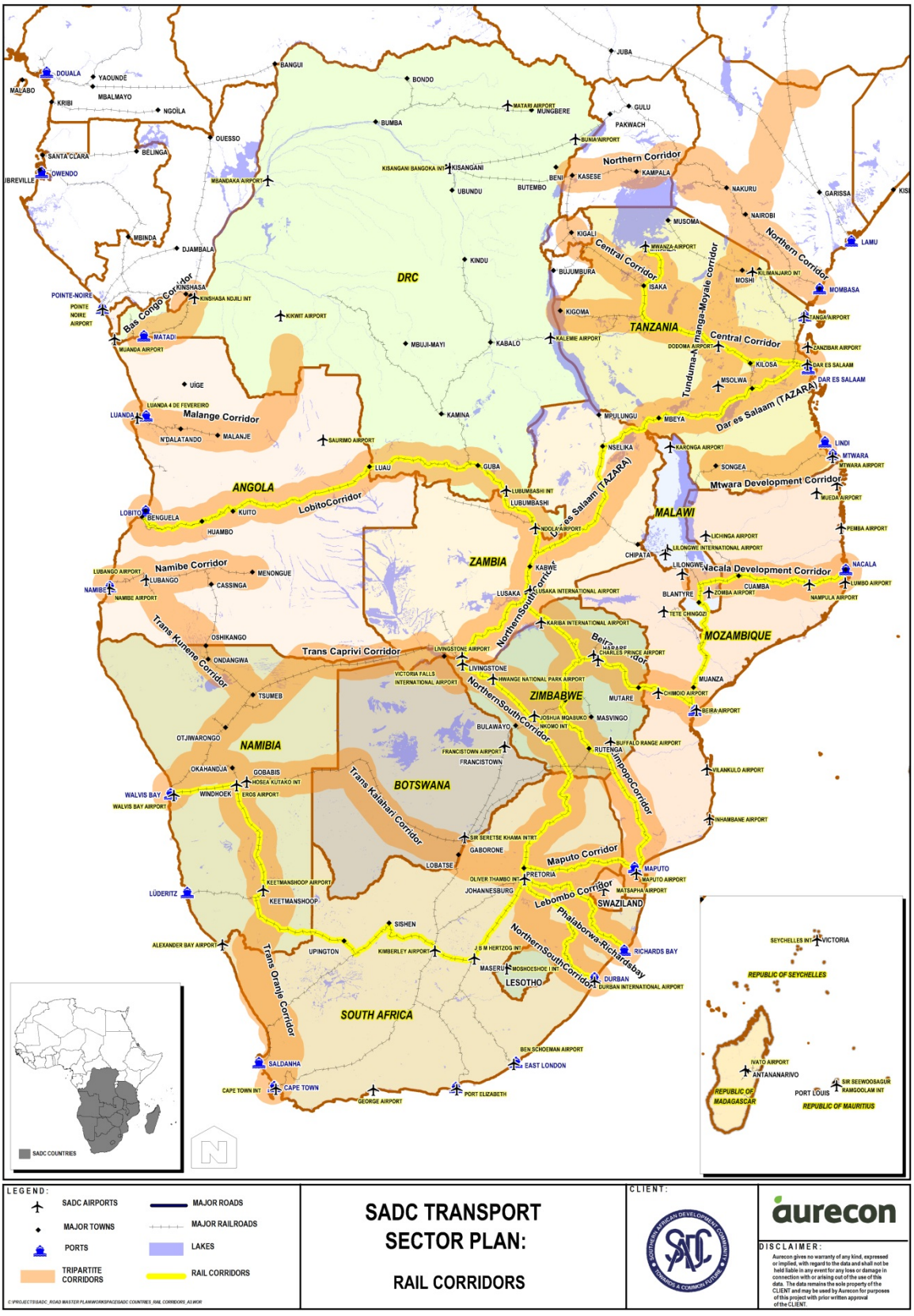


Figure 0-5: SADC Mainland Rail Network

2.1.2.2 Rail Condition

The current situation for several of the regional railway systems is that the traffic volumes and income has fallen below that required for sustainable operations. The income generated is first spent on salaries and fuel, with inadequate funds left over for maintenance and repair of both infrastructure and equipment, as shown in t he budgets and performance indicators. The railways thus continue to decline and lose customers, and are unable to attract the necessary funding required to return to competitive levels of reliability.

According to Gopa Decon International (Now Intec), the condition of railways has generally deteriorated because of the following reasons:

- There has been a lack of maintenance and investment. As a result, most of the railways are very run-down and require substantial rehabilitation of both infrastructure and rolling stock;
- During wars and civil disturbances railways are often one of the first targets for destruction and this has affected railways either directly (e.g. Angola and Mozambique) or indirectly by separating inland railways from their ports (e.g. Malawi); and
- Theft of operating equipment has disabled services and tied up available finance in the replacement thereof.

Figure **0-6** indicates the available current railway network condition in SADC.

Legend

- Rail Track Assessment
- Good
- Fair
- Poor
- Not in use

Note

The condition of the operational track on the South African TFR is good, relative to the other regional systems – safety, speed restrictions and permissible
Train lengths are the main criteria. On regional systems outside TFR and the new Sena coal line, the train lengths are limited to between 20 and 40 wagons.

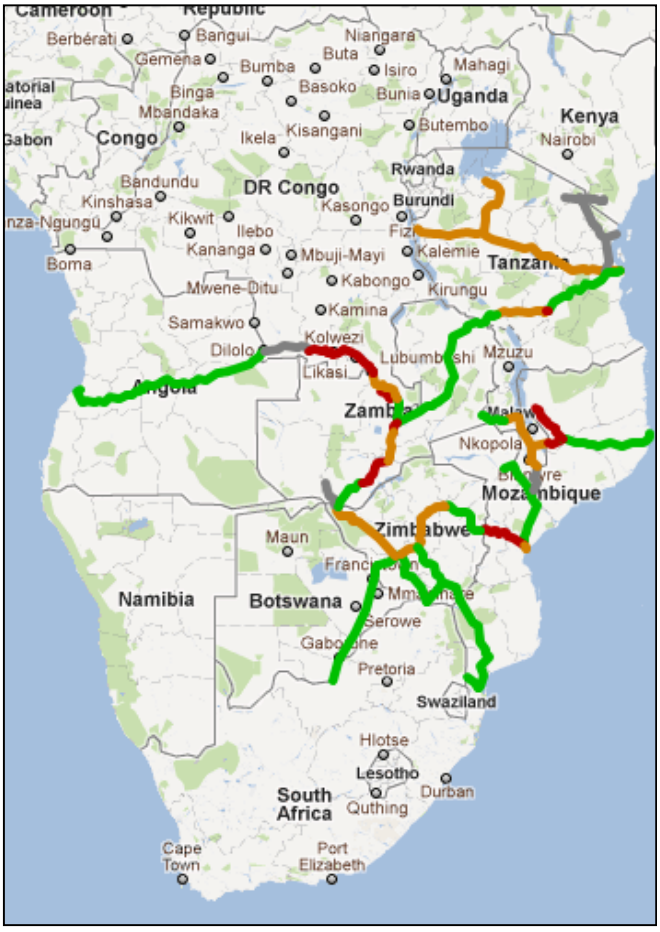


Figure 0-6: Regional Rail and Indicative Condition (excluding RSA TFR)
Source: www.trademarksa.org
Note: Not all railways in each Member State are indicated on this map

2.1.2.3 Capacity

All the regional railway systems are operating well below their original design capacities, but are currently suffering severe capacity constraints because of poor track condition and poor locomotive and wagon availability (many units stabled). In other words, the railway systems are not able to handle more traffic without substantial investment in the repair and upgrading of track and equipment, and the provision of working capital. Figure 0-7 indicates the railway line capacities in SADC, while

Table 0-4 shows the railway infrastructure capacity as estimated in the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa.

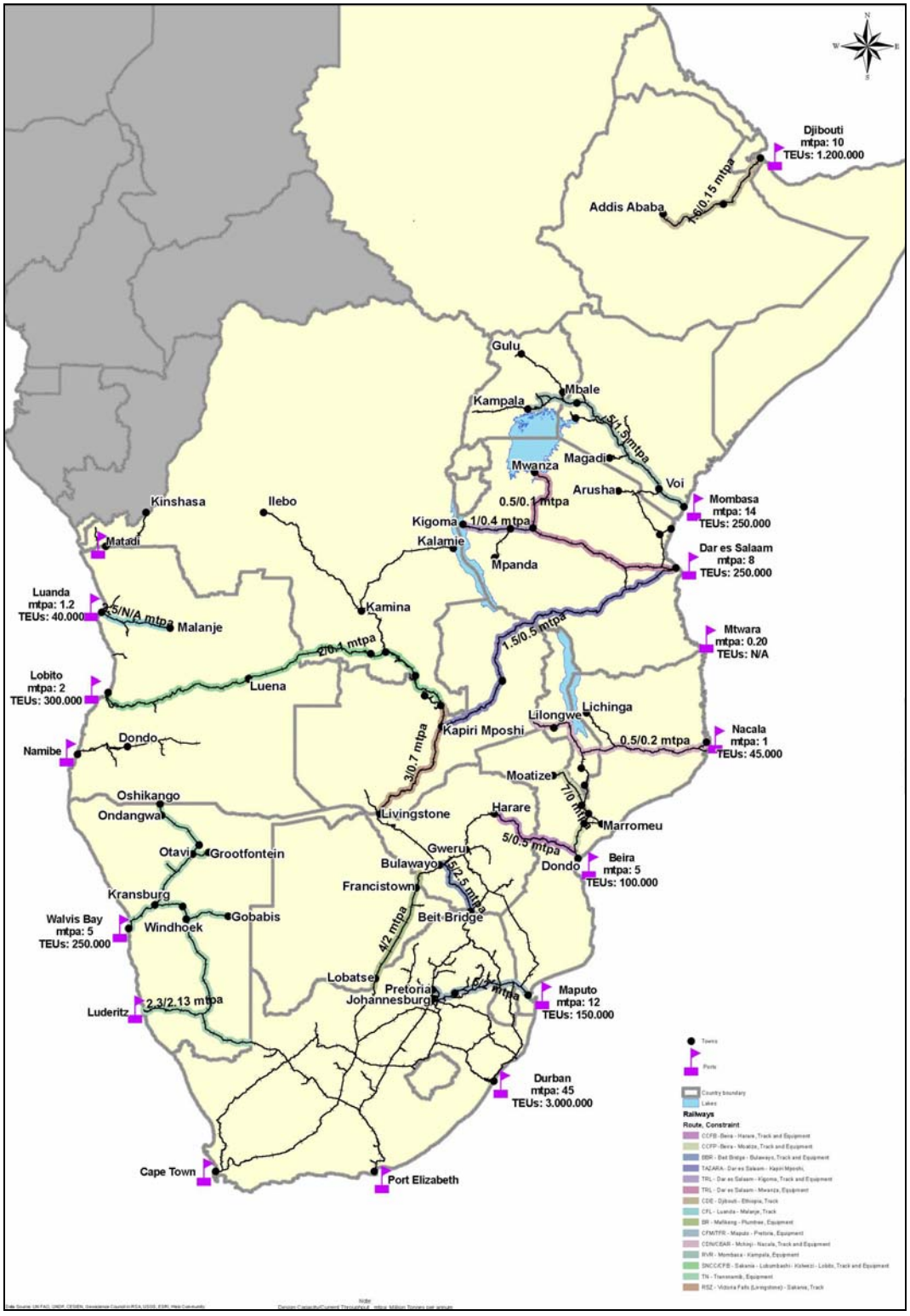


Figure 0-7: Railway Capacities – SADC

Source: Gearsing, B. 2010. Sub-Saharan Rail Assessment

Table 0-4: Estimated Rail Infrastructure Capacity

Railway	Design Capacity	Current Throughput	Main Capacity Constraints
TRL/TRC – Mwanza	0.5 mpta	0.1 mpta	Collapsed marine services on Lake Victoria
Trains per day	2	0.5	Virtually no traffic
TRL/TRC – Kigoma	1 mpta	0.4 mpta	Poor track condition, poor equipment, lack of capital and working funds
Trains per day	2	1.5	
TAZARA	1.5 mpta	0.5 mpta	Equipment availability and lack of working capital. Previous maximum of 1.2 mpta, equivalent to assessed financial break even
Trains per day	3 to 5	1 to 2	Need an investment amounting to ± US$200 million to break even
CDN/CEAR Nacala	0.5 mpta – new section in Mozambique: 5 mpta track capacity	0.2 mpta	Severe capacity constraint on very poor 77 km section and poor equipment availability
Trains per day	± 5	Less than 1	
CCFB Beira – Malawi/Moatize	7 mpta	0	Railway line refurbished to handle 7 mpta, 4 -5 trains per day. Coal traffic expected in 2011, further upgrade to 12 mpta will require US$150 million. Link to Malawi not yet operational
Trains per day	5	Less than 1	Expect 5 trains, mainly coal, per day after 2011/2012
CCFB – Harare	5 mpta	0.5 mpta	Poor track condition and equipment availability, low demand. Require investment
Trains per day	6 to 8	1 to 2	
CFM – Maputo	6 mpta	2 mpta	Lack of wagons and locomotives. 30 wagon trains, refurbished track
Trains per day	6	3	Need longer trains, should aim for 40 wagon
NRZ – BBR	15 mpta	1 mpta on NS (mostly BBR), 2.5 mpta on whole NRZ	Poor track and equipment. US$150 million needed for NRZ viability. 385 km is private BBR which has marketing rights on the Bulawayo – Victoria Falls line, i.e., all NS transit traffic is handled by BBR/NLPI. BBR is said to be profitable, but no financials are available
Trains per day	10 to 15	2 to 3	
RSZ Zambia	± 3 mpta	Est. 0.7 mpta	Poor track condition. Concession planned for +3 mpta. The previous maximum was up to 5 mpta, while only 2 mpta prior to concession
Trains per day	6 to 8	1	Track rehabilitation required, as well as improved locomotive availability
SNCC DRC	2 mpta	± 0.1 mpta	Track and equipment very poor, WB US$250 million funding considered
Trains per day	4	Less than 1	
BR Botswana	4 mpta	2 mpta	Excellent track, however, locomotive and

Railway	Design Capacity	Current Throughput	Main Capacity Constraints
			equipment rehabilitation is required
Trains per day	6 to 8	2 to 3	One fuel train per day plus cement, grain and soda ash trains
Trans-Namib	2 million	1.8 million	Number of locomotives and wagons, but they have been increasing each year. The upgrading of the track is contracted for the Kranzburg – Tsumeb section where needed. Very little traffic via SA
Trains per day			
Benguela Angola	2.5 mpta	N/A	Refurbished, operational up to Huambo to DRC border by 2011
Trains per day	5	Less than 1	
Lobito Angola	2.5 mpta	N/A	Refurbished, operational up to Malange
Trains per day	5	2	

Note: *Trains per day is defined as being in each direction = cross-border freight or transit traffic. Train length is rarely longer than 30 wagons (1 200t fully loaded), often only 20 wagons because of locomotive and track limitations, and sometimes as little as 10 wagons (SNCC and some sections in Uganda)*

Note: *The South African rail system (TFR) is not presented here. It is a much larger and viable system which carries more than 200 mpta of freight, several times more than the combined rail volumes of the other Eastern and Southern African systems. Most of the traffic is carried on profitable, bulk, heavy haul lines, but sections of the general freight business, including intermodal (container) services, have traditionally struggled to be profitable. The main sections of track in South Africa, which is relevant to the regional rail services, are the lines linking Gauteng to Durban, Maputo, Beitbridge and Gaborone. All the lines are operating below capacity, with the Durban line carrying more than 45 trains per day in each direction. No constraints are expected for many years to come (double electrified track). TFR/Transnet has commenced a process of concessioning their low-density branch lines, which they are unable to operate profitably.*

2.1.2.4 Network Discontinuity

Although the regional rail network is quite extensive and flexible, the challenges towards the provision of network continuity are the issues of gauge and method of locomotive propulsion. Regional coherence and consent around these issues are challenging, as each country has a legacy of railway infrastructure (inherited or otherwise) that has a certain gauge and that is suitable for certain types of locomotive propulsion.

As previously stated in this document, the challenge in making the construction of new railway lines and upgrade existing railway lines viable, is to increase the amount of freight making use of rail. Continuity and inter-regional connectivity are essential components of supporting the increased viability of rail as a means of conveying freight.

Another obstacle to continuity is the deterioration, and in many cases outright collapse, of railway infrastructure, rendering whole corridors redundant as a result.

2.1.3 Sea ports: Existing Infrastructure and Networks

2.1.3.1 Network

Table 0-5 lists the 19 ports that have been identified as most significant in the SADC region. The locations of most of these ports are shown in Figure 0-4.

Table 0-5: SADC Regional Ports

Regional Port	Country	SADC Corridor	SARA Corridor	World Port Source Category
Dar-es-Salaam	Tanzania	Dar-es-Salaam central	Central, TAZARA	Large seaport
Mtwara	Tanzania	Mtwara		Small pier, jetty or wharf
Maputo	Mozambique	Maputo, Limpopo	Limpopo, Ressano, Carcia, Goba	Medium seaport
Beira	Mozambique	Beira	Beira	Medium seaport
Nacala	Mozambique	Nacala	Nacala	Small seaport
Durban	South Africa	North-South, Maseru, Durban	Plumtree, Beitbridge	Large seaport
Richards Bay	South Africa		Richards Bay	Medium seaport
Cape Town	South Africa	Trans-Orange		Medium seaport
Walvis Bay	Namibia	Trans-Caprivi, Trans-Cunene, Trans-Kalahari, Trans-Orange	Namibian	Small seaport
Luderitz	Namibia	Trans-Orange		Small harbour
Lobito	Angola	Lobito		Medium deepwater seaport
Luanda	Angola	Malange		Medium deepwater seaport
Namibe	Angola	Namibe		Small harbour
Matadi/Boma	DRC	Bas, Congo		Small river port
Port Elizabeth	South Africa	None		Medium seaport
Toamasina	Madagascar	None		Medium seaport
Port Louis	Mauritius	None		Medium seaport
Victoria	Seychelles	None		Small seaport
Saldanha	South Africa	None		Large jetty

Note: The category accorded by the World Port Source is shown to give a preliminary indication of the scale of each port.

The port network is faced by a number of challenges, namely:

- **Poor modal interface management – port/road and port/rail:** Large numbers of road trucks in the port terminal area often interfere with port operations and harm performance. Rail improvements could reduce the number of trucks entering the port;
- **Poor materials handling capabilities and infrastructure:** Many ports are impeded by insufficient materials handling capabilities and infrastructure, irrespective of the apparent capacity and suitability to accommodate certain berths and drafts;
- **Customs and trade challenges:** Freight and other goods are often held up for periods as long as two months, rendering many logistic chains ineffective and running at a loss.
- **Poor location and layout:** Most of the ports are surrounded by densely populated and highly industrialised zones, with little or no room for the necessary expansion to handle high port volumes;
- **Poor access:** Road access to the ports is often through highly developed business, industrial and residential areas subject to severe traffic congestion. Railway access to container terminals is in most cases inherited and modified from the old break bulk rail system. Ideally,

both road and rail should have dedicated and unimpeded access to the port terminals from main transport corridors and economic centres; and

- **Insufficient berths and drafts:** The capacity of ports, especially under conditions where demand is close to (or exceeds) capacity, is a direct function of the number of available berths, the berth size and the allowable draft of such berths.

2.1.3.2 Port Condition

A number of ports are in poor condition, most notably Beira and Matadi.

2.1.3.3 Major Nodes

The major port nodes are:

- Nacala;
- Beira;
- Maputo;
- Durban;
- Walvis Bay; and
- Luanda.

2.1.3.4 Capacity

Most of the SADC corridor ports are currently operating close to their capacity. Table 0-6 shows the port infrastructure capacity as estimated in the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa. Figure 0-8 indicates the capacities of the major regional ports.

Table 0-6: Estimated Port Infrastructure Capacity

Port	Design Capacity	Current Throughput	Main Capacity Constraint
Dar-es-Salaam, total	8 mpta	7.4 mpta	Including 2.1 mpta POL
TEU	250 000	375 000	Containers diverted to general cargo quays and ICDs
Mtwara, total	0.20 mpta	0.09 mpta	Previous max throughput 200 000 mpta
TEU	N/A	7 100	Mobile cranes and ships gear, low demand
Nacala, total	1 mpta	0.7 mpta	Total of four berths
TEU	45 000	45 000	Ships gear and mobile cranes
Beira, total	5 mpta	2.8 mpta	Depth constraint, smaller vessels, feeder to Maputo and Durban
TEU	100 000	45 000	Two gantry cranes
Maputo, total	12 mpta	8 mpta	Including 4 mpta at Matola
TEU	150 000	100 000	Undergoing expansion
Durban, total	45 mpta	45 mpta	Excluding POL – undergoing phased expansion

TEU	3 million	2.8 million	Nearing capacity, diversion already taking place to Port Elizabeth/Coega, Richards Bay does not have a container terminal (no final decision yet), but Maputo is expanding
Walvis Bay, total	+5 mpta	5 mpta	Port is engaged in a major expansion plan designed to raise capacity. Current volumes are 2007 – 2008.
TEU	250 000	250 000	New terminal being built – up to 500 000 TEUs pa
Luanda, total	2 mpta	± 2 mpta	Remains very congested, diversion via Walvis Bay. 80% imports
TEU	300 000	300 000	Recently expanded by APM
Lobito, total	1.2 mpta	1.2mpta	Previous maximum of 2.5 mpta – mainly bulk minerals. 90% imports
TEU	40 000	40 000	Ships gear and mobile cranes

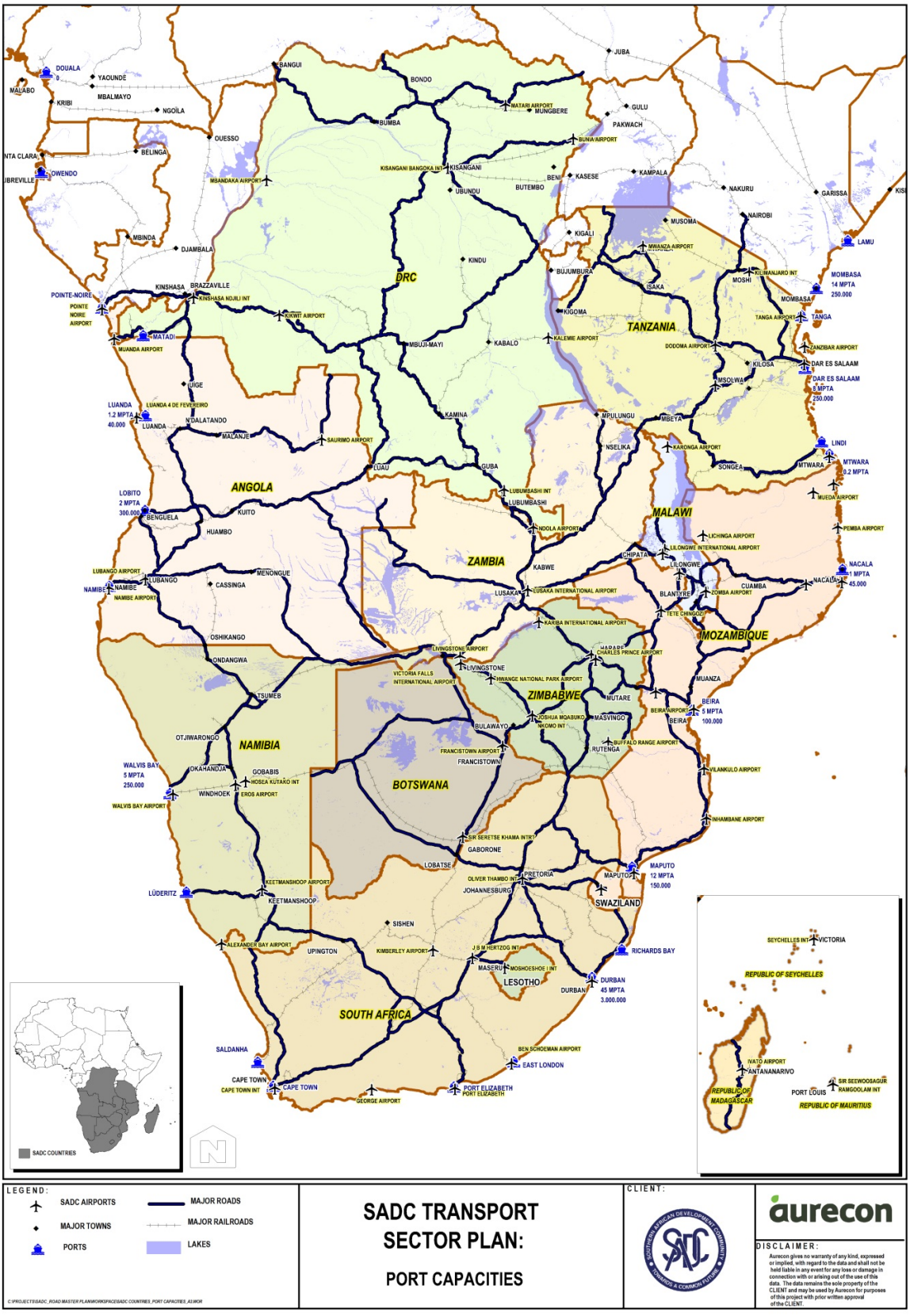


Figure 0-8: Major Regional Port Capacities

2.1.4 Air Transport: Existing Infrastructure and Networks

2.1.4.1 Network

There are numerous airports and airstrips in the SADC region. Oliver Tambo Airport in Ekurhuleni (next to Johannesburg) is by far the largest airport in the region. Not only is it the major hub for intercontinental flights into the region, but it also acts as regional hub, with most air travel between SADC capitals involving a transfer in Johannesburg.

As with all aviation networks, major regional airports serve as interconnecting hubs from which the surrounding region is served.

2.1.4.2 Condition

An indication of the physical conditions of projects at the region's airports can be summarised as follows:

- **Angola:** The main problems are inadequate airport runways and terminals, as well as deficient navigation and traffic control equipment;
- **Botswana:** Significant investment has been undertaken to modernise airports;
- **DRC:** Airports vary, with facilities ranging from fair to poor;
- **Madagascar:** The international airport is being upgraded;
- **Malawi:** Lilongwe is the premier airport, but requires security equipment. At Blantyre the runway need to be rehabilitated, while the airport also requires air navigation, security and fire equipment;
- **Mauritius:** One modern airport located in Plaisance in the south of the island;
- **Mozambique:** Maputo is the most important airport and is being modernised with new passenger and cargo terminals;
- **Namibia:** Airports are currently being upgraded;
- **Seychelles:** Airport is in good condition;
- **South Africa:** Airports are in excellent condition;
- **Tanzania:** Facilities at Dar-es-Salaam are considered inadequate, and a development and expansion plan is underway; and
- **Zambia:** The main airports are Lusaka, Ndola, Livingstone and Mfuwe. Modernisation is required at Ndola.

Development plans were prepared for the airports, but have been out on halt because of a lack of funding.

2.1.4.3 Major Nodes

Oliver Tambo Airport in Johannesburg is the major node. It acts as an inter-continental hub for flights into the region. It is also a regional hub, with most air travel between SADC capitals involving transfer in Johannesburg.

2.1.4.4 Capacity

Traffic is very concentrated in the few airport hubs in the region. The number of airports is stable, and enough runways exist to handle traffic, with better scheduling and minor investment in parallel taxiways and some terminal facilities required.

2.1.5 Inland Waterways and Inland Ports: Existing Infrastructure and Networks

2.1.5.1 Inland Waterways

There are no inland waterways formally linked to the SADC corridors, although the Mtwara Corridor crosses Lake Malawi.

The services on Lake Malawi have declined, partly due to road development along its shore and changing political and economic circumstances affecting trade flows. The services on Lake Malawi are mainly focused on public sector obligations to remote communities. Revival will likely depend on economic development in northern Mozambique and southern Tanzania, and in particular the development of major anchor projects within the Mtwara Corridor.

2.1.5.2 Inland Ports

Inland depots are used worldwide to assist in the transit process at trans-shipment points. There are very few operational terminals in the SADC region, with a number of terminals are planned. These are critical interventions to assist land-locked countries with trade facilitation.

2.1.5.3 Summary of Main Concerns per Mode

The table below provides a summary of the main concerns identified in the previous sections. These issues are listed per mode.

Table 0-7: Summary of Main Concerns per Mode

Transport Network	**Main Concerns**
Road	Condition: • Roads not maintained due to high cost of maintenance • Poor condition due to damages of conflict and neglect in the DRC and Angola Continuity: • Missing links in Angola, Tanzania and the DRC Bottlenecks: • Occasional congestion between Gauteng and Durban • Delays at cities where bypasses have not yet been built (Lusaka, Ndola and Harare) • Capacity constraints on roads with significant grades where climbing lanes have not been provided • Delays at border posts – e.g. congestion at border posts between South Africa and Lesotho
Railways	Condition: • Lack of maintenance and investment • Damage as result of conflict • Theft of operating equipment Capacity: • Poor track condition (Kigoma, Nacala, Harare, National Railways of Zimbabwe, Beitbridge-Bulawayo Railway, Zambia, DRC) • Poor locomotive and wagon availability (Kigoma, Harare, Maputo, National Railways of Zimbabwe, Beitbridge-Bulawayo Railway, DRC, Trans-Namib, Botswana) • Collapsed marine services on Lake Victoria Discontinuity as a result of railway condition
Sea ports	• Poor modal interface management – port/road and port/rail • Poor location and layout

Transport Network	Main Concerns
	• Poor access • Mobile cranes and shops gear (Mtwara, Lobito) • Depth constraints (Beira) • Congested (Luanda) • Poor condition (Matadi and Beira)
Air transport	Condition: • Inadequate runways (Angola, Blantyre, Zimbabwe, Lesotho) • Inadequate terminals (Angola, Dar-es-Salaam, Ndola, Zimbabwe)
Inland waterways and inland ports	• Low volumes • Not many in operation

2.2 Enabling Environment and Institutional Arrangements

The enabling environment and institutional arrangements of the transport sector includes regional policy, regulatory and legal frameworks for transport which covers:

- A description of the existing policy, regulatory and legislative environment in the SADC region with reference to the transport sector;
- A definition of the long-term challenges for SADC regional transport cooperation and development;
- Strategic priorities for regional transport development through cooperation; and
- An indication of further policy and institutional reforms needed to promote regional traffic and improve the management and maintenance of regional transport corridors.

Each major transport sub-sector will be discussed separately. These sub-sectors are:

- Roads;
- Road transport (which, although impacting on the roads domain, is an area planned and carried out quite independent of the planning and delivery of roads);
- Railways;
- Ports, maritime and inland waterway transport;
- Aviation; and
- Topics affecting the transport sector, but not specific to a certain mode.

For each of the above sub-sectors an analysis was done by looking at:

- **Integration targets:** Overview of the expected nature and extent of regional integration, based on the understanding that the region should increase the development of cooperation opportunities at the stage 3 integration level. These targets are informed by international trends and practices and the integration potential in SADC;
- **Policy and planning:** A review of the extent to which policy and planning in the sub-sector has been elevated to the regional level, and how the sub-sector is governed at national level;
- **Standards and oversight:** For infrastructure and services to be properly integrated, there must be common standards for infrastructure and operations (including vehicles and operators). Many areas of harmonising standards were identified in the SADC Protocol, and a brief assessment is made of progress and further focus areas;

- **Regional system:** The 'top' layers of transport infrastructure and services in the region are those that fulfil a regional, as opposed to a national or local, transport role. The regional layer is made up of corridors, i.e. those routes that link major centres in a region. The extent to which such a regional system is identified and put into operation is reviewed and described;
- **Delivery:** The role of regional bodies in the delivery and/or coordination of infrastructure or transport services is assessed. With regard to infrastructure, these bodies represent the national delivery agencies (e.g. roads authorities), and private sector service providers when it comes to transport services;
- **Funding:** Regional transport services are expected to be self-funding in principle. Regional infrastructure, however, is funded on a spectrum of public to private sources. It is expected that regional infrastructure would become increasingly self-funding (through user charges) not only to enhance the financial self-sustainability thereof, but also for other purposes such as equitable inter-model competition; and
- **Diagnostic:** Following the requirements of the TOR, each chapter is concluded with a summary or checklist of challenges, priorities for cooperation and targets for further policy and institutional reforms.

The aspects addressed for each sub-sector took into account international and regional policies, standards, guidelines and plans, as well as an indication of each SADC Member State's status with regards to certain aspects.

The concept "commercial" or "commercialisation" is often used in this diagnostic and has the same meaning as applied in the Protocol. For example, Article 2.4 refers to "restructured state enterprises and public utilities which are financially independent and commercially viable", and Article 4.2 refers to "introducing commercial management practices to foster institutional, economic and technical efficiency". The concept therefore implies knowing the financial cost of an activity, actively managing costs and achieving an acceptable balance between cost to the user and the level of service. At a regional level, there are very few (if any) transport infrastructure and services which should not, in principle, be commercially viable.

2.2.1 Road Infrastructure

2.2.1.1 Regional Integration Target

There should be a commonly defined regional road network that provides efficient and fully integrated infrastructure and operations. Such a network should provide access to at least the major centres of population and economic activity, as well as access between ports of entry and land-locked Member States. The network should be provided in a manner that minimises total transport costs by adopting appropriate, cost-effective standards and commercialised management practices, and by ensuring self-sustaining funding sources for routine and periodic road maintenance at the least. The attainment of this goal requires the monitoring of coordination and implementation by a central institution.

2.2.1.2 Regional Roads Policy and Planning

The Protocol (Article 4.2) foresees a harmonised regional road infrastructure policy. A formal policy has not yet been fully developed at regional level, although COMESA has prepared a Transport Policy and Strategy (2010) under the Tripartite Initiative (SADC, COMESA and EAC), which has since been endorsed by EAC. SADC was an observer during the development of this Policy.

One of the key sub-regional organisations involved in regional roads policy and planning is the Association of Southern African National Roads Agencies (ASANRA) – a body that was established in

line with the Protocol and is governed by a board that comprises the chief executives from each of the SADC roads agencies. The organisation's main goal is to enhance regional policy coordination and road transport system integration in order to improve inter-regional road transport efficiency and lower transport costs. The organisation's role includes advising SADC ministers on regional road policy, and in turn, the SADC ministers of transport are tasked with advising the Summit of Heads of State on matters of overall policy and development, including those pertaining to the roads sector.

A number of technical committees have been established under SADC, including the Road Infrastructure Technical Committee, which is tasked with investigating the extent of regional policy implementation by Member States.

A number of corridor management committees (CMCs) have also been established in line with Article 4 of the SADC Protocol on Transport, Communications and Meteorology, and have been instrumental in facilitating dialogue between corridor stakeholders and harmonising procedures and documentation used in transport and transit operations along a corridor. Examples of the CMC's include:

- **Central Corridor:** In 2006, Tanzania, Uganda, Rwanda, Burundi and the DRC signed a multilateral agreement to form the Central Corridor Transit Transport Facilitation Agency (CCTTFA);
- **Dar-es-Salaam Corridor:** A constitution to establish the Dar-es-Salaam Corridor Coordinating Committee was signed in October 2003 by stakeholders from Malawi and Tanzania;
- **Walvis Bay Corridor:** The general corridor institution is the Walvis Bay Corridor Group (WBCG), while only one institution, the Trans-Kalahari Corridor Management Committee, has been established for one of the three arms of the corridor; and
- **Maputo Corridor:** In early 2004, the Maputo Corridor Logistics Initiative (MCLI) was launched as a public-private sector partnership.

One of the challenges faced by the corridor management groups is the fact that different corridor performance systems are being applied, leading to the non-comparability of data and results.

2.2.1.3 Regional Roads System

Article 4.2 of the Protocol stipulates that Member States must develop a harmonised regional road infrastructure policy. Of particular relevance to the regional infrastructure in the roads sector is the Regional Trunk Road Network (RTRN). Substantial progress has been made in terms of defining and numbering the RTRN as envisaged in the Protocol. In this regard, ASANRA commissioned a study in 2007 to review the RTRN with inclusion of the DRC.

SADC now has a commonly defined, integrated and route numbered regional road network, which can provide a sound basis for future planning and management. To this end, a Guideline for the Harmonisation of Conditional Reporting of the SADC RTRN has been developed under the auspices of ASANRA, and there are plans for developing a GIS-based regional map which will provide a variety of performance road usage parameters such as road condition, annual average daily traffic volumes, etc.

SADC is in the process of developing a regional weighbridge plan, which will include the sitting of weighbridges and appropriate operating arrangements.

2.2.1.4 Roads Standards

SATCC design standards and specifications for roads and bridges were developed and adopted some time ago, and are annexed to the SADC Protocol. In addition, SADC has overseen the following efforts aimed at harmonising road standards:

- SADC Specification for Road and Bridge Works (now translated into both French and Portuguese);
- SADC Guideline on Low-volume, Sealed Roads;
- SADC Geometric Design Standards;
- SADC Pavement Design Manual; and
- SADC road traffic signs, markings and signals.

The extent of compliance with the harmonised roads standards needs to be ascertained as a basis for reporting on the status of road infrastructure policy implementation.

Other standards planned for development under the auspices of ASANRA include:

- Guidelines for the Use of in-situ recycling for the upgrading and rehabilitation of roads in SADC;
- Harmonised materials laboratory and field testing manuals for the SADC region;
- Infrastructure planning and design;
- Soil and materials testing; and
- Construction contract documentation.

Feedback from the SADC Task Force on Road Transport Liberalisation mentions that there is a need to re-evaluate the coordination of road standards to isolate the issues that are really in need of harmonisation, and that the coordination of road standards should be handled by a technical committee with support and coordination by the SADC Secretariat.

2.2.1.5 Roads Delivery

ASANRA is not an executing (planning and development) entity in the way national roads authorities are. These national bodies therefore remain responsible for the delivery of the national components of the regional roads network.

Article 4.4 of the Protocol refers to the establishment of autonomous, accountable national roads authorities. Various countries have independent roads agencies as indicated in Table 0-8 below.

Table 0-8: Establishment of National Roads Agencies

Country	Roads Agency
Angola	None, the Angolan Road Agency (INEA) is in fact a roads department
Botswana	None, only the roads department under the Ministry of Works and Transport
DRC	None, falls under the Ministry of Public Works and Infrastructure
Lesotho	Yes, the recent creation of the Roads Directorate, which includes the merger of the Department of Rural Roads and the Roads Branch, entails a transition from a government institution to a semi-private sector oriented organisation
Madagascar	None
Malawi	Yes , the Roads Authority was created in 2005 though the Roads Authority Act of 2005 after separating the Road Fund from the National Roads Authority (NRA), which was created in 1997
Mauritius	None

Country	Roads Agency
Mozambique	Yes , the National Roads Agency (ANE) was created in 1999
Namibia	Yes, the Roads Authority (RA) was established in terms of the Roads Authority Act, No. 17 of 1999
Seychelles	None
South Africa	Yes, the South African National Roads Agency Limited (SANRAL) was established in 1998 in accordance with the National Roads Act of 1998, and is an independent, statutory company
Swaziland	None , the Roads Department is under jurisdiction of the Ministry of Public Works and Transport. Institutional reform is in the process of being implemented
Tanzania	Yes , the national roads agency (TANROADS) was established under section 3(1) of the Executive Agencies Act of 1997
Zambia	Yes , the Road Development Agency (RDA) was established by the Public Roads Act of 2002
Zimbabwe	Yes , the Zimbabwe National Road Administration (ZINARA) was established in terms of the Roads Act of 2001

A recently study, conducted by SSATP, on commercialised road management capability in a selection of SADC countries, concluded that progress in road management reform could best be described as "a road partially travelled". The study indicated that there were many instances of deviation from recommended RMI good practice, which needed to be addressed through stronger advocacy by a regional institution such as ASANRA.

2.2.1.6 Roads Funding

Article 4.5 of the Protocol states that cohesive and definitive road funding policies must be implemented, and that a common understanding in respect of the types of road user charges and the levels of such charges is necessary.

Table 0-9 below indicates the SADC countries that have a roads fund.

Table 0-9: Establishment of National Roads Funds

Country	Roads Fund
Angola	Legislation for the implementation of a road fund has already been established, but not implemented as yet
Botswana	An institutional study of Botswana road agencies was conducted in 1998 and recommended that a road fund be established, but these recommendations have not been implemented yet
DRC	None
Lesotho	Yes, it was established in 1995 and became operational in 1997
Madagascar	None
Malawi	Yes, it was established through the Road Fund Administration Act of 2005
Mauritius	None
Mozambique	Yes , the Road Fund (FE) was created in 1999
Namibia	Yes, the Road Fund Administration (RFA) was established by the Road Fund Administration Act, No. 18 of 1999
Seychelles	None
South Africa	None
Swaziland	None, but institutional reform is being implemented
Tanzania	Yes , the current roads fund and roads fund board were established under the Roads Tolls Act, No. 2 of

Country	Roads Fund
	1998 as amended
Zambia	Yes , the National Road Fund Agency (NRFA) was created in terms of the National Road Fund Act of 2002
Zimbabwe	Yes , was established in terms of the Roads Act of 2001

2.2.1.7 Road user charging

Despite the agreement reached by SADC Ministers of Transport on the 1997 Proposed System of Harmonised Road Transit Charges for the SADC Region, efforts to implement the harmonised regimes have not been realised. Member States have either continued with their existing arrangements, or have introduced new regimes that are not fully congruent with the Study's recommendations, as indicated in Table 3-3. As a result, the region has different sources of road financing arrangements in place. These differences continue to impact negatively on the smooth flow of traffic across borders within the region.

The road user charges (RUCs) that are being levied in each SADC country are indicated in Table 0-10 below.

Table 0-10: Types of RUC Implemented

RUC	Angola	Botswana	DRC	Lesotho	Madagascar	Malawi	Mauritius	Mozambique	Namibia	South Africa	Seychelles	Swaziland	Tanzania	Zambia	Zimbabwe
Cross-border charges transit charges/foreign vehicle permit fees/road tollgate fees**/toll fees**	X	X	X	X		X		X	X			X	X	X	X
Road transport permit fees		X													
Carbon taxes														X	X
Annual vehicle licence fees	X	X	X	X		X		X	X	X		X	X	X	X
Fuel levies		X		X		X		X	X				X	X	X
Fuel taxes*			X							X		X			
Tolls								X		X					

** Payable in some countries without a road fund and a dedicated fuel levy. In Angola the fuel price is subsidised, and fuel taxes are therefore not applicable.*

*** Toll fees and road toll gate fees are levied by the DRC and Lesotho respectively at the border post when entering the country, and are therefore separate from fees charged on toll roads.*

More recently, by the SADC-commissioned Implementation of Harmonised Road User Charges System in the SADC Region (2007), in which the COMESA and EAC Secretariats participated as observers, revised the charges proposed in the 1997 Harmonisation Study. Yet again, the recommended road user charges has not yet been implemented, as Member States are still in the process of reaching agreement on the consolidation and level of charges, prior to the signing of a Memorandum of Understanding (MoU). In the meantime, the process of RUC harmonisation has been extended to include COMESA and the EAC. Funding for this has been obtained and the Terms of Reference are being finalised. Once this study is completed, it will be imperative for the RECs, through sub-regional organisations such as ASANRA, to play an assertive role in monitoring the implementation of the recommended charges.

Article 4.6 of the Protocol refers to the Regional Funding Initiative and foresees harmonised cross-border road user charging systems and a regional road maintenance fund.

The harmonisation of cross-border road user charging systems in SADC currently entails country-specific charges as opposed to uniform charges, as agreed during a SADC ministers meeting in 1995 in Lilongwe, Malawi. Uniform charges will only be possible once a Regional Road Maintenance Fund (RRMF) has been implemented. In the absence of an RRMF, the countries with RTRN maintenance requirements lower than the uniform charges will gain, while those with higher requirements will lose.

Efforts were made to harmonise road transit charges, i.e. access charges paid by vehicles that do not contribute to roads costs through licence fees. SADC commissioned a study in 2006 aimed at harmonising road user charges for the continental Member States. However, Member States are still in the process of reaching agreement on the consolidation and level of charges, prior to signing a MoU.

The function of the Cross-Border Road Transit Agency (CBRTA) is not to recover transit charges, but is aimed at advising, facilitating and enforcing the law on matters concerning the regulation of cross-border road transport. It has a regional role in the sense that it deals with cross-border road transport, albeit from a SA perspective.

2.2.1.8 Regional Road Fund Initiative

Article 4.6 of the Protocol refers to the Regional (Road) Funding Initiative, and foresees the operation of a harmonised road user charging system and the establishment of a regional road maintenance fund, in recognition of the likelihood that national funding may be insufficient to ensure adequate upkeep of the RTRN. The latter initiative is contingent upon the prior establishment of a smoothly operational road user charging regime in the SADC region, which is yet to materialise. Moreover, with the recent extension of the RUC harmonisation process to include COMESA and EAC, it is apparent that the implementation of a wider regional road fund initiative will have to await the outcome of the new study.

2.2.1.9 Road Infrastructure Diagnostic

Table 0-1 shows the main challenges, priorities and targets for reform in roads infrastructure.

Table 0-11: Road Infrastructure Diagnostic

Area	Challenges and Gaps	Priorities for Cooperation
Roads	Lack of adherence to the implementation of regional road infrastructure policies	Member States to think regionally and act nationally in the implementation of the Road Infrastructure Policy
	Inadequate funding for development of RTRN	Agreement on the funding strategy for the development of RTRN
	Non-harmonisation of RUCs in the SADC region	Harmonisation of RUCs based on the common road funding model for the region, including transit charges. Road user charges to be simplified and should not be changed without advance warning to associations and operators
	Lack of harmonised axle load, GVM limits and related regulations	Harmonised load limits in the SADC/COMESA/EAC region
	Compliance with regional roads standards	Continue roads standards harmonisation

	Efficient and effective RTRN	Performance monitoring of RTRN
	Efficient and effective commercialised road agencies	Institutionalised, commercialised road management (CRM) practices

2.2.2 Road Transport

2.2.2.1 Regional Integration Target

There should be unimpeded road transport operations over the region. The regional road transport sector should be deregulated so that carriers registered in one Member State can freely contest for the transport goods and services between that Member State and regional nodes in and between other Member States, although it is not yet expected that Member States would grant cabotage rights. Similarly, the right to access a Member State from outside the region would remain with the Member State. Within this context, market access should only be restricted where operators do not comply with common safety, technical and security standards.

2.2.2.2 Regional Road Transport

The identification of priority regional corridors is directly related to the function the corridors are expected to fulfil. The primary stated policy of SADC is to link production and consumption points with maritime points. The following regional road transport corridors have been identified:

- High priority corridors
  - North-South Corridor;
  - Maputo Corridor;
  - Dar-es-Salaam Corridor;

- Medium
  - Trans-Kalahari Corridor;
  - Beira Corridor;
  - Nacala Corridor;
  - Trans-Caprivi Corridor;
  - Central Corridor;
  - Trans-Orange Corridor;
  - Lobito Corridor;

- Low
  - Trans-Cunene Corridor;
  - Limpopo Corridor;
  - Namibe Corridor;
  - Malange Corridor;
  - Bas Congo Corridor;
  - Mtwara Corridor; and
  - Maseru-Durban Corridor.

Source: Revised RIDMP First Draft: Annexure 5.2: Transport - Corridors and Border Posts (Gopa report, p4 and p24)

Figure 0-9 indicates the relevant transport corridors in the SADC region as determined by the Tripartite Agreement between SADC, EAC and COMESA. There are some corridors in addition to the listed regional road transport corridors.

Please note that the alignment of the corridors was based on the latest available information from credible sources. There are, however, corridors of which the detailed alignments differ according to

some Member States and other organisations that participated as stakeholders in the development of this TSP, and SADC dedicated a task group to the finalisation and detailing of the regional corridors' alignment. Specific corridors mentioned were the North-South Corridor, the Malange Corridor and the Nacala Corridor.

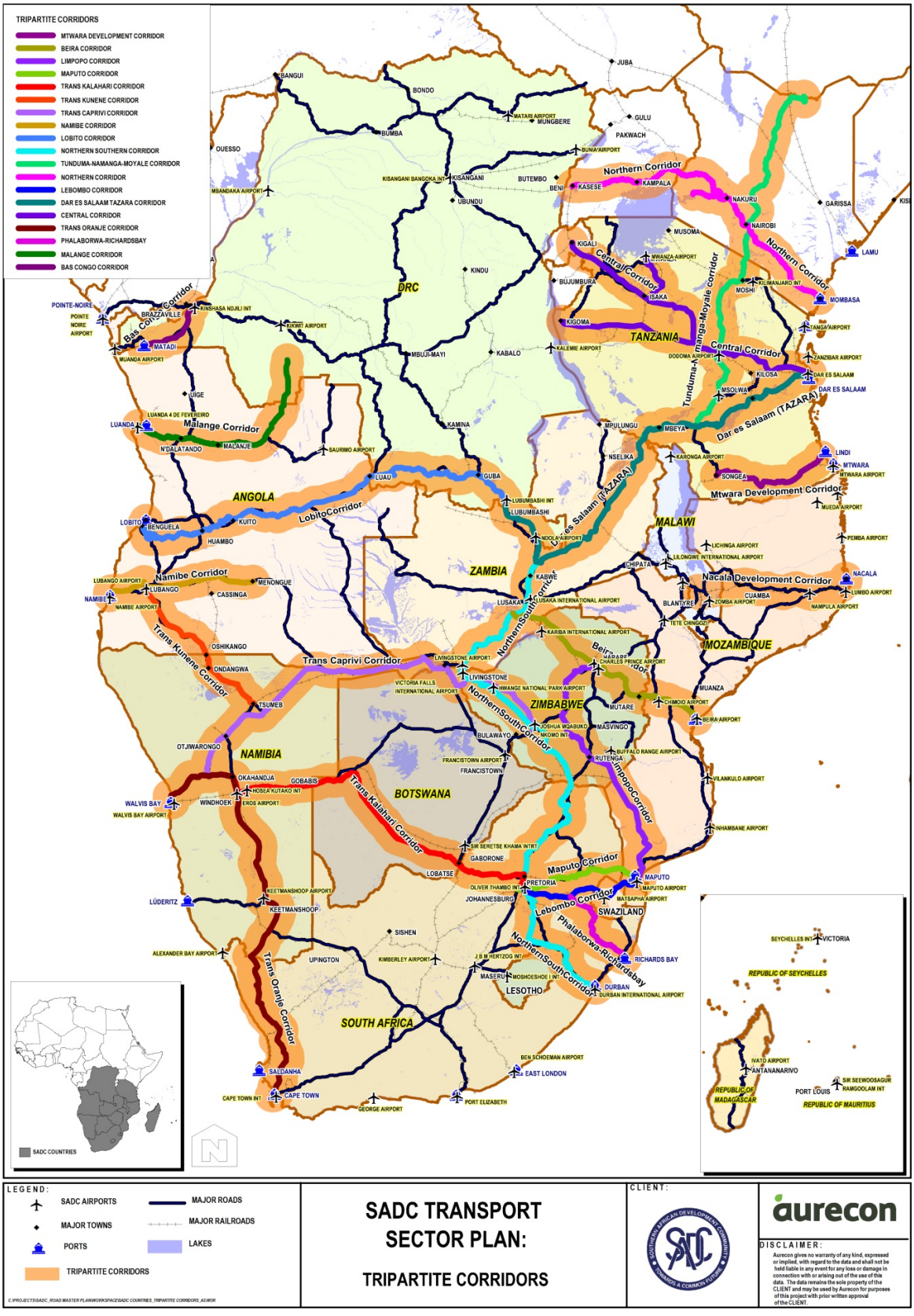


Figure 0-9: Relevant Transport Corridors

2.2.2.3 Regional Road Transport Policy and Regulation

2.2.2.3.1 Policy and Planning

Road transport policies are set by Member States themselves, with the SADC Task Force on Road Transport Liberalisation driving market liberalisation from the regional perspective.

Article 5.6 of the Protocol foresees corridor management groups on high-volume routes, with a mandate to facilitate consensus on road transport liberalisation. The initial focus of the Joint Route Management Groups (JRMGs) or Joint Route Management Committees (JRMCs) (also known as Road Transport Route Management Groups (RTRMG)) is to develop bilateral transport agreements which provide for the extra-territorial recognition of road transport permits, issued by national authorities based on reciprocity. Once this objective has been achieved, the committees will focus on other road transport and road traffic issues such as the harmonisation of permissible axle loads. These committees, established as an inter-governmental initiative, are mainly represented by governments, road transport operators and freight forwarders. Examples of JRMCs include the JRMC between South Africa and Zimbabwe.

The SADC Secretariat is of the opinion that the JRMC concept is not effective in practice, as JRMCs do not meet regularly enough, the membership changes depending on availability of personnel, the subject matter is too varied and the delegates to the JRMC meeting often do not have authority over many of the aspects deliberated. It is planned that JRMCs be implemented on a multilateral/corridor basis.

The Federation of East and Southern African Road Transporters Associations (FESARTA) addresses problems experienced by road transporters in the SADC region. Its objectives, relevant to the legal, regulatory and institutional arrangements in the regional transport sector, include "to actively propose, promote, support or oppose, as may be deemed expedient, legislative or other measures to improve the efficiency of regional road transport services through national governments, COMESA and SADC", and to "participate fully in the activities of the SATCC Road infrastructure, Transport and Traffic Committee (Road SCom) and other appropriate sectors of SADC and COMESA".

2.2.2.3.2 Market Access

Cross-border road transport is currently regulated through multi- and bilateral road transport agreements, concluded with various SADC Member States and in line with the stipulations of the Protocol. SADC, or any of its subsidiary organs, does not play any role in concluding or overseeing these agreements.

The bilateral agreements that are currently in place are shown in

Table 0-12.

Table 0-12: Bilateral Agreements

Angola	Botswana	DRC	Lesotho	Malawi	Mozambique	Namibia	South Africa	Swaziland	Tanzania	Tanzania	Zimbabwe
Angola											
	Botswana		MoU			MoU-C	MoU-C/ MoU	MoU			BRT
		DRC									
			Lesotho				MoU	MoU			
				Malawi	BP		BRT		C		
					Mozambique		BP/ BG	BRT	BG/BP		BRT
						Namibia	MoU-C			BRT	
							South Africa	MoU		BRT	BRT
								Swaziland			
									Tanzania	BRT	
										Tanzania	
											Zimbabwe

Legend:

BRT: Bilateral Agreement on Road Transport
BP: Bilateral Agreement on Carriage of Passengers
BG: Bilateral Agreement on Carriage of Goods
C: Corridor Agreement
MoU: Memorandum of Understanding (SACU)
MoU-C: Memorandum of Understanding (Trans-Kalahari Corridor)

Note: The bilateral agreements that are in place are only shown for the continental Member States, as bilateral road transport agreements are not applicable for the non-continental member states of Mauritius, Madagascar and the Seychelles.

At the SADC Task Force meeting held on 18 and 19 March 2010 to discuss road transport liberalisation, it was stated that a process needs to be formed to provide a basis for the development of a uniform, multilateral framework for liberal road transport dispensation in the region. This would

go a long way towards achieving the anticipated road transport regime (refer to section 3.1). The process should be as follows:

- Analyse all bi- and multilateral agreements;
- Define and evaluate terms and conditions;
- Develop a homogenous document structure;
- Develop homogenous terms and conditions;
- Distribute the document to Member States for evaluation;
- Receive feedback; and
- Produce a homogenised agreement and convene a meeting to debate its implications and resolve variances.

It should be noted that the SADC Protocol foresees quota and capacity management systems (refer Article 5.4c), which probably fly in the face of a fully liberalised road transport philosophy.

A concern exists regarding destructive or cutthroat competition in road transport, i.e. where prices do not cover production costs over extended periods, as “dumping” is generally a prohibited anti-competitive practice. It is not foreseen that anyone would pre-approve regional road transport charges, but there should be a body where complaints can be lodged. If justified by the workload, a dedicated regional road transport entity could be established; but the regional competition authority would more likely execute this function.

2.2.2.3.3 Law Enforcement

Article 5.9 of the Protocol envisages harmonised road transport law enforcement, including standardised offences and penalties. There would also be increased self-regulation by transporters.

Article 6.13 considers road traffic control and policing. Here too the focus is on standardisation across the region in terms of offences and penalties, as well as a common standard for road traffic enforcers throughout the region. It is foreseen that there will be coordinated traffic control and enforcement programmes for overloading control, speed management, driver alcohol abuse, vehicle safety and documentation.

Transport and traffic law enforcement is carried out by each Member State. In the case of South Africa, these functions have been assigned to arm's length agencies in the form of the Cross-Border Road Transport Agency (CBRTA) and the Road Traffic Management Corporation (RTMC). However, governments in other Member States mostly carry out these functions.

2.2.2.3.4 Road Transport Facilitation and NTBs

Facilitation refers to streamlining the procedures of transport, often involving government/public entities. Member States should ensure that facilitation agencies effectively contribute to the main policy objective of free movement by preventing unnecessary interruptions and delays.

Several road transport facilitation efforts are underway on the Maputo, Central, Northern, Walvis Bay and Dar-es-Salaam corridors aimed at implementing a harmonised Integrated Border Management Strategy across the three RECs (EAC, COMESA and SADC).

2.2.2.4 Vehicle and Other Standards

There is a close relationship between vehicle and infrastructure standards, with many vehicle standards aimed at protecting the roads asset. A distinction between 'infrastructure' and 'operations' standards are therefore slightly artificial. Notwithstanding, SADC has carried out the following efforts of harmonising road transport operations:

2.2.2.4.1 Harmonisation of Vehicle Weight Limits and Legal Framework for Overload Control

In support of the attainment of the above, SADC has prepared a document entitled Enabling Legal Reform: Control of Vehicle Load (third draft, March 1999), which comprises the following two instruments as annexures to the SADC Protocol :

- Memorandum of Understanding (MoU) on Vehicle Loading; and
- Model Legislative Provisions (MLP) on Management of Vehicle Loading.

The MoU provides a new, more progressive, approach to vehicle loading management in the SADC region, while the MLP provides an improved regulatory framework for controlling overloading. Collectively, these documents constitute important reforms in overload control, which respond to the most glaring shortcomings of traditional approaches.

The implementation of the SADC overload control reforms has been slow, and there is still a lack of harmonisation on many aspects of overload control. Furthermore, the regulatory frameworks of a number of countries have still not been updated in line with the SADC MLP. In an attempt to speed up the implementation process, SADC, COMESA and EAC, with the support of SSATP, commissioned a study into Best Practices in Overload Control in Eastern and Southern Africa with the aim of assessing best practices in order for these practices to be disseminated to, and possibly replicated in, other countries. The results of this study were published in April 2010 as SSATP Working Papers and provide a sound basis for improving overload control in the SADC, COMESA and EAC regions.

More recently, in 2011, the EAC, on behalf of the tripartite, commissioned a study on the Harmonisation of Vehicle Overload Control in the East African Community, which led to agreement on a variety of overload control issues, including axle load and gross vehicle mass limits, accommodation of vehicle technology development and weighbridge operations and management. A parallel study is still dealing with the legal framework for overload control and is expected to be completed by March 2012. Once the EAC study is completed and the recommendations are approved at tripartite level, it will become the blueprint for the control of vehicle loading in the SADC/EAC/COMESA region. Thereafter, it will be necessary for a central coordinating body such as ASANRA to play a stronger monitoring role in ensuring that the agreed strategies are implemented according to a realistic timetable.

2.2.2.4.2 SADC Driver Licensing – Harmonising the Training of Drivers and the Delivery of Drivers Licensing

One of the outstanding issues is the requirement that each country should be in a position to vouch for the standards of all road transport leaving their country in terms of whether the operating entity is known, whether the vehicles are roadworthy, and whether the drivers are licensed, among others, by issuing a transport operators card similar to the COMESA Operators Licence.

Apart from the above initiatives, operations standards that require further attention as per feedback from the SADC Task Force on Road Transport Liberalisation are:

- **Fitness of vehicle standards (Protocol 6.3) and vehicle and equipment safety standards (6.4):** Vehicle specifications and weights should be defined and published;
- **Abnormal/hazardous loads (6.7):** This harmonisation initiative is still under development;
- **Third party insurance (6.8):** The analysis of current problems with multiple insurance schemes has been completed, and proposals for interfacing systems have been agreed upon in principle. The process to interface the yellow card, fuel levy and cash system is ongoing throughout the tripartite region;
- **Driver training/testing (6.9):** Draft manuals are being developed and adopted;
- **Road Traffic Quality Management (RTQM) (6.12):** No progress has been made to arrive at an agreed system;
- **Incident management (6.14):** No progress has been made to arrive at an agreed system;
- **Vehicle pollution control (6.15):** No progress has been made to arrive at an agreed system; and
- **Road traffic information (6.16):** No progress has been made to arrive at an agreed system.

2.2.2.5 Road Transport Diagnostic

Table 0-13 shows the main challenges, priorities and targets for reform in roads transport.

Table 0-13: Road Transport Diagnostic

Area	Challenges and Gaps	Priorities for Cooperation
Road transport	• Protection of national road transport industry • Issuance of transport operators card by competent (national) authority • Practical application and management of the terms and provisions of the bilateral agreements are challenging • Application of permit systemappears to be arbitrary given the widespread avoidance by operators • Lack of law enforcement capacity leads to arbitrary enforcement actions	• Move from bi-/multilateral arrangements to regional liberalisation, starting with common multilateral frameworks, working towards removing the third party rule • Continue road transport standards harmonisation , e.g. vehicle dimensions and weights which has not yet been rationalised • Elevate JRMCs to corridor (multilateral) level • Transport association/bureau to provide certification and monitoring services to transporters, in order to combat random policing actions, coercion and corruption

2.2.3 Railways

2.2.3.1 Regional Integration Target

The regional railway systems should be offering seamless and relatively fast cross-border rail services. In order to achieve this, the collection of national railway systems should be properly integrated into a regional mainline track system, with uniform standards with respect to key design parameters (gauge, axle loads, traction, etc.). The network should be operated and maintained in a commercialised manner. Regional train operations should be based on non-discriminatory, open access to regional operators. To bring together the regional rail network and ensure its united operation will require regional planning and oversight from a safety and technical perspective.

2.2.3.2 Rail Versus Road Context

Except for specific bulk lines, most of the freight carried by railway operators in the SADC region is classified as general freight. The region's freight carriers serve many customers with partial train

loads, shorter trains, smaller wagons, longer train turnaround times and higher unit costs, and are mostly in direct competition with road transport.

Rail has an advantage over road in that the customs clearance of goods should take place at the commercial end stations, not at the borders. Prior to the deregulation of road transport and the disruptions caused by regional conflicts, the SADC rail system functioned reasonably well. This is clearly no longer the case, mainly because of financial and operating capacity constraints, rather than newly-created institutional barriers. The deregulation of road transport meant that higher-value, just-in-time traffic moved over to roads.

Rail costs are mostly fixed, which means that lower freight volumes, and therefore lower income, do not cover the same fixed costs and results in operational losses. With capacity exceeding demand, governments and railways had no reason to support new investment and did not respond to the changing market conditions. The trucking sector however, did adapt to the new market with improved technology such as the 56 t interlink.

The lack of investment in rail reduced income, and the shortage of operating working capital led to deferred maintenance on ageing assets, resulting in poor asset utilisation, poor reliability and a further decline in customers. The operating losses caused governments, supported by the World Bank, to opt for the private sector concessioning of several regional systems. Some of these have since failed, and several others have not yielded the desired results.

2.2.3.3 Regional Rail Policy and Planning

Until quite recently, South Africa's Transnet Freight Rail (TFR/Spoornet), as the dominant and most resourceful regional railway operator, had an International Joint Ventures division, which actively pursued railway business in Africa, with implementation and investments being channelled through a company called Comazar. Spoornet operated on the North-South Corridor in the DRC, Zambia and Zimbabwe through contractual arrangements with the respective concessionaires. However, these ventures were not financially viable, and Transnet, as the sole shareholder, instructed Spoornet to withdraw from all regional railway operations.

Article 7.2 of the Protocol foresees a harmonised regional railway policy. However, at present, there is no effective regional railway planning unit, as illustrated by the difficulties of implementing the Moatize coal export programme, the uncoordinated reconstruction of the Benguela Line (Lobito Corridor), and the various competing initiatives being pursued for Botswana's coal exports.

It is clear that SADC, as the representative of regional governments who are the owners of rail infrastructure, needs to collaborate with the Southern African Railways Association (SARA), which represents the regional railway operators and concession companies.

SARA is the regional association of railways in the SADC region. It promotes rail as the transport mode of choice by:

- Ensuring fair competition;
- Developing an equitable, market-driven surface transport (road and rail) industry;
- Improving the efficiency and effectiveness of the regional railways operations; and
- Championing the cause of the regional railways.

Its main objective is to enable the SADC railway industry to provide safe, integrated, cost-effective, predictable and a seamless, one-stop service. It aims to exploit interconnectivity and achieve cross-

border operability, promote regional and continental rail network connectivity, develop, enhance, and harmonise policies, governance and business processes and promote alliances for the exchange of technical information, strategies, skills development and training.

Both SADC and SARA need to be strengthened in respect of their resources and mandate to fulfil their proposed function. Presently, entities such as USAID, Trademark and other donors assist and supplement these organisations' resource and capacity constraints.

In the past few years, despite the poor performance of the regional railway sector, there have been many proposals for new railway lines and expensive upgrades, mostly promoted by governments and institutions, rather than the railway companies. The focus tends to be on the development of grand schemes, such as railway inter-connectivity between corridors and the multibillion dollar proposals for Standard Gauge railway upgrades, rather than upgrading and reviving the existing network and systems. The desire to implement Standard Gauge railway upgrades relates to the decision of the African Union (AU) and Union of African Railways to adopt Standard Gauge for the construction of new railway lines on the continent (the Brazzaville Declaration, 2006). The viability of the proposals for new rail lines will largely be determined by the private sector's appetite for these major investments, or government's commitments to raise the funds through agreements with the main trading partners.

2.2.3.4 Regional Rail System

The SADC regional railway system is extensive, most of it having been built before long distance road services were available, with the exception of the TAZARA line, connecting Zambia to Dar-es-Salaam, which was built in 1975. There are significant differences in the standards and conditions of the track infrastructure throughout the region, ranging from 20.5 t axle loads and 70 wagon trains on the newly-upgraded Sena Line (specified before the commencement of the current Moatize coal export programme) to sections of the Zambian, and northern Mozambican mainline systems, which still operate on wooden or corrode steel sleeper lines with less than 15 t allowable axle loads and speed restrictions as low as 10 km/h.

The regional railway system is flexible, with reasonably good inter-connectivity, allowing the landlocked Copper Belt countries to access five or more competing ports. The North-South rail route is considered to be quite vulnerable as it is a single line passing through Victoria Falls and Sakania and with some sections in poor condition. This route connects South Africa to the DRC through Zimbabwe, Botswana and Zambia, and also connects these countries to the region's ports. There is some redundancy in respect of low volume branch lines in Zambia, Zimbabwe, Tanzania and South Africa. In South Africa, TFR is making no profit on about half of the 20 000 km network, but with some sections being considered viable for private sector concessioning.
Figure **0-6** indicates the current railway network condition available in SADC.

The regional cross-border rail services are hampered by the complicated operating interface between adjacent national railway systems – the handover of wagons from one operator to another is often uncoordinated, mainly due to capacity constraints.

Despite the relatively poor and declining performance and condition of the backbone SADC rail system, there are numerous proposals for new lines and links to be built, mainly sponsored by governments, such as:

- The Trans-Kalahari railway line which provides a direct route between South Africa and Walvis Bay in Namibia, and possibly serving as a coal export route for Botswana;

- A 300 km rail link between Lion's Den in Zimbabwe and Kafue in Zambia, providing a shorter rail link to Beira;
- A north-west rail link between Zambia and Angola which connects with the port of Lobito;
- A link between the Namibian system and southern Angola; and
- Various Standard Gauge upgrading proposals for East Africa.

Most, if not all, of these projects are unlikely to be financially viable in the short- to medium-term, because of low projected freight traffic volumes and high capital investment and operating costs.

There is clearly a need to define a core regional mainline rail network as a strategic priority in regional planning and development proposals. This network should include the North-South Corridor, as well as all the existing rail connections to the regional ports. New developments could follow once the core system is considered fully functional. Specific projects, such as the Moatize coal export rail line, are primarily being driven by the private sector mining developers, so far with little input regarding regional policy and strategic development guidelines.

2.2.3.5 Common Per-way and Rail Equipment Standards

Article 7.5 of the Protocol encourages the development of compatible technical standards in respect of infrastructure and operational equipment.

Despite the fact that all the regional railways operate on the 1 067 mm Cape Gauge system (except for the isolated TRL system in Tanzania which operates on Narrow Gauge), the technical standards used generally comply with those of the American Association of Railroads (AAR) in respect of braking systems, couplings, etc., and most mainline locomotives are manufactured in America (GM and GE diesel electrics). The same wagons can operate throughout the region, subject to axle load restrictions and the length and operating speed of trains. The region's operating constraints are linked to track and equipment specifications, as well as track condition, and the overriding operating requirement is safety, which is generally controlled by warnings and speed restrictions.

Regional rail operators understand that the maximum operating speed is not a critical issue for freight movement. An average speed of approximately 20 km/h will deliver a competitive freight service on most corridors. It is breakdowns, accidents and equipment availability that detract from the reliability of rail which are the main problems that need to be dealt with in the first instance.

The main requirements of the Protocol are that standards and equipment should be compatible, and that uniform and standardised conditions should apply. It also supports the provision of trackage rights, which could imply and open access operating system for multiple operators. Uniform standards of the regional mainline track system should include:

- Uniform general axle loads, likely 20.5 t, allowing 84 t wagons with 64 t payloads;
- Uniform track geometric standards, allowing train speeds of up to 80 km/h;
- Uniform track maintenance procedures;
- Uniform track gauge, likely to be retained at 1 067 mm, except for TRL in Tanzania which will be 1 000 mm. There is, however, little need for connections between the two corridors. The Kidatu rail-to-rail trans-shipment has been closed down due to low demand;
- Standard wagon, coupling and braking systems (dual vacuum and air, gradually moving to air only to allow for longer trains) are already in force (except for TRL);
- Standardised maximum train lengths, often limited by poor track condition, but ideally up to 50 wagons requiring passing loops of 900 m; and

- Ideally, a standardised mainline locomotive fleet, such as a GE type +3000 hp unit, allowing for easy maintenance and improved availability and utilisation.

An open access track operating system should be in place in order for trains from one system to operate on the other regional systems, without the need for formal handover procedures and locomotive changes. Open access is largely an issue of operational safety and responsibility, and could, for example, be resolved by having an operator from the host operator on each train. The inspection and clearance of locomotives and wagons could also take place at the dispatch and receiving stations on cross-border services, rather than at the changeover points.

The declining performance of the railways, and the generally poor performance of the rail concessions, have resulted in some governments believing that the existing railway networks are an out-dated legacy of colonial times, and that the only logical solution is to replace it with a more modern system, based on the 1 435 mm European Standard Gauge , which would allow for speeds of up to 120 km/h. This has been adopted as the formal railway development policy (for new railways) by several governments, and the AU. However, within the SADC 1 067 mm system, it seems unlikely that this could be implemented in the foreseeable future, except in isolated systems such as South Africa's Gautrain passenger service, where a high operating speed is a key requirement.

2.2.3.6 Rail Oversight

The establishment of regional transport safety and economic regulating authorities is necessary in order to build an open access, integrated regional railway system through the provision of state funds or track support infrastructure.

2.2.3.7 Delivery

In recent years, both national and regional rail services have deteriorated due to declining traffic volumes and, as a result, a decline in income and a lack of investment in new systems in response to changing market conditions. As a result, all regional general freight railway operations suffer from capacity constraints, despite the fact that they are operating well below their respective design capacities. This means that train transit times between the regional ports and the economic centres of the landlocked countries can take four times longer than the reasonable benchmark. For example, transits between Durban and the Copper Belt can take up to one month, mainly because of problems and delays at the interface between adjacent railway systems, inland terminals and the ports.

The regional railways are mostly state-owned enterprises, providing strategic economic transport services. The respective governments are responsible for the delivery of infrastructure, equipment and services, whether the system has been concessioned to the private sector or not. In the case of TAZARA, the two governments are joint owners, while China is involved as the main funder. This structure has been problematic both in respect of management and financing arrangements.

There are plans to establish a seamless railway service running through Malawi for the Moatize coal export services line from Mozambique. This service will be developed and funded by the private sector, and will likely involve the joining of four different railway concessions and negotiations with the two governments involved. The implementation of this project has been delayed due to institutional and ownership complexities and the absence of an approved railway development strategy and programme, but a development MoU has been signed.

The main reason the World Bank and the respective regional governments implemented the railway concessioning process, was to release the governments from the ongoing operating losses incurred by the state-owned railway companies. It was expected that the private sector would effectively turn

around the rail sector and that the concession fees paid to government would assist in repaying the World Bank loans and support further infrastructure investments. In other words, it was assumed that the main reason for the decline in railway performance was due to poor management and the absence of business focus, which the private sector could rectify. In almost all cases this assumption proved to be wrong. The investment requirements were underestimated, the process took a long time, during which key market segments were lost to road, and the new private sector operators were either unwilling or unable to invest the necessary capital.

It is now generally accepted that the low-volume regional SADC railway systems, which are in direct competition with road hauliers in respect of pricing and service levels, are unable to generate sufficient income to cover the cost of maintenance, upgrading and the renewal of track infrastructure (similar to roads, which require to the order of 15 000 vehicles per day to operate as viable toll roads).

In the absence of a fully equitable road pricing regime, the sensible solution to the problem of retaining the regional railways services would be for the track infrastructure to be financed by government, in exchange for agreed upon access fees with the operator/s and subject to a positive economic cost benefit analysis. In other words, for the railways to become more competitive, they should be structured and operated similar to road services.

This will require railway to focus on improving the operation of the port and inland rail terminals, including the interface between rail and road services, in order to offer multimodal door-to-door freight services. However, the regional railways systems (generally) only have one licensed operator, which usually suffer from financial and resource constraints. Despite the general poor performance of the railway concessions in Southern and East Africa, there is clearly still a need for private participation in strategic partnership arrangements with the national railways to provide services such as track and equipment maintenance, the provision of dedicated wagons and locomotives for specific ring-fenced projects, leasing of equipment, workshop operations and the operation of inland and port rail terminals.

In future, it is likely that the revival of the regional railway will be supported through a model based on the respective national governments providing and maintaining track infrastructure in a similar manner to that provided for road services. As with toll roads, this should be done on a self-funding basis where possible. Such a model requires the completion and regular updating of an approved railway development master plan for the region, a process which is currently being driven by SADC.

2.2.3.8 Funding

The key regional rail track and equipment standards and specifications are suggested in Section E above, and should be the first short-term objective. However, the main operating constraints at the moment are the condition of the existing track and equipment, as well as the absence of sufficient operating and investment funds.

In their present structure, the low-volume railways are no longer financially viable as independent units. The income generated is based on market-related tariffs, which are mostly insufficient to cover the cost of operations, maintenance and necessary re-investment. The railway system as a whole is therefore not an attractive investment for the private sector, unless the income is linked to a long-term anchor project, or if selected operations can be financially ring-fenced with the track infrastructure being provided by the governments against an agreed usage fee.

The governments, as the owners of all track infrastructure, are ultimately responsible for the funding and delivery of fixed infrastructure, whether or not it is channelled through a public-private partnership or operating concession. In May 2010, SADC decided to create a regional rail fund, but the modalities are not yet known.

2.2.3.9 Rail Diagnostic

Table 0-14 shows the main challenges, priorities and targets for reform in the rail sub-sector.

Table 0-14: Rail Diagnostic

Area	Challenges and Gaps	Priorities for Cooperation
Rail network	• Re-investment in run-down systems, including public funding	• Common network design and operating standards
Rail transport	• Low system reliability • Open access to regional network	• Formulation and negotiation of a new, multilateral business agreement between railways in the region to replace the existing bilateral agreements
Rail	• Lack of holistic regional rail policy	

2.2.4 Ports and Shipping

2.2.4.1 Regional Integration Target

The ports in the SDAC region need to be managed in an effective, commercial manner to limit their contribution to transport delays and costs. Inter-port competition should be encouraged where possible. Marine transport will continue to be operated on a liberalised basis where shippers, whether from the region or elsewhere, compete for traffic, including cabotage traffic. Although largely a national or bilateral issue, a similar liberalisation approach should be followed with regard to inland waterway transport, even though these services have a social rationale which may justify public support. Since the maritime domain is global, international conventions and standards should be internalised and overseen on a regional level.

2.2.4.2 Maritime Context

2.2.4.2.1 International Maritime Organisation (IMO)

In the overall governance of international maritime transport, all international conventions must be complied with. The oversight of these international standards is delegated to the Member States of the International Maritime Organisation (IMO) and/or delegated authorities such as classification societies.

The objective of the IMO is safe, secure and efficient shipping on clean oceans, and because of the international nature of the shipping industry, it aims to improve safety in maritime operations at an international level, rather than through individual countries acting unilaterally uncoordinated. The IMO promoted the adoption of 50 conventions and protocols and adopted more than 1 000 codes and recommendations concerning maritime safety and security, the prevention of pollution and related matters. All safety designs and standards for vessels, as well as the training and qualifications of seafarers are determined by the IMO and its international standards and conventions.

In Article 8.5 of the Protocol SADC Member States affirm their commitment to apply the international standards and recommended practices of the IMO.

2.2.4.2.2 Maritime Regional Cooperation in Africa

In October 2009, the ministers responsible for maritime transport in Africa adopted the African Maritime Transport Charter (an update of the 1994 charter). The objectives of the Charter are, among others, to:

- Implement harmonised maritime transport policies, capable of promoting the sustained growth and development of African merchant fleets and of fostering closer cooperation among the Member States;
- Promote the effective implementation of international maritime instruments to which Member States are party;
- Promote bilateral and multilateral cooperation among the maritime administrations of Member States and their respective operational organisations; and
- Encourage the establishment and support of maritime and ports administrations.

2.2.4.3 Regional Ports, Shipping Policy and Planning

Article 8.2.1a) of the Protocol commits Member States to develop a common understanding regarding the net benefits of a common shipping and ports policy, and how such benefits would be distributed among Member States. The intention is therefore not necessarily to have a common policy, but to investigate the implications thereof. It is unclear whether such an investigation was carried out, but the reality is that policy and planning is a function of the government department responsible for maritime transport in the respective regional countries. A division within the relevant national ministry of landlocked Member States may be responsible for the ports. Port-specific planning is carried out by the respective ports authorities, and may or may not take note of the AU Maritime Transport Charter.

There is currently no regional body responsible for ports or maritime policy and planning. However, nearly all port authorities in the SADC region and beyond are members of the Port Management Association of Eastern and Southern Africa (PMAESA), and can discuss management and institutional reforms within the region. In addition, PMAESA and many of the ports are members of the International Association of Ports and Harbours (IAPH). Thus, many aspects of planning for operations, port development, superstructure, cranes and tariff structures can be discussed in these forums, and various international standards can be set as benchmarks.

Through PMAESA, regional port officials not only discuss all aspects of the port management, operations and development, but, thanks to the link with IAPH, they can also discuss the latest global strategies, management styles and technical specifications of equipment. Additionally, PMAESA keeps statistics of each individual port within the region and thus can compare efficiency and productivity between ports.

The Pan-African Ports Conference (PAPC) is a continental body which encompasses PMAESA, the North Africa Ports Association (UNAP) and the Port Management Association of West and Central Africa (PMAWCA). The body permits port officials to discuss matters on a continental basis.

While each Member State has a national freight association, there is also a regional body, the Federation of Clearing and Forwarding Agents of Southern Africa (FCFASA), the presidency of which is based in Harare. Although FCFASA cooperates with the national bodies, it is struggling financially.

2.2.4.4 Oversight

The SADC region acceded to the Status of Conventions as published by the IMO on its website (dated 31 October 2011). However, the level of implementation is severely hampered by the lack of resources, particularly expertise and revenue, and many countries are struggling to implement the functions they have accepted by signing the international instrument. The Status of Conventions indicates which administrations have agreed to these conventions and which ones still need to accede. Many of the

There is no body conducting regional regulation and enforcement, and due to the resource constraints in most of the countries, they are struggling to ensure regulation and enforcement in the national context. The European Union (EU) model of a regional maritime authority conducting assistance and oversight on the individual members is perhaps a model that might be achievable in time.

2.2.4.4.1 Safety

In Article 8.5 of the Protocol, SADC Member States commit to apply the international standards and recommended practices of the IMO and to participate as a region in the formulation of new standards and practices regarding maritime safety, aids to navigation (AtoN), search and rescue, hydrography, maritime training, service conditions of seafarers, treatment of stowaways, protection of the marine environment and maritime communications.

The aspects of shipping and navigation safety are subject to international regulations emanating either from the IMO, or the International Association of Lighthouse Authorities (IALA). International standards for hydrography are established by the International Hydrographic Organisation (IHO). The standards and specifications of vessel construction, fitments and qualifications of the crew are all set by the IMO. In addition, there are internationally recognised standards for navigation systems in order to provide safe navigation along a country's coastline. These standards are developed and circulated by IALA. All navigation policies and rules are set by IMO and IALA.

Most of the coastal countries within the region are members of these associations and are thus able to obtain technical assistance whenever required.

2.2.4.4.2 Market Access

Maritime transport is probably the most deregulated of the regulated industries in the transport sector. There is liberalisation in that anyone can purchase a vessel, which has to comply with all the international safety regulations emanating from IMO, and enter the international transport industry and trade from country to country. Thus, while the vessel itself and its operation by the crew are highly regulated, any owner can enter the industry and trade internationally.

The same can largely be said for inland waterway transport (IWT) on the rivers and lakes of the region. However, this sector is relatively small, compared to a few decades ago, as most goods and persons are transported by road or rail, which is much faster and requires less handling. However, in Europe there is a move to transfer more goods and persons with IWT as it is more environmentally friendly than road and rail transport.

2.2.4.4.3 Economics

With respect to best practices and port equipment, the role of the IAPH is extremely important, and developing ports can gain a lot of relevant information from the organisation. Further, IAPH reports

on the international norms with respect to port operations and thus an international benchmark is achieved against which the regional ports can measure their performance.

Some Member States are introducing a port regulator to ensure that there is transparency and openness in all port operations.

2.2.4.5 Delivery

2.2.4.5.1 Ports

Unlike other sectors within the transport chain, ports generally serve their hinterland and neighbouring landlocked countries. More and more ports are becoming important parts of transport corridors, as there is at least one port at the beginning or end of the transport corridor. Examples are the Walvis Bay Corridor and the Maputo Corridor.

Figure 0-4 and Table 0-15 show the main regional ports and the corridors they serve. There is little trade between ports, and thus each port is important and fulfils its role within the economy of the surrounding region and the transport corridor it feeds.

Table 0-15: Main Regional Ports by Corridor and Categorisation

Regional Port	Country	SADC Corridor	SARA Corridor	World Port Source Category
Dar-es-Salaam	Tanzania	Central, Dar-es-Salaam	Central, TAZARA	Large seaport
Zanzibar	Tanzania	N/A	N/A	Small harbour
Mtwara	Tanzania	Mtwara		Small pier, jetty or wharf
Mahe/Port Victoria	Seychelles	N/A	N/A	Small seaport
Port Louis	Mauritius	N/A	N/A	Medium seaport
Tamatave/Toamasina	Madagascar	N/A	N/A	Medium seaport
Nacala	Mozambique	Nacala	Nacala	Small seaport
Beira	Mozambique	Beira	Beira	Medium seaport
Maputo	Mozambique	Maputo, Limpopo	Limpopo. Ressano Garcia, Goba	Medium seaport
Richards Bay	South Africa		Richards Bay	Medium seaport
Durban	South Africa	North-South, Maseru-Durban	Plumtree, Beitbridge	Large seaport
Port Elizabeth	South Africa	N/A	N/A	Medium seaport
Cape Town	South Africa	Trans-Orange	N/A	Medium seaport
Luderitz	Namibia	Trans-Orange	N/A	Small harbour
Walvis Bay	Namibia	Trans-Caprivi, Trans-Cunene, Trans-Kalahari, Trans-Orange	Namibian	Small seaport
Namibe	Angola	Namibe	N/A	Small harbour
Lobito	Angola	Lobito	N/A	Medium deepwater seaport
Luanda	Angola	Malange	N/A	Medium deepwater seaport
Matadi/Boma	DRC	Bas Congo	N/A	Small river port

From the individual perspective, ports compete for traffic leading to limited scope for cooperation and integration. In the case where there is a portfolio of ports in a country, the national ports authority may designate specific ports to specific goods. Some ports in the region are, in fact, competitors and in these instances there is a tendency to marginally improve efficiency. Examples in the region are Durban and Maputo, and Mombasa and Dar-es-Salaam.

The Protocol requires the improvement of port operations in order to maximise efficiency and to encourage the efficient and effective movement of goods and persons through the region's ports by promoting viable investment in port infrastructure and operations, promoting competition in the provision of port servicers and improving landside facilities.

Article 8.3 of the Protocol encourages Member States to undertake appropriate institutional restructuring to improve port operations, including commercialisation and private participation. National port authorities are in place and are effective in the running of the countries' ports. This is substantiated by the number of port authorities that are members of PMAESA. Most of the ports and port authorities within the region are subject to an act of parliament such as the National Port Authority Act or other similarly named acts. All policy and planning is carried out by the relevant port authorities, but in certain instances there could be private participation in the planning when a port is to serve a specific industry or import/export.
Table **0-16** indicates the regional ports authorities.

Table 0-16: Regional Ports Authorities

Country	Ports Authority	Ports
Tanzania	Tanzania Ports Authority (TPA)	Major seaports of Dar-es-Salaam, Tanga, Mtwara, smaller seaports and lake ports (lakes Victoria and Tanganyika)
Tanzania	Zanzibar Port Corporation (ZPC)	Port Malindi
Seychelles	Seychelles Port Authority (SPA)	Port Victoria
Madagascar	Ministry of Transport and Meteorology	Port Toamasina, three other deep seaports and 14 coastal shipping ports
Mauritius	Mauritius Ports Authority	Port Louis
Mozambique	Portos e Caminhos de Ferro de Moçambique (CFM)	Maputo, Beira, Nacala, Pemba and Quelimane ports
South Africa	Transnet National Ports Authority (NPA)	Durban, Richards Bay, Cape Town, Saldana, Coega/Ngqura, Port Elizabeth, East London and Mossel Bay
Namibia	Namibian Ports Authority (Namport)	Walvis Bay and Luderitz
Angola	Separate port authorities for major ports	Lobito, Luanda, Namibe and others
DRC	ONATRA/SCTP (state-owned corporation)	Matadi and Boma

There is an increasing trend toward the concessioning of various operations and/or terminals in the region's ports. This is an extremely good mechanism of getting private participation in these ports. Most of the concessioning to date have been in the container industry and container terminal operations. Table 0-17 gives examples of concessioning of ports.

Table 0-17: Concessioning of Ports

Port	Facility	Model
Dar-es-Salaam	Container terminal	To Tanzania International Container Terminal Services (TICTS), management contract
Toamasina	Whole port	To Madagascar International Container Terminal Services

Port	Facility	Model
		(MICTS), management contract
Nacala	New coal terminal	Concession
Beira	Container and general cargo terminals	Cornelder de Moçambique (CdM), management contract
Maputo	Whole port	Maputo Port Development Company, concession
Richards Bay	Richards Bay Coal Terminal (RBCT)	Private
	Wood chip and bulk liquid cargoes terminals	Private
Matadi	Container terminal	Management contract

Most of the region's seaports are at different stages of reaching what the Protocol is requesting. In most cases, the ports are owned by the State or a port authority in which the shares are wholly owned by the state. There is a strong movement towards "landlord" ownership and the port services are being privatised or managed through partnerships. Notwithstanding this move, the development of port infrastructure rests strongly with the state, while its operations are moving towards leasehold options.

A key issue in the region is the low efficiency and productivity of the region's ports when compared to the international norms as identified by the IAPH. Another issue is the age and efficiency of the equipment at some of the ports. At the 27th IAPH World Ports Conference in Bussan, Korea, the Resolution on the Development of Port Infrastructure was adopted on 26 May 2011, unanimously resolving that:

- IAPH urges governments to recognise the important role that ports play in national and local economies; and
- IAPH urges port authorities and states to allocate sufficient resources to the timely development of port infrastructure, including approach channels, breakwaters, terminals and port-related land transport.

Countries in the region generally realise the importance of their ports, however, more need to realise the important role these ports play an important part in the economy of the region and the nation in which they are situated. Most ports within the region are undergoing some form of improvement, be it berths or the deepening of the water depth. Therefore, the principal constraint on regional freight transport as identified by FCFASA is the condition of the roads on which the freight carriers have to operate.

The ports on rivers and lakes, on the other hand, are subject to water levels, and with the low rainfall over the region in the last couple years, water level is generally becoming a critical factor.

2.2.4.5.2 Aids to Navigation

The Protocol (Article 8.5.3) commits Member States to co-operate in improving the provision of AtoN in the SADC coastal waters. The responsibility for this function typically falls under the national marine safety regulators.

In 1996, an initiative commenced to revive the Regional Co-Operation Group on Safety of Navigation and Marine Environmental Protection (SAGNEP), and this initiative appears to have gained fresh

momentum. The ongoing Western Indian Ocean Marine Highway Project (WIO-MHP) is ongoing, with the objective of introducing modern AtoN systems in the SADC region.

2.2.4.5.3 Maritime Transport Services

To enter the maritime transport sector requires only the capital to purchase a vessel or vessels, a relationship with agents in a world-wide network to obtain cargoes and qualified crew to keep the investment providing a return and operating efficiently. Generally, the ship owner will set freight rates, however in some trades there are central bodies which could set freight rates on certain routes and/or specific trade. At times a surcharge is imposed on the freight rates of vessels coming to Africa due to the longer waiting periods as a result of the inefficient operation of the ports.

The carriers in the region's maritime transport environment are generally foreign, and Member States have very few international trading vessels on their registers, with perhaps the exception of Tanzania, which has approximately 50 vessels on the Zanzibar register. In general, the region's fiscal regime is unfavourable to a ship owner and thus ships are registered elsewhere where there is an open register. The unfavourable fiscal regime encourages the region's ship owners of the to use "flag of convenience" registers.

The Protocol (Article 8.2) encourages the growth of tonnage capacity in Member States, as well as the use of coastal shipping and feeder services. There has been some movement in feeder services from smaller ports to the larger ports in the region, however, there has been no appreciable increase in tonnage capacity within the Member States. Some Member States are actively pursuing the registration of vessels, but this still has to materialise. The region, and in fact the African continent, has seen many national shipping lines in the past, resulting in many experts in the field, however, these national shipping lines have declined in recent years, with the exception of Nigeria.

2.2.4.5.4 Inland Waterway Transport

Inland waters play a very limited role in the regional transport system. Services are provided on lakes Victoria, Tanganyika and Malawi/Nyasa, as well as on the Congo River. Consideration is being given to developing the Shire-Zambezi rivers to provide a link between Malawi and the Mozambican ports of Chinde and Beira, but to date this initiative has failed to receive the necessary bilateral support. Services on Lake Victoria consist of links between the Tanzanian ports of Bukoba and Mwanza, Port Bell in Uganda and Kisumu in Kenya. These links carry mostly localised traffic and play little or no role in the regional transport system. Kenya and Tanzania have established maritime administration presences at their ports, however the use of these links still need to be strengthened. There is a link between Dar-es-Salaam, the DRC and Burundi using Lake Tanganyika, however, volumes are currently very low.

Trading on these inland waterways is considered to be international trade and thus, for many years in the past, international maritime rules and standards applied. Recently though, IMO has set standards and rules specifically for vessels operating on Africa's inland waterways. All the Member States with inland water transport sectors have government departments that are responsible for policy, planning and oversight. However, with the competition from road transport, these maritime transport departments are extremely short on resources, especially funding.

The declining usage and therefore low productivity of the inland water transport sector keep cargo volumes low as well, leading to non-profitable services. A partnership between government and the private sector could provide the solution, and a long-term evaluation of the sector should be undertaken. Transporting cargo by means of water transport is more environmentally friendly than making use of road or rail systems, giving this sector an advantage.

2.2.4.6 Funding

2.2.4.6.1 Oversight

Maritime safety administrations are funded by the government, user charges, or a combination thereof. When safety administrators rely on only government funding, it is sure to have insufficient resources, and it is doubtful that any maritime functions are operating. Those maritime administrations which are funded by user charges alone are viable when there is a large fleet operating from that country, or if there is a large number of foreign vessels annually visiting the ports. The funds collected from ship owners are generally factored into the freight rates, and thus the consumers are the real source of funding for the administration. Where there is a mix of user charges and government funding, there is the possibility that funds generated could be used for other purposes and, again, the maritime administration might suffer from a lack of resources.

The possible creation of a regional maritime safety oversight agency would have to be accompanied by the development of a sustainable funding model, which is largely based on user charging.

2.2.4.6.2 Ports

In most cases the operations of the ports are funded through user charges however, in some cases, user charges may not be adequate and thus government funding will be sought. The development of ports and port infrastructure depends mainly on government, and thus is state funded. However, where development is required for a specific trade or commodity, government often enters into partnerships with the private sector. The development of shore side operations is seen as a partnership, and more and more of private funding is being invested in these operations.

2.2.4.6.3 Shipping

Shipping is funded on a purely user charging basis, and the rates are set by the international market based on demand and vessel capacity.

2.2.4.7 Maritime Diagnostic

Table 0-18 shows the main challenges, priorities and targets for reform in the maritime sub-sector.

Table 0-18: Maritime Diagnostic

Area	Challenges and Gaps	Priorities for Cooperation
Ports	• Congestion and production inefficiencies requiring investment, capacity growth and improved operations • Introducing private sector participation • Impact of a port-rail cross-subsidisation funding model on port charges and total transport cost	Information, experience exchange
AtoN	Sustainability, funding, modernisation in world of satellite/electronics	
Shipping	• Development of regional industry and economies of scale (without encouraging protectionism) • Enforcement of IMO requirements regarding sub-standard ships and crews	Development of national/regional maritime traffic lanes in order to know where vessels passing the region would be sailing and to enhance maritime safety and prevent pollution (as per the WIO-MHP model)

Maritime	• Lack of holistic regional maritime policy • Compliance with international commitments (conventions) • Maintaining port-state control skills and establishing a sustainable funding model	• Review requirements of and compliance with the African Maritime Transport Charter • Standardised regional standards and practices • Incorporation of standards into national legislation • Region-wide training

2.2.5 Aviation

2.2.5.1 Regional Integration Target

Like marine transport, air transport is a global enterprise, largely provided based on commercial considerations. Although regional air services are expected to follow this global approach, domestic air services will likely keep focusing on national rather than commercial considerations. Regional airports should be provided in an efficient, commercial manner, as it is expected that route density will lead to a network of intra-regional services which connects regional centres with major hubs.

To ensure that regional aviation remains fully integrated globally, the international conventions, standards and recommended practices applicable to aviation should be properly implemented and overseen. Here too there is scope for consolidating the oversight function at a regional level. Figure 0-4 indicates the major regional airports.

2.2.5.2 Civil Aviation Context

Although the focus is on the regional integration of civil aviation, it is important to have a clear understanding of the system and how specific elements may impact directly or indirectly on regional considerations. The system components are:

- Human: As the creator and operator of the system, sub-systems and system elements, people are the single most important element
- Aircraft: The heavier-than-air powered machine, invented and developed by mankind to soar through the skies for the benefit of mankind
- Flight operations: Procedural systems for the safe and effective operation of aircraft and the technical equipment on board the aircraft
- Airports and aerodromes: The provision of a system of facilities for the take-off and landing of aircraft, the loading and unloading of passengers and cargo, managing sufficient space for aircraft movement and parking on the ground
- Airspace and air navigation services: Providing the airspace for aircraft movement and the required navigation services, air traffic services and information needed for safe completion of flights, together with the management of the airspace.

Governing the civil aviation system are laws, regulations, standards and procedures, while the government authorities perform supervision to ensure conformance with requirements. The five sub-systems above interact with one another and are all affected and governed by the following two systems (or sets) of regulatory requirements:

- Safety and security requirements referring to policies, regulations and procedures to achieve an appropriate level of safety and security in the civil aviation system; and

- Air transport requirements which include policies, regulations and formal arrangements to satisfy air transport demands, allocating traffic rights (market access) domestically and internationally and other matters pertaining thereto.

2.2.5.2.1 International Civil Aviation Organisation

The full extent of effective integration in the Southern African region in the field of aviation can only be determined in the context of the role that the International Civil Aviation Organisation (ICAO) and similar regional organisations are currently playing in development of orderly, safe and secure international civil aviation. The Convention on International Civil Aviation (the Chicago Convention, 1944), establishing the organisation, also provides the regulatory framework for an integrated system of the different disciplines constituting civil aviation. The organisation has assumed regulatory functions, primarily focusing on the technical aspects of aviation safety and security, and plays a consultative and advisory role in the economic and legal spheres. The Convention therefore distinguishes between mandatory and permissive functions.

Since its inception, the main technical achievement of ICAO has been the agreement of its Member States on the necessary level of standardisation for the operation of safe, efficient and regular air services. The standardisation has mainly been achieved through the adoption of annexures to the Convention, covering the full spectrum of civil aviation, known as International Standards and Recommended Practices (SARPs).

The permissive functions of ICAO include research into aspects of air transport and air navigation, which are of international importance, training, regional planning and the implementation of regional plans, technical cooperation, forecasting and economic planning and airport and airspace management.

ICAO is the most influential inter-governmental organisation in the spheres of international air transport (economic) and in particular civil aviation safety (technical) regulation. SADC, under Chapter 9: Civil Aviation of its Protocol gives a clear recognition to ICAO in the words:

"… Member States shall ensure the provision of safe, reliable and efficient services in accordance with the ICAO SARPs, with a view of improving the levels of service and cost-efficiency in support of the socio-economic development of the region."

International air law has its fundamental source in the Convention. In addition, several other multi-lateral conventions on air law, which unify the private and public law aspects of international civil aviation. These conventions address matters such as the international recognition of the rights in aircraft, liability in international carriage by air and aviation security measures. The succession to these international treaties is not automatic, but requires an expression of the will of the succeeding Member State in a proper form.

2.2.5.2.2 Aviation Regional Cooperation in Africa

Since the signing of the Chicago Convention, states in Africa have created an autonomous regional civil aviation organisation known as the African Civil Aviation Commission (AFCAC), which works in close liaison with ICAO. Membership is open to all African States which are members of the Economic Commission for Africa (ECA) or the African Union (AU). In essence, AFCAC's functioning is limited to inter-governmental cooperation through the harmonisation of policies and procedures of its Member States. Such policies and procedures merely support the mandatory and permissive functions of ICAO. AFCAC, together with similar organisations in other parts of the world, works

concomitantly with ICAO towards common aims and objectives. AFCAC does not have any decision-making powers in this regard.

2.2.5.3 Regional Aviation Policy and Planning

As part of the creation of an enabling environment in the region, it is expected that there would be a Regional Civil Aviation Policy, supported by a strategy that provides a blueprint or an overall plan to give effect to the active implementation of the Policy. National legislation should incorporate the principles of integrated regional civil aviation.

The most significant regional initiative in the policy and planning domain is the SADC Protocol to the extent that it also addresses civil aviation. The Protocol, inter alia, provides for matters such as harmonised regional civil aviation policy on intra-regional air transport markets for SADC airlines, economic and institutional restructuring of all functional areas of civil aviation, strengthening of regional capacity towards aviation and promotion of compliance with ICAO SARPs.

A SADC regional coordinating body, assisted by Member States, should assume responsibility for implementing the above. Such a body does not yet exist.

There are various industry representative organisations active in the region, and their mandate includes participating in and influencing policy direction. The Airlines Association of Southern Africa (AASA) can be classified as a truly regional organisation. It represents the interest of 15 member airlines from SADC countries. It represents its members on all issues of common interest to airlines, including policy, planning, operational, regulatory and financial issues. The larger national airports in the region belong to the Airports Council International (ACI). ACI represents airports interests with governments and international organisations such as ICAO, and assists with the development of SARPs. Some national air navigation services providers belong to the Commercial Air Navigation Service Organisation (CANSO), which represents the interests of the Air Navigation Service Providers (ANSPs) worldwide.

2.2.5.4 Aviation Oversight

2.2.5.4.1 Aviation Safety and Security

Two key aspects are important here: firstly, the establishment of a set of tools or norms to guide and regulate as, may be appropriate, development, operation and maintain the functioning of the civil aviation system; and secondly, to impose regulatory and monitoring systems to ensure compliance with standards and procedures.

Regional Standards
Pursuing a Level 3 degree of regional integration, it is expected that there would be a common regional set of technical standards and practices addressing civil aviation safety and security, fully compliant with ICAO SARPs and corresponding with the standards of the European Air Safety Authority (EASA) and the Federal Aviation Administration (FAA) in the USA. Member States should also accede to the multi-lateral conventions for the unification of air laws. In this regard, Article 9.4 of the Protocol firmly places adherence to ICAO SARPs on the agenda, encouraging Member States to recognise each other's licenses and certificates (authorisations), provided they comply with the SARPs.

Regional CAA
Although possibly a Level 4-type initiative, an autonomous, financially self-sustaining Regional Civil Aviation Authority could be considered, with a mandate to regulate aviation safety and security on a

regional basis, and therefore on behalf of Member States. ICAO recognises that the emergence of trading and regulatory blocs provides vehicles for the devolution of some of the safety responsibility in a common regional or sub-regional approach. The Civil Aviation Safety and Security Oversight Agency (CASSOA) in East Africa is an example where such an initiative is being undertaken in the tripartite area.

An accord was signed in 1996 for the establishment of a Southern Africa Regional Air Transport Authority (SARATA). The objectives of the SARATA Accord were the:

- Establishment of a regional regulatory air transport regime providing for the harmonisation of norms and recommended practices in areas pertaining to flight safety, air transport policy, fair competition, consumer protection and environmental issues;
- Development of an enabling environment for commercially viable and efficient air transport operations;
- Creation of a unified airspace within the SADC region; and
- Creation of negotiating machinery of Member States in their negotiations with third countries or groups of countries for air service agreements.

The Project on Cooperative Development of Operational Safety and Continuing Airworthiness Programme in the Southern African Development Community Member States (COSCAP) of 2003 provided for a cooperative agreement between the SADC Member States, aiming at enhancing the safety of air transport operations. The project was planned as the forerunner of a permanent SADC Aviation Safety Organisation (SASO), manned by regional flight safety inspectors, having the mandate to continue the certification, surveillance, airline audit and training functions. The project feasibility study included cost-sharing among SADC Member States as inherent in the project, but supplemented by contributions from third part donors, regional development banks and international organisations.

As far as SARATA is concerned, the objectives appeared to cover a very wide spectrum of functions involving the comprehensive regulation of those functions, as well as aspects of service delivery and which do not align anymore with the global trend to separate these functional areas. In 1996 it was decided to discontinue the SARATA concept. The draft Ministerial Accord, however, contains principles and approaches which may still be of value as guidelines for the ultimate establishment of a regional civil aviation authority in the functional area of regional safety and security regulation. In respect of COSCAP, no significant progress since the feasibility study can be commented upon.

It is acknowledged that the fulfilment of the third objective may constitute a Level 4 activity. Realising that the achievement of the first objective may initially involve considerable effort, two phases are foreseen: Phase 1 will be the establishment of the authority with the mandate to assume responsibility for compiling the regional standards and ensure implementation by Member States in their domestic regulations. Phase 2 will entail full regulatory control on behalf of the Member States.

SADC has a permanent mission to ICAO at its headquarters in Montreal, Canada to keep abreast with the development of principles of international air navigation and the planning and development of international transport as provided for in the Protocol.

2.2.5.4.2 Market Access

Market access in a regional context would relate to the rules and norms applying to all operators wishing to participate in the activities of the air transport services market. The concept of market

access does not apply to airports and ANS, as these do not enter/exit under the same competitive logic as air services.

Globally, the entering (or exiting) of the aviation market is managed in an orderly fashion, based on two fundamental but interrelated considerations, namely safety and reliability. Safety (including security), which is of paramount importance, was already dealt with in the previous section.

Reliability should be viewed from three sides. Firstly, the setting up of rules that will enable an environment conducive towards the functioning of the market in a proper (safe and orderly) fashion (i.e. structuring the air transport market). Secondly rules and/or arrangements that will govern the conduct in the market itself. Thirdly monitoring and performance.

It is expected that for air transport, Level 3 integration would require effective liberalisation of intra-regional (SADC) and intra-African air transport services in accordance with the terms and conditions contained in the Yamoussoukro Decision on the implementation of the African Transport Policy. The Air Transport Services Regulations for the Implementation of the Liberalised Air Transport Industry (Competition Regulations), 2008, would be incorporated into the national aviation laws of Member States. The Joint Competition Authority (JCA) would function properly and effectively to oversee the liberalisation of the air transport market.

SADC has been intimately involved with air transport liberalisation as is demonstrated in the Protocol, as well as its participation in the initiatives of UNECA and AFCAC as reflected in the inception of the Yamoussoukro Declaration in 1988, the Mauritius Decisions in 1993, and culminating with the Yamoussoukro Decision in 1999.

At the First COMESA-EAC-SADC Tripartite Summit in October 2008, it was reported that SADC had put in place the administrative structure for the JCA Secretariat.

The competition regulations adopted by COMESA, EAC and SADC provide for the establishment of the JCA to oversee the implementation of the competition regulations. The Tripartite Task Force is at present engaged in getting the JCA operational through the implementation of a roadmap. The roadmap involves the development of the legal and institutional framework to give effect and mandate to the JCA, the organisational and management structure for the JCA Secretariat, the business plan and budget, sustainable mechanisms for funding the JCA and an Air Services Agreement (ASA) template for the implementation of the Yamoussoukro Decision in the Tripartite region.

2.2.5.4.3 Economic Considerations

Given the economic conditions dictating the aviation industry, the question which arises from a regional context is to what extent should air transport services be economically regulated? Historically airlines have developed as state-owned airlines or flag carriers, while airports and the supporting air traffic and navigational services remained in the domain of central government. Motivated by the concept of national interest and national security, governments have created monopolies which, with the advent of liberalisation, became necessary to introduce specific measures to deal effectively with the status quo situation.

In terms of what the expectations from the regional level should be, as a first step the airline industry at the national level should be economically deregulated. Economic decisions should, as far as possible, be subject to general competitive principles applicable to all industries to maximise

consumer choice and satisfaction. This will lay the foundation for an economically deregulated regional airline industry.

In the best interest of users and service providers at regional level, Member States should establish autonomous entities for airports and lower airspace air traffic management services. Member States would, nevertheless, remain responsible for safety and security, and in view of the monopolistic nature of airports and air traffic management (ATM) services, also responsible for the economic oversight of all operations.

An independent, financially self-supporting mechanism should be introduced by Member States for the economic regulation of airports and ATM facilities and services. Such a mechanism would oversee economic, commercial and financial practices within the following framework and/or other related parameters adopted at the regional level: It would ensure non-discrimination in the application of charges, ensure there is no overcharging or other anti-competitive practice or abuse of dominant position, ensure transparency as well as the availability and presentation of all financial data required to determine the basis for the charges, assess and encourage efficiency and efficacy in the operation of providers, establish and review standards, quality and level of services provided, monitor and encourage investments to meet future demand and ensure that user views are adequately taken into account.

Article 9.2 of the SADC Protocol provides for the commercialisation of SADC airlines, airports and the provision of ATM. In Article 9.3 regional air services are addressed and a common approach towards aspects such as regionally owned airlines, route networks, standardisation in equipment, common rules for licensing of aircraft maintenance organisations and airline business plans are being referred to. However, from a regional perspective, apart from the overlap with the Yamoussoukro Decision, no further evidence could be found with respect to progress on any of the other issues mentioned in the Protocol.

2.2.5.5 Delivery

The delivery function can be divided into the provision of (i) regional aviation infrastructure (airports and terrestrial aeronautical aids) and systems (systems utilising satellite technology), (ii) the operation and maintenance of the regional infrastructure, and (iii) the provision of regional air transport services for the carriage of passengers and air freight. Although this section will primarily address the regional aspects of aviation delivery the inter-dependence between so-called regional systems and systems dedicated only to domestic activities must be recognised.

2.2.5.5.1 Regional Airports

It is expected that there should be a network of international airports located at regional centres in the SADC region, designated as regional airports as entry points (gateways) into the region and thereby points via which the region should be linked to the rest of the continent and the world. Such a formal airports classification has been proposed in East Africa, with airports being either international or gateway (providing a wide range of international services, including inter-continental, and domestic services) or regional (domestic services, including links with gateway airports).
Table **0-19** lists the major regional airports.

Table 0-19: Major Airports in SADC (2010)

Country	City	Airport

Country	City	Airport
Angola	Luanda	4 de Fevereiro
Botswana	Gaborone	Sir Seretse Khama
DRC	Kinshasa	N'Djili
	Lubumbashi	Lubumbashi
Lesotho	Maseru	Moshoeshoe
Madagascar	Antananarivo	Ivato
Malawi	Lilongwe	Kamuzu
Mauritius	La Plaisance	Sir Seewoosagur Ramgoolam
Mozambique	Maputo	Maputo
	Beira	Beira
Namibia	Windhoek	Hosea Kutako
	Windhoek	Eros
Seychelles	Victoria	Pointe Larue
South Africa	Johannesburg	OR Tambo
	Cape Town	Cape Town
	Durban	Durban
Swaziland	Mbabane	Matsapa
Tanzania	Dar-es-Salaam	Julius Nyerere
	Arusha	Kilimanjaro
	Zanzibar	Abed Amani Karume
Zambia	Lusaka	Lusaka
	Livingstone	Livingstone
Zimbabwe	Harare	Harare
	Bulawayo	Bulawayo
	Victoria Falls	Victoria Falls

Note: Major national and international airports with more than 500 000 people visiting in 2009 are shown, while other airports are included if unsure
Source: GOPA, supplemented

Such regional airports should be operated as public agencies or airport authorities. Airport authorities should retain their landlord status, but introduce competition in non-core services by contracting these out to render services at levels commensurate with regional requirements. Regional airports should be financially self-sustaining and financially ring-fenced involving the full cost profile of the airport.

The Protocol addresses airports and ANS only on a limited basis in Article 9.2 by stating that the commercialisation of airports and ANS should be considered in terms of the "rationalisation of the relationship between governments and civil aviation institutions, human resource development and ownership options, among other matters".

Table **0-20** gives the status of ownerships of airports in Member States.

Table 0-20: Status of Airport Ownership in SADC Countries

Country	Airport Authority	Classification
Angola	N/A	N/A
Botswana	Civil Aviation Authority (CAAB)	Agency
DRC	N/A	N/A
Lesotho	Department of Civil Aviation	Government
Madagascar	Aéroports de Madagascar (ADEMA)	Corporation
Malawi	Department of Civil Aviation	Government
Mauritius	Airports of Mauritius Company Ltd (AML)	Corporation
Mozambique	Aeroportos de Moçambique (ADM)	Corporation
Namibia	Namibia Airports Company	Corporation
Seychelles	Civil Aviation Authority (SCAA)	Agency
South Africa	Airports Company South Africa	Corporation
Swaziland	Directorate of Civil Aviation	Government
Tanzania	Tanzania Airports Authority Kilimanjaro Airport under concession	Agency Concession
Zambia	National Airports Corporation Ltd (NACL)	Corporation
Zimbabwe	Civil Aviation Authority (CAAZ)	Government

2.2.5.5.2 Regional Air Navigation Infrastructure

SADC should be actively and effectively participating in the Africa-Indian Ocean (AFI) region navigation planning and the implementation of CNS/ATM systems under the auspices of ICAO. SADC regional airspace should be integrated as a contiguous unit with no national boundaries, other than regional boundaries at the outer edges of the region and divided into upper and lower airspace. The regional upper airspace should be operated utilising satellite technology by a regional public agency or concessioned out. Existing terrestrial air navigation systems serving regional and international air movements in the lower airspace should be designated as regional aeronautical infrastructure. Lower airspace should be operated on a commercialised basis by a national public agency, a contract with the regional public agency for the upper airspace, or concessioned out.

Over a period of time, ICAO has employed its regional planning structures to plan and implement the Communications Navigation Surveillance Air Traffic Management (CNS/ATM) systems. Globally, seven regional plans have been established. One of these plans relates to the AFI region and the AFI Planning and Implementation Regional Group (APIRG) is responsible for the implementation of the regional plan. Further refinement was, however, necessary and the activities of APIRG were divided into ten predefined homogenous/routing areas under the supervision of ten Implementation Coordination Groups (ICGs). Individual states and other stakeholders realise the significance of using sub-regional structures to further the aims and objectives of the implementation plans on a regional basis. SADC is one of the regional organisations that participates in this initiative. Table 0-21 gives the status of ANS in Member States.

Table 0-21: Status of ANS in SADC Countries

Country	ANSP	Classification

Angola	National Civil Aviation Institute (INAVIC)	Government
Botswana	Civil Aviation Authority (CAAB)	Agency
DRC	Directorate of Civil Aeronautics	Government
Lesotho	Department of Civil Aviation (lower airspace)	Government
Madagascar	ASECNA	Concession
Malawi	Department of Civil Aviation	Government
Mauritius	Department of Civil Aviation	Government
Mozambique	Aeroportos de Moçambique (ADM)	Corporation
Namibia	Department of Civil Aviation	Government
Seychelles	Civil Aviation Authority (SCAA)	Agency
South Africa	Air Traffic and Navigation Services Company (ATNS)	Corporation
Swaziland	Directorate of Civil Aviation (lower airspace)	Government
Tanzania	Civil Aviation Authority (TCAA)	Agency
Zambia	National Airports Corporation Ltd (NACL)	Corporation
Zimbabwe	Civil Aviation Authority (CAAZ)	Government

The SADC has engaged in viability studies to determine the feasibility of a SADC Upper Airspace Control Centre (UACC), as well as the viability for lower airspace requirements for SADC Member States, which would harmonise with the UACC concept. The Tripartite Summit gave recognition to SADC's work in this regard, aiming at coordinating with similar initiatives in other regions.

To date SADC has played a considerable role in supporting the implementation of CNS/ATM systems by Member States in the region, which has been recorded at the APIRG meetings. The initiative towards further implementation of what is being called the ATM Operational Concept, which is ICAO's present visionary approach towards an integrated, harmonised and globally interoperable ATM system, would require a continuation of the SADC's support.

2.2.5.5.3 Air Transport Services

Historically, the provision of air transport services has been largely regulated at the international level by bilateral agreements between governments. ICAO recognises the replacement of less liberal bilateral agreements with regional and sub-regional air transport service multi-lateral agreements, such as among the Member States of the European Union, or the Andean Pact and Mercosur groups in South America.

Economic liberalisation is being fostered trans-nationally by the Organisation for Economic Cooperation and Development (OECD), as well as globally by the World Trade Organisation who applies the General Agreement on Trade in Services (GATS) to three specific air transport services, namely aircraft repair and maintenance, sales and marketing and computer reservation systems.

Moving more aggressively towards regional integration, it is expected that air transport at a regional level should be based on the active implementation of the Yamoussoukro Decision in a liberalised regional air transport market, including the designation of airlines by Member States to exercise traffic rights under the Decision. Institutional arrangements for monitoring implementation should be put into operation. Airline cooperative agreements or marketing arrangements such as code sharing, leasing or franchising would be prevalent. Multi-lateral air transport agreements between the SADC region and the aeronautical authorities of inter-continental destinations should be

introduced, with the Joint Competition Authority (JCA) playing a leading role in initiating air service transport agreements.

SADC has been a fairly active player in the regional initiatives towards air transport liberalisation. The Protocol in Article 9.3 deals extensively with the enhancement of commercial viability and competitiveness of regional air services, but this has been taken a step further with the Yamoussoukro Decision. Various arrangements are being put into place by the Tripartite Task Force.

The Protocol (Article 93.3) encourages the development of scale economies in regional air services, e.g. through joint ventures between and integration of some SADC airlines, and the standardisation of ownership structures, air transport networks, airline business plans and operational planning. Such initiatives should clearly be driven by good commercial practice.

Since the late 1970s, many countries have overhauled there economic restrictions and liberalised their air transport markets. In the SADC region, however, progress has been slow. The reason for this lies with the continued reluctance of many SADC states to liberalise their transport regimes due to the concerns that liberalisation and increased competitive pressures resulting will undermine the viability of the national air carriers.

2.2.5.6 Funding

2.2.5.6.1 Oversight

Although some national aviation safety regulators remain dependent on government for their funding, the arm's length agencies have implemented various degrees of user charging, including a general levy on civil aviation.

2.2.5.6.2 Infrastructure and Services

The SADC Protocol provides for the economic and concomitant institutional restructuring of SADC airlines, airports and air traffic and navigation services, including the restructuring of such institutions in respect of, among others, financing (Article 9.2c)i)aa).

As noted already (refer to 2.2.5.e.), it is therefore expected that regional airports would be largely financially self-sustaining. ANS of a regional nature (i.e. at least upper airspace) should similarly pay its own way with users ensuring the necessary management, reinvestment and capacity growth through user charging. As noted throughout Chapter 9 of the Protocol, regional air transport services should have a strong commercial and therefore self-funding rationale.

2.2.5.7 Human Resources in Aviation

Certainly one of the most important aspects on which the success of regional integration in the field of civil aviation depends is the capability of human capital that will have to be engaged in the process. The aviation industry covers abroad spectrum of skills requirements, ranging from highly skilled technological and aviation-specific skills to more generic skill similar to the requirements of other service industries. More specifically reference can be made to the training skills required for airline pilots, aeronautical engineers, aircraft maintenance engineers, airport designers, air traffic controllers, management, security systems, management and corporate services supported by financial, insurance, leasing, legal and aviation insurance capabilities.

Requirements for Level 3 integration would be:

- A core of properly trained and skilled personnel to assume responsibility for the broad spectrum of civil aviation and related functions with a proper understanding of and a willingness to actively engage in the regional integration of civil aviation;
- An equitable participation of the nationals of Member States in all regional structures;
- The establishment of suitable training facilities and appropriate training equipment and materials to fulfil the collective needs in the region; and
- Where training facilities are already in existence in the region, capable to contribute to the regional training effort, such facilities should be assessed by an independent adjudicator (preferable nominated by ICAO) in terms of its capabilities, and if it meets set standards, to be accredited as a regional training facility.

In Article 9.3 the Protocol refers to a common approach by Member States to human resource development in the civil aviation sector within SADC. Various training facilities are in existence in Member States. Some of these facilities also provide training to aviation personnel from neighbouring states. ICAO plays a considerable role in ensuring appropriate training standards and curriculums.

2.2.5.8 Aviation Diagnostic

Table 0-22 shows the main challenges, priorities and targets for reform in the aviation sub-sector.

Table 0-22: Aviation Diagnostic

Area	Challenges and Gaps	Priorities for Cooperation
Airports	Designation of regional hubs (the Yamoussoukro Decision does not provide an approach to route networks and regional or gateway airports)	
ANS	• Perceived national security issues related to ANS • Commercialisation and de-politisation of ANS • Sustainable funding model for ANS • Treatment of LAS (lower airspace) if UAS (upper airspace) is commercialised	Regional integration of upper airspace
Air Transport	• Implementing air services liberalisation in line with the Yamoussoukro Decision • The comity and reciprocity concept in bilateral agreements is deeply entrenched in the minds of aeronautical authorities and it is difficult to make paradigm shift to a more liberalised regime • Protection of national, especially state-owned, loss-making airlines	Implementation of Yamoussoukro Decision
Aviation	• Lack of holistic regional aviation policy • Lack of accession to and non-compliance with international commitments (conventions) • Lack of SARPs implementation • Lack of coordination of training efforts by Member States • Maintaining safety oversight skills and establishing sustainable funding model	• Standardised regional SARPs • Incorporation of SARPs into national legislation • Region-wide training

2.2.6. Non Mode-Specific Topics

There are some transport topics which do not fit neatly into the mode structure of this diagnostic, most of which cut across and are therefore applicable to all the transport modes.

2.2.6.1 Inter-modality

The Protocol promotes intermodal synergy and the optimal utilisation of modes (Article 3.2 and 3.4). The intention is assumed to be that no mode should be systematically favoured above another, and the modes should compete on a level playing field. The main area of intermodal tension is probably road versus rail, where the full cost of road infrastructure is typically not passed on to the road transporter, but is in the case of rail. Levelling the playing field would therefore entail pricing roads at their full cost (refer to Section 0).

2.2.6.2 Competition

For all modes of transport covered in this diagnostic, a dispensation is foreseen of deregulated, private and competitive provision of transport services. This arrangement is largely in place in the case of maritime transport, but has not yet been achieved. It is anticipated in the near future for road and air transport, and possibly still some way off for rail transport. In aviation, the JCA will at some point be established to manage the liberalisation of regional air transport.

The competition domain is treated as a cross-cutting issue by SADC, i.e. not a purely transport topic. The tripartite has also previously (Kampala, October 2008) confirmed the intention of developing an inter-REC (i.e. 'regional') competition policy framework. The SADC Trade Ministers adopted the Declaration on Regional Cooperation in Competition Law and Consumer Policy in 2008, providing for a cooperation framework in the application of Member States' respective national competition laws. It has not been investigated (for this diagnostic) how the declaration deals with transport in general and the existence of some transport-specific economic regulators in the region.

2.2.6.3 Search and Rescue (SAR)

Article 8.5.4 of the Protocol commits Member States to develop their search and rescue capacity on a regional basis, including investigating the development of a regional SAR organisation with participation by all Member States. SAR also arises in the aviation chapter (Article 9.3.3).

A Maritime Search and Rescue Standard Operating Procedure for Mutual Assistance between SADC Member States exists (at least since 2002), as facilitated by the Standing Maritime Committee on Co-Operation between Member States (SMC). The plan provides for the promotion of the establishment of National Rescue Control Centres as required by the IMO, establishing a database of regional assets and their capabilities, as well as organisational and communication information, establishing standard operating procedures for mutual assistance, combined training and exercises, and for agreements for assistance as mutually arranged.

2.2.6.4 Accident Recovery and Investigation

The Protocol provides for the development of incident management systems for road transport (Article 6.14). Accident investigation should be standardised for railways (Article 7.4), but is not specifically provided for in the case of maritime or air transport.

As noted in Section 0, the roads incident management topic has not progressed in the region. It has also not advanced in the case of the other modes.

2.2.6.5 Transport and the Environment

The Protocol commits Member States to establishing a transport system that is environmentally sustainable (Article 2.3), taking due consideration of relevant international and regional conventions (Article 2.4), and which is compatible with responsible environmental management (Article 3.1).

The Protocol provides for the development of measures to assess and control the impact of road transport on the environment (Article 6.15), as noted in section 0, the harmonisation initiative for hazardous loads is still under development.

Railways must be environmentally friendly (Article 7.1), and the marine environment must be protected in line with international standards (Article 8.5). It is not known whether such initiatives have been pursued by SADC.

3. Gap Analysis for Transport Network as a Whole

3.1 Projections and Trends for 2027 and Infrastructure Requirements

The demand for regional and transit transport was determined through a desktop exercise based on information that was available from the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa project(PPIAF October 2011). This chapter provides a summary of the results for the SADC region farom the aforementioned report.

The World Bank, in collaboration with the three Regional Economic Communities (RECs) of Eastern and Southern Africa launched the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa project. The RECs involved are the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC).

Five volumes were prepared for this project. The third volume, the Strategic Transport Network Model Report, describes the historic trade flows in the region and provides trade demand and trade flow projections. It analyses the relationship between trade and performance, the current decision-making process for corridor selection and suggests the methodology for evaluating the strategic transport network required for the subject region.

3.1.1 Base Year Demand for Regional and Transit Trade

The main importers by volume (tonnage) are South Africa (45 million tons), Angola (10 million tons), and Zimbabwe (7 million tons). South Africa has by far the highest volume of exports (81 million tons), followed by Angola (51 million tons), Botswana (7 million tons), and Zambia (4 million tons).

The majority of Southern Africa's imports come from overseas (79 %); 16 % come from countries in Southern and Eastern Africa; and the remaining 5 % come from other African countries. Similarly for exports, the majority of Southern Africa's exports (76 %) go overseas, whereas 23 % stay in Southern and Eastern African countries and a minimal amount of exports go to other African countries.

3.1.2 2027 Forecast for Demand for Regional and Transit Trade

The Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa project used the following in forecasting future demand for regional and transit trade:

- Historical trade data series;
- GDP forecasts by country; and
- Population forecasts by country.

2009 **2027**

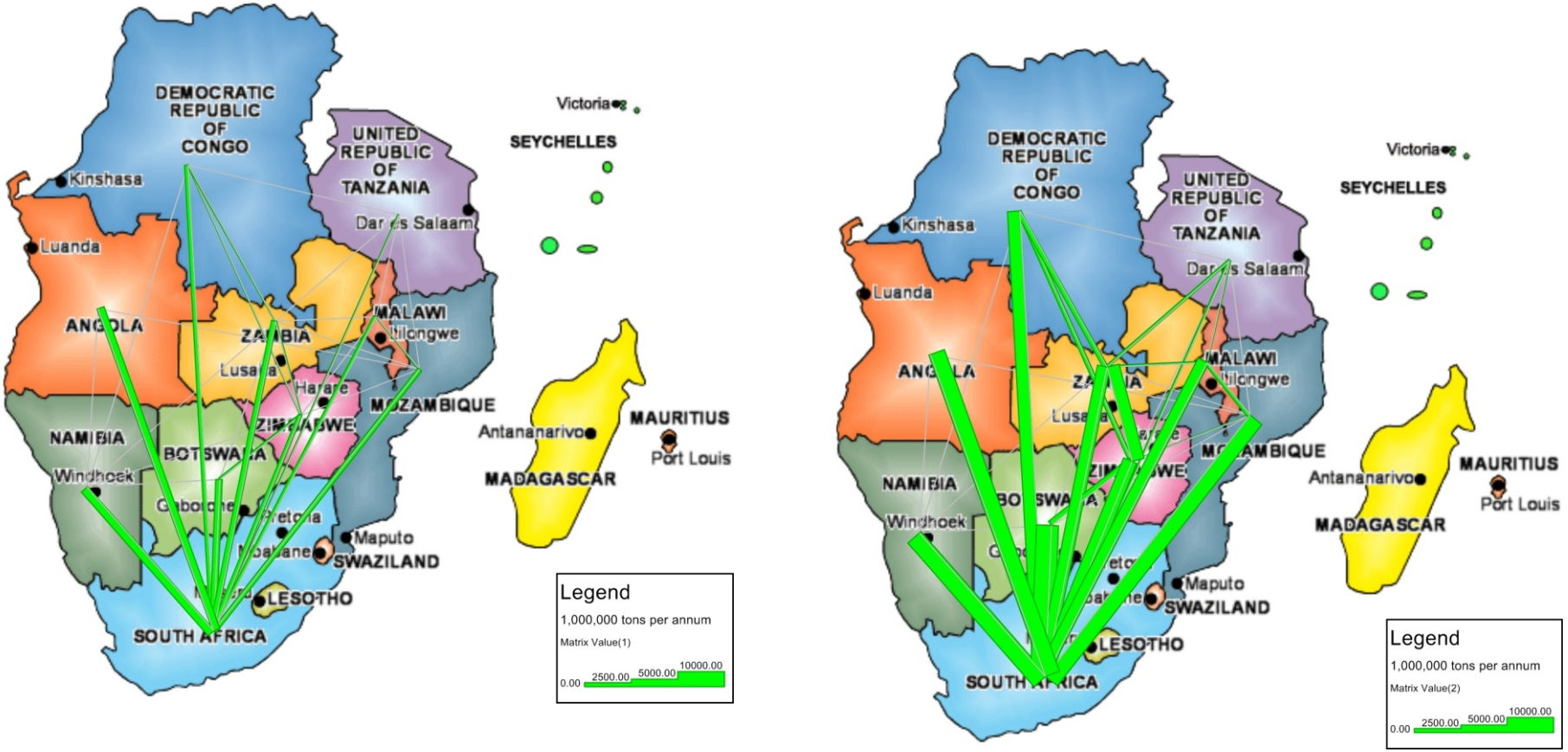
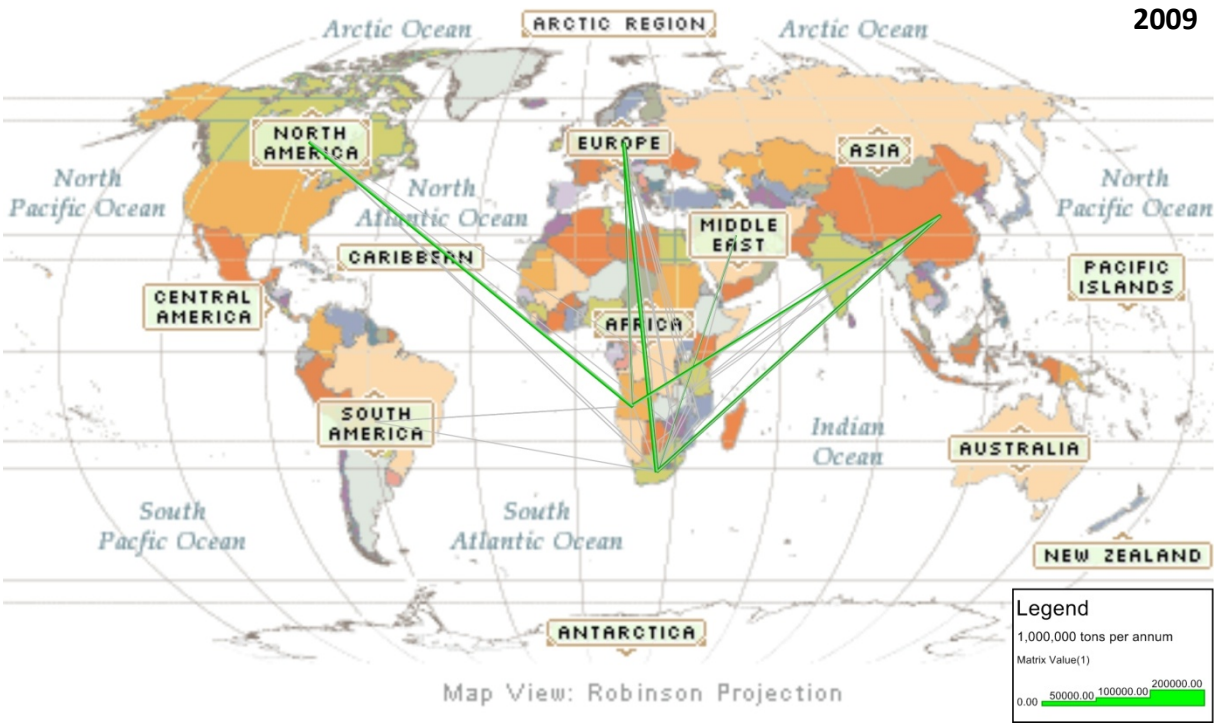


Figure 0-1: Estimated Trade Flows between SADC Countries for 2009 and 2027



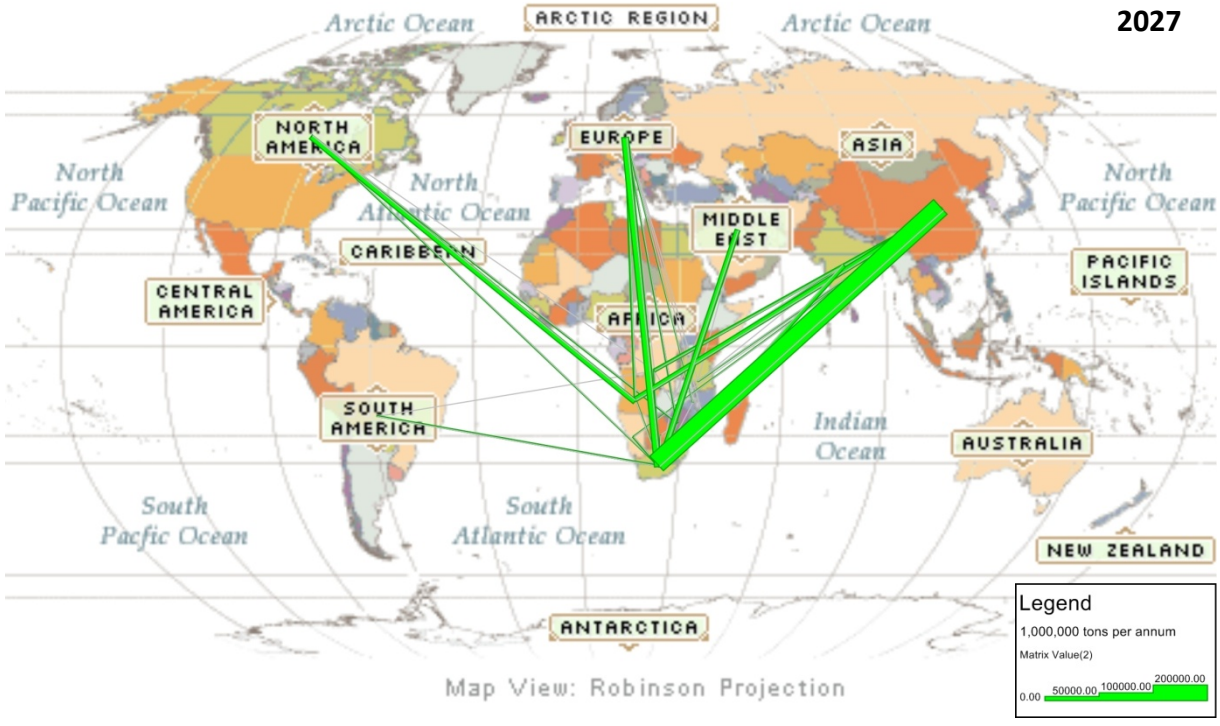


Figure 0-2: Estimated International Trade Flows for SADC Countries 2009 and 2027

3.1.3 Major Development Areas and Projects

This section provides a summary of minerals mined or extracted in the SADC region that are dependent on the transport sector for inputs and outputs. Transport demand from mining of minerals often provides anchor projects with which to justify major infrastructure investment and development.

Table 0-2 provides estimated mineral production by commodity as listed in the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa project. Figure 0-3 indicates the location of mineral sources and the distribution of estimated mineral

production for the SADC region.

Figure **0-5** indicates the location of agricultural sources and the distribution of estimated agricultural production for the SADC region.

3.1.4 Identification of Priority Regional Transport Corridors

The identification of priority regional corridors is directly related to the function the corridors are expected to fulfil. The primary stated policy of SADC is to link production and consumption points with maritime points.

Gopa-Decon assessed the corridors against the following criteria:

- Current condition;
- Current utilisation;
- Availability of shipping and port services;
- Trucker perceptions; and
- According to each corridor's potential growth:
  - Utilising mineral resources development as the core;
  - Through intra-regional trade; and
  - Through diversification and advancement of industrial structure.

On this basis, corridors were ranked as follows:

Table 0-1: SADC Corridors Ranked by Priority

Priority	Corridor
High	North-South, Maputo and Dar-es-Salaam
Medium	Trans-Kalahari, Beira, Nacala, Trans-Caprivi, Central, Trans-Orange, Lobito
Low	Trans-Cunene, Limpopo, Namibe, Malange, Bas Congo, Mtwara and Maseru-Durban

Table 0-2 indicates the estimated ongoing and future mineral and agricultural production by commodity and source from the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa.

Figure 0-3 and Figure 0-4 indicates the location and distribution of estimated mineral production and regional context respectively, while

Figure **0-5** and

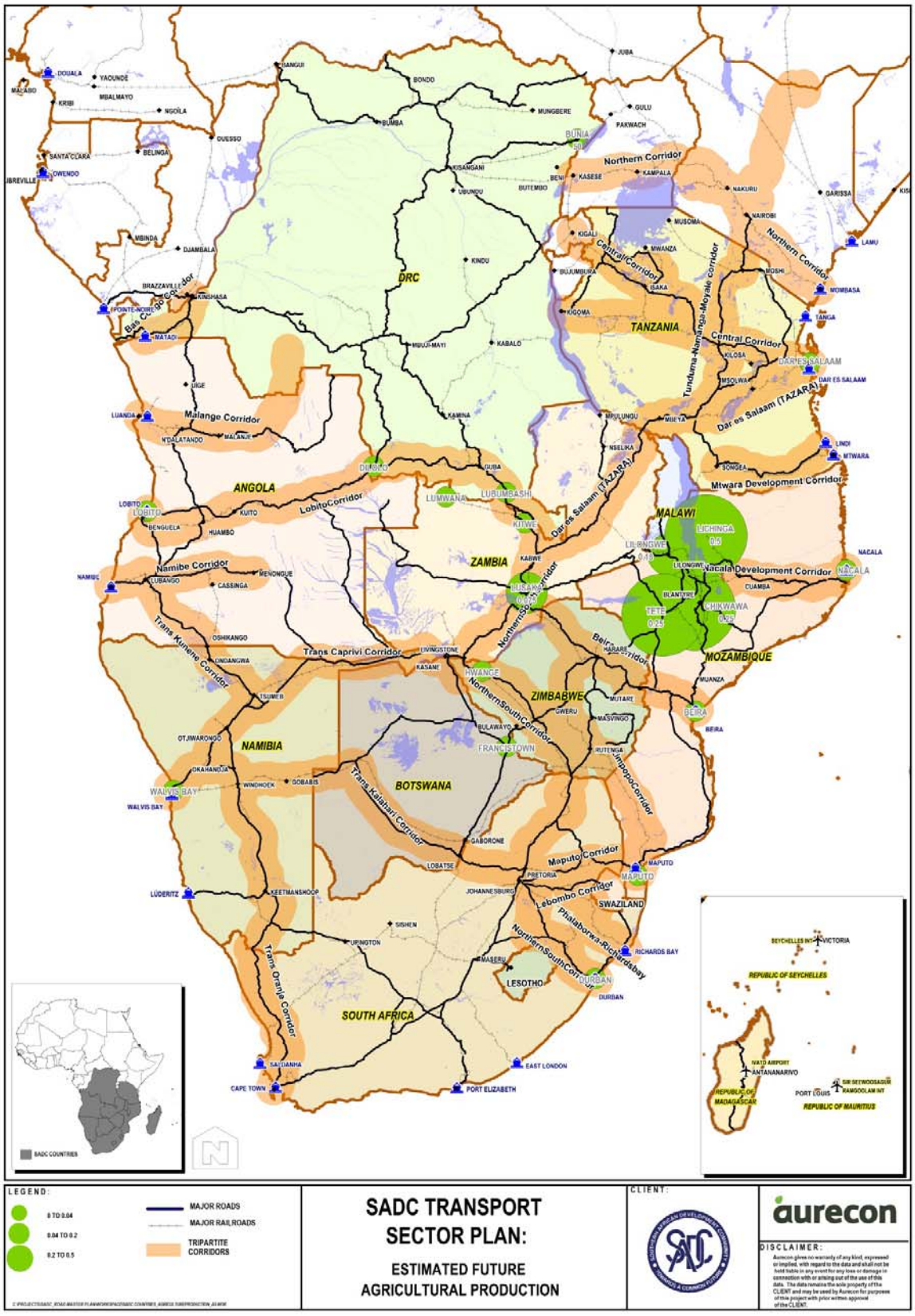


Figure **0-6** indicates the location and distribution of estimated agricultural production and regional context respectively. These figures give further insight into the importance of certain transport corridors.

Table 0-2: Estimated Mineral and Agricultural Production by Commodity and Source

Source	Location	Commodity	Mode	Existing Volumes	New/Additional Annual Production (tons)	Final Destination and Routing	Production	
							Start	End
Moatize	Tete province	Coal	Rail to Beira (600 km)	None	12 million mpta	India, China, Far East (100%)	2012	2040
Moatize	Tete province	Coal	Rail to Nacala (1 000 km)	None	20 million mpta	India, China, Far East (80%), the West (20%)	2012	2040
Malawi	Dwangwa and Nchalo (Chikwawa)	Sugar	Road via Blantyre to Beira port (800 km), rail currently closed, but goes to Beira (500 km)	150 000 mpta	±100 00 mpta	EU and West (100%) (estimated)	2010	N/A
Malawi/eastern Zambia	Lilongwe region	Tobacco	Road to Beira, road to South Africa	180 000	50 000	Far East (60%), South Africa (30%), EU (10%), and an estimated 60% currently through Beira	2010	N/A
Mozambique	Lichinga region	Agriculture/forestry	Road to Nacala, rail to Nacala (needs upgrading)	Nominal exports	Assumingly 500 000 mpta	Assumingly to the East, all through Nacala (captive traffic)	2010	N/A
Mozambique	Zambezi valley	Sugar	Rail to Beira (300 km), barge to Beira (300 km)	100 000 mpta	±150 000 mpta	Assumingly mainly to the EU and the West, all through Beira (captive traffic)	2010	N/A
Zambian Copper Belt	Ndola Kitwe Chingola region	Copper	Road/rail to Dar-es-Salaam and road to Durban	800 000 mpta	400 000 mpta	To the East, mainly China (80%) and to the West (20%) via Lobito after 2015	2010	2050
Zambia Copper Belt	Ndola Kitwe Chingola region	Copper concentrates	Rail to Durban	Variable, ±200 000 mpta	Declining with increasing smelting capacity	To the Far East, especially China	2010	2015
DRC Copper Belt	Kolwezi region	Copper	Rail to Lobito, road and rail via Zambia	50 000 mpta	200 000 mpta	Assumingly 50% to the East and 50% to the West	2015	N/A
Western DRC	Kisenge, close to the Angolan border	Manganese	Rail to Lobito (1 400 km)	None	400 000 mpta (previous production level)	Assumingly 75% to the East, 25% to the West and SA	2015	N/A
Eastern DRC	Lubumbashi region	Copper	Rail and road	50 000 mpta	200 000 mpta	Assumingly 50% to the East and 50% to the West	2010	N/A
Eastern DRC	Lake Albert region	Iron ore	Rail to new bulk terminal at Mombasa or Lamu	None	Up to 50 million mpta	Assumingly all to the East, mainly China	2020	N/A
Western Zambia	Lumwana region	Copper concentrates	Road or rail to Chingola, rail to Lobito and rail or road to Walvis Bay through Katima Mulilo	100 000 mpta	300 000 mpta concentrates	Assumingly 100% to the East, mainly China	2010	2040

Source	Location	Commodity	Mode	Existing Volumes	New/Additional Annual Production (tons)	Final Destination and Routing	Production	
							Start	End
Zambia	Lusaka region	Agriculture	Road to the South (South Africa), air to the West	50 000 mpta	100 000 mpta	Assumingly 60% to the EU and 40% to the Middle East	2010	N/A
Botswana	Eastern Central region	Coal	Rail to Walvis Bay or rail to Maputo	None	Assumingly 5 million mpta	Assumingly all to the East	2015	2040
Zimbabwe	Northern region, Hwange, Victoria Falls	Coal	Rail to South Africa and rail to Maputo	None, only 0.5 million mpta locally	Assumingly 0.5 million mpta to South Africa and 2 million mpta as international exports	Assumingly all to the East, mainly India and China	2012	2035

Source: Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa, PPIAF, October 2011

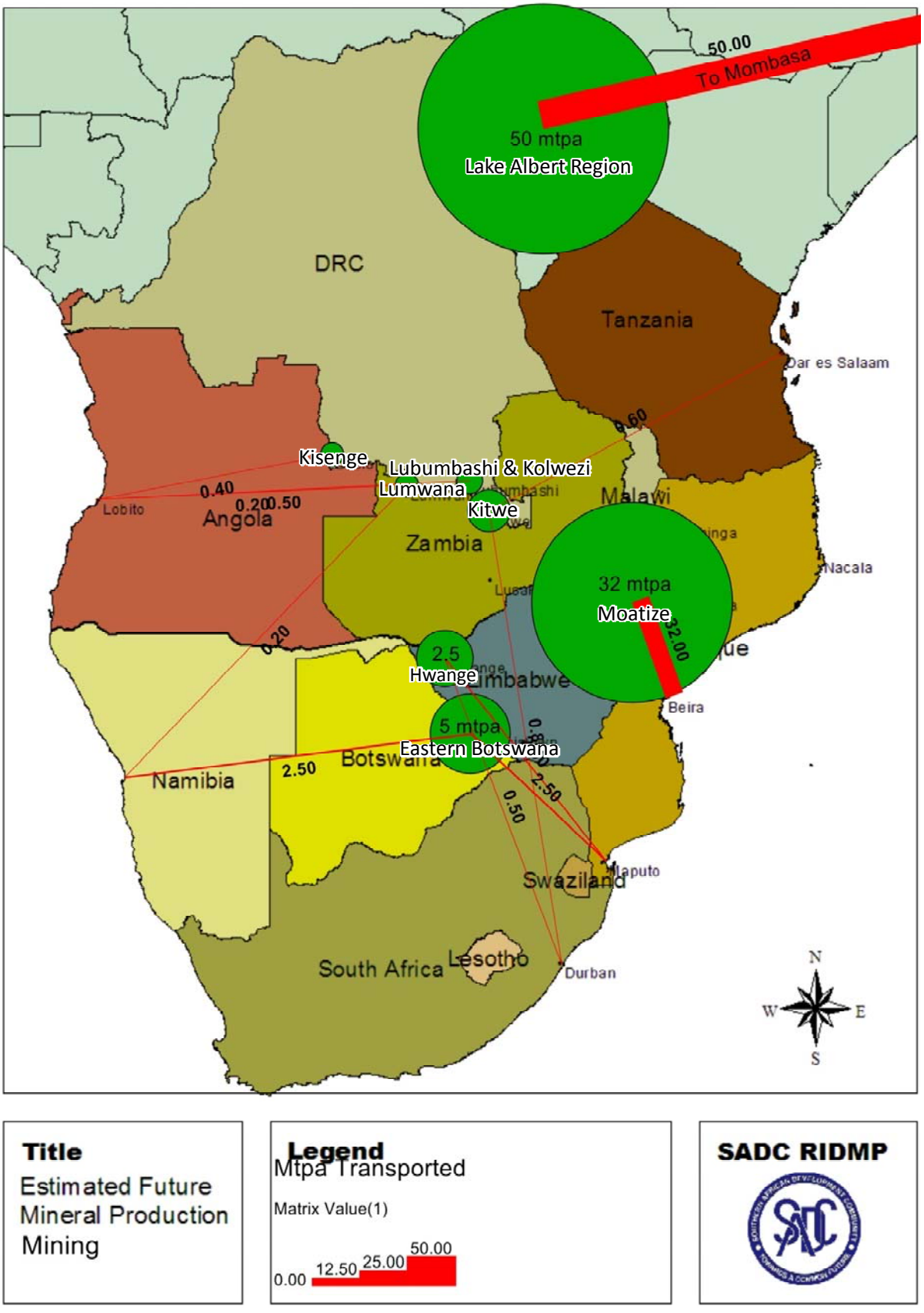


Figure 0-3: Location and Distribution of Estimated Mineral Production

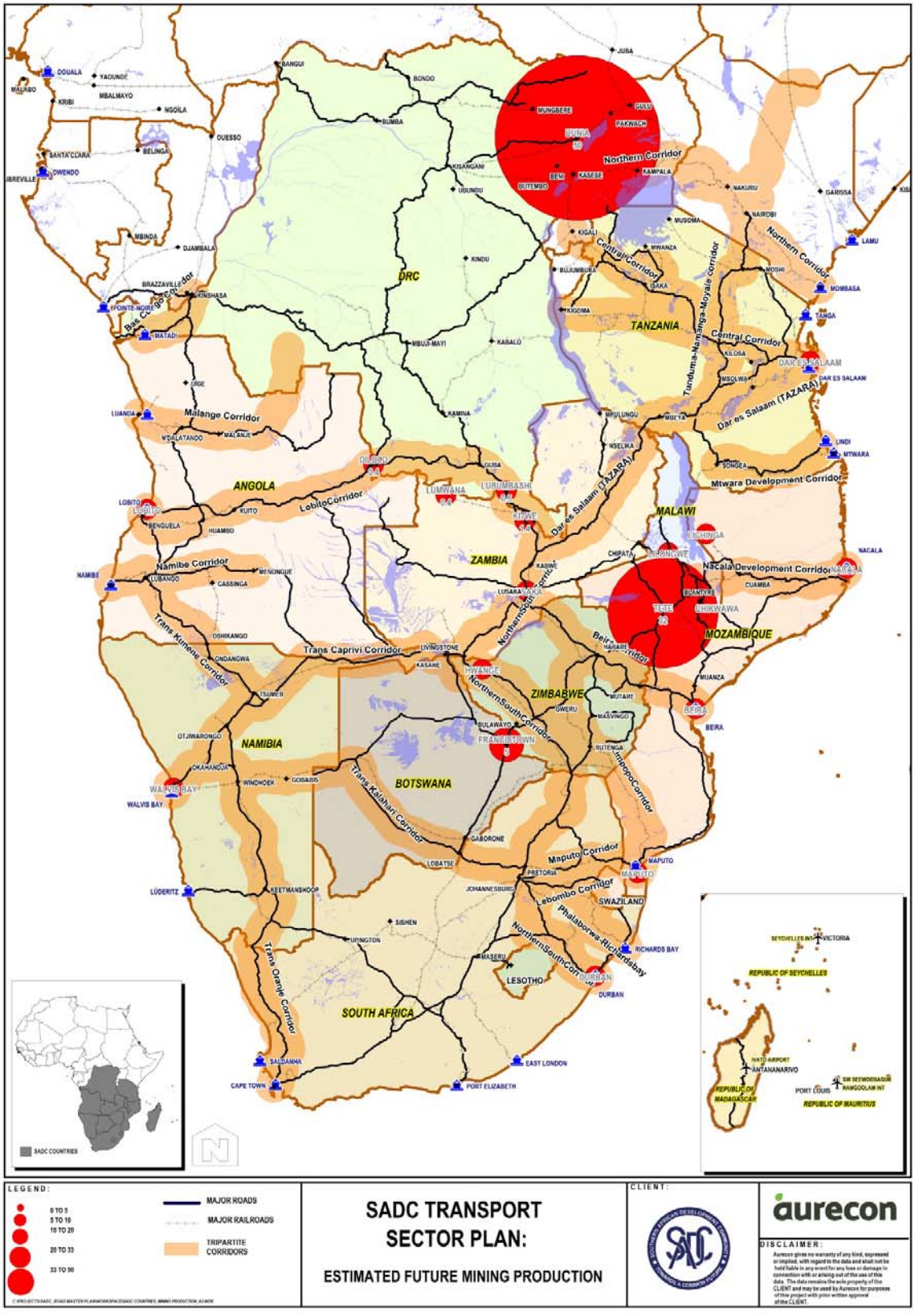


Figure 0-4: Mining Production in Regional Context

Figure 0-5: Location and Distribution of Estimated Agricultural Production

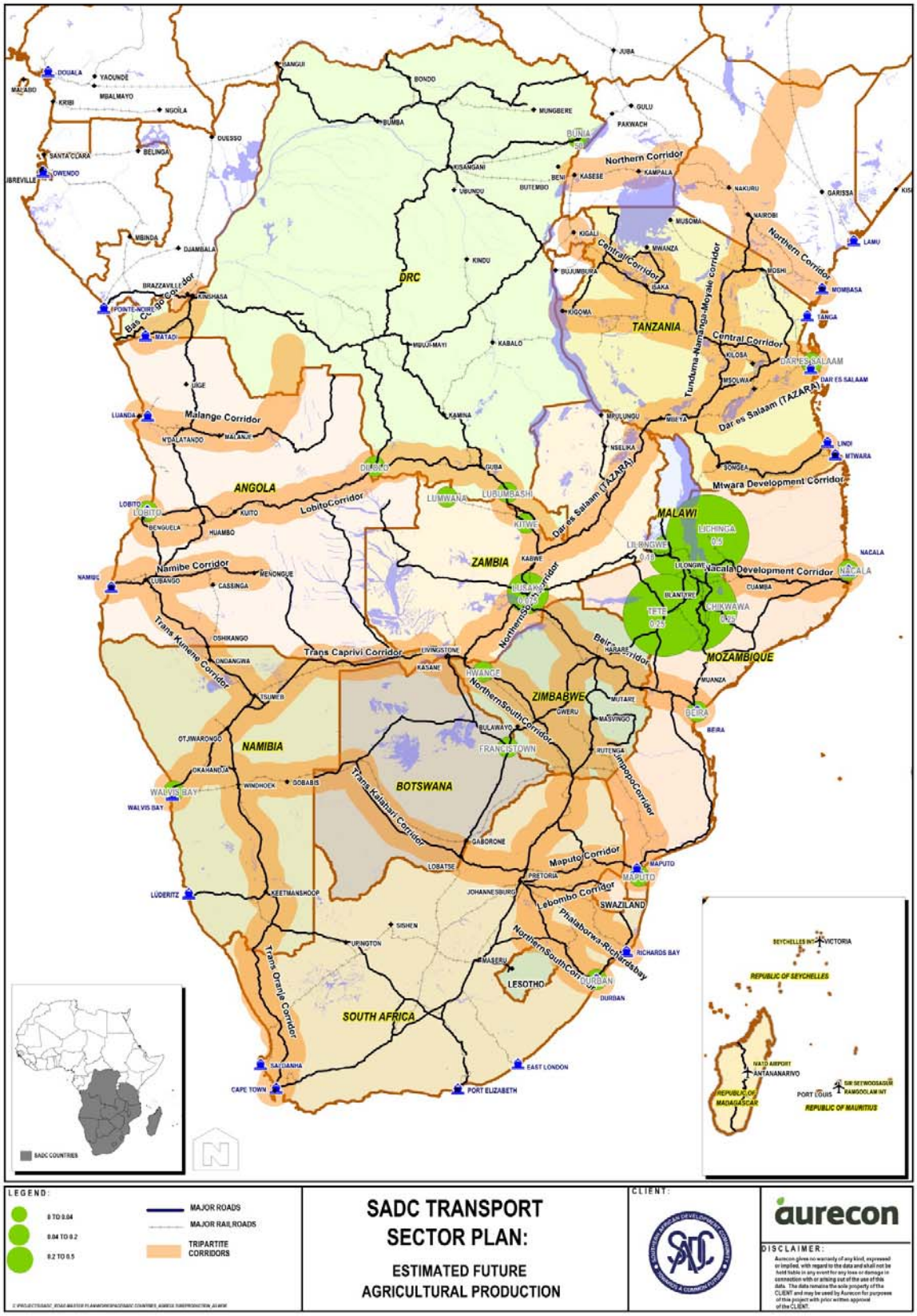


Figure 0-6: Agricultural production in Regional Context

3.2 Assessment of Gap between Current Situation and 2027 Requirements

Based on the available documents this study prepared a best guess scenario. This scenario consists of new transport infrastructure, for all transport sectors that will be required by 2027 to service the projected new economic activities and population centres. This approach looks at the most likely future scenario based on current information.

The projects identified here were not based on detailed analysis, but was determined in a desktop exercise based on information that was available in the following documents:

- Programme for Infrastructure Development for Africa draft reports;
- Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa; and
- Revised RIDMP first draft.

3.2.1 Roads

Based on the strategic network ratings and the feasibility study that was done in the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa, the following road network projects would probably be in place by 2027:

- Dar-es-Salaam – Chalinze toll road;
- Kazungula bridge;
- Nata-Kazungula road upgrading;
- Beitbridge – Chirundu road upgrading;
- Tete toll bridge;
- Western Corridor road in Zambia; and
- The development of an intra-regional road asset management system.

3.2.1.1 Dar-es-Salaam – Chalinze Toll Road

This road forms the major artery out of Dar-es-Salaam and is the starting point for both the Dar-es-Salaam Corridor and the Central Corridor coming from the port. The segment from the port to Chalinze (131 km) is very congested. Much of it is in good condition, having recently been upgraded, but it needs to be widened from 4 to 6 lanes to accommodate the level of traffic.

3.2.1.2 Kazungula Bridge

The route through Kazungula provides an alternative to the route through Beitbridge, Zimbabwe and Chirundu. Commercial carriers through Durban and Gauteng cross into Botswana at Pioneer Gate, Tlokweng or Martin's Drift and proceeds to Kazungula. At Kazungula, trucks cross the Zambezi on a ferry causing a two day delay. The construction of the bridge and one-stop border post is expected to reduce the travelling time to 30 minutes for vehicles with pre-cleared cargo and one hour for the rest.

3.2.1.3 Nata-Kazungula Road Upgrading

This road is divided into two packages. Nata to Pandamantenga (199 km) and Pandamantenga to Kazungula (109 km). Both sections were damaged by the rains in 2007/8 and require rehabilitation in

the form of a surface overlay. This road upgrade is critical to the success of the Kazungula bridge project.

3.2.1.4 Beitbridge – Chirundu Road Upgrading

This section is on the main North-South Corridor road. It has been evaluated for the North-South Corridor Aid for Trade Project that has now established a tripartite trust account to make the necessary investments on this corridor.

3.2.1.5 Western Corridor Road in Zambia

Now that the copper sector is developing around Lumwana in north-western Zambia, there is need for a transportation outlet for this region. Upgrading the road will provide a shorter, less congested and more secure route to a west coast port.

3.2.1.6 Development of an Intra-Regional Road Asset Management System

The traditional approaches to road management and financing, which have relied on managing roads through a government department and financing them through general budget allocations, have generally not worked.

In order to be capable of achieving formal economic prioritisation, the optimisation of road infrastructure and to minimise system development time, the World Bank's HDM IV model has generally been adopted as the preferred analytical tool for use in road asset management. Verification studies to assess its applicability to local conditions have led to a number of minor enhancements to vehicle operating cost and unpaved road deterioration, based on research carried out in Southern Africa.

The use of a road asset management system can assist roads agencies in meeting the challenges in strategic planning, programme analysis, project analysis and research and policy studies.

3.2.2 Railways

In the SADC region there seems to be a strong focus on revitalising the rail sector, with many new proposals for major projects. Rail appears to be the logical option for the transportation of passengers and goods due to:

- The high cost of road transport compared to rail transport;
- Railway transportation is about four times more fuel efficient than road transportation, and as the fuel prices increase, rail will become increasingly competitive; and
- Environmental factors are becoming increasingly important, and are being controlled by commitments and legislation.

However, the regional railways will all have to increase their freight volumes significantly in order to become viable. The main problem is that there is not enough traffic to go around. Building new lines and linkages will not assist the situation, unless linked to specific contracted anchor projects.

Table **0-3** lists rail links that are likely to be viable in the short to medium term.

Table 0-3: Rail Links with Likely Viability in the Short to Medium Term

Link	Comment
Chingola – Solwezi – Lumwana (Zambia)	Needs direct participation by the mines as an income guarantor
Botswana (BR) – Lephalale (South Africa)	It is likely that this line will eventually be built on the basis of contracted mining traffic and would be suitable for a public-private partnership
Moatize – Nacala	The Moatize-Nacala railway is likely to proceed in the short term, financed by Vale, with coal exports as the contracted guarantee
Sena – Beira and the reopening of the Malawi link	Should be viable given the rail traffic potential. At present the sugar exports from southern Malawi are transported by road to Beira (more than 100 000 mpta) at a cost of more than US$75/t. The railway distance is about 400 km, and would cost about US$20/t at an attractive rail tariff of US cents 5/t/km. Return loads would also be secured. This indicates potential savings of about US$5 million pa, which could pay for the railway rehabilitation very quickly
Rehabilitation of the SNCC system in the DRC, particularly section to Dilolo connecting to Angola and the section to Kalemie on Lake Tanganyika (connecting eastern DRC with Dar-es-Salaam through Kigoma and the TRL service)	It remains to be seen how much of the Copper Belt traffic will be captured by the Lobito line, but it won't be the projected 2.5 mpta in the short to medium term. However, it will capture some of the traffic presently routed via the North-South Corridor
Upgrading of Beira – Machipanda line	It remains a priority project, and is tied to the revival of the NRZ railway system

Source: SOFRECO, 2011

3.2.3 Sea Ports

According to the Programme for Infrastructure Development in Africa (PIDA), the total port traffic in Southern Africa will jump from 92 million tons in 2009 (Nacala, Beira, Maputo, Durban and Walvis Bay) to 500 million tons in 2027. Transit traffic from landlocked countries will jump from 12 million tons to more than 35 million tons in 2020 and is expected to increase to more than 100 million tons over the next 30 years. This will create major infrastructure capacity problems.

Due to the increase in tonnage demand noted above, ongoing port projects will not provide the required capacity, in particular for container traffic. These future port capacity issues will be further complicated by the development of large mineral projects that will all involve new ports or port expansions (as well as rail connections). Therefore, port development programmes should be put in place immediately in most regions, in order to ensure that enough port capacity will be provided on time. This is particularly important for the landlocked countries. Figure 0-7 indicates the analysis of long-term port capacity gaps in Southern Africa.

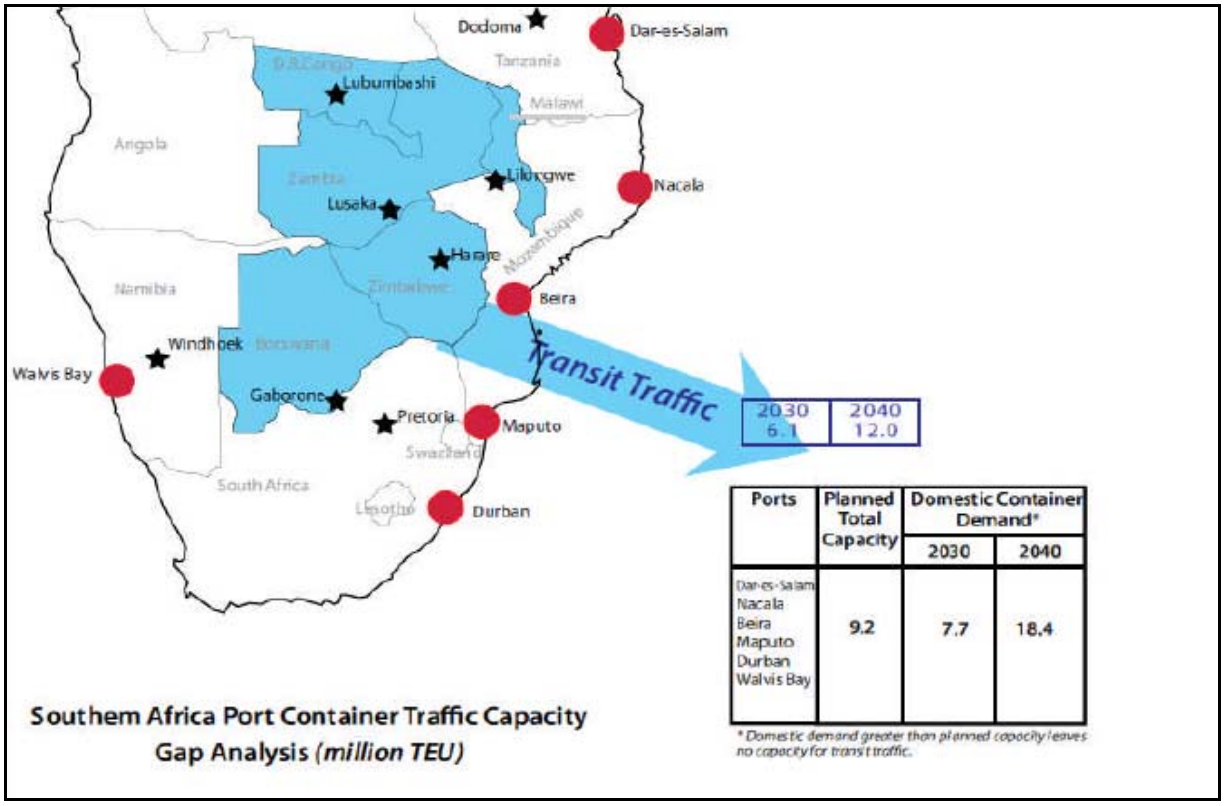


Figure 0-7: Analysis of Long-Term Port Capacity Gaps in Southern Africa
Source: Study on Programme for Infrastructure Development in Africa (PIDA), 2011

SADC traffic increases show a need for major port expansion by 2020, especially with the realisation of suppressed demand. This could be focused on existing deep-water ports such as Nacala and Walvis Bay and the expansion of other Southern African ports or new ports. When Moatize coal exports are developed in Mozambique, this will require the expansion of Beira or Nacala, or a new mineral port at the mouth of the Zambezi River.

This programme will therefore comprise the development of a master plan for regional port capacity, as well as the implementation of short-term port expansion plans (Nacala, Beira, Maputo, Durban, Walvis Bay and Luanda).

3.2.4 Air Transport

According to Gopa-Decon, very limited information is available on the national plans for airport investment. In terms of construction of new airports there is only one, a new airport for Luanda, about 35 km outside the city.

There are plans to improve the following airports in Angola:

- Lubango;
- Huambo; and
- Cabinda.

The African Development Bank (AfDB) is currently funding the following projects in Namibia:

- The study for upgrading of the Hosea Kutako International Airport;
- Environmental master plan for eight regional airports; and
- Land-use master plan for five regional airports.

Additional terminal capacity is being provided in:

- Johannesburg;
- Gaborone; and
- The existing airport in Luanda.

There is a generally recognised need to invest in safety equipment, such as radar, and in improved terminal facilities at airports in the region.

3.2.5 Inland Waterways and Inland Ports

According to Gopa-Decon, the Shire-Zambezi inland waterway project is under active consideration and is therefore included here. The Shire-Zambezi waterway is nearly 500 km long, divided between Mozambique and Malawi. The objective of the project is to establish a modern transport system over the route, though building new ports, dredging and other river training works and investment in vessels, whether barges or small sea-going ships.

According to Gopa-Decon a number of inland depots are planned in the SADC region:

- A cargo terminal is currently under construction at Chipata in Zambia, to link with the new Mchinji–Chipata railway line;
- A dry port is planned at Dona Ana, which is located at the junction of the Sena Railway Line with the main line to Tete and with a branch line to Malawi. The Mozambican logistics company MoCargo invested in this project to serve import and export cargo to/from Malawi, especially to/from Blantyre and Limbe, via the Sena Corridor;
- A container terminal is planned at Tete in Mozambique, in line with the rehabilitation of the Sena railway. The project has been initiated and will be managed by CFM. Tete has the potential to become a strategic transport hub for Malawi (and eastern Zambia in the long run) when the Sena railway is rehabilitated;
- A dry port is planned near the Lebombo/Ressano Garcia border crossing. A feasibility study is scheduled for completion in June 2010; and
- The developed master plan targets development of dry ports at Lusaka, Kitwe and Edeola in Zambia.

Each dry port is to be about 40 000 m2 and include customs as an Inland Container Depot (ICD), an industrial park and ring road access. In the future, railway access is also planned. SADC should be open to the possible facilitation of such terminals, provided that feasibility studies show these are economically and financially justified (Gopa-Decon).

4. Strategic Framework

4.1 Significance of Sector and Priority Goals

Transportation means personal mobility as well as access to goods, services and information. It is an essential human activity that makes a critical input to social development and national and regional economies. There is a critical need for efficient movement of goods as a primary element of economic competitiveness versus such traditional competitiveness costs such as labour or raw materials. The transport sector is thus directly responsible for economic growth and poverty eradication in communities.

Economic and social development will not be possible in the SADC region, without addressing transport needs and providing new transport options to unlock areas with no or poor access to the markets. Social development and community upliftment also cannot take place without a proper transport system in place.

Transportation is crucial to the economic health of the SADC region, and must be supported by the Member States' governments. The interdependence of transport and the economy of a region is explained in more detail below.

4.1.1 Priority Goals

The SADC Protocol on Transport, Communications and Meteorology formulates in Article 3.1 the objectives of integrated transport in the region as follows:

"Member States shall promote economically viable, integrated transport service provision in the region, characterised by high performance standards and consistent levels of efficiency and reliability of all individual components of the transport chain; on the basis of complementarities and cooperation between modes, modal choice optimisation, seaport hinterland optimisation and with due regard to modal advantages; bearing in mind the need to preserve the region's transportation infrastructure by encouraging the development of multi-modal service provision and compatible with responsible environmental management to support the development of major regional development corridors and facilitate travel between their territories."

These objectives encompass the priority goals for each individual transport mode, and directly aligns with the integration of the transport modes and system in the Transport Sector Plan.

4.1.2 Interdependence of Transport and the Economy

From a general standpoint the economic impacts of transportation can be direct and indirect:

- **Direct impacts** relate to accessibility change where transport enables larger markets to save time and money; and
- **Indirect impacts** relate to the economic multiplier effects where the price of commodities, goods or services drops and/or the variety increases.

4.1.2.1 Transport-Economy Linkages

The effects of transport on an economy include:

- Enabling the movement of bulk goods, therefore facilitating the exploitation of mineral, agricultural and forest resources;
- Improving the competitiveness of remote areas by reducing travel time to urban markets;
- Improving business competitiveness by introducing greater reliability in delivery times, both of inputs needed in the production process and finished goods to markets;
- Reducing costs of the logistics supply chain;
- Facilitating specialisation and the adoption of new production activities and techniques;
- Reducing the isolation of remote areas; and
- Facilitating the incorporation of countries into the globalised economy.

Attempts at developing a theory of transportation and development have come to the conclusion that transport is a necessary, but not sufficient, condition to induce economic growth. The extent to which transport investment promotes economic growth depends not only on the natural resource base of the area, but also on the response of individuals and governments to the creation of economic opportunities, to the emergence of entrepreneurial talent and to the efficient organisation of the transport sector and policies relating to its operation.

The 1994 World Bank Development Report concluded that economic infrastructure (public utilities, public works and transport) raises productivity and lowers production costs, but that it has to expand quickly enough to accommodate growth. It found that a 1% increase in the stock of infrastructure was associated with a 1% increase in GDP across all countries, and that the transport sector (the capital infrastructure, equipment, facilities and services) contributed in terms of value-adding 5.3%, 6.8% and 9.5% of the GDP of low-income, middle-income and high-income countries respectively.

Pointing to studies of the relationship between infrastructure and investment in economic growth in developed countries, the World Bank reported that a number of studies found that causation runs in both directions, although many studies concluded that the role of infrastructure in growth was substantial.

Although recent international studies confirm a generally positive relationship between infrastructure and growth, there are a number of caveats2:

- If a particular project results in over-provision, it could have a negative effect on growth;
- The measures used may give misleading results, e.g. infrastructure expenditure may not indicate the efficacy of the investment or the quality or usefulness;
- The impact of infrastructure on aggregate output may be indirect (by influencing, e.g. the productivity of physical capital) rather than direct;
- There are other factors besides infrastructure that influence economic growth, and it is difficult to control these determinants of growth and isolate the role of infrastructure;
- Inappropriate aggregation of infrastructure measures could obscure the relative importance of different types of infrastructure in economic growth. The focus has tended to be more on economic than on social infrastructure; and

[2] Fedderke, J and R Garlick (2008). *Infrastructure Development and Economic Growth in South Africa: a Review of the Accumulated Evidence*. Policy Paper No. 12. Cape Town: School of Economics, University of Cape Town.

- Even if a strong statistical association between infrastructure and growth is revealed, this does not by itself define the direction of causality. Some theories hold that economic growth affects infrastructure investment. Thus, if aggregate output increases, it could generate demand for more infrastructure, e.g. in order to transport the output.

4.1.2.2 Economic Multipliers

The transport sector accounts for an average of about 5-6% of GDP in developed and developing countries, and usually for about 15-25% of total annual investment in developing countries (less than half of that for developed countries)3. The transport sector also has significant links with other sectors of the economy, and therefore contributes to economic growth through a multiplier effects.

Transport is one of a number of sectors in the economy. It delivers services to other sectors and purchases inputs from them. Spending on and by transport therefore filters into and multiplies in the rest of the economy, and savings on transport costs become free to be spent elsewhere.

The following example demonstrates the expected economy-wide result of an investment in transport infrastructure. Assume a US$10 million expenditure, shared simply between activities as follows: 10% aggregate (mining and quarrying), 10% reinforcing steel (iron, steel and metal products), 10% cement (glass and cement), 10% asphalt (petroleum refineries), 50% site preparation, earthworks and construction and labour (construction) and 10% transport (transport and communication). That would mean the total (economy-wide) impact would be US$36.7 million.

For transport savings (i.e. where a project causes transport operators to incur less cost), a similar calculation can be made. Here, one would assume that the particular activity making the saving (e.g. tea) would spend that saving completely in the economy, so that the saving becomes expenditure. The same expenditure multiplier would then indicate what the economy-wide benefit would be.

4.2 Policy and Regulatory Framework

4.2.1 Overarching Transport Policy and Regulatory Framework

Over-and-above the sub-sector-specific diagnosis, there are some over-arching themes in the transport sector that should be highlighted and which is described in more detail in the paragraphs to follow.

4.2.1.1 Systemise Implementation of the Protocol

SADC has had a checklist of agreed policy, regulatory and institutional endeavours in place since 1996. In this respect, it is well ahead of other RECs which do not have such a single or detailed portfolio of issues and appear to address issues in a more impromptu manner. However, at least one of these (EAC) has significant political momentum and has been driving regional integration much more aggressively than SADC.

[3] Baum, WC and Tolbert SM (1985). *Investing in Development: Lessons of World Bank Experience*. New York: Oxford University Press.

There are many areas in the Protocol where progress has indeed been made, but equally, there is a significant number outstanding. There does not appear to be an action plan with associated timelines supporting the implementation of the Protocol.

The Protocol is now more than ten years old and should be reviewed so that issues already addressed can be excluded and new issues included.

4.2.1.2 Regional Rules must Replace National Rules

One of the focus areas of the regional safety regulators should be driving the adherence to international conventions and protocols and elevating regulatory codes, standards and practices to the regional level. There is no longer-term benefit of each Member State updating its national legislation, regulations and technical standards in parallel. The full potential of regional economies of scale should be realised.

4.2.1.3 Continue to Commercialise Delivery

Most Member States have made significant progress in moving infrastructure provision to arm's length agencies and to liberalise transport operations, including withdrawing from the public provision of transport services, which can pay their own way. However, there are some Member States lagging the trend and these should be encouraged to move to the more sustainable commercial model. It is expected that SADC (or the SATCC-TU successor in the regional transport domain) assist these countries, including putting in place the required funding models.

It should be noted that this recommendation pertains primarily to regional infrastructures and services, not national or local infrastructure and services, which may indeed be of a public-good nature justifying government participation.

4.2.2 Sub-sector-specific Policy and Regulatory Framework

For each transport mode a policy and regulatory diagnostic was done, which is summarised in the tables to follow (
Table **0-1** to

Table **0-4**). These tables refer to specific topics within a sub-sector (transport mode) and summarise the challenges, gaps, cooperation priorities and targets for policy and regulatory reform.

Table 0-1: Road Transport Policy and Regulatory Framework

Area	Challenges and Gaps	Priorities for Cooperation	Targets for Policy and Regulatory Reform
Road transport	• Protection of national road transport industry • Issuance of transport operators card by competent (national) authority • The practical application and management of the terms and provisions of the bilateral agreements are challenging • Application of permit system appears to be arbitrary given	• Move from bi/multilateral arrangements to regional liberalisation, starting with a common multi-lateral framework, working towards removing the third-party rule • Continue road transport standards harmonisation, e.g. vehicle dimensions and weights not yet rationalised • Elevate JRMCs to corridor (multi-lateral) level • Transport associations or a bureau to provide certification and monitoring services to transporters in order to	• Coordination of market access regulations to be separated from the technical harmonisation process • Regional law enforcement approach (and institution/s) • Issues regarding

Area	Challenges and Gaps	Priorities for Cooperation	Targets for Policy and Regulatory Reform
	the widespread avoidance by operators • Lack of law enforcement capacity leads to arbitrary enforcement actions	combat random policing actions, coercion and corruption	movement of goods (e.g. customs regulations) to be handled separately from road transport

Table 0-2: Rail Policy and Regulatory Framework

Area	Challenges and Gaps	Priorities for Cooperation	Targets for Policy and Regulatory Reform
Rail network	Re-investment in run-down systems, including public funding	Common network design and operating standards	
Rail Transport	• Low system reliability • Open access to regional network	Formulation and negotiation of a new multilateral regional business agreement between railways to replace the existing bilateral agreements	
Rail	Lack of holistic regional rail policy		

Table 0-3: Maritime Policy and Regulatory Framework

Area	Challenges and Gaps	Priorities for Cooperation	Targets for Policy and Regulatory Reform
Ports	• Congestion and production inefficiencies requiring investment, growing capacity and improved operations • Introducing private sector participation • Impact of port-rail cross-subsidisation funding model on port charges and total transport cost	Information, experience exchange	• Continue commercialisation, including land lording • Investigate implications of unbundling integrated port-rail operations (including associated requirements for road funding reform)
AtoN	Sustainability, funding, modernisation in world of satellite/electronics		Investigate regional delivery of AtoN, based on WIO-MHP experience
Shipping	• Development of regional industry, economies of scale (without encouraging protectionism) • Enforcement of IMO requirements regarding sub-standard ships and crews	Development of national/regional maritime traffic lanes to know where vessels passing the region would be sailing. This will enhance maritime safety and prevent pollution (as per the WIO-MHP model)	
Maritime	• Lack of holistic regional maritime policy • Compliance with international commitments (conventions) • Maintaining port-state control skills and establishing sustainable funding model	Review requirements of and compliance with African Maritime Transport Charter Standardised regional standards and practices Incorporation of standards into national legislation Region-wide training	

Table 0-4: Aviation Policy and Regulatory Framework

Area	Challenges and Gaps	Priorities for Cooperation	Targets for Policy and Regulatory Reform
Airports	Designation of regional hubs (The Yamoussoukro Decision does not provide an approach to route networks and regional or gateway airports)		Continue commercialisation of regional airports
ANS	• Perceived national security issues related to ANS • Commercialisation and de-politisation of ANS • Sustainable funding model for ANS • Treatment of LAS (lower airspace) if UAS (upper airspace) is commercialised	Regional integration of upper airspace	Continue commercialisation of national ANS
Air transport	• Implementing air services liberalisation in line with the Yamoussoukro Decision • The comity and reciprocity concept in bilateral agreements is deeply entrenched in the minds of aeronautical authorities, making it difficult to make a paradigm shift to a more liberalised regime • Protection of national (especially state-owned, loss-making) airlines	Implementation of Yamoussoukro Decision	Withdrawal of government participation in national airlines
Aviation	• Lack of holistic regional aviation policy • Lack of accession to and non-compliance with international commitments (conventions) • Lack of SARPs implementation • Lack of coordinated training efforts by Member States • Maintaining safety oversight skills and establishing a sustainable funding model	• Standardised regional SARPs • Incorporation of SARPs into national legislation • Region-wide training	

4.3 Institutional Arrangements

4.3.1 Proposed Institutional Arrangements

The SADC Policy should pave the way for a common approach in dealing with regional transport infrastructure and services. Member States are therefore expected to incorporate this Policy in their domestic policies and legislation. This would include the separation of policy/planning, service provision and regulation. Member States are expected to retain a strategic planning and policy-making role, but withdraw from transport operations (which should be provided at arm's length and preferably outside of government) and regulation (which should be provided by agencies). For transport infrastructure, they are expected to sell or concession off public assets with private good characteristics, but to manage facilities with natural monopoly characteristics in a more regulated environment, i.e. as public agencies and regulatory supervision. Independent regulators should oversee the sector. These include regulators for market entry (licensing boards), conduct (safety and security regulators such as CAAs and MSAs) and commercial performance (price and service level regulators overseeing monopolies).

At regional level, the process of regional integration implies cooperation between Member States, and the increased upwards assignment of responsibility for issues of regional (supra-national) importance. The regional body must lead the process of integration and be resourced for this responsibility. Its main functions would be to provide guidelines on national policy in support of

regional standardisation and integration, draw up high-level regional transport infrastructure and service master plans to serve as a reference point for national planning and for support to the region, to develop the capacity of partner states and to promote and coordinate the creation of regional associations and agencies for specific purposes, e.g. the regionalisation of regulation and the creation of management agencies for cross-border transport infrastructure.

Figure 0-1 shows the proposal on how functions that presently reside with Member States would progressively migrate to the community.

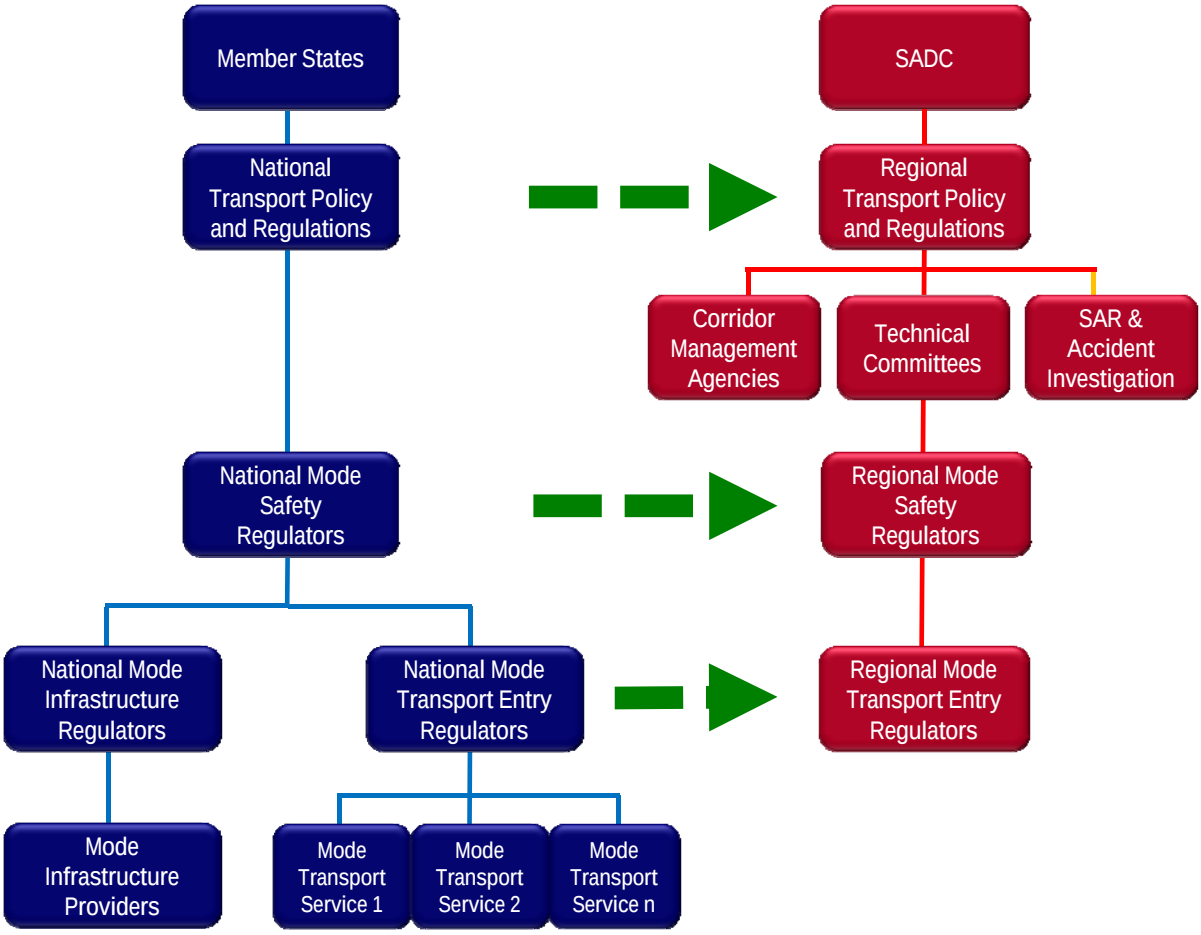


Figure 0-1: SADC Policy Institutional Proposals

4.3.2 Sub-sector-specific Institutional Reform

For each transport modes a policy, regulatory and institutional diagnostic was done. The tables below (Table 0-5 to Table 0-8) refer to specific topics within a sub-sector (transport mode) and highlights the institutional reform needs.

Table 0-5: Road Transport Institutional Reform Needs

Area	Targets for Institutional Reform
Road transport	Establish a general or roads-specific regional transport competition authority to ensure fair competition Regional law enforcement approach (and institution/s)

Table 0-6: Rail Institutional Reform Needs

Area	Targets for Institutional Reform
Rail	Strengthening of SADC rail planning capacity, including human resources Strengthening of SARA in respect of human resources. In the first instance this is likely to require outside assistance Establishment of a regional railway safety regulator, working in liaison with the respective national railway safety regulators

Table 0-7: Maritime Institutional Reform Needs

Area	Targets for Institutional Reform
Ports	Continue commercialisation, including land lording Investigate implications of unbundling integrated port-rail operations (including associated requirements for road funding reform)
AtoN	Investigate regional delivery of AtoN, based on WIO-MHP experience
Maritime	Establishment of regional safety oversight agency

Table 0-8: Aviation Institutional Reform Needs

Area	Targets for Institutional Reform
Airports	Continue the commercialisation of regional airports
ANS	Continue the commercialisation of national ANS Establishment of regional UACC
Air Transport	Withdrawal of government participation in national airlines Continue establishment of a regional air services authority (JCA)
Aviation	Establishment of regional safety oversight agency (SASO)

4.3.3 Overarching Transport Institutional Reform

Over-and-above the sub-sector-specific diagnosis, there are some over-arching themes in the transport sector that should be highlighted and which is described in more detail in the paragraphs to follow.

4.3.3.1 Reinstate SATCC/SATCC-TU

A recurring theme in the consultation accompanying the development of this diagnostic, is that the regional transport agenda has lost momentum since the consolidation of all SADC functions. There is a need for a regional body that is mandated to perform the policy and planning functions on behalf of the SADC region. A model similar to the Southern Africa Transport and Communications Commission (SATCC) and associated technical unit (SATCC-TU) may be applied to perform this function through the development of a regional policy agenda by developing, implementing, formalising and monitoring regional and national policies and identifying and evaluating international standards and recommended practices deemed essential for regional implementation and relevant to the roads sector.

4.3.3.2 Establish Regional Oversight Bodies

Moving towards a next level of regional integration, there is much potential to elevate transport safety regulation to the regional level, in the form of regional rail, maritime and aviation safety

regulators. Equally, as market access rights become free, consideration should be given to increasing the scope of the JCA to cover other modes as well, specifically to oversee and ensure fair competition in transport.

These regional regulators must also develop information platforms to generate, collate and maintain regional transport data and statistics.

Furthermore, there is a need to oversee regional transport operations from an economic perspective. A regional economic transport regulator would oversee the inter-modal competition and dynamics between road, rail, ports, pipelines and aviation and encourage a level playing field. This body would also watch over or even issue market access rights in as far as this required in a deregulated transport environment.

4.4 Modal Development Plan

4.4.1 Factors Determining Use of Different Transport Modes

There are various factors that determine the optimal use of different transport modes. In the SADC region, made up mostly of developing countries where there is a significant need and potential to develop and invest in the transport sector, three particular factors that influence the usage of different transport modes stands out, namely:

- Transport supply and demand;
- Captive users/markets; and
- Infrastructure maintenance.

4.4.1.1 Transport supply and demand

Transportation in essence is the movement of people and/or goods between different origins and destinations. Transportation systems is made up of elements that relates to the supply of transport and finding a trade-off or balance with the demand that it should service as depicted in Figure 0-2.

Figure 0-2: Illustration of Transportation Demand versus Supply

The transportation environment is basic economic interaction between supply and demand. A mature transportation system displays this interaction best. The area where the biggest demand

exists, e.g. a densely populated urban area, would typically have a dense road network and public transport infrastructure to serve the demand for transportation that exists there. In a developing environment though, the challenge is to use transportation interventions to have a catalytic effect to create a demand where, at present, it may not be to the extent that warrants the investment. The largest portion of the SADC region is made up of developing environments.

A mistake often made, is to concentrate strategy and investment around the provision of capacity, whereas a more balanced approach should seek to manage both the demand and supply sides of the system. Demand can be managed in a number of ways – the spatial development frameworks and legislative frameworks start playing an important role here.

There is sufficient evidence internationally that it is impossible to invest in transport to the extent that it addresses capacity problems completely and sustainably. It is therefore important in the master planning process to focus on the management of transport demand as well. By considering both capacity and demand, the lifespan and utility of each investment can be maximised to its full potential.

The usage of different transport modes are also influenced by the demand and supply side of a transportation system. For instance, if there is a need for fresh market goods that have to be exported to have a significant shorter travel time to reach the destined market on time, air transport would be preferred instead of road transport.

4.4.1.2 Captive users/markets

Captive users and markets refer to the transport users or products that have no other choice of transport mode mainly due to:

- Available infrastructure/service (i.e. there is only roads and trucks to transport goods/people);
- Specific requirements that is only met by a specific transport mode (i.e. railway trucks can accommodate heavier loads of break bulk than trucks on roads); or
- Affordability of a specific transport mode (i.e. it is cheaper to make use of the train than the bus).

The impact of captive users/markets in the SADC region needs to be determined in order to establish a realistic view of the feasibility to provide alternatives and what exactly those alternatives would entail. The provision of alternative/parallel transport options will be driven by demand.

4.4.1.3 Transport Systems Maintenance

The maintenance of transport systems (infrastructure and operations) impacts on the usage of specific transport modes. A producer might decide to rather make use of rail transport from, instead of road transport due to the fact that the road that his products travel on is not being maintained and has become unsafe and the travel time too long due to potholes. Another example is delays at border posts which causes a decision to switch from road to air transport, etc.

Thus if the transport network (systems – infrastructure and operations) are not maintained and allowed to degrade to such an extent that a specific mode can no longer function optimally, it can cause modal shift if the option is available.

4.4.2 Transport Sector Projects

The modal development plan consists of projects that originate from distinct sources, namely:

- A list of projects submitted by SADC Member States with project identity abbreviation “MSP” – Member States Projects. Furthermore, projects were also added by Member States during the stakeholder participation process;
- A list of projects from the 2027 future requirements with project identities known as the Best Guess Scenario – abbreviated as “BGS”;
- A list of projects from the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa, PPIAF October 2011, submitted to the World Bank, project identity abbreviation CSTN – Core Strategic Transport Network Projects;
- A list of institutional projects, as well as institutional initiatives from the Enabling Environment and Institutional Arrangements Analysis (refer to section 0) with project identity institution project/institutional initiative. The institutional initiative were listed, but a cost could not be linked to it as these are activities that should be driven by the member states and SADC as a regional body; and
- Lastly a list of longer-term strategic projects (abbreviated as LTSP) which were identified as part of a regional context beyond 2027 (Refer to section 0).

A total number of 208 projects are listed as part of the Transport Sector Modal Development Plan. The different transport sub-sectors’ (modes) projects are given from Table 0-9 to

Table **0-14**. The projects include:

- 18 border post projects;
- 72 road projects;
- 31 rail projects;
- 23 aviation projects; and
- 64 maritime and ports projects.

Please note the following:

- Detailed project information is indicated as per available;
- Where information allowed, first order costing was done;
- For reference purposes to the maps, the project number and ID is included in the tables, but they do not necessarily follow sequentially due to the sorting into the different transport sub-sectors;
- The details provided on the MSP projects are according to the information provided by SADC;
- The details on the CSTN projects are according to the study documentation;
- The details given on the BGS projects mostly originate from secondary data sources. First order costs were linked to them where information was available including external sources. The rail projects were costed based on recent unit prices used in other studies. Where there was a lack of enough detail to do a cost estimate with no findings on external source searches, the costs had to be omitted;
- The details on institutional projects are given according to the relevant evaluation of the document. Cost estimations are first order, based on similar projects in other REC with the assumption that consultants should be appointed for a study;
- Project profiles were completed with the available information, as requested, for the MSP projects and are provided in Apendix A; and
- In future, SADC will develop a systemised database for all projects with access from Member States and other identified stakeholders to update information on the project profiles to ensure a better accuracy of reflected information which will be linked to a on a GIS system.

4.4.2.1 Project Locations

The locations of the infrastructure projects were placed onto GIS maps and indicated with their different project IDs. This gives an indication of the spread of the projects within the SADC region. Figure 0-3 and

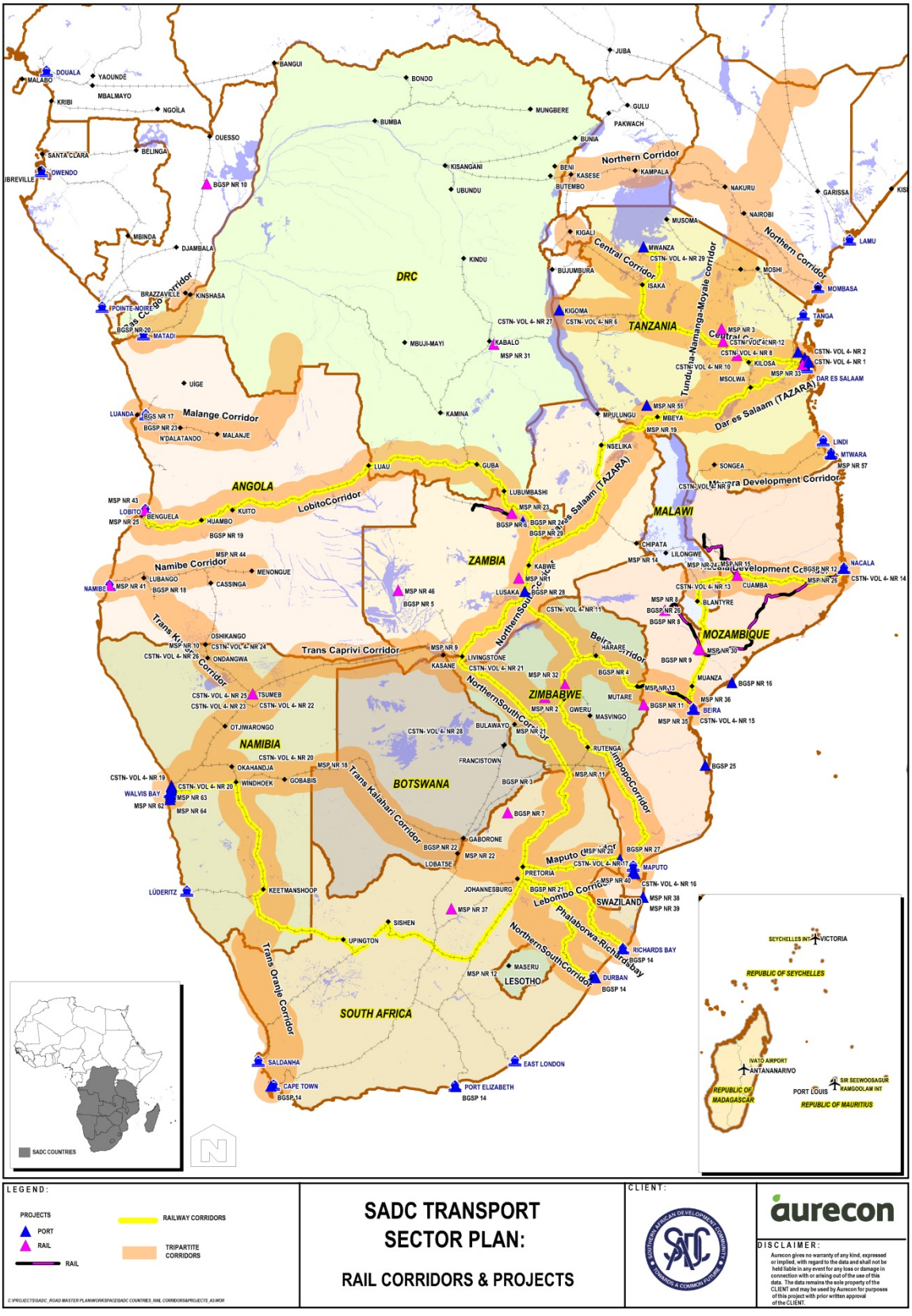


Figure 0-4 indicate the infrastructure projects in context of their relevant regional corridors. Please note the following with regards to the maps:

- The project locations are indicated with different coloured beacons for the different transport mode projects;
- The beacons were placed in the centre of a project according to available information;
- Where possible, rail and road projects were indicated in their full extent; and
- One-stop border post projects are denoted as OSBP in the legend.

Table 0-9: Institutional and Policy Projects and Initiatives

No.	Project ID	Project Title	Sector	Project Location	Project Description	Estimated Total Cost (US$ million)
186	Institutional project	Determine the status of the Road Infrastructure Policy implementation	2.2 Transport – Road	SADC	Survey to ascertain the status of the Road Infrastructure Policy implementation as a basis for soliciting commitment from Member States to implement the policy	2.5
187	Institutional project	Development of strategy document for funding of RTRN	2.2 Transport – Road	SADC	Development of a strategy document for funding of RTRN	2
188	Institutional project	Reach agreement on consolidation and level of RUCs	2.2 Transport – Road	SADC	• Reach agreement on the consolidation and level of RUCs • Agree and sign the MoU • Establish the Regional Cross-Border Road User Charges Collection Association • Develop a detailed implementation plan per country • Deposit instrument of ratification • Transmit copies of the instrument of ratification • Commence implementation	4
189	Institutional project	Harmonisation of corridors	2.2 Transport – Road	SADC	Harmonised corridor performance and data systems, including GIS map	2.5
190	Institutional project	Commercialised road management (CRM) assessment study	2.2 Transport – Road	SADC	CRM assessment study aimed at improved monitoring and advocacy capacity for greater management efficiency , resulting in effective road infrastructure delivery in the SADC region	1
191	Institutional project	Establish a regional transport competition authority	2.2 Transport – Road	SADC	Establish a general or roads-specific regional transport competition authority to ensure fair competition	3
192	Institutional project	Coordination of market access regulations and technical harmonisation process	2.2 Transport – Road	SADC	The coordination of market access regulations needs to be separated from the technical harmonisation process	2
202	Institutional initiative	Adopt the recommendations of the Study for the Harmonisation of Vehicle Overload Control in the EAC	2.2 Transport – Road	SADC	Adopt the recommendations of the Study for the Harmonisation of Vehicle Overload Control in the EAC, which has been agreed to at tripartite level	
203	Institutional initiative	Member State commitment to adhere to regional standards	2.2 Transport – Road	SADC	Strong advocacy by ASANRA to ensure Member State commitment to adherence to regional standards	
204	Institutional initiative	Harmonisation of regional transport law enforcement approach	2.2 Transport – Road	SADC	Regional law enforcement approach (and institution/s)	

205	Institutional initiative	Independence of issues regarding movement of goods (e.g. customs regulations)	2.2 Transport – Road	SADC	Issues regarding movement of goods (e.g. customs regulations) to be handled separately from road transport	
193	Institutional project	Establish a common rail standards	2.3 Transport – Rail	SADC	Common network design and operating standards	3
194	Institutional project	Formulate new multilateral regional business agreement between railways	2.3 Transport – Rail	SADC	Formulation and negotiation of a new multilateral regional business agreement between railways, to replace the existing bilateral agreements	1.5
195	Institutional project	Establish a regional railway safety regulator	2.3 Transport – Rail	SADC	Establish a regional railway safety regulator, working in liaison with the respective national railway safety regulators	2.5
206	Institutional initiative	Strengthen SADC rail planning capacity	2.3 Transport – Rail	SADC	Strengthen SADC rail planning capacity, including human resources	
207	Institutional initiative	Strengthen SARA in respect of human resources	2.3 Transport – Rail	SADC	Strengthen SARA in respect of human resources. In the first instance this is likely to require 'outside' assistance	
199	Institutional project	Establish a regional UACC	2.4 Transport – Air	SADC	Establish a regional UACC	2.5
200	Institutional project	Continue the establishment of a regional air services authority (JCA)	2.4 Transport – Air	SADC	Continue the establishment of a regional air services authority (JCA)	1.5
201	Institutional project	Establish a regional air safety oversight agency (SASO)	2.4 Transport – Air	SADC	Establish a regional safety oversight agency (SASO)	3
209	Institutional initiative	Continue commercialisation of regional airports	2.4 Transport – Air	SADC	Continue the commercialisation of regional airports	Unknown
210	Institutional initiative	Continue commercialisation of national ANS	2.4 Transport – Air	SADC	Continue the commercialisation of national ANS	Unknown
211	Institutional initiative	Withdrawal of government participation in national airlines	2.4 Transport – Air	SADC	Withdrawal of government participation in national airlines	Unknown
198	Institutional project	Establish a regional water transport safety oversight agency	2.6 Transport – Water	SADC	Establish a regional safety oversight agency	3
197	Institutional project	Investigate regional delivery of AtoN	2.6 Transport – Water	SADC	Investigate regional delivery of AtoN, based on WIO-MHP experience	2
196	Institutional project	Investigate implications of unbundling integrated port-rail operations	2.5 Transport – Ports	SADC	Investigate implications of unbundling integrated port-rail operations, including associated requirements for road funding reform	2
208	Institutional initiative	Continue commercialisation, including the land lording of ports	2.5 Transport – Ports	SADC	Continue commercialisation, including the land lording of ports	

Table 0-10: Border Posts Projects

No	Project ID	Project Title	Sector	Project Location	Project Description	Estimated Total Cost (US$ million)
9	MSP	Katima Mulilo/Wenela OSBP	2.1 Transport - Border Posts	Between the towns of Sesheke and Katima Mulilo at the border of Zambia and Namibia	Establish the Katima Mulilo/Wenela OSBP	5
10	MSP	Oshikango-Santa Clara OSBP	2.1 Transport - Border Posts	Between the towns of Santa Clara and Oshikango at the border of Angola and Namibia	The border post is congested, and on the Namibian side the town encroached on potential land for the expansion of border facilities. If an OSBP is contemplated, a new Greenfield site with adequate space needs to be identified. The new facility could be dedicated to rail and road freight, while the current border crossing is used for pedestrian and non-commercial vehicle traffic	6
11	MSP	Beitbridge OSBP	2.1 Transport - Border Posts	Between the towns of Beitbridge and Musina at the border of Zimbabwe and South Africa	The joint South Africa/Zimbabwe border efficiency management project stalled after committees were established and a draft MoU drawn up. Zimbabwe is proceeding with the upgrading and expansion of infrastructure using public-private partnership options. The plans incorporate the development of an OSBP in the long run	6
12	MSP	Maseru Bridge OSBP	2.1 Transport - Border Posts	Between the towns of Maseru and Ladybrand at the border of Lesotho and South Africa	Establishing Maseru Bridge OSBP	6
13	MSP	Forbes-Machipanda OSBP	2.1 Transport - Border Posts	Between the towns of Mutare and Manica at the border of Zimbabwe and Mozambique	Establishing Forbes-Machipanda OSBP	6
14	MSP	Mwami-Mchinji OSBP	2.1 Transport - Border Posts	Between the towns of Chipata and Mchinji at the border of Zambia and Malawi	Establishing Mwami-Mchinji OSBP	5
15	MSP	Chiponde-Mandimba OSBP	2.1 Transport - Border Posts	Between the towns of Mandimba and Chiponde at the border of Mozambique and Malawi	Establishing Chiponde-Mandimba OSBP	5

16	MSP	Zobue-Mwanza OSBP	2.1 Transport - Border Posts	Between the towns of Zobue and Mwanza at the border of Mozambique and Malawi	Establishing Zobue-Mwanza OSBP	5
17	MSP	Nyamapanda-Cuchimano OSBP	2.1 Transport - Border Posts	Between the towns of Magasso and Nyamapanda at the border of Mozambique and Zimbabwe	Establishing Nyamapanda-Cuchimano OSBP	5
18	MSP	Trans-Kalahari-Mamuno OSBP	2.1 Transport - Border Posts	Between the towns of Buitepos and Mamuno at the border of Namibia and Botswana	Establishing Mamuno-Trans-Kalahari border post OSBP	4
19	MSP	Nakonde-Tunduma OSBP	2.1 Transport - Border Posts	The Tunduma border post is located in the Mbozi district, Mbeya, some 103 km from the Mbeya Municipality. The Nakonde border post is located in the Nakonde district council of Zambia	Construction of Nakonde-Tunduma OSBP	8
20	MSP	Ressano Garcia-Lebombo OSBP	2.1 Transport - Border Posts	Between the towns of Lebombo and Ressano Garcia at the border of South Africa and Mozambique	In 2007 South Africa and Mozambique signed the Bilateral Agreement on Combined Border Control Posts on the Mozambique-South Africa Border (the Bilateral Agreement). Objective to expedite transit by rail and road across their common border. Ressano Garcia and Lebombo (Mozambique/RSA) being developed to OSBP. To date the following has been completed: Commercial freight clearance facilities established away from border (Old airport and additional 4 km) Freight by-pass road constructed Separate passenger corridor and clearance facilities constructed Traffic separated with passenger buses and private motorist using the old road and main facilities The South African Department of Transport conducted a freight optimisation study that includes the Oshoek/Ngwenya and Ressano Garcia/Lebombo border posts. Recommendations include infrastructure upgrades	8

					and processes redesign	
21	MSP	Plumtree-Ramokgwebane OSBP	2.1 Transport - Border Posts	Between the towns of Plumtree and Ramokgwebane at the border of Zimbabwe and Botswana	Establishing Plumtree-Ramokgwebane OSBP – design and construction of separate freight and passenger terminals	4
22	MSP	Pioneer Gate-Skilpadshek OSBP	2.1 Transport - Border Posts	Between the towns of Lobatse and Zeerust at the border of Botswana and South Africa	There are ongoing infrastructure facilities upgrades at Skilpadshek (South Africa/Botswana) to increase office space and improve access roads	4
23	MSP	Kasumbalesa OSBP	2.1 Transport - Border Posts	Between the towns of Kasumbalesa and Chililabombwe at the border of the DRC and Zambia	Establishing Kasumbalesa OSBP	4
24	MSP	Colomue-Dedza OSBP	2.1 Transport - Border Posts	Between the towns of Dedza and Calobue at the border of Malawi and Mozambique	Establishing Colomue-Dedza OSBP	4
40	MSP	Ngwenya-Oshoek OSBP	2.1 Transport - Border Posts	Between the towns of Ngwenya and Oshoek at the border of South Africa and Swaziland	Establishing Ngwenya-Oshoek OSBP	4
67	MSP	Kazungula OSBP	2.1 Transport - Border Posts	Zambia/Botswana		4

Table 0-11: Road Projects

No	Project ID	Title of project	Sector	Project Location	Project Description	Estimated Total Cost (US$ million)
4	MSP	Dar-es-Salaam-Chalinze toll road	2.2 Transport – Road	Dar-es-Salaam, eastern Tanzania to Chalinze, central Tanzania	Planning, design and construction of extra lanes to road between Dar-es-Salaam and Chalinze, as well as the construction of toll booths	157
5	MSP	Beitbridge – Chirundu road upgrading	2.2 Transport – Road	Beitbridge, southern Zimbabwe to Chirundu, southern Zambia	Upgrade the motorway system, as it plays a major role in industrial mining and agricultural development	932
6	MSP (188)	Kazungula Bridge	2.2 Transport – Road	Southern Africa (border of Botswana and Zambia and western Zimbabwe)	The project involves the construction of a bridge, new border facilities in each country and related infrastructure. The proposed bridge has been designed as an extra-dosed road-rail bridge configuration with middle deck sections of 129 m, and four piers in the river with a total length of 923 m. It will follow a curved alignment layout to avoid the border area in the Zambezi waters between Botswana and Zimbabwe, where the exact border positions have not been ratified	250
7	MSP	Nata-Kazungula road upgrading	2.2 Transport – Road	Nata, central Botswana to Kazungula, southern Zambia	The project comprises the reconstruction of approximately 135 km of the road between Nata and Kazungula and the improvement of parking and landing facilities at Kazungula ferry area, with associated ancillary and drainage works. The project will start 42.5 km from Mata and end about 20 km south of Pandamantenga. The contract to the value of P521 759 101.11 has been awarded to Sladden International (Botswana) (Pty) Ltd.	235
8	MSP	Tete toll bridge	2.2 Transport – Road	Tete, Mozambique	• Design, construct, operate and maintain a new bridge and construct new access roads to bridge • Operation and maintenance of old Samora Machel Bridge • Rehabilitation, maintenance and operation of toll roads	140
25	MSP	Lobito Corridor roads	2.2 Transport – Road	From Lobito, Angola, to Dilolo, western DRC, to northern Zambia	The programme activities will entail the rehabilitation of the main feeder roads within the corridor., which will include the restoration of the bridges and drainage systems, and the reconstruction of pavements	390
26	MSP	Nacala Corridor roads	2.2 Transport – Road	Nampula, central Mozambique, to Lilongwe, Malawi, to northern Zambia	Rehabilitation of road infrastructure on the Nacala Corridor, specifically the sections within Mozambique and Malawi (and possibly extending into Zambia)	270

27	MSP	Western Corridor roads – Zambia	2.2 Transport – Road	Kasempa, central Zambia, to Kaoma, western Zambia, to Mongu, western Zambia, to Senanga, south-western Zambia to Nangweshi, south-western Zambia to Sesheke, southern Zambia	Planning, design and construction of roads to full bituminous standards and the construction of a bridge over the Zambezi River	262
35	MSP	Beira- Mutare road upgrading and tolling	2.2 Transport – Road	From the Beira port in Mozambique to the Mutare/Machipanda border post between Mozambique and Zimbabwe	• Rehabilitation of the existing pavements (according to the adopted option) • Rehabilitation/maintenance of existing bridges • Rehabilitation/maintenance of existing major culverts • Retaining/upgrading the existing cross-section according to the adopted option • Retaining/upgrading the existing horizontal and vertical alignment according to the adopted option • Upgrading selected intersections by providing formal bus and taxi stops • Providing pedestrian sidewalks (where required) at bridges located in urban areas • Replacing road signs • Replacing all existing guardrails and providing new ones where required • Installing subsoil drains where necessary • Implementing a one-way/single lane option at the Pungue River bridge (truss section) • Environmental protection works at borrow pits	119.4
43	MSP	DRC roads on NSC	2.2 Transport – Road			Unknown
44	MSP	Luanda-Windhoek Corridor roads	2.2 Transport – Road	Luanda - Windhoek Corridor		Unknown
47	MSP	Trans-Caprivi roads, upgrading of Sinanga to Katima Mulilo road (205 km)	2.2 Transport – Road		Upgrade of road	Unknown
48	MSP	There is an additional list of roads and rail projects linking the DRC to Angola, Cabinda, Tanzania and Zambia	2.2 Transport – Road			Unknown

50	MSP	Establishment of cargo freight station (CFS) – Kisarawe	2.2 Transport – Road		• Rail shuttle transport linkage • Re-alignment of existing container yards at Dar-es-Salaam port • New dry port terminal, new truck road access, new mainline (RAHCO and TAZARA),spur lines, freight stations • Customs, clearing and forwarding buildings • Truck parking spaces and other associated facilities	120
52	MSP	Road link at Stevenson Delhomme-Dan Koko (St. Louis)	2.2 Transport – Road		This bypass will divert traffic from the capital city, which will lead to less congestion in Victoria	776
53	MSP	Road link between Mt. Fleuri Road to Bois De Rose Road, Victoria	2.2 Transport – Road		This bypass will divert traffic from the capital city, which will lead to less congestion in Victoria	7
54	MSP	Victoria Waterfront bypass	2.2 Transport – Road		This bypass will divert traffic from the capital city, which will lead to less congestion in Victoria	6.4
59	MSP	Toll N1 from Maputo to Maxixe and N7 from Beira to Machipanda, including the link between Vanduzi and Changara	2.2 Transport – Road	N1 Maputo to Maxixe and N7 from Beira to Machipanda including the link Vanduzi – Changara		Unknown
65	MSP	Platjaan cross-border bridge	2.2 Transport – Road	South Africa/Botswana		10.5
66	MSP	Martins Drift cross-border bridge	2.2 Transport – Road	South Africa/Botswana		12
70	MSP	Luiza	2.2 Transport – Road	Kasai Occidental Road, close to the border of Angola	Construction of road from Dar-es-Salaam to Catinga	20
74	MSP	Plumtree – Bulawayo – Harare – Mutare	2.2 Transport – Road	Between Plumtree and Mutare, Zimbabwe	Rehabilitation of the road (700 km)	Unknown
75	MSP	Beitbridge – Bulawayo	2.2 Transport – Road	Between Beitbridge and Bulawayo		Unknown

76	MSP	Bulawayo – Victoria Falls	2.2 Transport – Road	Between Bulawayo and Victoria falls		Unknown
77	MSP	Harare – Nyamapanda	2.2 Transport – Road	Between Harare and Nyamapanda		Unknown
89	MSP	Rehabilitation of the Matala – Dongo – Cuvango – Cuchi – Menongue road	2.2 Transport – Road		Road rehabilitation	Unknown
90	MSP	Rehabilitation of the Luau – Cazombo road	2.2 Transport – Road	Moxico	Road rehabilitation	Unknown
91	MSP	Rehabilitation of the Mbanza Congo – Noqui road (access to Luvo Posto Fronteirico)	2.2 Transport – Road	Zaire	Road rehabilitation providing access to Luvo Posto Fronteirico	Unknown
92	MSP	Rehabilitation of the Lubango – Santa Clara – Troco ondjiva – Santa Clara Lote 5 – Circular Ondjiva road	2.2 Transport – Road	Cunene	Road rehabilitation	Unknown
93	MSP	Rehabilitation of the Menongue – Caiundo – Catuitui road	2.2 Transport – Road	Kuando Kubango	Road rehabilitation	Unknown
94	MSP	Rehabilitation of the Buco Zau – Belize – Miconje road (including Acesso Luali, 11 km)	2.2 Transport – Road	Cabinda	Road rehabilitation	Unknown
95	MSP	Rehabilitation of the Malange – Marimba – Mangando and Posto Fronteirico road	2.2 Transport – Road	Malanje	Road rehabilitation	Unknown
96	MSP	Rehabilitation of the Uige – Quinzala – Damba – Quibocolo – Maquela do Zombo – Quimbata road	2.2 Transport – Road	Uige	Road rehabilitation	Unknown
97	MSP	Rehabilitation of the Uige – Quinzala – Damba/Quibocolo/Maquela do Zombo/Quimbata road	2.2 Transport – Road	Uige	Road rehabilitation	Unknown
98	MSP	Maintenance of the Riabela – Mavinga route	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown

99	MSP	Maintenance of the Calai – Dirico route (117 km)	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown
100	MSP	Maintenance of the -Cuangar – Calai route (143 km)	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown
101	MSP	Maintenance of the Dirico – Mucusso route (66 km)	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown
102	MSP	Maintenance of the Kuito – Cuanavale – Nancova route (158 km)	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown
103	MSP	Maintenance of the Mavinga – Rivungo route	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown
104	MSP	Maintenance of the Nancova – Rito – Dirico route (435 km)	2.2 Transport – Road	Kuando Kubango	Maintenance of existing road	Unknown
105	MSP	Construction of a bridge over the Kuito River in Dirico	2.2 Transport – Road	Kuando Kubango	Construction of a bridge	12
106	MSP	Construction of a bridge over the Cubia River on the Mavinga – Rivungo route	2.2 Transport – Road	Kuando Kubango	Construction of a bridge	12
107	MSP	Construction of a bridge over the Kubango River in Calai	2.2 Transport – Road	Kuando Kubango	Construction of a bridge	15
108	MSP	Study of the infrastructure integrated in Noqui	2.2 Transport – Road	Zaire		2
109	MSP	Study of the infrastructure integrated in Tomboco	2.2 Transport – Road	Zaire		2
110	MSP	Study of the infrastructure integrated in Cuimba	2.2 Transport – Road	Zaire		2

111	MSP	Study of the infrastructure integrated in Cunene	2.2 Transport – Road	Cunene		2
112	MSP	Study of the infrastructure integrated in Namibe	2.2 Transport – Road	Namibe		2
113	MSP	Construction of the Soyo's integrated infrastructure	2.2 Transport – Road	Zaire	Construction of Soyo's integrated infrastructure	Unknown
126	BGS	Western Corridor road in Zambia	2.2 Transport – Road		The objective is to raise the entire route to full bituminous standard, in order to form a direct route from the western Zambian mines to the port of Walvis Bay	900
155	BGS	Upgrade of road between Plumtree and Mutare	2.2 Transport – Road	Between Plumtree and Mutare, Zimbabwe	Upgrade the road between Plumtree and Mutari	Unknown
161	CSTN	Road to the port of Kigoma	2.2 Transport – Road	Tanzania	The route between Manyoni and Kigoma is currently not paved, as this is essentially a rail route	286
163	CSTN	Access roads to and expansion of the Dar-es-Salaam port	2.2 Transport – Road	Tanzania	A grade-separated fly-over for the Morogoro Road/Nelson Mandela intersection is needed to relieve the congestion to the port	
164	CSTN	Rehabilitation of the Blantyre–Zomba (60 km) – Mzuzu – Nkhata Bay(50 km) roads	2.2 Transport – Road	Malawi	Rehabilitation of the Blantyre–Zomba (60 km) – Mzuzu – Nkhata Bay(50 km) roads	Unknown
166	CSTN	Road rehabilitation between the escarpment and Chirundu	2.2 Transport – Road	Malawi	The road segment closest to Chirundu is badly potholed and in need of reconstruction in many places	40
175	CSTN	Road improvements on the Namibian section of the Trans-Kalahari	2.2 Transport – Road	Namibia	716 km of the original highway is being rehabilitated and widened in several phases	Unknown
176	CSTN	Road rehabilitation between Livingstone and Zimba	2.2 Transport – Road	Zambia	This approximately 70 km section was badly potholed and needed full rehabilitation	Unknown
179	CSTN	Upgrade Rundu – Oshikango road	2.2 Transport – Road	Namibia	This project involves converting the 501 km route from gravel to bitumen across northern Namibia, facilitating the development of the region as well as trade with Angola and Zambia	500

180	CSTN	Road link from Tsumeb – Katwitwi	2.2 Transport – Road	Namibia	This project involves the paving of a 258 km gravel road on an increasingly active trade route between Namibia and southern Angola. Bonded warehouses are also being constructed on the Namibian side	500
183	CSTN	Nata – Kazungula road	2.2 Transport – Road			Unknown

Table 0-12: Rail Projects

No.	Project ID	Project Title	Sector	Project Location	Project Description	Estimated Total Cost (US$ million)
1	MSP	Zambian railway system restructuring	2.3 Transport – Rail	From the Zambian Copper Belt to south-western Tanzania	Restructure and renegotiate the concession to ensure investment takes place in the railway infrastructure (possibly by vertical separation of the rail concession)	Unknown
2	MSP	Revival of the National Railways of Zimbabwe	2.3 Transport – Rail	South-western Zimbabwe towards Harare, Harare towards Beira, Mozambique, and Harare towards Zambia	Investment in infrastructure, as well as rolling stock repair and acquisition	200
3	MSP	Revival of the Tanzania Railways Limited	2.3 Transport – Rail	From Isaka, Tanzania to Kigari, Burundi and Rwanda	Investment in infrastructure, as well as rolling stock repair and acquisition	Unknown
28	MSP (113)	Chingola – Solwezi railway extension	2.3 Transport – Rail	Chingola, northern Zambia to Solwezi, north-western Zambia	Construction of new railway line from Chingola – Solwezi – border with Angola (536 km line)	400
29	MSP	Moatize – Nacala railway	2.3 Transport – Rail	Moatize, western Mozambique to Nacala, eastern Mozambique	Upgrade of existing railway line to accommodate 30 mpta (or more)	500
30	MSP	Sena railway upgrading	2.3 Transport – Rail	Sena, Mozambique to Limbe, southern Malawi, and Blantyre, southern Malawi	Upgrade of railway line to accommodate 6 – 19 mpta	150
31	MSP (AB5410)	SNCC railway upgrading	2.3 Transport – Rail	South-eastern DRC	Revitalising rail service, rehabilitation of rail infrastructure, new rolling stock acquired	218
32	MSP (112)	Lion's Den – Kafue rail link	2.3 Transport – Rail	Lion's Den, central Zimbabwe, to Kafue, southern Zambia	Construction of new railway line between Kafue and Lion's Den (292 km line)	500
36	MSP	Beira – Mutare – Harare railway upgrading	2.3 Transport – Rail	Beira, Mozambique, to Mutare, eastern Zimbabwe, to Harare, central Zimbabwe	Performing deferred maintenance and realignment of sections of track	500
37	MSP	Trans-Kalahari railway	2.3 Transport – Rail	The corridor stretches from Gauteng, South Africa, through Botswana to Walvis Bay, western Namibia	Construction of a new railway line to link up to the railway line in Namibia	Unknown
38	MSP	Tchobanine heavy-haul railway	2.3 Transport – Rail	Tchobanine, Mozambique, through Zimbabwe to eastern Botswana	The feasibility study on the construction of a railway to connect Botswana to a port in Namibia is ongoing. Invitations for the Expression of Interest (EoI)from potential	4724

					transaction advisors and contractors have been sent out. The construction of the line is planned on a public-private partnership basis and developers of coalfields in Botswana and South Africa, among others, are expected to bid	
41	MSP	Namibe Railway upgrading, including link to Santa Clara border post	2.3 Transport – Rail	From port of Namibe, western Angola to Oshikango/Santa Clara border post, southern Angola	Rehabilitation of Namibe – Menongue section. Namibe – Menongue section (756 km), including the Jamba and Tchamutete branch lines (115 km). The set deadline for the conclusion of the works is December 2011. The works consist of the renewal of the line by lifting the existing infrastructure, slightly rectifying the rail line, renewing the ballast and replacing the existing material (wood sleepers with mono-block concrete sleepers and 30kg/m and 45kg/m rails with 50kg/m rails). This will enable trains to attain the maximum speed of 120 km/h in some stretches of the line. The physical execution of the works corresponds to practically 50% of the assignment in respect of the: • Replacement of all old 30 and 40 kg/m rails with new 50kg/m rails • Installation of new track change devices • Replacement of metal and wood sleepers with mono-block concrete sleepers • Appliance of new ballast with adequate characteristics • Building and reparation of bridges • Execution of the line platform • Installation of signalling and telecommunication equipment	91

42	MSP	Lobito Corridor railway	2.3 Transport – Rail	From Lobito, western Angola to Dilolo, western DRC	Railway line rehabilitation. The rolling stock, the ancillary facilities including workshops, operating plant and equipment as well as telecommunication system would have to be replaced, refurbished and modernized. Institutional support would be vital to ensure satisfactory implementation and adequate management of the railway system.	Unknown
46	MSP	Trans-Caprivi/ western Zambia Railways from Kolwezi (DRC), through Solwezi (Zambia) to Mongu, Sesheke(Zambia) and Katima Mulilo (Namibia)	2.3 Transport – Rail	Kolwezi, DRC, to Solwezi, Zambia, to Mongu, Zambia, to Sesheke, Zambia, to Katima Mulilo, Namibia		Unknown
49	MSP	Tanzania submitted a list of new railway projects, some of which may be part of the COMESA and/or EAC master plan	2.3 Transport – Rail			Unknown
85	MSP	Benguela railway rehabilitation with RSA	2.3 Transport – Rail	Border post interchange between two countries	Railway rehabilitation	Unknown
127	BGS	Chingola to Solwezi – Lumwana (Zambia)	2.3 Transport – Rail		Construct new line	395
128	BGS	Botswana (BR) to Lephalale (South Africa)	2.3 Transport – Rail		Construct new line	263
129	BGS	Rehabilitation of the SNCC system in the DRC, particularly to Dilolo, to connect to Angola and Kalemie on Lake Tanganyika	2.3 Transport – Rail		Rehabilitation of SNCC system	656
130	BGS	Beira – Machipanda line	2.3 Transport – Rail		Upgrading of line	500
165	CSTN	Improving the TAZARA rail system	2.3 Transport – Rail	Tanzania	Shift of freight from road to rail. The track has good specifications, but needs repairs in sections. Financing is needed for equipment repair and as working capital, with new management and realistic business plan	250

167	CSTN	Improved regional rail operating agreements	2.3 Transport – Rail		Possible open access for multiple rail operators	1
168	CSTN	Cuamba to Lichinga railway	2.3 Transport – Rail	Mozambique	The gradual reconstruction/upgrade of the strategic rail link will promote significant regional agricultural development in the fertile Niassa province (260 km)	Unknown
177	CSTN	Rehabilitation of the railway line between Kranzberg and Tsumeb	2.3 Transport – Rail	Namibia	This 332 km section of track was seriously degraded and needed rehabilitation. The northern extension to Angola depends on the strengthening of this middle section of the route	Unknown
178	CSTN	ICD at Tsumeb	2.3 Transport – Rail	Namibia	To handle the increased volumes estimated for the route. Tsumeb is the logical location for an ICD, as the Namibian copper smelter is located there And trucks bring through concentrate from the Copper Belt mines. After smelting, the blister copper is hauled by train to the port of Walvis Bay	Unknown
181	CSTN	Extension of Trans-Namib from Ondangwa to Oshikango	2.3 Transport – Rail	Namibia		Unknown

Table 0-13: Aviation Projects

No	Project ID	Project Title	Sector	Project Location	Project Description	Estimated Total Cost (US$ million)
60	MSP	Construction of two additional aircraft parking stands (code E)	2.4 Transport – Air	Mauritius	Construction of two fully equipped off bridge aircraft parking stands (Code E)	5.2
78	MSP	Buffalo-range airport	2.4 Transport – Air			Unknown
79	MSP	Kariba airport	2.4 Transport – Air			Unknown
80	MSP	Seychelles improvement in airport infrastructure	2.4 Transport – Air		To develop airport infrastructure in order to cater for traffic growth as a result of regional integration and the development in air access within the regions	Unknown
86	MSP	Catumbela airport	2.4 Transport – Air		Construction of infrastructure and railways	Unknown
118	LTSP	Vilankulos	2.4 Transport – Air	Vilankulos (Inhambane)	Vilankulos airport expansion	Unknown
119	LTSP	Tete airport	2.4 Transport – Air	Tete	Tete airport relocation	Unknown
122	LTSP	Pemba airport expansion	2.4 Transport – Air	Pemba	Pemba airport expansion	Unknown
139	BGS	New airport, 35 km outside Luanda	2.4 Transport – Air		Construction of new airport	750
140	BGS	Lubango	2.4 Transport – Air		Improve airport	50
141	BGS	Huambo	2.4 Transport – Air		Improve airport – rehabilitation of infrastructure	50
142	BGS	Cabinda	2.4 Transport – Air		Improve airport	50
144	BGS	Gaborone	2.4 Transport – Air		Additional terminal capacity	31
145	BGS	Luanda- 4th of February	2.4 Transport – Air		Additional terminal capacity	30
169	CSTN	Nacala airport	2.4 Transport – Air	Mozambique	Conversion of Nacala Military Airport to a civilian international airport with immigration and customs clearance, hence direct travel to Nacala from abroad	Unknown
171	CSTN	Maputo airport upgrade	2.4 Transport – Air	Mozambique	Improvements are scheduled for the airport terminals	Unknown

Table 0-14: Ports and Water Transport Projects

No	Project ID	Project Title	Sector	Project Location	Project Description	Estimated Total Cost (US$ million)
33	MSP	Cargo freight stations, Dar-es-Salaam	2.5 Transport – Ports	Kisarawe, 35 km from Dar-es-Salaam port	• Rail shuttle transport link • Re-alignment of existing container yards at Dar-es-Salaam port • New dry port terminal, truck road access, mainline (RAHCO and TAZARA),spur lines and freight stations • New customs, clearing and forwarding buildings • New truck parking spaces and other associated facilities	120
34	MSP	Berths at Kigamboni to expand Dar-es-Salaam port	2.5 Transport – Ports	Dar-es-Salaam	The Tanzania Ports Master Plan (2008 – 2028) identified potential areas for the expansion of the Dar-es-Salaam port footprint to accommodate forecasted traffic cargo flows. The new area lies on the opposite side of the existing port at Kigamboni areas 1 – 3 with the following estimated dimensions: • Area 1: 1 700 m quay length and 60 ha • Area 2: 1 300 m quay length and 35 ha • Area 3: 1 700 m quay length and 65 ha	657.2
39	MSP	Tchobanine deep sea port	2.5 Transport – Ports	Tchobanine, just south of Maputo, Mozambique	Construction of a deep-sea terminal and heavy-haul rail line to serve Zimbabwe and Botswana, mostly through coal and other traffic. Feasibility studies are ongoing, Botswana and Mozambique have signed a MoU and Zimbabwe is expected to sign soon. Joint technical and ministerial committees have been established and are operational. All three countries have signed MoUs with the private developers	2124
45	MSP	Nacala port modernisation and expansion	2.5 Transport – Ports		Upgrading of existing Nacala port and new coal terminal	200

51	MSP	Development of new berth at Kigamboni	2.5 Transport – Ports		The Tanzania Ports Master Plan (2008 – 2028) identified potential areas for the expansion of the Dar-es-Salaam port footprint to accommodate forecasted traffic cargo flows. The new area lies on the opposite side of the existing port at Kigamboni areas 1 – 3 with the following estimated dimensions: • Area 1: 1 700 m quay length and 60 ha • Area 2: 1 300 m quay length and 35 ha • Area 3: 1 700 m quay length and 65 ha	657.2
55	MSP	Development of deepwater port at Mwambani Tanga	2.5 Transport – Ports	Tanzania	The Mwambani Bay area, 10 km south of the existing port, is earmarked for Greenfield port and EPZ development, and is expected to be operational by 2016. The entrance Mwambani Bay is about 1 000 m wide, and an area of 174 ha has been acquired by TPA for this project. The main road networks and TRL rail system can be connected over 7 km, while connecting to TAZARA would require some 350 km of new rail. The new port could either concessioned to a single operator, or split between three terminals, a specialist dry bulk terminal, break bulk and container terminal. After the pre-rationalisation of the new port, probably in 2016, the lightering services at the existing port will mostly be used by dhows and some small coasters serving the local markets. Equipment can be relocated to the Mwambani port	188
56	MSP	Development of new port at Mbegani Bagamoyo	2.5 Transport – Ports	60 km north of Dar-es-Salaam Port at Mlingotini area, Bagamoyo	A SWOT analysis conducted indicates that the planned Mbegani port is a good location with significant growth potential for container and vehicle handling. To be constructed in three phases. Phase 1 to be operational by 2018 to handle 6000 TEUs and 100,000 vehicle units per annum, phase 2 year 2023 to handle increased to 1.5 million TEUs and 175,000 vehicle units per annum, and phase 3 in	1600

					2028, to increase TEUs to 2.8 million and 270,000 vehicle units per annum.	
57	MSP	Mtwara port and EDZ development	2.5 Transport – Ports	Tanzania	The major port facilities required between 2013 – 2028 are: • Oil jetty with two berths • Conveyor belt for dry bulk • Dry bulk terminal • Container terminal • Expansion of the stacking/storage areas and procurement of cargo handling equipment	184.1
61	MSP	The new Walvis Bay container terminal on reclaimed land	2.5 Transport – Ports	Walvis Bay, Namibia		344
62	MSP	Walvis Bay new tanker berth	2.5 Transport – Ports	Walvis Bay, Namibia		81.25
63	MSP	Walvis Bay ship and rig repair quay	2.5 Transport – Ports	Walvis Bay, Namibia		75
64	MSP	The Walvis Bay marina development	2.5 Transport – Ports	Walvis Bay, Namibia		None – Private development
68	MSP	Kasumbalesa	2.5 Transport – Ports	Near Lubumbashi	Road route	Unknown
69	MSP	Beni	2.5 Transport – Ports	North Kivu. Northern Corridor coming from Mombasa		Unknown
71	MSP	Pweto Katanga	2.5 Transport – Ports	Tanzania/ Zambia	If the dry port is placed at Pweto Katanga, it will reduce distance for road users by 750 km	Unknown
72	MSP	Katanga- Kasai- Kinshasa Bridge	2.5 Transport – Ports	Kasai Occidental	Rail and road (combined)	Unknown
73	MSP	Walvis Bay dry port	2.5 Transport – Ports		Construction of a dry port	Private sector funded.
82	MSP	Extension of existing commercial port, Seychelles	2.5 Transport – Ports		Extension of existing commercial port by 300 m in the same alignment southwards	Unknown
87	MSP	Lobito port	2.5 Transport – Ports		Upgrading port and dry dock, and plan construction of 150 000 m2mineral terminal for mines	Unknown
88	MSP	Namibe port	2.5 Transport – Ports		Construction of dry port (built by Toyota)	Private sector funded.
114	MSP	Lobito dry port	2.5 Transport – Ports	Lobito	Construction of a dry port (logistics platforms)	30

115	LTSP	Luanda port expansion	2.5 Transport – Ports	Luanda	Port expansion	Unknown
116	LTSP	Maputo port expansion	2.5 Transport – Ports	Maputo	Port expansion	Unknown
117	LTSP	New dry port at Selebi-Phikwe	2.5 Transport – Ports		Construction of dry port	30
120	LTSP	Chinde Port expansion and new port at Macuze	2.5 Transport – Ports	Zambezi	Port expansion at Chinde and construction of a new port at Macuze	Unknown
121	LTSP	New ports at Pemba, Mocimboa da Praia and Savana	2.5 Transport – Ports	Pemba	Construction of new ports at Pemba, Mocimboa da Praia and Savana	Unknown
123	LTSP	New dry port at Mpulungu	2.5 Transport – Ports		Construction of a dry port at Mpulungu	25
124	LTSP	New dry port at Chirundu	2.5 Transport – Ports		Construction of a dry port at Chirundu	25
125	LTSP	New dry port at Mocuba	2.5 Transport – Ports	Zambezi	Construction of a dry port at Mocuba	25
131	BGS	Nacala	2.5 Transport – Ports		Port expansion	650
132	BGS	Walvis Bay	2.5 Transport – Ports		Port expansion	650
133	BGS	South African Ports	2.5 Transport – Ports		Port expansion	4162
134	BGS	Port Expansions at Durban and Richards Bay	2.5 Transport – Ports		Port expansion at Durban and Richards Bay	2910
135	BGS	Expand and upgrade of Cape Town Port	2.5 Transport – Ports		Port expansion and upgrade	642
136	BGS	Decommissioning of existing PE manganese terminal and new manganese terminal	2.5 Transport – Ports		Decommission existing Port Elizabeth manganese terminal and construction of a new manganese terminal	610
137	BGS	Beira	2.5 Transport – Ports	Beira	Port expansion and new coal terminal	650
138	BGS	New mineral port at the mouth of the Zambezi	2.5 Transport – Ports		Port expansion	850
149	BGS	Dry port at Lebombo/Ressano Garcia border crossing	2.5 Transport – Ports		Construction of dry port	25
150	BGS	Dry port at Lusaka	2.5 Transport – Ports		Construction of dry port	25
151	BGS	Dry port at Kitwe	2.5 Transport –		Construction of dry port	25

			Ports			
152	BGS	Dry port Edeola	2.5 Transport – Ports		Construction of dry port	25
153	BGS	New coal terminal at Beira	2.5 Transport – Ports	Beira, Mozambique	Construction of a new coal terminal at Beira port. A 50 ha site was set aside for this	50
154	BGS	New dry port at Harare	2.5 Transport – Ports	Harare, Zimbabwe	Construction of dry port	25
156	CSTN	New Dar-es-Salaam Container terminal	2.5 Transport – Ports	Tanzania	Two new container berths at Dar-es-Salaam Port, berth 13 and 14	280
157	CSTN	Maintenance and Capital Dredging Dar-es-Salaam	2.5 Transport – Ports	Tanzania	Maintenance and capital dredging of entrance channel and berths	60
158	CSTN	Bulk Terminal Expansion – Port of Dar-es-Salaam	2.5 Transport – Ports	Tanzania	Conversion of general cargo berths 5, 6, and 7 to bulk terminals	5
159	CSTN	Dar-es-Salaam RoRo Quay	2.5 Transport – Ports	Tanzania	Plan to develop a RoRo terminal and multi-storey car park to save space occupied by 5 000 vehicles. A second park to be added in 2016	5
160	CSTN	Community-based system in Port of Dar-es-Salaam	2.5 Transport – Ports	Tanzania	This software system will connect the port to the revenue service, clearing agents, other border agencies, banks, etc. for electronic submission of documents and payment of duties and fees	2
162	CSTN	New SPM oil terminal	2.5 Transport – Ports	Tanzania	Existing SPM was damaged by the corrosion of pipeline, and is in very poor condition. Used for crude oil imports to Zambia (0.6 million t p/a), not Tanzania	44
170	CSTN	Beira port dredging	2.5 Transport – Ports	Mozambique	Dredging of the 40 km port of Beira entrance channel financed by the EU	Unknown
172	CSTN	Maputo and Matola port rehabilitation programme	2.5 Transport – Ports	Mozambique	The rehabilitation project includes dredging	Unknown
173	CSTN	Walvis Bay bulk and break bulk handling	2.5 Transport – Ports	Namibia	The relocation of some operations is recommended	Unknown
174	CSTN	Walvis Bay VTS/port control	2.5 Transport – Ports	Namibia	The port will relocate the port control system to an area adjacent to the present radar tower	Unknown
182	CSTN	Dry port at Kigoma	2.5 Transport – Ports	Tanzania	Construction of dry port at Kigoma	25
184	CSTN	Isaka dry port	2.5 Transport – Ports	Tanzania	Construction of dry port at Isaka	25
185	CSTN	Botswana dry port at Walvis Bay	2.5 Transport – Ports	Namibia		Private funded

146	BGS	Cargo terminal at Chipata	2.6 Transport – Water		Under construction	360
147	BGS	Dry port at Dona Ana	2.6 Transport – Water		Construction of dry port	25
148	BGS	Container terminal at Tete	2.6 Transport – Water		Construction of container terminal	360

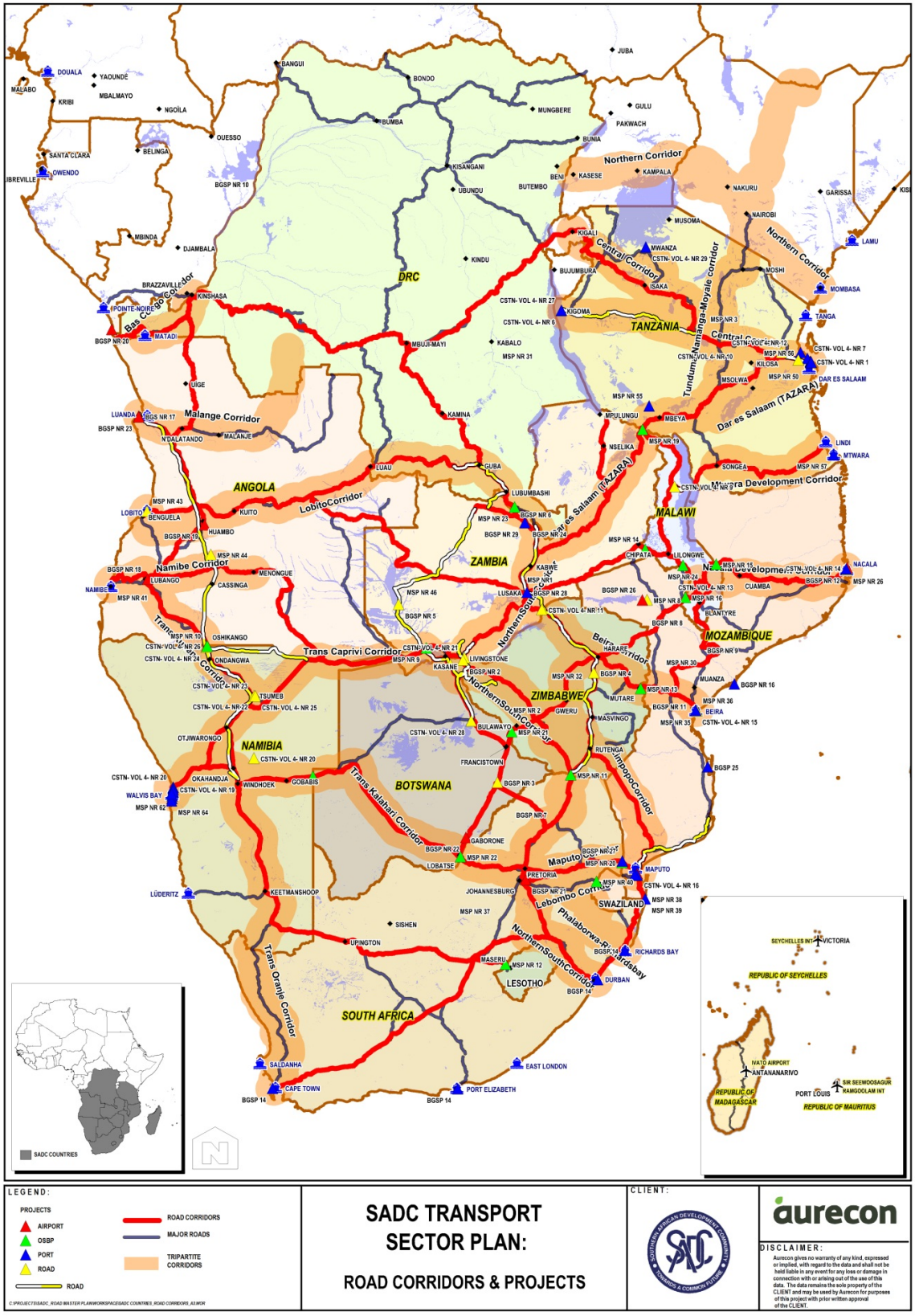


Figure 0-3: Road Transport, Aviation and Port Projects in Road Corridor Regional Context

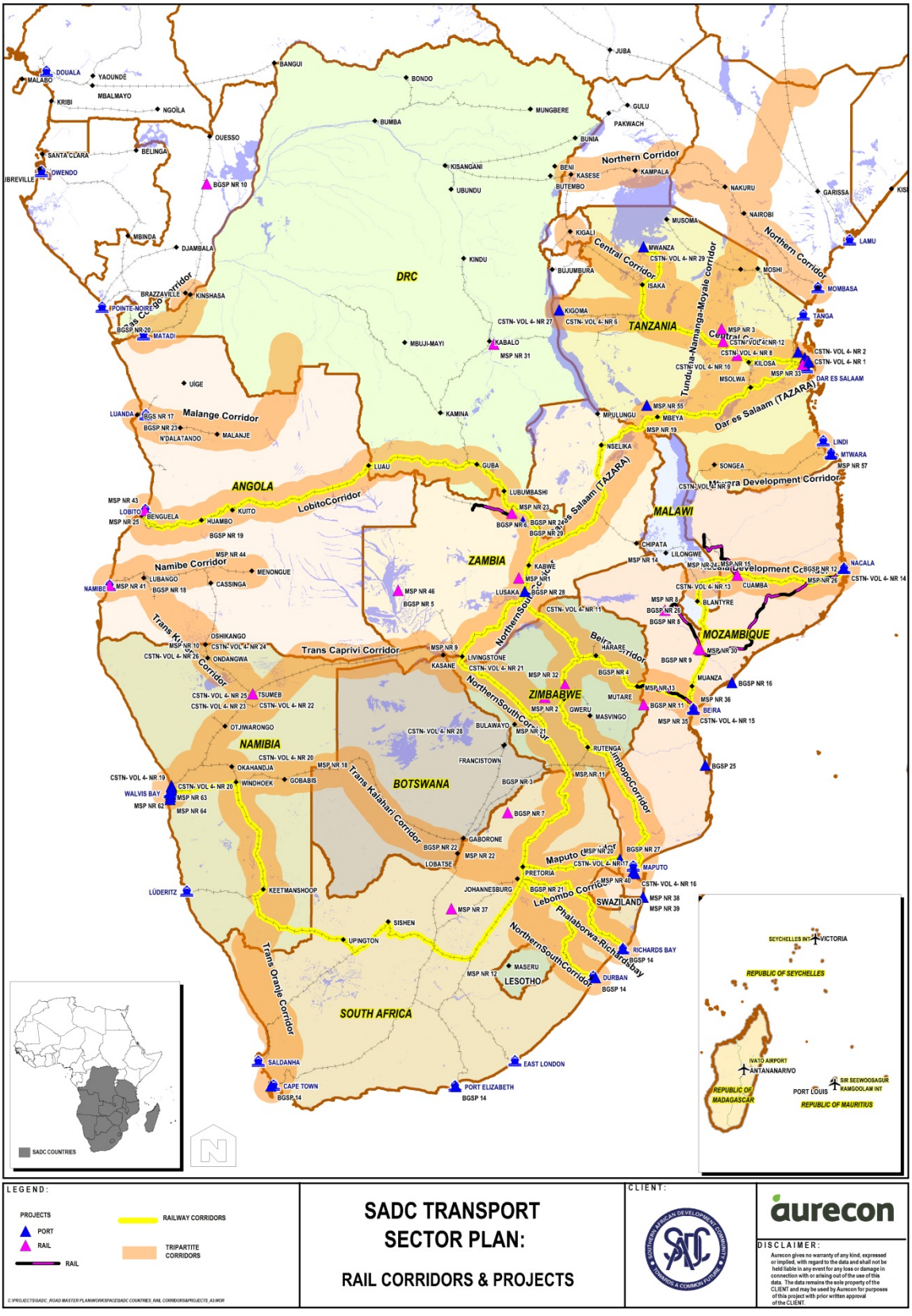


Figure 0-4: Rail Transport and Port Projects in Rail Corridor Regional Context

4.5 Inter-relationship with Other Infrastructure Sectors

The TSP, in collaboration with other sectors such as energy, water, information communication technology and meteorology, seeks to support the development of the free trade area, a customs union and ultimately a common market in SADC by facilitating regional integration processes and the attainment of an increasing measure of self-reliance involving three mutually interdependent dimensions, namely the integration of:

- Physical, institutional and social infrastructure;
- Production systems; and
- Local, regional and continental markets.

The Transport Sector has direct and indirect impacts on economic and social development of the region. Transport development and economic development are interdependent on each other as explained in Section 0.

The transport sector is not dependent on any of the other four sectors (energy, water, information communication technology and meteorology) for the implementation or sequencing of projects. The transport sector can however assist the other sectors (energy, water and information communication technology) by making their infrastructure accessible.

5. Implementation Action Plan

5.1 Mode-specific Trade Flow Assignment on the Transport Network

Trade flows give an indication of transport network demand, which in turn is linked to economic activity. The presentation of trade flows on the regional road and rail network of the SADC region can give an indication of current (2009 base year) and future (2030 horizon year) demand on corridors, which in turn highlights transport infrastructure projects in the vicinity that align to already economic active areas.

The development of origin-destination matrices to represent the trade flows to and from SADC countries were developed based on the matrices developed in the study report of the Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa (2011). These matrices are currently not transport mode (road or rail) or export port specific. For a more real world application, these matrices were further developed to be mode- and port-specific. The process used to develop these mode- and port-specific matrices are describe in the following steps:

A Transport Master Plan Study done for COMESA in 2009 obtained the then latest international trade flow data (import and export of detailed commodities) for African countries. The different commodities were grouped into meaningful categories that would make use of similar transport modes. This study then further divided trade flows between the different transport modes (rail, road and other). From this allocation a percentage mode split was calculated per origin – destination pair that formed part of COMESA and the rest of the world. An origin-destination pair represent the trade flows between two countries. Based on this calculated percentage, the trade flows in the 2011 Core Strategic Transport Network Study's matrices were split between rail and road;
The COMESA study furthermore split exports and imports from the rest of the world to COMESA countries, and vice versa, between ports per country. Landlocked countries' exports and imports were split based on the nearest port. If the nearest port is a relative small port with limited capacity, it was assigned to the nearest major port; and

The port splits per country were then applied on the 2011 Core Strategic Transport Network Study's matrices, with the end result of a mode- and port-specific matrix. The resultant matrices are shown in Table 0-1 and

Table **0-2** below as well as Table 6-7 to

Table 6-10 which is attached in Annexure B.

Figure 0-1 and

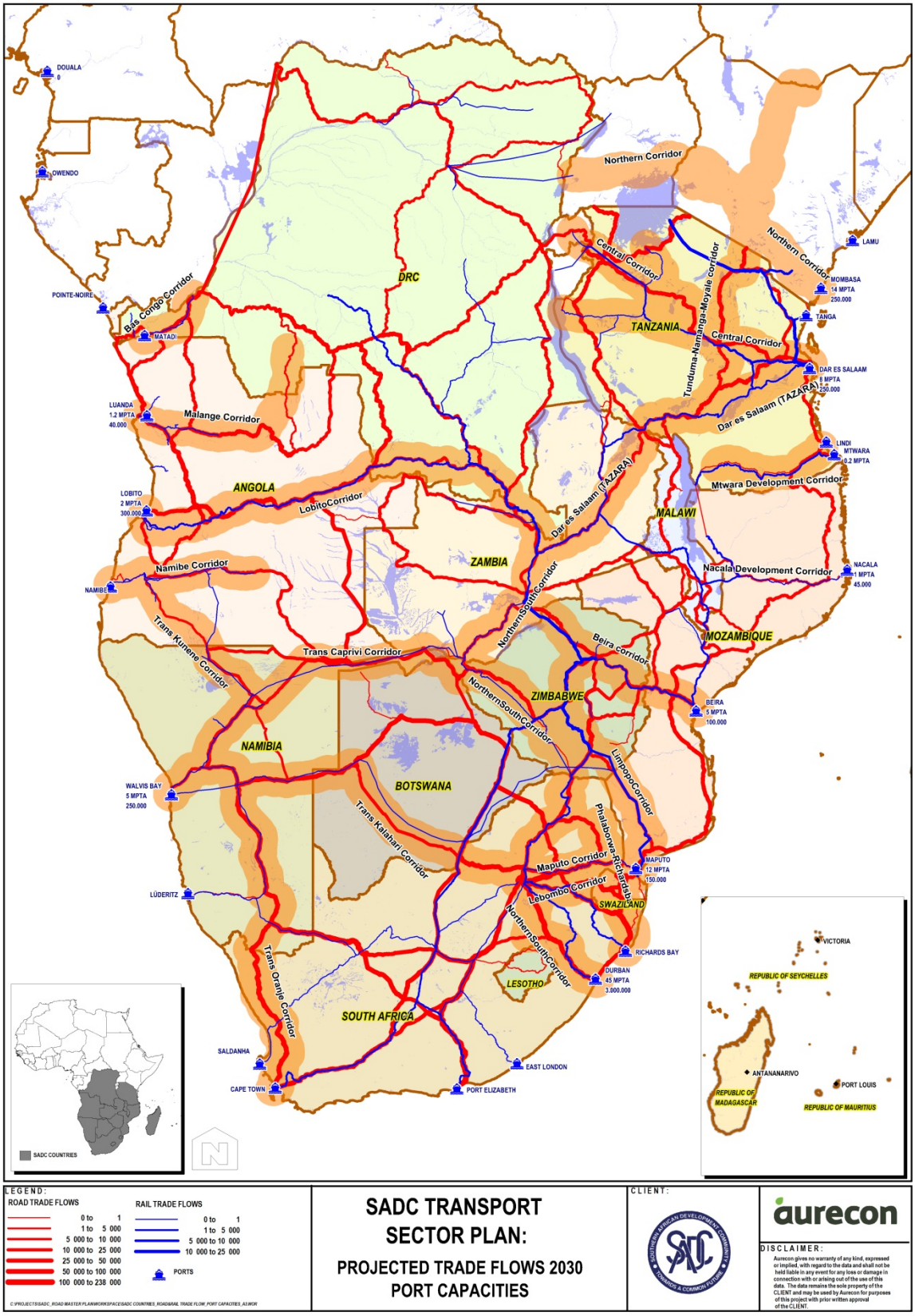


Figure **0-2** indicates the assigned trade flows on the road and rail network respectively, together with current port capacities.

5.2 Assumptions and Limitations

It must be noted that this is not a foolproof approach taking into account all possible variables as well as current limitations on the surface transport network and system. This approach is assigned the trade flows assuming that there are no restrictions on the network with regards to capacity, condition or delay. The future scenario took into account the future mineral and agricultural productions as stipulated in Table 0-2.

Apart from the shortcomings of this exercise, the assigned trade flows do however still give an indication of transport network trade traffic in the SADC region, indicating corridor and therefore also economic activity.

Table 0-1: Estimates of Import and Export Tonnages in 2009 for Study Countries (thousand tons)

Destination/Origin	Angola	Botswana	Burundi	DRC	East Asia	Ethiopia	Europe	Kenya	Latin Am.	Malawi	Middle East	Mozambique	Namibia	North America	Rwanda	South Africa	South Asia	Tanzania	Uganda	Zambia	Zimbabwe	Total
Angola	-	-	-	-	22 453	-	7 194	0	3 894	-	13	8	3	29 730	-	4 169	169	-	0	0	-	67 634
Botswana	-	-	-	-	50	-	39	0	2	-	0	2	13	10	-	1 680	0	1	0	35	1 281	3 114
Burundi	-	-	-	1	12	-	7	17	-	-	5	-	-	1	3	-	-	-	1	0	0	46
DRC	-	-	0	-	644	-	162	12	214	-	2	0	10	519	60	8	73	1	-	141	65	1 911
East Asia	4 834	16	88	518	-	1 494	-	2 394	-	437	-	688	391	-	86	11,601	-	1 602	893	339	168	25 549
Ethiopia	-	-	-	-	29	-	128	5	3	-	300	-	-	172	0	5	41	1	1	0	0	686
Europe	2 327	51	26	1 072	-	650	-	1 762	-	1 066	-	1 892	1 475	-	109	13 647	-	1 168	1 023	1 925	1 320	29 513
Kenya	7	0	21	251	201	48	1 139	-	2	44	651	5	0	71	267	28	42	713	617	113	7	4 228
Latin America	1 524	-	0	153	-	196	-	314	-	-	-	69	-	-	4	4 102	-	248	52	-	-	6 662
Malawi	-	-	-	-	49	-	1 941	24	-	-	54	18	-	232	-	296	66	48	-	23	44	2 796

14 781	4 672	2 020	13 358	46	63 161	14 155	1 706	2 661	5 478	4 511	268 688
-	-	0	143	-	1 956	61	9	0	656	-	5 710
47	73	8	66	0	2 907	171	52	-	-	140	6 041
368	5	0	50	2	454	779	109	-	0	1	4 356
711	8	2	854	0	740	879	-	272	179	8	7 435
-	28	27	-	0	-	-	4	-	-	14	466
10 211	2 044	529	4 911	0	-	6 545	55	38	652	690	61 214
110	-	-	-	-	23	20	19	611	-	-	1 312
-	145	268	-	4	5 864	-	142	-	-	1 421	38 579
78	4	-	702	-	5 014	27	-	0	71	31	7 821
109	-	7	64	-	1 075	332	16	-	21	46	4 352
-	18	1	-	6	772	-	133	0	20	3	1 978
400	493	-	168	-	1 780	286	136	-	312	91	5 213
-	-	0	-	2	46	-	-	0	-	17	4 180
1 555	4	0	458	0	953	1 600	73	584	43	-	9 797
-	1 499	310	-	10	21 704	-	394	225	1 706	1 405	37 864
936	-	-	1 405	-	76	1 000	0	0	0	0	5 807
-	320	631	-	16	14 201	-	477	26	1 240	5	40 355
220	4	32	173	2	2 133	77	73	861	544	407	6 521
31	-	-	3	1	3	9	5	42	4	0	234
4	9	35	24	-	2 664	3	0	0	29	231	3 067
-	18	170	4 336	-	797	2 366	7	-	-	-	16 385
Middle East	Mozambique	Namibia	North America	Rwanda	South Africa	South Asia	Tanzania	Uganda	Zambia	Zimbabwe	Total

Note: Rows represent exports and columns represent imports

Table 0-2: Estimates of Import and Export Tonnages in 2030 for Study Countries (thousand tons)

Destination/Origin	Angola	Botswana	Burundi	DRC	East Asia	Ethiopia	Europe	Kenya	Latin America
Angola	-	-	-	-	17 406	-	-	6	-
Botswana	-	-	-	-	-	-	48	1	-
Burundi	-	-	-	14	419	-	109	57	1
DRC	-	-	-	-	3 522	-	3 409	798	-
Ethiopia	-	-	-	-	373	-	-	42	-
East Asia	40 657	557	126	20 622	-	-	-	1 165	-
Europe	22 197	141	75	-	-	-	-	3 048	-
Kenya	0	-	45	90	15 180	7	4 261	-	487
Latin America	-	8	-	4 861	-	9	-	64	-
Malawi	-	-	-	-	1 643	-	4 004	166	-
Middle East	219	-	92	5	-	4 979	-	1 350	-
Mozambique	54	9	-	0	6 772	-	3 950	29	708
Namibia	-	5	-	37	-	-	1 375	1	109
North America	54 161	79	2	-	-	289	-	310	-
Rwanda	-	-	2	149	279	0	71	525	2
South Africa	11 103	4 756	-	30	70 228	13	22 952	81	11 679
South Asia	-	-	9	-	-	-	-	479	-
Tanzania	-	8	-	0	14 042	19	6 874	1 976	1 656
Uganda	0	-	3	-	6 546	6	2 630	2 065	911
Zambia	0	137	0	441	2 393	2	3 451	332	89
Zimbabwe	-	3 208	0	935	312	4	-	66	-
Total	128 393	8 907	354	27 184	139 114	5 328	53 133	12 559	15 643

11 147	55 853	18 775	11 522	23 415	879	354 414	97 133	9 176	12 730	22 407
176	-	-	-	503	-	6 245	191	108	0	8 218
93	6 225	-	27	-	-	6 422	154	409	1	-
-	-	-	-	-	9	1 601	183	514	-	-
191	5 390	68	6	1 316	1	1 097	4 209	-	1 337	1 183
264	-	1 302	557	-	2	-	-	-	-	516
1 179	27 854	10 852	1 344	1 284	4	-	40 698	234	121	2 029
-	2 203	-	-	-	-	27	180	49	3 663	1
926	-	605	409	-	9	11 220	-	1 657	-	-
-	-	30	-	1 885	-	11 740	852	0	0	322
74	2 001	-	15	-	-	40	1 697	36	-	116
214	-	526	-	-	323	40 855	-	1 014	23	1 787
-	1 504	1 851	-	632	-	6 688	1 076	509	-	1 171
-	-	-	1	-	5	-	-	82	0	-
98	6 037	-	-	274	1	3 249	21 296	360	3 137	145
7 738	-	-	1 292	-	-	65 976	-	1 968	949	4 155
-	2 404	-	-	6 453	-	211	-	17	0	3
194	-	3 421	7 514	-	518	179 606	-	2 129	159	-
-	1 530	-	114	2 742	7	8,125	17 235	79	3 168	2 618
-	-	-	-	11	-	6	133	-	173	11
-	80	37	46	188	-	10 397	46	2	-	133
-	625	82	197	8 129	-	909	9 183	8	-	-
Malawi	Middle East	Mozambique	Namibia	North America	Rwanda	South Africa	South Asia	Tanzania	Uganda	Zambia

Zimbabwe	-	-	-	1 909	-	1	12 102	-	-	341	375	445	-	12 860	-	3 040	-	143	2	26	-	31 246
Total	36 545	10 978	933	45 255	256 669	9 503	119 641	54 665	5 030	19 585	51 762	15 946	16 356	82 527	7 151	209 482	3 128	39 516	14 471	20 203	19 966	1 039 312

Note: Rows represent exports and columns represent imports

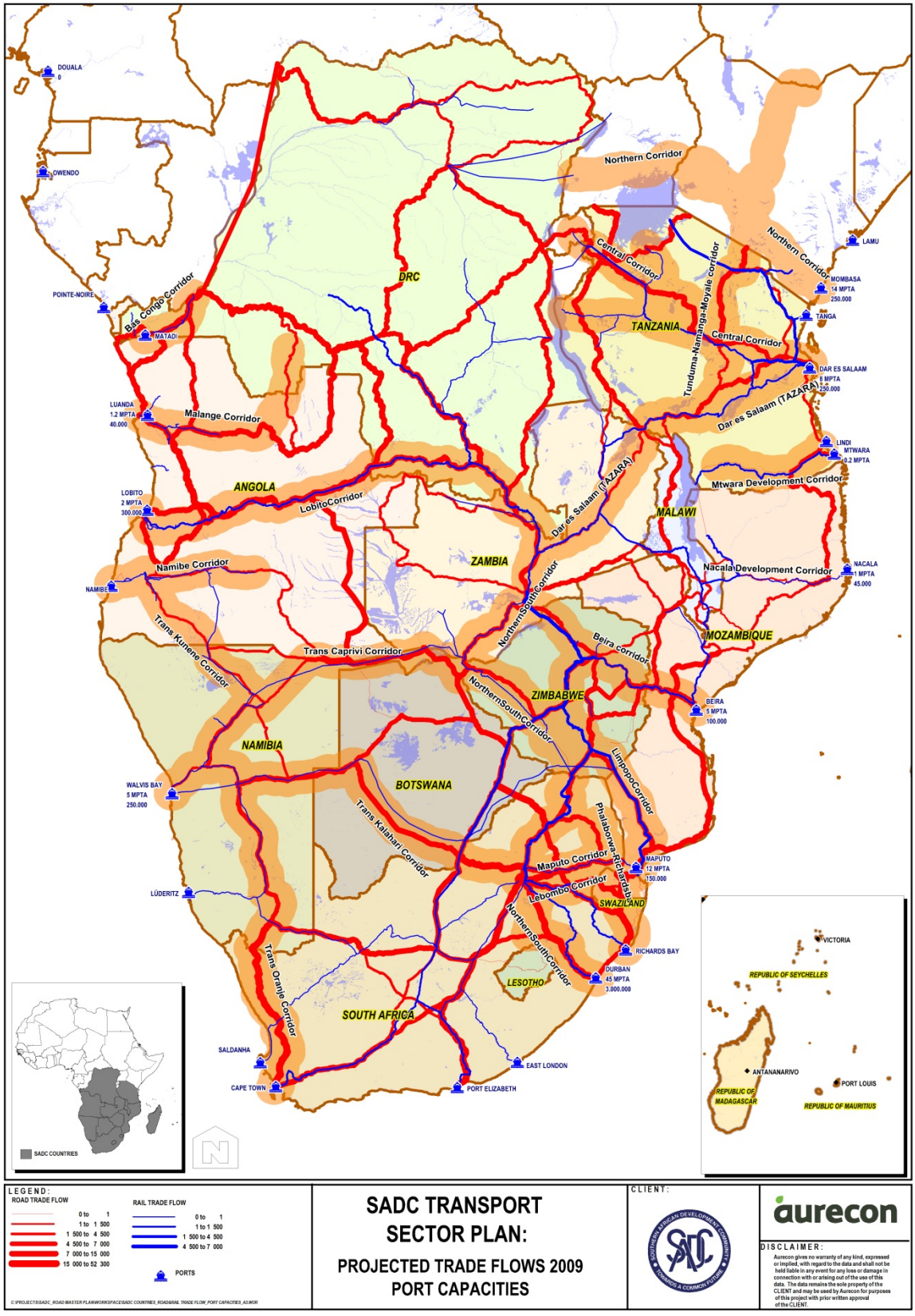


Figure 0-1: 2009 Projected Trade Flows

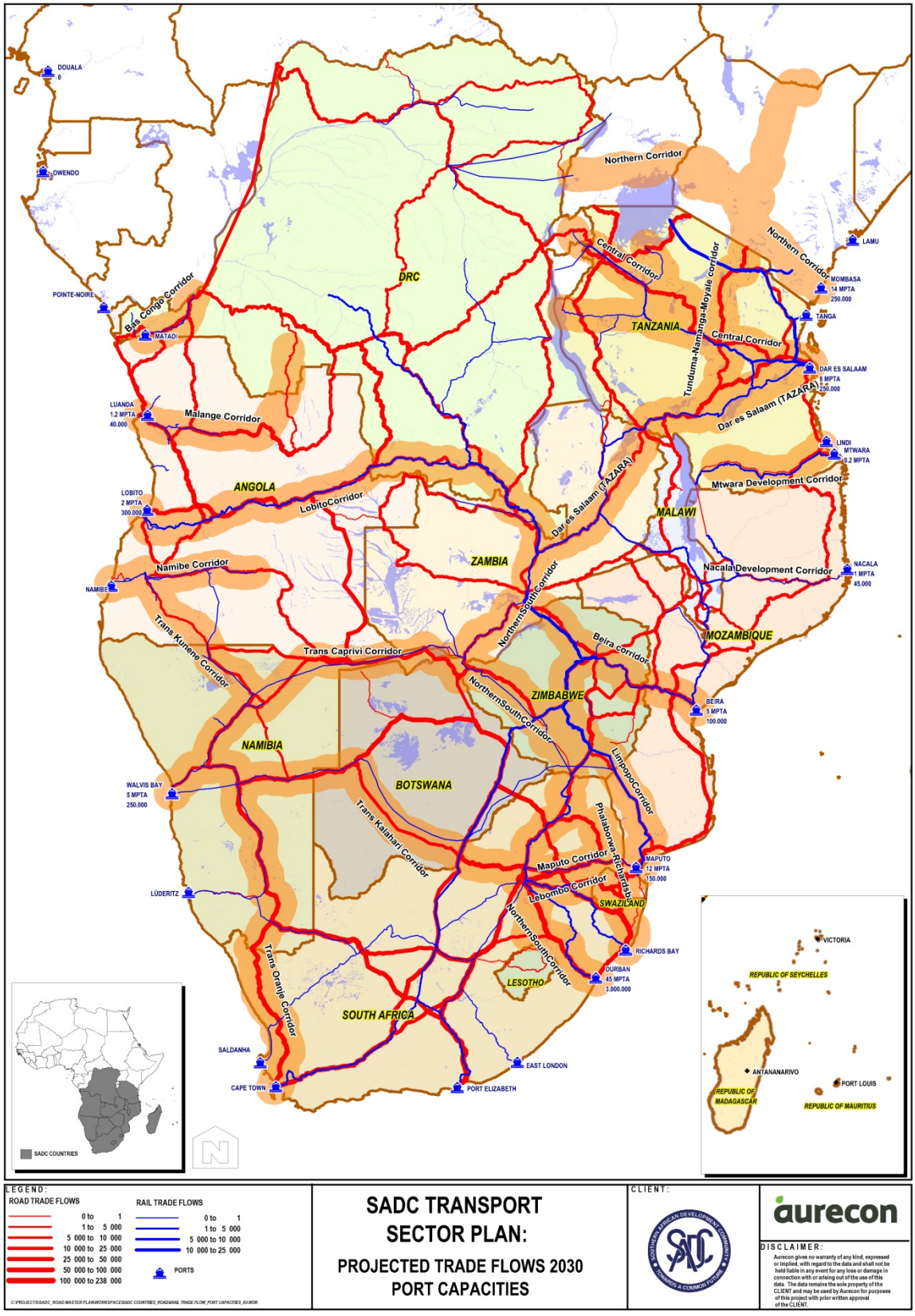


Figure 0-2: 2030 Projected Trade Flows

5.3 Corridor Ranking Based on Assigned Trade Flows

In order to indicate which corridors have the highest trade flows, the trade flows on the regional road and rail networks in the vicinity of the various corridors were added together. The ranking of the corridors, based on assigned trade flows for 2009 and 2030, are indicated in Table 0-3 and Table 0-4 respectively. The top four corridors with the highest assigned trade flows remain the same for 2009 and 2030.

Please note that the Gopa-Decon study assessed the corridors against a list of criteria (as described in Sections 0 and 0), and thus cannot directly be compared with this ranking which is only based on trade flows and of which the intention is single-minded in that it can assist in project phasing.

Table 0-3: Corridor Ranking for the 2009 Assigned Trade Flows

Rank	Corridor	Total for Road and Rail (mpta)
1	North-South Corridor	586 863
2	Lebombo Corridor	434 528
3	Maputo Corridor	397 611
4	Trans-Kalahari Corridor	382 110
5	Limpopo Corridor	210 469
6	Richards Bay-Phalaborwa Corridor	139 669
7	Beira Corridor	139 032
8	Central Corridor	97 145
9	Dar-es-Salaam (TAZARA)	93 451
10	Trans-Orange Corridor	89 157
11	Trans-Caprivi Corridor	88 522
12	Tunduma-Namanga-Moyale corridor	51 975
13	Bas Congo Corridor	37 444
14	Malange Development Corridor	34 582
15	Trans-Cunene Corridor	22 685
16	Mtwara Development Corridor	12 918
17	Namibe Corridor	10 098

Table 0-4: Corridor Ranking of the 2030 Assigned Trade Flows

Rank	Corridor	Total for Road and Rail (mpta)
1	North-South Corridor	2 347 623
2	Lebombo Corridor	1 879 142
3	Maputo Corridor	1 661 006
4	Trans-Kalahari Corridor	1 640 726
5	Limpopo Corridor	708 029
6	Lobito Corridor	663 671
7	Richards Bay-Phalaborwa Corridor	662 024
8	Trans-Orange Corridor	594 345

9	Beira Corridor	518 745
10	Dar-es-Salaam (TAZARA)	511 999
11	Central Corridor	456 597
12	Trans-Caprivi Corridor	420 729
13	Tunduma-Namanga-Moyale Corridor	255 321
14	Trans-Cunene Corridor	112 521
15	Bas Congo Corridor	107 407
16	Malange Development Corridor	85 250
17	Mtwara Development Corridor	56 827
18	Namibe Corridor	35 329

5.4 Modal Development Plan Implementation

5.4.1 Trade flow Projections Application

The projects that make up the modal development plan as detailed in Section 0 were placed on the GIS maps, together with the 2009 and 2030 trade flows on the regional road and rail network in

Figure 0-3 and

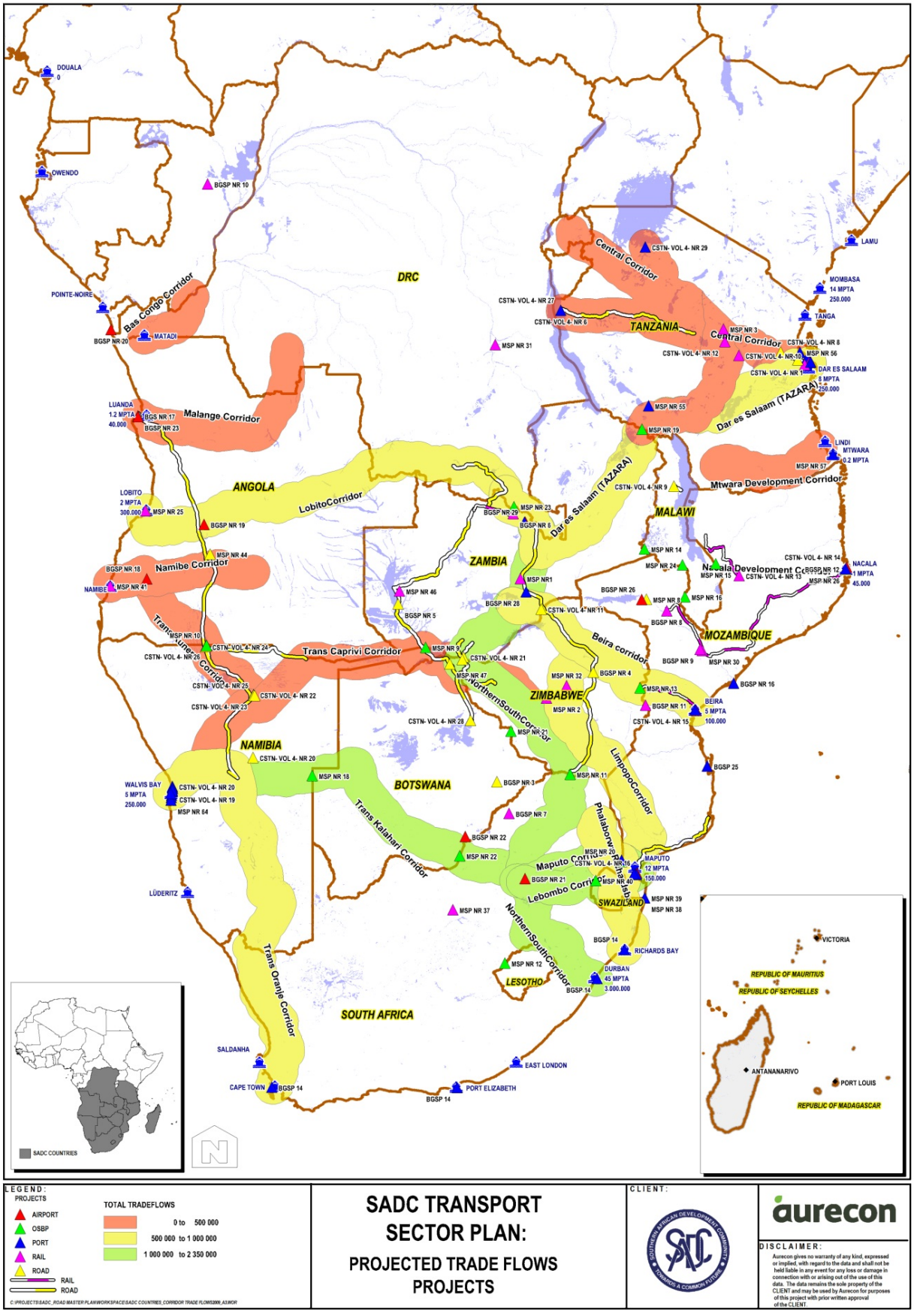


Figure 0-4 respectively. The figures indicate the corridors in three colours linked to trade flow volumes (refer to the legend – green corridors carry the highest and red the lowest).

Infrastructure projects in the vicinity of corridors with higher trade flows could be considered to give priority, as they can assist in the further development of trade and economy along these corridors.

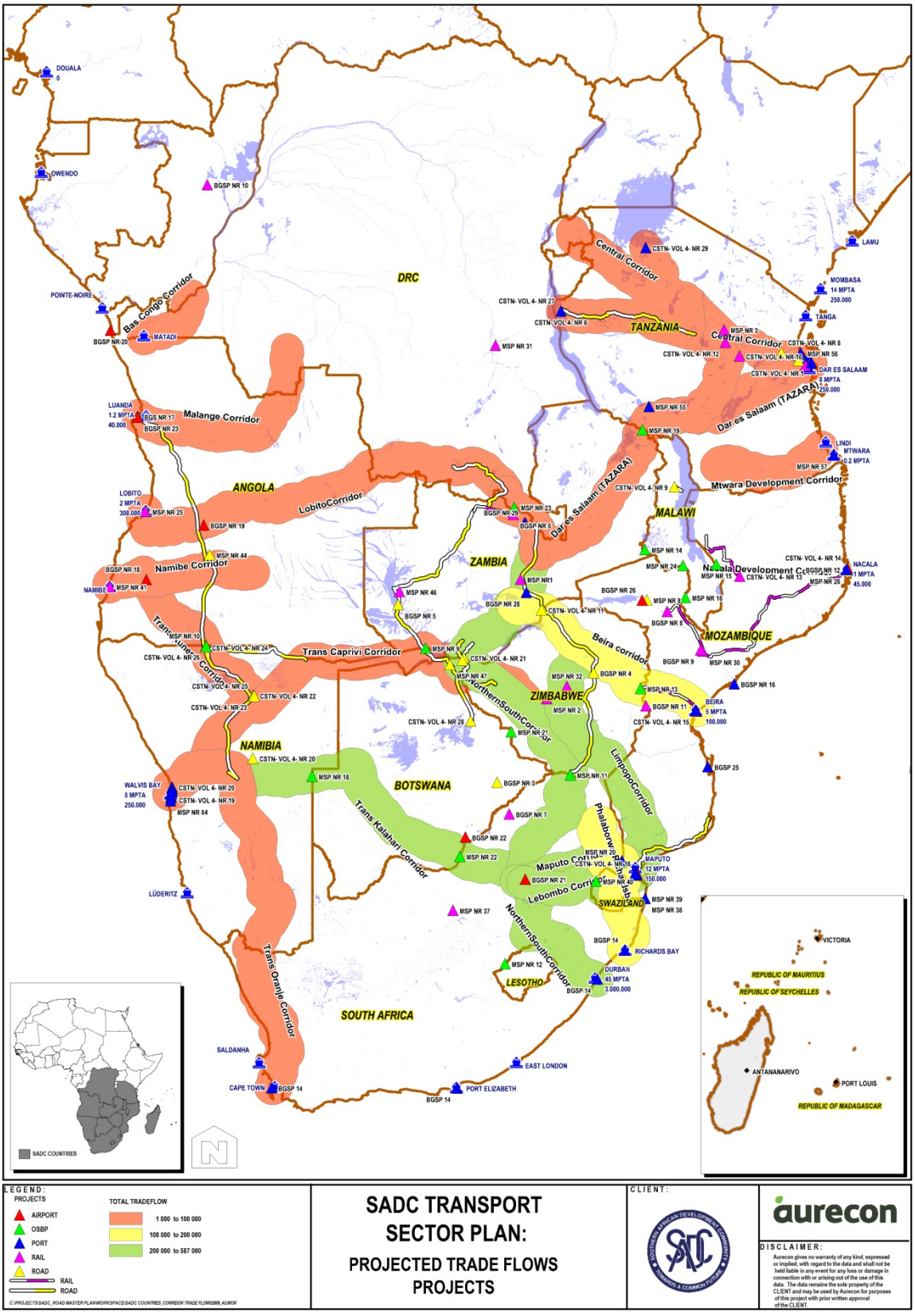


Figure 0-3: 2009 Corridors Trade Flows with the Transport Sector Infrastructure Projects

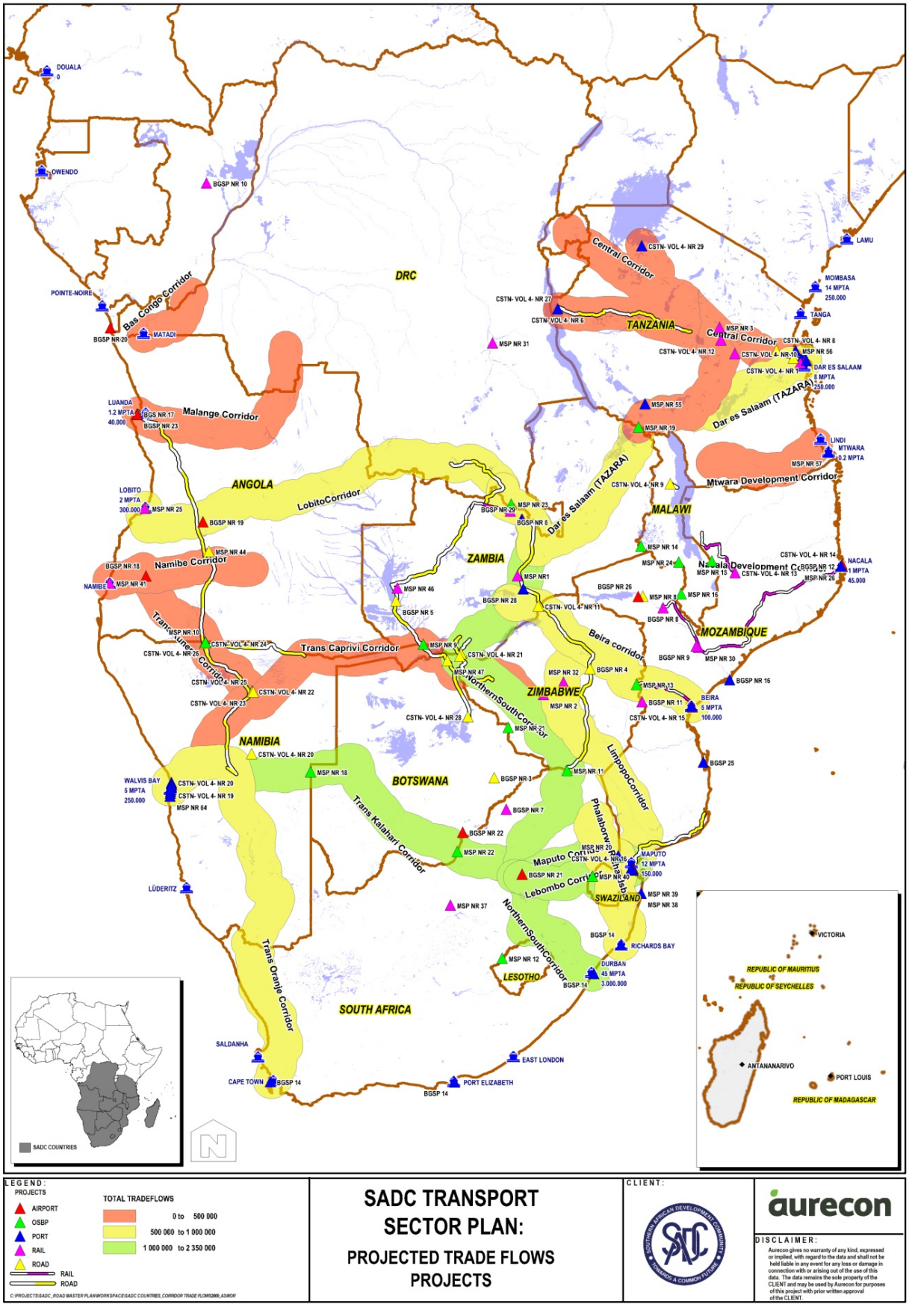
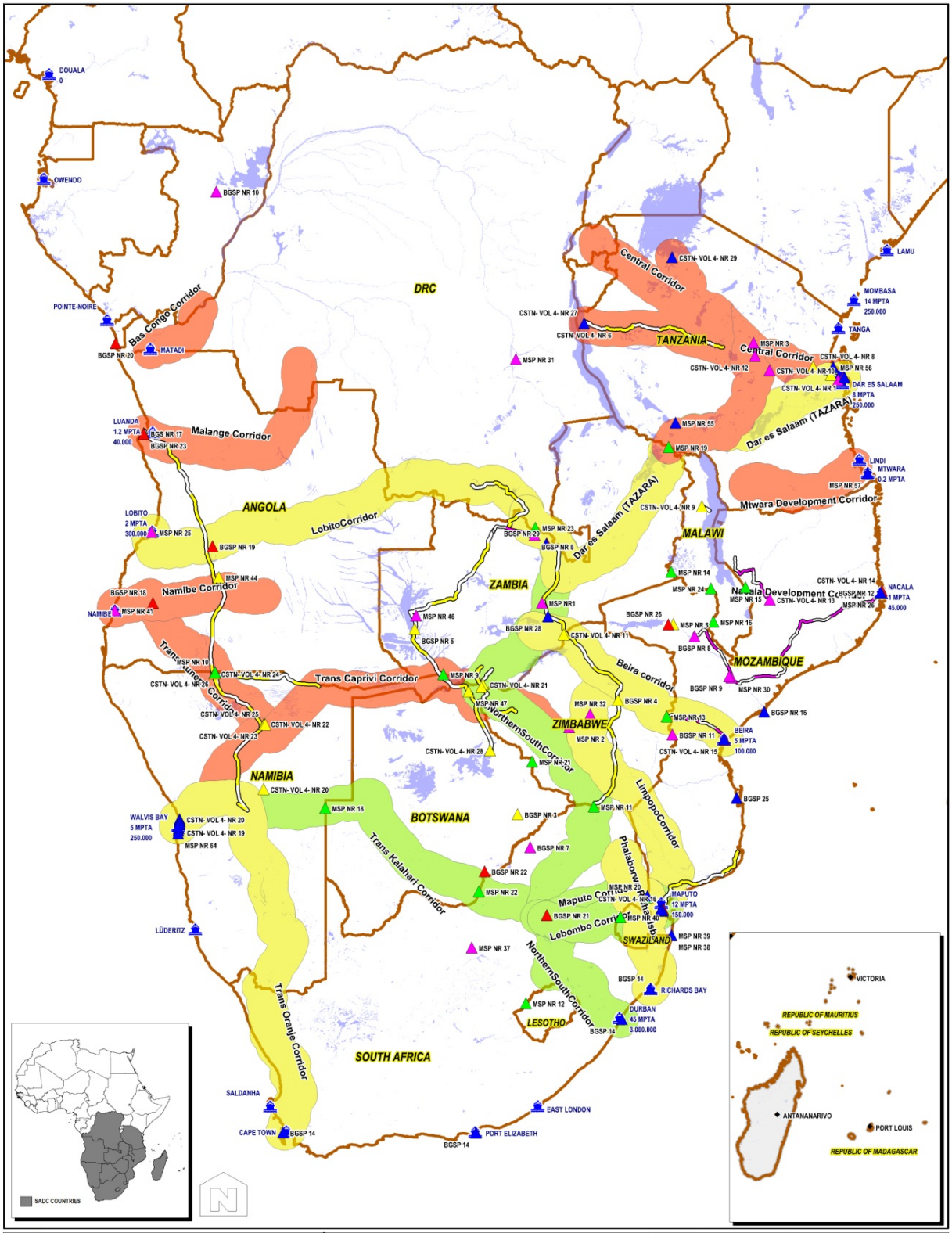


Figure 0-4: 2030 Corridor Trade Flows with the Transport Sector Infrastructure Projects

By taking into account the future significant productions of minerals and agriculture, the 2030 trade flows is used to assist in the raking of projects (refer to



LEGEND:
PROJECTS
AIRPORT
OSBP
PORT
RAIL
ROAD
RAIL
ROAD
TOTAL TRADEFLOWS
0 to 500 000
500 000 to 1 000 000
1 000 000 to 2 350 000
C:\PROJECTS\SADC_ROAD MASTER PLAN\WORKSPACES\SADC COUNTRIES_CORRIDOR TRADE FLOWS2009_A3.MXD

SADC TRANSPORT SECTOR PLAN:

PROJECTED TRADE FLOWS PROJECTS

CLIENT:

aurecon

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Figure 0-4). The projects on the corridors with the highest trade flows (indicated as green corridors) will rank highest, followed by projects on the yellow corridors and then projects on the red corridors. It is recommended that the rank group of projects be used as guidance in the decision to prioritise the funding of projects from feasibility stage to implementation and to seek investment opportunities accordingly as part of a project lifecycle and funding system as described in Section 0. The results are indicated in Table 0-6.

5.4.2 Action Plan

The institutional and capacity building projects must be implemented immediately, thus in the short-term, parallel to the sub-sector infrastructure projects which are ready for implementation. Once this has commenced, the planning and preparation of the other projects can start in order to get them up to implementation stages in the medium- and long-term phases.

5.4.2.1 Project Phasing

The anticipated action plan consists of six transport sector project programmes, namely:

- Enabling policy/regulatory environment;
- Border post infrastructure (new);
- Road infrastructure (new, upgrade and maintenance);
- Rail infrastructure (new, upgrade and maintenance);
- Aviation projects (new, upgrade and maintenance); and
- Ports and water transport projects (new, upgrade and maintenance).

The phasing of these projects can be done for Phase 1, based on projects that are deemed to be ready to commence with implementation. The phasing is not based on prioritised projects or the application of the trade flow assignment, which is an independent attempt to illustrate one element that can be used to assist in ranking of project implementation. The rest of the projects will fall into the end of Phase 1 and then into Phase 2 and 3 which will focus on:

- Project planning, preparation and implementation; and
- Seeking different funding options for projects in collaboration with Member States and other organisations and private partners (public-private partnerships).

This is illustrated in the

	Transport Sector Programme	No. Proj.	Phase 1										Phas			
			2013		2014		2015		2016		2017		2018		2019	2020
			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
1	Enabling Policy/Regulatory Environment	26														
2	Border Post Infrastructure (new)	18														
3	Road Infrastructure (new, upgrade and maintenance)	61														
4	Rail Infrastructure (new, upgrade and maintenance)	26														
5	Aviation Projects (new, upgrade and maintenance)	17														
6	Ports and Water Transport Projects (new, upgrade and mai	60														

Project Plann
Seeking differ
with member
private partn

Note: Phase 1 (blue) is an indication of "ready" projects to commence.

Figure 0-5.

5.4.2.2 Project Budget

The associated budget for each of the project programmes were estimated by using provided detail information and/or calculating a first order costing on projects where sufficient information was available. Table 0-5 indicates how the total transport sector budget of approximately US$31.31 billion is distributed between the different project programmes.

Table 0-5: Estimated Transport Sector Budget

Transport Sector Project Programmes	Total Budget (US$ million)
Enabling policy/regulatory environment	38
Border post infrastructure (new)	79
Road infrastructure (new, upgrade and maintenance)	5 982.3
Rail infrastructure (new, upgrade and maintenance)	9 348
Aviation projects (new, upgrade and maintenance)	996.2
Ports and water transport projects (new, upgrade and maintenance)	18 862.25
Total projects budget	**35 305.75**

Note: Costing was done on available project information or where first order cost estimates were possible

Table 0-6: Ranked Projects According to Trade Flow Volumes on Corridors

Project Title	Project Description	Sector	Corridor
High Trade Flow Corridor Projects			
BGSP 14 South African ports: Durban	Port expansion (R23.37 billion)	Port	North-South Corridor
BGSP 13 Walvis Bay	Port expansion	Port	Trans-Kalahari Corridor
BGSP 19 Huambo Airport	Improve airport	Airport	Lobito Corridor

BGSP 2 Kazungula Bridge	Construction of a road bridge which can handle trains in the future	Road	North-South Corridor
BGSP 22 Gaborone Airport	Additional terminal capacity	Airport	Trans-Kalahari Corridor
BGSP 24 Cargo Terminal at Chipata Airport	Cargo terminal under construction	Airport	North-South Corridor
BGSP 27 Dry port at Lebombo-Ressano Garcia border crossing	Dry port under construction	Port	Maputo Corridor
BGSP 28 Dry Port at Lusaka Port	Dry port under construction	Port	North-South Corridor
BGSP 29 Dry Port at Kitwe Port	Dry port under construction	Port	North-South Corridor
BGSP 4 Beitbridge-Chirundu road upgrading	Upgrade two road sections	Road	Limpopo Corridor
CSTN Vol. 4, No. 16 Maputo Airport upgrade	Improvements are scheduled for the airport terminals	Airport	Limpopo Corridor
CSTN Vol. 4, No. 17 Maputo and Matola port rehabilitation programme	The rehabilitation project includes dredging	Port	Limpopo Corridor
CSTN Vol. 4, No. 18 Walvis Bay bulk and break-bulk handling	The relocation of some operations is recommended	Port	Trans-Kalahari Corridor
CSTN Vol. 4, No. 19 Walvis Bay VTS/port control	The port will relocate the port control system to an area adjacent to the present radar tower	Port	Trans-Kalahari Corridor
CSTN Vol. 4, No. 20 Road improvements on the Namibian section of the Trans-Kalahari	716 km of the original highway is being rehabilitated and widened in several phases	Road	Trans-Kalahari Corridor
CSTN Vol. 4, No. 21 Road rehabilitation between Livingstone and Zimba	This approximately 70 km section was badly potholed and needed full rehabilitation	Road	North-South Corridor
CSTN Vol. 4, No. 30 Botswana dry port at Walvis Bay		Port	Trans-Kalahari Corridor
MSP No. 11 Beitbridge border OSBP	Zimbabwe is upgrading and expanding the infrastructure using public-private partnership options. The plans incorporate the development of an OSBP in the long run	OSBP	North-South Corridor
MSP No. 18 Trans-Kalahari-Mamuno OSBP	Establishing Mamuno-Trans-Kalahari border post OSBP	OSBP	Trans-Kalahari Corridor
MSP No. 2 Revival of Zimbabwe's national railways	Require investment in infrastructure and the repair and acquisition of rolling stock	Rail	Limpopo Corridor
MSP No. 20 Ressano Garcia-Lebombo OSBP	Infrastructure upgrades and redesign of processes	OSBP	Maputo Corridor
MSP No. 21 Plumtree-Ramokgwebane OSBP	Establishing Plumtree-Ramokgwebane OSBP. Design and construction of separate freight and passenger terminals	OSBP	North-South Corridor

MSP No. 22 Pioneer Gate-Skilpadshek OSBP	Ongoing infrastructure facilities upgrades at Skilpadshek (SA/Botswana) to increase office space and improve access roads.	OSBP	Trans-Kalahari Corridor
MSP No. 25 Lobito Corridor roads	Rehabilitate the main feeder roads within the corridor. This will involve the restoration of the bridges, drainage systems and the reconstruction of pavements	Road	Lobito Corridor
MSP No. 32 Lion's Den-Kafue rail link (Zimbabwe-Zambia)	Construct new line to link Zimbabwe with Zambia	Rail	Limpopo Corridor
MSP No. 40 Ngwenya-Oshoek OSBP	Establishing Ngwenya-Oshoek OSBP	OSBP	Lebombo Corridor
MSP No. 43 Lobito Corridor railway	Railway line rehabilitation, link to Lobito port, possible future link to Zambia	Rail	Lobito Corridor
MSP No. 47 Upgrading of Sinanga-Katima Mulilo	Upgrade of road	Road	North-South Corridor
MSP No. 61 New Walvis Bay container terminal on reclaimed land	Namport: Construction of a modern 30 hectare container terminal to expand the Walvis Bay port's container and bulk handling capacity	Port	Trans-Kalahari Corridor
MSP No. 62 New tanker berth	Namport: Construction of a new tanker berth (a modern marine petroleum offloading facility) in Walvis Bay	Port	Trans-Kalahari Corridor
MSP No. 63 Ship and rig repair quay	Namport: The new ship and rig repair quay will see the construction of a new jetty suitable for two large, semi-submersible oil rigs as well as drill ships	Port	Trans-Kalahari Corridor
MSP No. 64 Walvis Bay marina development	Namport: Allow a private investor to build, operate and own a modern facility through a long-term concession	Port	Trans-Kalahari Corridor
MSP No. 1 Zambian railway system restructuring	Restructure the existing concession, possibly by vertical separation of the rail concession	Rail	North-South Corridor
Medium Trade Flow Corridor Projects			
BGSP 14 South African ports: Richards Bay	Port expansion (R23.37 billion)	Port	Richards Bay-Phalaborwa Corridor
BGSP 15 Beira port	Port expansion	Port	Beira Corridor
BGSP 27 Dry port at Lebombo-Ressano Garcia border crossing	Dry port construction	Port	Richards Bay-Phalaborwa Corridor
BGSP 28 Dry port at Lusaka	Dry port construction	Port	Beira Corridor
BGSP 4 Beitbridge-Chirundu road upgrading	Upgrade two road sections	Road	Beira Corridor
CSTN Vol. 4, No. 11 Road rehabilitation between Escarpment and Chirundu	The road segment closest to Chirundu is badly potholed and in need of reconstruction in many places	Road	Beira Corridor
CSTN Vol. 4, No. 15 Beira port dredging	Dredging of the 40 km entrance channel to the Beira port	Port	Beira Corridor

CSTN Vol. 4, No. 16 Maputo airport upgrade	Improvements are scheduled for the airport terminals	Airport	Richards Bay-Phalaborwa Corridor
CSTN Vol. 4, No. 17 Maputo and Matola port rehabilitation programme	The rehabilitation project includes dredging	Port	Richards Bay-Phalaborwa Corridor
MSP No. 13 Forbes-Machipanda OSBP	Establishing Forbes-Machipanda OSBP	OSBP	Beira Corridor
MSP No. 20 Ressano Garcia-Lebombo OSBP	Infrastructure upgrades and the redesign of processes	OSBP	Richards Bay-Phalaborwa Corridor
MSP No. 35 Beira-Mutare road upgrading and tolling		Road	Beira Corridor
MSP No. 36 Beira-Mutare-Harare railway upgrading	Perform deferred maintenance and realignment of sections of tracks	Rail	Beira Corridor
MSP No. 38 Techobanine heavy haul railway		Rail	Richards Bay-Phalaborwa Corridor
MSP No. 39 Techobanine deep seaport		Port	Richards Bay-Phalaborwa Corridor

Low Trade Flow Corridor Projects			
BGSP 17 New airport, 35 km outside Luanda	Construct new airport	Airport	Malange Development Corridor
BGSP 14 South African ports: Cape Town	Expand and upgrade (R5.135 billion)	Port	Trans-Orange Corridor
BGSP 1 Dar-es-Salaam-Chalinze toll road	Upgrade and toll existing road	Road	Central Corridor
BGSP 13 Walvis Bay	Port expansion	Port	Trans-Orange Corridor
BGSP 18 Lubango airport	Improve airport	Airport	Trans-Cunene Corridor
BGSP 2 Kazungula bridge	Construction of a road bridge which can handle trains in the future	Road	Trans-Caprivi Corridor
BGSP 23 Luanda airport	Additional terminal capacity	Airport	Malange Development Corridor
BGSP 24 Cargo terminal at Chipata	Cargo terminal under construction	Airport	Dar-es-Salaam (TAZARA)

BGSP 29 Dry port at Kitwe	Dry port under construction	Port	Dar-es-Salaam (TAZARA)
BGSP 6 Chingola to Solwezi-Lumwana	Construct new railway line (536 km)	Rail	Dar-es-Salaam (TAZARA)
CSTN Vol. 4, No. 4 Dar-es-Salaam RoRo quay	Plan to develop a RoRo terminal and multi-story car park to save the space occupied by 5 000 vehicles. A second park to be added in 2016	Port	Central Corridor
CSTN Vol. 4, No. 1 New Dar-es-Salaam container terminal	Two new container berths	Port	Central Corridor
CSTN Vol. 4, No. 10 Improving the TAZARA rail system	The track has good specifications, but needs repairs in sections. Financing needed for equipment repairs and working capital, while new management with a realistic business plan is also required	Rail	Tunduma-Namanga-Moyale Corridor
CSTN Vol. 4, No. 12 Improved regional rail operating agreements	Possible open access for multiple rail operators	Rail	Tunduma-Namanga-Moyale Corridor
CSTN Vol. 4, No. 18 Walvis Bay bulk and break-bulk handling	The relocation of some operations is recommended	Port	Trans-Orange Corridor
CSTN Vol. 4, No. 19 Walvis Bay VTS/port control	The port will relocate the port control system to an area adjacent to the present radar tower	Port	Trans-Orange Corridor
CSTN Vol. 4, No. 2 Maintenance and capital dredging Dar-es-Salaam port	Maintenance and capital dredging of entrance channel and berths	Port	Central Corridor
CSTN Vol. 4, No. 20 Road improvements on the Namibian section of the Trans-Kalahari	716 km of the original highway is being rehabilitated and widened in several phases	Road	Trans-Orange Corridor
CSTN Vol. 4, No. 21 Road rehabilitation between Livingstone and Zimba	This approximately 70 km section was badly potholed and needed full rehabilitation	Road	Trans-Caprivi Corridor
CSTN Vol. 4, No. 22 Rehabilitation of the railway between Kranzberg and Tsumeb	This 322 km section of the track was seriously degraded and needed rehabilitation. The northern extension in Angola depends on the strengthening of this section of the route	Rail	Trans-Cunene Corridor
CSTN Vol. 4, No. 23 ICD at Tsumeb	To handle the increased volumes estimated for the route	Road	Trans-Cunene Corridor
CSTN Vol. 4, No. 24 Upgrade Rundu-Oshikango Road	Involves paving the 501 km gravel route across Namibia with bitumen	Road	Trans-Cunene Corridor
CSTN Vol. 4, No. 25 Road link from Tsumeb to Katwitwi	This 258 km segment of gravel road is being paved as it is part of an increasingly active trade route between Namibia and southern Angola. Bonded warehouses are also being constructed on the Namibian side	Road	Trans-Cunene Corridor
CSTN Vol. 4, No. 26 Extension of Trans-Namib from Ondangwa to Oshikango	Extension of Trans-Namib from Ondangwa to Oshikango	Road	Trans-Cunene Corridor
CSTN Vol. 4, No. 27 Kigoma port	Port improvements	Port	Central Corridor

CSTN Vol. 4, No. 29 Isaka dry port		Port	Central Corridor
CSTN Vol. 4, No. 3 Port bulk terminal expansion	Conversion of general cargo berths 5 and 6	Port	Central Corridor
CSTN Vol. 4, No. 30 Botswana dry port at Walvis Bay		Port	Trans-Orange Corridor
CSTN Vol. 4, No. 5 Community-based system in Dar-es-Salaam port	Software system for the electronic submission of documents and payment of duties and fees	Port	Central Corridor
CSTN Vol. 4, No. 6 Road to the Kigoma port	The route from Manyoni to Kigoma is currently not paved. This is essentially a rail route	Road	Central Corridor
CSTN Vol. 4, No. 8 New SPM oil terminal	Used for crude oil imports to Zambia, not for Tanzania	Port	Central Corridor
CSTN Vol. 4, No. 9 Access roads to Dar-es-Salaam port		Road	Central Corridor
MSP No. 10 Oshikango/Santa Clara OSBP	If an OSBP is contemplated, the new facility could be dedicated to road and rail freight and the current border crossing used for pedestrian and non-commercial vehicle traffic	OSBP	Trans-Cunene Corridor
MSP No. 19 Nakonde/Tunduma OSBP	Construction of Nakonde/Tunduma OSBP	OSBP	Tunduma-Namanga-Moyale Corridor
MSP No. 23 Kasumbalesa OSBP	Establishing Kasumbalesa OSBP	OSBP	Dar-es-Salaam (TAZARA)
MSP No. 3 Tanzania Railways Limited revival	Investment in infrastructure and the repair and acquisition of rolling stock	Rail	Tunduma-Namanga-Moyale Corridor
MSP No. 33 Cargo freight stations Dar-es-Salaam	Rail shuttle transport linkage, realignment of existing container yards, new dry port terminal, new truck road access, new mainline, new spur lines, freight stations, customs and clearing and forwarding buildings, truck parking spaces, etc.	Rail	Central Corridor
MSP No. 34 Berths at Kigamboni to expand Dar-es-Salaam port	Quay length of 1 700m and 60 ha on Kigamboni Area 1, 1 300m and 35 ha on Kigamboni Area 2 and quay length of 1 700m and 65 ha on Kigamboni Area 3	Port	Central Corridor
MSP No. 41 Namibe Railway upgrade, including link to Santa Clara border post	Mocamedes railways is to be rehabilitated and rail link constructed towards Oshikango-Santa Clara border post	Rail	Namibe Corridor
MSP No. 44 Luanda-Windhoek Corridor roads		Road	Namibe Corridor
MSP No. 47 Upgrading of Sinanga-Katima Mulilo road	Upgrade of road	Road	Trans-Caprivi Corridor
MSP No. 50 Establish cargo freight station at Kisarawe	Provide a dry port on the outskirts of Dar-es-Salaam (For container and vehicle traffic)	Rail	Central Corridor
MSP No. 51 Development of new berths at Kigamboni	Provision of new berths (a container quay) expected to handle dry, container and liquid bulk	Port	Central Corridor

MSP No. 55 Development of deep water port at Mwambani, Tanga		Port	Tunduma-Namanga-Moyale Corridor
MSP No. 56 Development of new port at Mbegani, Bagamoyo		Port	Central Corridor
MSP No. 57 Mtwara Port at EDZ development		Port	Mtwara Development Corridor
MSP No. 61 New Walvis Bay container terminal on reclaimed land	Namport: Construction of a modern 30 hectare container terminal to expand the Walvis Bay port's container and bulk handling capacity	Port	Trans-Orange Corridor
MSP No. 62 New tanker berth	Namport: Construction of a new tanker berth (a modern marine petroleum offloading facility) in Walvis Bay	Port	Trans-Orange Corridor
MSP No. 63 Ship and rig repair quay	Namport: The new ship and rig repair quay will see the construction of a new jetty suitable for two large, semi-submersible oil rigs as well as drill ships	Port	Trans-Orange Corridor
MSP No. 64 Walvis Bay marina development	Namport: Allow a private investor to build, operate and own a modern facility through a long-term concession	Port	Trans-Orange Corridor
MSP No. 9 Katima Mulilo-Wenela OSBP	Establishing Katima Mulilo-Wenela OSBP	OSBP	Trans-Caprivi Corridor

	Transport Sector Programme	No. Proj.	Phase 1										Phase 2										Phase 3									
			2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027	
			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
1	Enabling Policy/Regulatory Environment	26																														
2	Border Post Infrastructure (new)	18																														
3	Road Infrastructure (new, upgrade and maintenance)	61																														
4	Rail Infrastructure (new, upgrade and maintenance)	26																														
5	Aviation Projects (new, upgrade and maintenance)	17																														
6	Ports and Water Transport Projects (new, upgrade and mair	60																														

Project Planning, Preparation and Implementation. Seeking different fuding options for projects in collaboration with member states, funding and other organisations and private partners (PPPs).

Note: Phase 1 (blue) is an indication of "ready" projects to commence.

Figure 0-5: Estimated Transport Sector Action Plan Phasing

	Transport Sector Project Programmes	Total Budget (million USD)	Phase 1	Phase 2	Phase 3
			2013 - 2017	*2018 - 2022*	*2023 - 2027*
1	Enabling Policy/Regulatory Environment;	38	100%		
2	Border Post Infrastructure (new);	79	20%	60%	20%
3	Road Infrastructure (new, upgrade and maintenance);	5982.3	10%	50%	40%
4	Rail Infrastructure (new, upgrade and maintenance);	9348	5%	35%	60%
5	Aviation Projects (new, upgrade and maintenance); and	996.2	20%	50%	30%
6	Ports and Water Transport Projects (new, upgrade and maintenance).	18862.25	10%	50%	40%
	Total Projects budget: 35.31 billion USD	**35305.75**	28%	41%	31%

Note: Costing was done on available project information or where first order cost estimates were possible

Figure 0-6: Approximate Budget Expenditure per Phase

5.4.3 Project Life Cycle and Funding

The projects included in the TSP are at different stages of the project life cycle. The World Bank defines the following phases in a project's life cycle as illustrated in Figure 0-7.

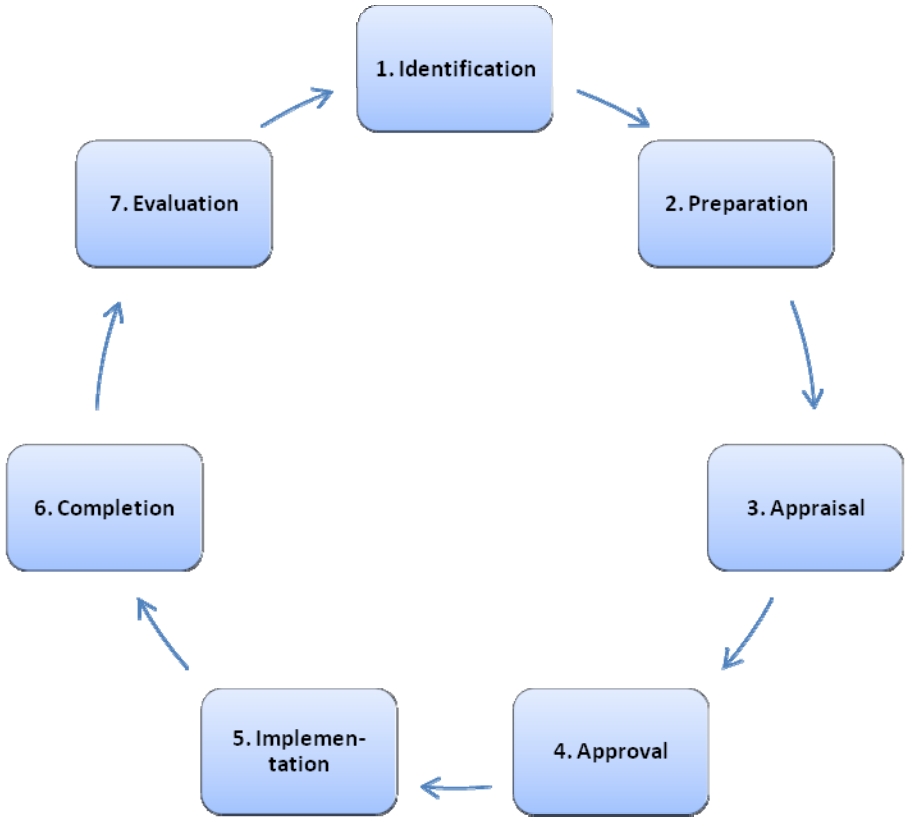


Figure 0-7: Typical Project Life-cycle

Once the project profiles have been updated with the current status of projects, a clear picture can be given on where projects are in the life cycle. Detail project phasing can then be done which can be coupled with the funding of projects.

Project funding in general can only be done with a proper motivation for the identified projects to get to the next stage. Some projects will fall in priority based on outcome of a feasibility study and funding might be more difficult to obtain.

The funding of transport sector plans is a dynamic process which can be facilitated by SADC by means of a system to assist in the motivations for funding, based on a set of criteria which gave input to a multi-criteria analysis, for example. The following directives for criteria could be considered for such a system:

- Increased competitiveness;
- Economic growth;
- Poverty reduction;
- Enhanced regional integration;
- Models of transport (multi-modal and inter-modal);
- Trade-related and transport linked to economic sectors (cross-sector focus);
- Access to sea ports for all land-locked countries;
- Reduce cost and improve services to increase the competiveness of exports;

- Reduce cost of imports;
- Address delay on trade corridors;
- Develop key transport/communications networks;
- Reduce loss, damage and deterioration en route;
- Open up opportunities for export expansion;
- Improve road safety and security;
- Minimise environmental and social impacts;
- Environment;
- Gender;
- Project funding;
- Project status;
- Research and technology transfer;
- Unimpeded access for all coastal Member States to and from land-locked countries;
- User pays principle;
- Enhance efficiency of regional development corridors;
- Access to major centres of population and economic activity;
- Reduce transport cost;
- Preserve existing infrastructure assets;
- Harmonisation of technical standards;
- Legal basis;
- Method of implementation;
- Pilot/innovative project;
- Consistency with EC policy, programming framework and aid effectiveness agenda;
- Consistency with partner government(s) policies and strategies; and
- Sustainability.

A project that succeeds in progressing to the level of design and implementation could be funded by donor agencies, Member States (coupled with bi- and multi-lateral agreements) and investors such as mine houses or potential private-public partnerships. The motivation for funding depends on the outcome from a project facilitation system where motivation will be drawn from the criteria outcomes. The interaction and benefit that other regional sectors will gain from implementing a certain project must carry weight in the overall contribution that such a project would have on regional development.

5.5 Clusters of development and Long-term Regional Strategic Projects

In a recent study that Whitehouse and Associates presented on 18 April 2012 to the Built Environment Professions Export Council (BEPEC) on Opportunities along the North-South Corridor, they identified 11 key clusters of development. Figure 0-8 indicates these clusters, which includes the summary of the overall development in the relevant countries as follows:

- **Botswana** is developing a cluster of energy, mining and related infrastructure from Orapa to Selebi Phikwe and south, as well as a minor cluster around the Kazungula border post. Mining cluster developing from Orapa to Selebi Phikwe is based on gas, coal and uranium;
- **Malawi** has two clusters – one to the south that is being threatened by relations with Mozambique, and a slowly developing cluster in the northern part of the country that could link with the Mtwara Corridor as well as Mbeya. The cluster in the south is based on mining, agriculture, power, cement and logistics through to Mozambique, while the cluster in the

north is based on mining, agriculture and links to Zambia/Tanzania (possibly ports, power, roads and rail);

- **Tanzania** has major long-term developments beginning to unfold: the Mtwara Corridor, with the petrochemical-driven cluster at Mtwara and the iron-coal and power cluster at Mchuchuma-Liganga. There is also the Central Corridor, directly in the ambit of the NSC, which includes the agricultural industry, mining, power and cement developments;
- **Mozambique** is the focus of some of the region's key clusters – notably in Tete, and including the logistics that this will unlock through to the ports of Nacala and Beira. In addition, it is thought that the Niassa province could have more potential than Tete, and will be the next major growth node. Allied to the Niassa is the development of the huge gas fields in northern Mozambique that should unlock major projects in the next decade. There is also a development node around Maputo, based primarily on industrial and commercial developments, urban development, airports and the new port of Techobanine;
- **Zimbabwe** does not have a true cluster as yet, but should in due course:
  - Triangle area for sugar and agriculture
  - Sengwa for coal
  - Chivu for iron ore;
- **Zambia's** major thrusts are the Copper Belt and movement to the north-western province, and the southern cluster from Lusaka to Kafue and the borders with Botswana and Zimbabwe. The Copper Belt development is based on mining and the Lusaka area for industry, property, logistics. The developments in the north-western province are particularly exciting, and the area will in all likelihood become another Tete. There is already a proposal on the table for the development of an industrial park in Solwezi to serve the mines.

The identified projects from this study were incorporated into the long-term regional strategic projects discussed in the following paragraphs. Similar development clusters must be identified by other Member States, as this is useful in future strategic planning of the region, as well as the possibility for project specific applications.

Accessing knowledge about development in the SADC region with regards to significant economic production and mineral findings gives a picture of what possible scenarios could come in play in the long term. Mineral production has the largest impact on specifically bulk transport services, thus mostly railways. Probable strategies could be considered in order for the region to be pro-active and ready with regards to putting infrastructure in place with available funding and detail planning.

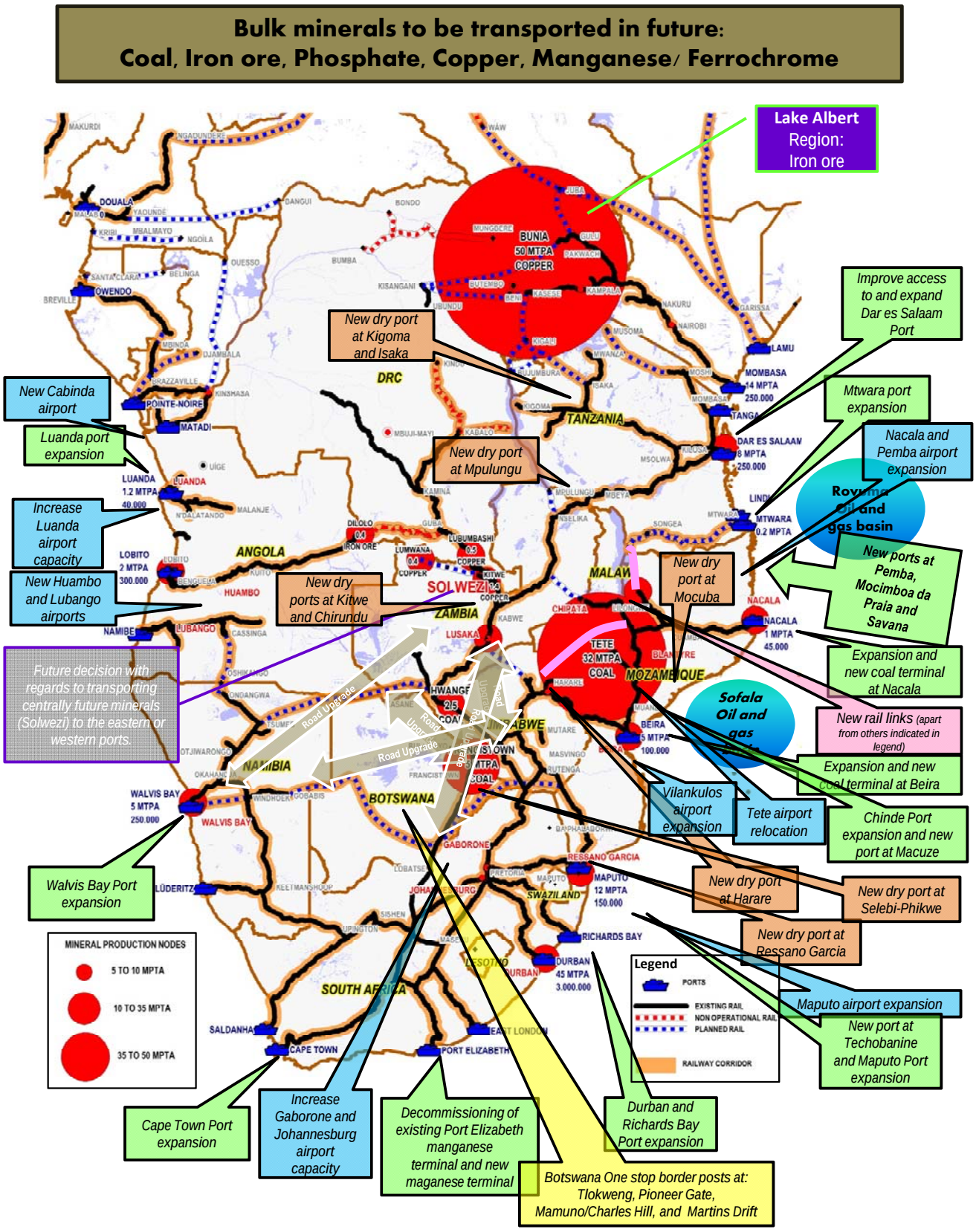


Figure **0-9** is an infographic that gives information with regards to the long-term regional scenario and required projects to realise an aligned strategy.

Figure **0-10** is a simplified version of these requirements. Various agencies, governments, private developers (especially mine houses) and investors are involved in these projects at the different stages of the project life cycle. Unfortunately the current detail status of every project is not readily available. SADC must take note of these projects by realising their significance for future development and involve themselves as far as possible in the prioritisation and implementation of them. The infographic indicates the following as base information:

- The known future mineral production has the most significant impact on the transport system (infrastructure requirements and corridor development) and is indicated in red circles with the commodities and production tonnage;
- The major ports with their current capacities; and
- The existing and planned major railway network with the major rail corridors.

These projects were also included in the complete project list in Section 0.

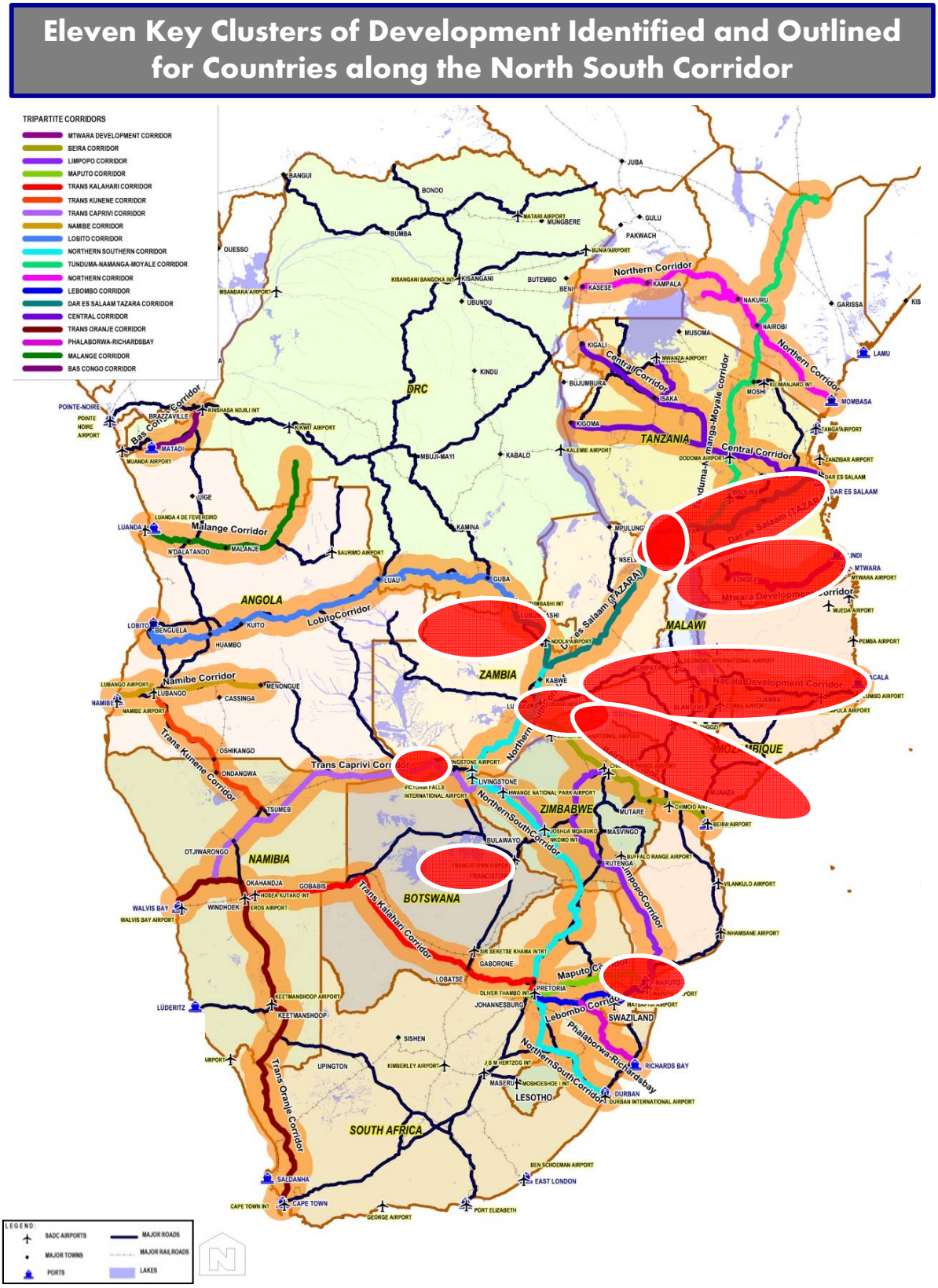


Figure 0-8: Key Clusters of Development along the North-South Corridor

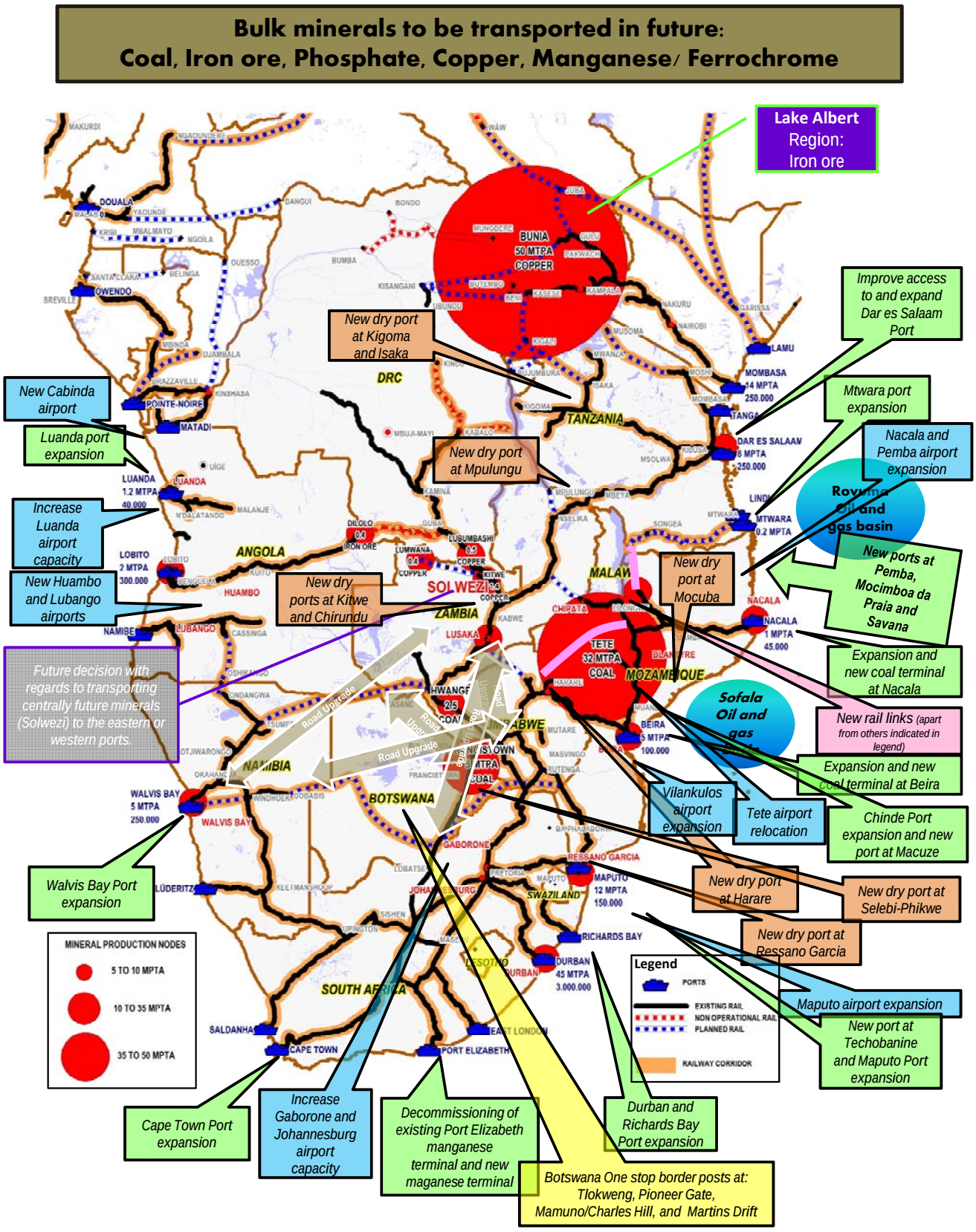


Figure 0-9: Long Term Regional Scenario and Required Infrastructure Projects

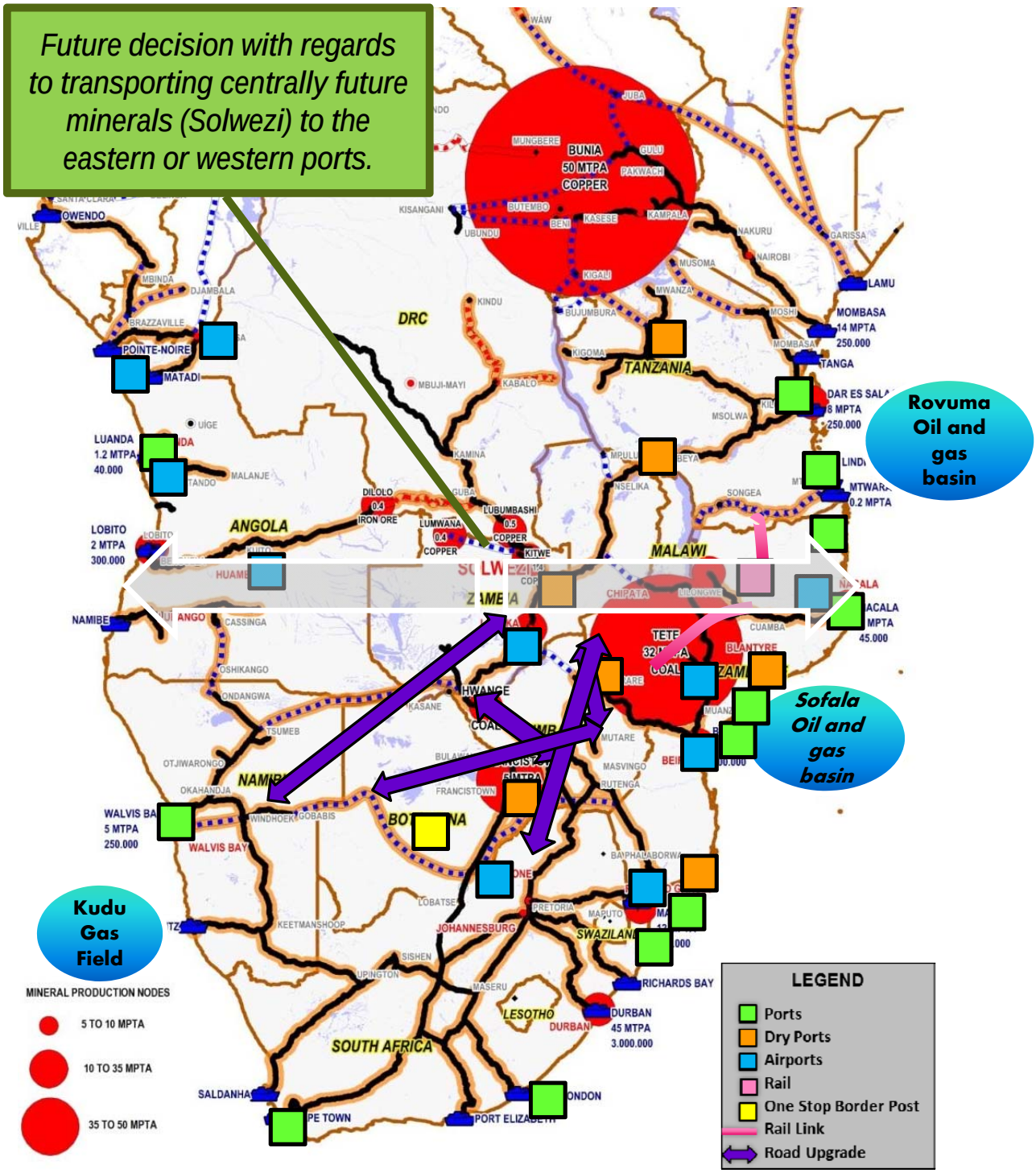


Figure 0-10: Simplified Illustration of Longer Term Infrastructure Requirements

Annexure A: Project Profiles

Member State Projects (MSP) No. 1 – 64

SADC Diagnostic Report No. MSP1

Project title	Restructuring of Zambia's railway systems		
Project contact	RSZ		
Project sponsors	Government of Zambia		
Sector	2.3 Transport – Rail		
Corridor	Dar-es-Salaam Corridor		
Project location	From the Zambian Copper Belt to south-western Tanzania		
Participating countries	Zambia		
Project objectives	To improve the efficiency and effectiveness of the concession, via the restructuring of the concession		
Project description	Restructuring and renegotiation of the existing concession to ensure investment in the railway infrastructure (possibly by vertical separation of the rail concession)		
Expected results	Investment in railway infrastructure and improved rail service		
Ongoing and related activities in SADC/Tripartite region	Restructuring of the regional railways		
Description of national project plan	Revival of the Zambian railway services		
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Government decision pending to initiate restructuring		
Business model	Public		
Implementing agency	Zambia Privatisation Agency		
Main parties in place	Government and concessionaire		
Main parties to be procured	N/A		
Technical/operational notes	The projected traffic levels are currently too low to ensure the sustainability of the concession (and the effect on the anticipated infrastructure investment)		
Available project documentation	CPCS/WB Appraisal 2010		
Funding status and interventions for which financing is required	None yet		
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP2

Project title	Revival of the National Railways of Zimbabwe (NRZ)		
Project contact	General Manager, NRZ		
Project sponsors	Government of Zimbabwe, Development Bank of Southern Africa (DBSA)		
Sector	2.3 Transport – Rail		
Corridor	North-South Corridor, Beria Corridor, Maputo Corridor		
Project location	From south-western Zimbabwe tow Harare, from Harare to Beira in Mozambique and from Harare to Zambia		
Participating countries	Zimbabwe		
Project objectives	Recapitalisation and revival of NRZ		
Project description	Investment in infrastructure and the repair and acquisition of rolling stock		
Expected results	Improving the competitiveness of the rail service, increase in modal share		
Ongoing and related activities in SADC/Tripartite region	Restructuring of the regional railways, which are key to the restructuring of SADC rail services		
Description of national project plan	Revival of the Zimbabwean railway services		
Current status	Project brief		
Planned or actual year of commencement	2011		
Planned or actual year of completion	2013		
Next steps	Completion of DBSA-funded appraisal		
Business model	Public		
Implementing agency	NRZ/DBSA		
Main parties in place	Government of Zimbabwe, DBSA		
Main parties to be procured	Strategic partnerships in some operations		
Technical/operational notes	Increasing capacity of NRZ		
Available project documentation	Appraisal being carried out by DBSA		
Funding status and interventions for which financing is required	DBSA has earmarked US$200 mil pending appraisal		
Revenues for repayment of financing	Income from operations		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Over 200	Over 200		
Source	DBSA		
Remarks			

SADC Diagnostic Report No. MSP5

Project title	Beitbridge-Chirundu road upgrading		
Project contact	Zimbabwe Investment Authority, Ministry of Transport and Communication		
Project sponsors	Zimbabwe Investment Authority		
Sector	2.2 Transport – Road		
Corridor	North-South Corridor		
Project location	Beitbridge, southern Zimbabwe to Chirundu, southern Zambia		
Participating countries	Zimbabwe		
Project objectives	Upgrade existing road between Chirundu and Harare, and between Harare and Beitbridge		
Project description	To upgrade the motorway system, as it plays a major role in the industrial, mining and agricultural sectors		
Expected results	Improve reliability and decrease vehicle operating costs		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Feasibility study completed		
Business model	Public-private partnership		
Implementing agency	BOOT investment or public-private partnership		
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Chirundu to Harare: Design work: 1.74, works: 348 and supervision: 3.48 **Harare to Beitbridge:** Design work: 2.855, works: 571 and supervision: 5.7	1 000		
Source			
Remarks			

SADC Diagnostic Report No. MSP8

Project title	Tete Toll Bridge		
Project contact			
Project sponsors	Government of Mozambique		
Sector	2.2 Transport – Road		
Corridor	North-South Corridor		
Project location	Tete, Mozambique		
Participating countries	Mozambique		
Project objectives	Construction of new toll bridge and access roads across the Zambezi River		
Project description	Design, construct, operate and maintain new bridge and construction of new access roads to bridge. Operation and maintenance of old Samora Machel Bridge. Rehabilitation, maintenance and operation of toll roads		
Expected results	Improved access and reliability		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model	Public-private partnership		
Implementing agency	Estradas do Zambeze		
Main parties in place	Ascendi Concessões de Transporte, Soares da Costa Concessões, Infra-Engineering Mozambique		
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
140			
Source			
Remarks			

SADC Diagnostic Report No. MSP9

Project title	Katima Mulilo/Wenela OSBP		
Project contact			
Project sponsors	JICA, RTFP, SIDA		
Sector	2.1 Transport – Border Posts		
Corridor	Trans-Caprivi Corridor		
Project location	Between the towns of Sesheke and Katima Mulilo at the border of Zambia and Namibia		
Participating countries	Namibia, Zambia		
Project objectives	Enhanced border security and trade chain security, reduced waiting time for vehicles at borders and reduced transport costs		
Project description	Establishing Katima Mulilo-Wenela OSBP		
Expected results	Improved efficiency at border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Being implemented		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP10

Project title	Oshikango-Santa Clara OSBP		
Project contact			
Project sponsors	JICA		
Sector	2.1 Transport – Border Posts		
Corridor	Trans-Cunene Corridor		
Project location	Between the towns of Santa Clara and Oshikango at the border of Angola and Namibia		
Participating countries	Angola, Namibia		
Project objectives	Enhanced border security and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	The border post is congested, and on the Namibian side the town has encroached on potential land for expansion of the border facilities. If an OSBP is contemplated, a new Greenfield site with adequate space needs to be identified. The new facility could be dedicated to rail and road freight, whilethe current border crossing is used for pedestrian and non-commercial traffic.		
Expected results	Improved efficiency at border post, greater familiarity with Angolan procedures		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Project brief		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP11

Project title	Beitbridge OSBP		
Project contact			
Project sponsors	COMESA, RTFP		
Sector	2.1 Transport – Border Posts		
Corridor	North-South Corridor		
Project location	Between the towns of Beitbridge and Musina, at the border of Zimbabwe and South Africa		
Participating countries	South Africa, Zimbabwe		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	The joint South Africa-Zimbabwe border efficiency management project stalled after committees and draft MoUs had been drawn up. Zimbabwe is proceeding with the upgrading and expansion of infrastructure using public-private partnership options. The plans incorporate the development of an OSBP in the long run		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	The Zimbabwean government has signed a concession for infrastructure provision. On the South African side there are plans for a bypass road to a second bridge upstream of current bridge		
Current status	Concept stage		
Planned or actual year of commencement	2011		
Planned or actual year of completion			
Next steps	• Convene Joint Ministerial Committee: May-July 2011 • Sign bilateral MOU on Beitbridge: August 2011 • Resuscitate the implementation of BBEMS: August 2011		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation	TLC Situational Analysis, November 2009		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP12

Project title	Maseru Bridge OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	North-South Corridor		
Project location	Between the towns of Maseru and Ladybrand, at the border of Lesotho and South Africa		
Participating countries	Lesotho, South Africa		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Maseru Bridge OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Department of Transport has developed freight optimisation plans		
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP13

Project title	Forbes-Machipanda OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	Beira Corridor		
Project location	Between the towns of Mutare and Manica at the border of Zimbabwe and Mozambique		
Participating countries	Mozambique, Zimbabwe		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Forbes-Machipanda OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes	• The existing border infrastructure at Forbes has been upgraded with funding from the government of Zimbabwe • Situational analysis for Forbes-Machipanda complete • Mozambique and Zimbabwe agreed on the development of a one-stop border post at Forbes-Machipanda		
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks	TradeMark South Africa has completed a situational analysis		

SADC Diagnostic Report No. MSP14

Project title	Mwami-Mchinji OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor			
Project location	Between the towns of Chipata and Mchinji at the border of Zambia and Malawi		
Participating countries	Malawi, Zambia		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Mwami-Mchinji OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Project brief		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source	AfDB has secured funding for Phase 3 of Nacala roads project		
Remarks			

SADC Diagnostic Report No. MSP15

Project title	Chiponde-Mandimba OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	Nacala Corridor		
Project location	Between the towns of Mandimba and Chiponde, at the border of Mozambique and Malawi		
Participating countries	Mozambique, Malawi		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Chiponde-Mandimba OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Tender for feasibility and design study to be launched soon		
Current status	Project brief		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes	Chiponde-Mandimba (Malawi-Mozambique) Started with the feasibility study and development of a legal framework for the OSBP as part of the Nacala Corridor roads feasibility study, funded by AfDB and coordinated by the SADC Secretariat		
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source	AfDB secured funding for Phase 3 of Nacala Roads Project		
Remarks			

SADC Diagnostic Report No. MSP16

Project title	Zobue-Mwanza OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	North-South Corridor		
Project location	Between the towns of Zobue and Mwanza at the border of Mozambique and Malawi		
Participating countries	Mozambique, Malawi		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Zobue-Mwanza OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP17

Project title	Nyamapanda-Cuchimano OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	North-South Corridor		
Project location	Between the towns of Magasso and Nyamapanda at the border of Mozambique and Zimbabwe		
Participating countries	Mozambique, Zimbabwe		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Nyamapanda-Cuchimano OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement	2011		
Planned or actual year of completion			
Next steps	TradeMark South Africa funded situational analysis at Nyamapanda-Cuchamano to determine issues that would need to be addressed (May-July 2011)		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks	TradeMark South Africa has completed a situational analysis		

SADC Diagnostic Report No. MSP18

Project title	TransKalahari-Mamuno OSBP		
Project contact	Trans-Kalahari Corridor		
Project sponsors	USAID/Southern Africa		
Sector	2.1 Transport – Border Posts		
Corridor	Trans-Kalahari Corridor		
Project location	Between the towns of Buitepos and Mamuno at the border of Namibia and Botswana		
Participating countries	Botswana, Namibia		
Project objectives	Ensure effective and maximum trade facilitation at the Trans-Kalahari Corridor		
Project description	Establishing Mamuno-Trans-Kalahari border post OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	PIM		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Redesign of OSBP		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation	Feasibility study for the establishment of a one-stop border post on the Trans-Kalahari Corridor completed in August 2008		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
4			
Source	JICA		
Remarks			

SADC Diagnostic Report No. MSP20

Project title	Ressano Garcia-Lebombo OSBP		
Project contact	Border Control Operational Coordinating Committee		
Project sponsors	DFID		
Sector	2.1 Transport – Border Posts		
Corridor	Maputo Corridor		
Project location	Between the towns of Lebombo and Ressano Garcial at the border of South Africa and Mozambique		
Participating countries	South Africa, Mozambique		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	In 2007 South Africa and Mozambique signed the Bilateral Agreement on Combined Border Control Posts on the Mozambique-South Africa Border (the Bilateral Agreement). The objective is to expedite transit by rail and road across the common border The Ressano Garcia-Lebombo (Mozambique-South Africa) OSBP is being developed, with the following completed to date: • Commercial freight clearance facilities established away from the border (old airport and KM4) • Freight bypass road constructed • Separate passenger corridor and clearance facilities constructed • Traffic separated with passenger buses and private motorist using the old road and main facilities South Africa's Department of Transport is conducting a freight optimisation study that includes the Oshoek-Ngwenya and Ressano Garcia-Lebombo border posts. Recommendations include infrastructure upgrades and process redesign		
Expected results	Increase the flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Being implemented		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Finalisation of the construction process		
Business model	Public		
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation	LRG OSPB workshop July 2007		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source	South African and Mozambican governments		
Remarks			

SADC Diagnostic Report No. MSP21

Project title	Plumtree-Ramokgwebane OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	North-South Corridor		
Project location	Between the towns of Plumtree and Ramokgwebane at the border of Zimbabwe and Botswana		
Participating countries	Zimbabwe, Botswana		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Plumtree-Ramokgwebane OSBP. Design and construction of separate freight and passenger terminals		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Scoping		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP22

Project title	Pioneer Gate-Skilpadhek OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	Trans-Kalahari Corridor		
Project location	Between the towns of Lobatse and Zeerust at the border of Botswana and South Africa		
Participating countries	South Africa, Botswana		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Ongoing infrastructure upgrades at Skilpadshek (South Africa/Botswana) to increase office space and improve access roads		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Being implemented		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Upgrades on South African side		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP23

Project title	Kasumbalesa OSBP		
Project contact			
Project sponsors	RTFP		
Sector	2.1 Transport – Border Posts		
Corridor	North-South Corridor		
Project location	Between the towns of Kasumbalesa and Chililabombwe at the border of the DRC and Zambia		
Participating countries	DRC, Zambia		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Kasumbalesa OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Being implemented		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Upgrades on DRC and Zambian sides		
Business model	Private		
Implementing agency	Private concession		
Main parties in place			
Main parties to be procured			
Technical/operational notes	• The access roads, parking and office facilities on Zambian side have been reconstructed under a BOT arrangement. Operators are complaining about the increase access/user costs introduced since the modernisation of the Zambian facilities • Similar facilities are under construction on the DRC side by the same service provider		
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source	Private concession		
Remarks			

SADC Diagnostic Report No. MSP24

Project title	Colomue-Dedza OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport – Border Posts		
Corridor	Nacala Corridor		
Project location	Between the towns of Dedza and Calobue at the border of Malawi and Mozambique		
Participating countries	Malawi, Mozambique		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Colomue-Dedza OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP25

Project title	Lobito Corridor Roads		
Project contact			
Project sponsors	The governments of Angola, DRC and Zambia, assisted by SADC and NEPAD		
Sector	2.2 Transport – Road		
Corridor	Lobito-Benguela Corridor		
Project location	From Lobito, Angola to Dilolo, western DRC to northern Zambia		
Participating countries	Angola, DRC and Zambia		
Project objectives	The objective of the programme is to improve internal (the southern and eastern parts of Angola) and external access to the Central and Eastern African regions, and thus serve as a conduit for regional integration.		
Project description	Activities will entail the rehabilitation of the main feeder roads within the corridor, which willl involve the restoration of the bridges and drainage systems and the reconstruction of pavements		
Expected results	Contribute to economic development and regional integration and hence to peace and stability in the Southern and Central African regions		
Ongoing and related activities in SADC/Tripartite region	The project is currently on the SADC priority list for projects, and has also been included in the NEPAD Short-term Action Plan		
Description of national project plan			
Current status	Project brief		
Planned or actual year of commencement	2011		
Planned or actual year of completion	2016		
Next steps	Organise a donor/financier conference as soon as possible. Complete prefeasibility studies for the road network within the Lobito Corridor		
Business model	Public-private partnership		
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes	A feasibility and design study for the reconstruction and rehabilitation of roads on the Lobito Corridor commenced in March 2011 and is planned for completion in 12 months time. The study is looking at direct road links between Angola and Zambia on this corridor		
Available project documentation	Prefeasibility study		
Funding status and interventions for which financing is required	Both public and private financing will be required. Some of the funding agencies that have shown interest in financing the railways rehabilitation works include the World Bank and the AfDB		
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
390 (2002)			EU-Africa Infrastructure Partnership, perhaps also World Bank, AfDB and DBSA
Source	Funds secured from EU-Africa Infrastructure Partnership		
Remarks	Consultants have been appointed to conduct the feasibility and design study		

SADC Diagnostic Report No. MSP26

Project title	Nacala Corridor Roads
Project contact	Road Development Agency under the oversight of the Permanent Secretary, Ministry of Works and Supply
Project sponsors	AfDB and the of Mozambican government
Sector	2.2 Transport – Road
Corridor	Nacala Corridor
Project location	Nampula, central Mozambique to Lilongwe, Malawi to northern Zambia
Participating countries	Mozambique, Zambia and Malawi
Project objectives	Development of a reliable, effective and seamless transport infrastructure along the Nacala Corridor to provide landlocked regions with better access to the Nacala port. This will improve transport services and access to markets and social services for communities in the area, as well as contributing to poverty reduction. Some 787 000 people are expected to benefit directly from the project in Mozambique
Project description	Rehabilitation of road infrastructure on the Nacala Corridor, specifically the sections in Mozambique and Malawi (and possibly extending into Zambia)
Expected results	The expected outcomes include reduced transport cost, improved accessibility to social services and markets and improved road safety. The development of the Nacala Road Corridor will enable an increase in the volume of Zambian exports through the Nacala port, expanding the market beyond national boundaries
Ongoing and related activities in SADC/Tripartite region	
Description of national project plan	
Current status	Concept stage
Planned or actual year of commencement	
Planned or actual year of completion	
Next steps	The appraisal report will be finalised for board approval
Business model	
Implementing agency	
Main parties in place	
Main parties to be procured	
Technical/operational notes	Progress by corridor road sections: • **Chiponde – Mangochi (M3) section (51 km):** The road is in a fair state, except in the escarpments where it is characterised by sectional road failures. A design consultant using local resources was contracted at a cost of MK12.2 million. A final draft report and tender documents have been submitted for this design and are being reviewed. It is expected that final designs will be in place by the end June 2011 • **Mangochi – Liwonde (M3) section (70 km):** The present riding surface is in fair condition, but the section is in need of upgrading to improve its vertical alignment. A design consultant was appointed through funding to the value of MK25.4 million from local sources. The consultant has submitted a final draft of the design report for reconstruction, which is being reviewed by both the Malawian government (through the Roads Authority) and the AfDB. It is expected that final designs will be in place by the end June 2011. • **Liwonde – Nsipe (M8/M1) section (64 km):** The road is in a fair state, but requires periodic maintenance. The shoulders of the road also need to be upgraded and paved to standard. A design consultant was appointed with funding from local sources at a contract sum of MK25.3 million, and is preparing appropriate design interventions for this section. To date, a final draft report has been submitted and is being reviewed. It is expected that final designs will be in place by the end June 2011. • **Nsipe – Lilongwe (M1) section (163 km):** Rehabilitation and maintenance works are ongoing. This project is co-funded by the 9th European Development Fund

	(EDF) (€7.6 million) and the Malawian government (€11.2 million). The works commenced in November 2008 and were expected to be completed in May 2010, however the latest estimations are that the project will be completed by the end of 2011. • **Lilongwe City Western bypass section (13 km):** Funding from the AfDB for Phase 1 of the multi-national Nacala Road Corridor Project. The Lilongwe Western bypass will cover a total of about 13 km from the junction of the Kaunda Road and M12 (customs) to the Likuni Township via a grade separation structure before connecting with the M1 close to the Bunda turnoff. The appointed supervising consultant is carrying out the design review and pre-contract services, while the civil works are expected to be complete by the end of November 2015. The total loan agreement for this project is 14.32 million Units of Account. • **Lilongwe – Mchinji (M12) section (118 km):** This stretch of road is in a fair to good state, and no funding has been identified for design studies or periodic maintenance works, which are now due. The shoulders of the road need to be improved, including the provision of bus bays to enhance road safety. • **Related developments** – additional designs: The Malawian government applied for the US$523 429 NEPAD grant for Nacala Road Corridor, which was meant for the Mangochi-Liwonde Pavement Investigation and Economic Evaluation and Detailed Engineering Design, to be utilised for other proposed design studies on the same corridor, since the rehabilitation design for the Mangochi-Liwonde road section was done using local resources. In Mozambique, the corridor covers the Nacala – Cuamba – Mandimba – Lichinga connections passing through the N1, N12 and N13. Progress along this part of the corridor is as follows: • **Phase 1:** Nampula – Cuamba section (348 km) • Funding agreements have been signed with the partners involved in Phase 1, which aims to asphalt the Nampula – Cuamba section (AfDB 57%, JICA 23%, Mozambican government 12%, and EXIM Bank of Korea 8% for the total amount of US$264 million) • The tender process for asphalting the Nampula – Cuamba section was carried out. Proposals were assessed and negotiations with the selected contractors have been concluded. Currently agreements are being prepared for signature. The road has been divided into three sections, and each section was awarded to a different contractor. It is hoped that work will be concluded in 30 months. • **Phase 2:** Cuamba – Mandimba – Lichinga section (350km) • The feasibility study on the asphalting of the road has been concluded, and in February 2011 the development of the detailed engineering plan began. • The Nacala Corridor Road Project in Zambia comprises 360 km of road rehabilitation from Luangwa Bridge (234 km from Lusaka) to Mwami at the border with Malawi. For implementation purposes, the project has been subdivided into eight sections. Progress has been made on Section 1: Luangwa Bridge – Nyimba (99km), Section 4: Sinda – Katete (40 km), Section 7: Chipata Town (4.7km) and Section 8: Chipata – Mwami border (19.1km)		
Available project documentation			
Funding status and interventions for which financing is required	The biggest share of the financing for this phase is expected to come from the African Development Fund, the concessionary window of the AfDB. Other donors include Japan's JICA and Korea's EXIM Bank. The Mozambican government will contribute counter		
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
270			AfDB
Source	The AfDB is already involved in the financing of Phase I of the Nacala Corridor Road Project		

	and the preparatory work for Phase III		
Remarks	Financing: The European Union (EU) and the European Investment Bank (EIB) have committed to financing the rehabilitation of a total 162.8 km comprising the above sections. The EU will providean EDF grant amounting to € 38 million		

SADC Diagnostic Report No. MSP27

Project title	Western Corridor Roads – Zambia		
Project contact			
Project sponsors	DBSA		
Sector	2.2 Transport – Road		
Corridor			
Project location	Kasempa, central Zambia to Kaoma, western Zambia to Mongu, western Zambia to Senanga, south-western Zambia to Nangweshi, south-western Zambia to Sesheke, southern Zambia		
Participating countries	Zambia		
Project objectives	Upgrading of roads to full bitumenous standards		
Project description	Planning , design and construction of roads to full bitumenous standards and construction of a bridge over the Zambezi River		
Expected results	Improved reliability and shorter travel distances		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Being implemented		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Construction of roads and facilities		
Business model	Public-private partnership		
Implementing agency	DBSA		
Main parties in place	DBSA		
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
262			
Source	Danida		
Remarks			

SADC Diagnostic Report No. MSP (113)28

Project title	Chingola-Solwezi Railway Extension		
Project contact	Kavindele		
Project sponsors	Northwest Project Railways		
Sector	2.3 Transport – Rail		
Corridor	Lobito-Benguela Corridor		
Project location	Chingola, northern Zambia to Solwezi, north-western Zambia		
Participating countries	Zambia, Angola		
Project objectives	Providing a railway link from the Copper Belt to Angola for export/import through Lobito		
Project description	Construction of new railway line from Chingola to Solwezi to the Angolan border (536km line)		
Expected results	New railway line, improved rail connectivity		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Implementation of a public-private partnership for the expansion of the Zambian rail network		
Current status	Being implemented		
Planned or actual year of commencement	2011		
Planned or actual year of completion	0		
Next steps	Prefeasibility study, prelim design, detail design, construction		
Business model	Public-private partnership		
Implementing agency	ZPA		
Main parties in place	NWPR		
Main parties to be procured	Financiers, mining company interests		
Technical/operational notes	Extension of rail service to new mines. Angola has already started with construction from Luena on the Lobito Corridor towards Jimbe (Angola-Zambia border). Zambia is planning to start construction in 2011		
Available project documentation	Prefeasibility studies and costing, LTA		
Funding status and interventions for which financing is required	Funding not secured yet		
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
200 – 400	None	200 – 400	None yet
Source	None yet		
Remarks	Linked to Project 44		

SADC Diagnostic Report No. MSP29

Project title	Moatize-Nacala Railway		
Project contact	Secretary for Ministry of Transport and Public Infrastructure, Malawi (+265 1 789 378)		
Project sponsors	Vale		
Sector	2.3 Transport – Rail		
Corridor	Nacala Corridor		
Project location	Moatize, western Mozambique to Nacala, eastern Mozambique		
Participating countries	Mozambique, Malawi		
Project objectives	To upgrade the railway services on the corridor and to provide coal export services on the route		
Project description	Upgrade of existing railway line to accommodate 30 mpta (or more)		
Expected results	Improved rail line, coal export		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	PIM		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Project stalled, the Malawian government appointed a consultant to reassess the concession		
Business model	Public-private partnership		
Implementing agency			
Main parties in place	Vale		
Main parties to be procured			
Technical/operational notes	The Malawian government and Vale signed a feasibility study for the construction and operation of the railway line linking the coalfields to the Nacala port through the existing railway network in Malawi and Mozambique		
Available project documentation	Various engineering feasibility studies		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Over 500			
Source			
Remarks	Requires several concessions to be in place		

SADC Diagnostic Report No. MSP30

Project title	Sena Railway Upgrading		
Project contact			
Project sponsors	CFM/World Bank		
Sector	2.3 Transport – Rail		
Corridor	Beira Corridor		
Project location	Sena, Mozambique to Limbe, southern Malawi and Blantyre, southern Malawi		
Participating countries	Mozambique		
Project objectives	To upgrade the Sena line to service the first phase of the Moatize exports (6 mpta)		
Project description	Upgrade of railway line to accommodate 6-19 mpta		
Expected results	Railway line improvement		
Ongoing and related activities in SADC/Tripartite region	Possible reconnection of Malawi Rail System		
Description of national project plan	To re-establish services on the Sena line		
Current status	Railway operational, upgrading not yet complete, concession cancelled		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Completion of upgrades to 6 mpta		
Business model	Likely public-private partnership (existing concession cancelled)		
Implementing agency	CFM, World Bank		
Main parties in place	Coal exporters		
Main parties to be procured	Possible procurement of private operator		
Technical/operational notes	Currently experiencing rail capacity constraints		
Available project documentation	Various studies completed		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Phase one: 30 Upgrade to 12 mtpa: 150			Financing will be secured through the Cola Mine Mark-up
Source			
Remarks			

SADC Diagnostic Report No. MSP (AB5410) 31

Project title	SNCC Railway Upgrading		
Project contact	SNCC, Vecturis (Belgium): Eric Peiffer		
Project sponsors	World Bank, GoDRC (possibly also Chinese involvement)		
Sector	2.3 Transport – Rail		
Corridor	North-South Corridor, Dar-es-Salaam Corridor and Central Corridor		
Project location	South-eastern DRC		
Participating countries	DRC		
Project objectives	Revival of SNCC system (in very poor state)		
Project description	Revitalising rail services, rehabilitation of rail infrastructure, new rolling stock acquired		
Expected results	Revival of DRC rail system		
Ongoing and related activities in SADC/Tripartite region	Restructuring of the regional railways		
Description of national project plan	Rail system is key to the DRC transport network		
Current status	Being implemented		
Planned or actual year of commencement	0		
Planned or actual year of completion	0		
Next steps			
Business model	Public-private partnership		
Implementing agency	MoT, CEPTM, CFPTM		
Main parties in place	GDRC, AfDB		
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
218	245		AfDB and GDRC
Source	AfDB and GDRC's Chinese credit line		
Remarks			

SADC Diagnostic Report No. MSP (112)32

Project title	Lion's Den Kafue Rail Link		
Project contact	Unknown		
Project sponsors	Unknown		
Sector	2.3 Transport – Rail		
Corridor	Beira Corridor		
Project location	Lion's Den, central Zimbabwe to Kafue, southern Zambia		
Participating countries	Zambia, Zimbabwe		
Project objectives	Construction of new rail route, which would provide the shortest route to any port (Beira) from the Copper Belt		
Project description	Construction of new railway line between Kafue, Zambia, and Lion's Den, Zimbabwe, 292 km line		
Expected results			
Ongoing and related activities in SADC/Tripartite region	A SADC project		
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement	0		
Planned or actual year of completion	0		
Next steps	Only prefeasibility study and preliminary design done to date. DBSA was going to appoint consultants, but the current status is unknown		
Business model	Public		
Implementing agency	NRZ		
Main parties in place	DBSA		
Main parties to be procured	Mining contracts to be signed and regional agreements needed		
Technical/operational notes	Project would need to overcome significant regional political resistance and severe topographical constraints		
Available project documentation			
Funding status and interventions for which financing is required	DBSA has indicated interest in the process of appointing consultants		
Revenues for repayment of financing	Possible mark-up on mine rail tariff		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Over 500	None	Over 500	None yet
Source	None yet		
Remarks			

SADC Diagnostic Report No. MSP34

Project title	Berths at Kigamboni to expand Dar-es-Salaam Port
Project contact	
Project sponsors	To be implemented under a public-private partnership arrangement (TPA/public-private partnership/donors)
Sector	2.5 Transport – Ports
Corridor	Dar-es-Salaam Corridor
Project location	Dar-es-Salaam
Participating countries	Tanzania
Project objectives	Provision of a news berth to meet forecast growth in the near future. The new berths are expected to handle dry, container and liquid bulk. The plan is to develop a container quay with the capacity to handle 1 500 TEUs/m/year and a motorvehicle quay with a capacity of 3 330veh/m
Project description	The Tanzania Ports Master Plan (2008 – 2028) identified potential areas for the expansion of the Dar-es-Salaam port footprint to accommodate forecasted traffic cargo flows. The new area is on the opposite side of the existing port at Kigamboni areas 1 -3, with the following estimated dimensions: Area 1 with a quay length of 1 700 m and 60 ha, Area 2 with a 1 300 m quay and 35 ha and Area 3 with a 1 700 m quay and 65 ha
Expected results	• Reduced overall ship staying time in ports and ship turnaround time • Lower shipping freight rates as a result of reduced waiting time for ships in the port and increased shipload • Reduced transit time and permitting movement at most states of the tide and at night • Greater throughput capacity for the port arising from the efficient use of berths, with more freedom of movement of ships through the channel • High rating of the port in terms of safety considerations • Attractimg bigger ships, trans-shipment cargo • Generate more revenue • Provide a cost-effective, logistically sound transport chain • Serve the economies of Tanzania and the landlocked neighbouring countries • Create direct and indirect employment opportunities. Facilitate least freight costs for both imports and exports. Enhancing cost-effective farming and trading at commercial and subsistence levels
Ongoing and related activities in SADC/Tripartite region	The ongoing projects related to this project are: • The strengthening/conversion of general cargo berths 1 to 7 in the Dar-es-Salaam port into dedicated berths for bulk carriers and RoRo vessels • The dredging of the Dar-es-Salaam port entrance channel
Description of national project plan	Under consideration in the National Five-year Development Plan 2011/12 – 2015/16
Current status	Concept stage
Planned or actual year of commencement	
Planned or actual year of completion	
Next steps	Feasibility study
Business model	Public-private partnership
Implementing agency	
Main parties in place	Negotiations between the government and interested investors to undertake detailed study
Main parties to be procured	Consultant for feasibility/detailed study and construction works
Technical/operational notes	Suitable sites have been identified and the land acquisition process is underway

Available project documentation	Tanzania Ports Authority Development Plan, Ports Master Plan 2009		
Funding status and interventions for which financing is required	Feasibility study consultant, detailed study and construction works		
Revenues for repayment of financing	To be established by the feasibility/detailed studies		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Estimated total cost for developing two port terminals at Kigamboni (Phase 1 – 3): 657.2			
Source			
Remarks			

SADC Diagnostic Report No. MSP35

Project title	Beira-Mutare road upgrading and tolling
Project contact	
Project sponsors	European Commission
Sector	2.2 Transport – Road
Corridor	Beira Corridor
Project location	From Beira port in Mozambique to Mutare-Machipanda border post between Mozambique and Zimbabwe
Participating countries	Mozambique, Zimbabwe
Project objectives	The project road forms part of the Beira Corridor and provides access to landlocked countries such as Malawi, Zimbabwe and Zambia. The N6 is also part of the Regional Trunk Route Network (RTRN), as formulated by the SADC. This project is aims to rehabilitate various sections of Mozambique's national primary road network. The primary road network consists of 1 407 km of unpaved roads and 4 459 km of paved roads adding up to a total length of 5 866km. The provinces in which the project is located have a paved route network of 1 148km (Manica 581 km and Sofala 567 km) running through the districts of Nhamatanda, Dondo and Beira in the Sofala province and through Gondola, Cidade de Chimoio and Manica districts in the Manica province. The project will improve about 285 km of the primary paved road network in the above stated districts. Rehabilitating the Beira-Machipanda Corridor will contribute significantly to the generation of socio-economic development of the region. An added advantage is the provision of a sufficient, sustainable, reliable and cost-effective road infrastructure
Project description	• Rehabilitating the existing pavements (according to the adopted option) • Rehabilitating/maintaining existing bridges • Rehabilitating/maintaining existing major culverts • Retaining/upgrading the existing cross-section according to the adopted option • Retaining/upgrading the existing horizontal and vertical alignment according to the adopted option • Upgrading selected intersections by providing formal taxi and bus stops • Providing pedestrian sidewalks (where required) at bridges located in urban areas • Replacing road signs • Replacing all existing guardrails and provide new guardrails, where required • Installing subsoil drains where absolutely necessary • Implementing a one-way/single lane option at the Pungue River bridge (truss section) • Implementing environmental protection works at borrow pits
Expected results	The upgraded and rehabilitated road will reactivate the socio-economic activities of the communities located in the area and the country as a whole. This will create opportunities for economic growth through the use of improved and safer roads with reduced vehicle operating costs
Ongoing and related activities in SADC/Tripartite region	Dredging of Beira Port
Description of national project plan	• Road Sector Policy 2008 (GOM) • Roads and Bridges Maintenance and Management Programme (RBMMP) • Road Sector Strategy (2007 – 2011) (GOM) • Road Sector Investment Programme (PRISE) (2007 – 2009)
Current status	Being implemented
Planned or actual year of commencement	2013
Planned or actual year of completion	2016

Next steps	Appointment of contractor, construction		
Business model	Select from dropdown		
Implementing agency	ANE		
Main parties in place	ANE, EC		
Main parties to be procured			
Technical/operational notes			
Available project documentation	Feasibility study, detail design		
Funding status and interventions for which financing is required	Funding required for rehabilitation of road. Status of funding in principle committed from donor but funding availability not yet guaranteed		
Revenues for repayment of financing	Grant supplemented by tolling		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Construction 119.4	?	?	EC and toll consortium
Source	?		
Remarks	Determination of viability to toll road is outstanding and toll consortia may not be interested due to fairly low traffic levels except if revenue stream is supplemented by Donor Grants and/or Government Appropriations via Road Fund		

SADC Diagnostic Report No. MSP36

Project title	Beira-Mutare-Harare Railway upgrading		
Project contact	NRZ, CFM		
Project sponsors			
Sector	2.3 Transport – Rail		
Corridor	Beira Corridor		
Project location	Beira, Mozambique to Mutare, eastern Zimbabwe to Harare, central Zimbabwe		
Participating countries	Zimbabwe, Mozambique		
Project objectives	Restoration of rail services between Harare and Beira		
Project description	Performing deferred maintenance and realigning sections of the track		
Expected results	Economic benefit		
Ongoing and related activities in SADC/Tripartite region	Restructuring the regional railways		
Description of national project plan	Two national plans at stake, Zimbabwe and Mozambique		
Current status			
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Operations will now return to CFM in order to obtain financing for the execution of the project		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes	The first section is part of NRZ revival, while the second is part of the new rail revival project		
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks	The project should actually focus on the Beira-Machapanda section, as the NRZ revival falls under a separate project		

SADC Diagnostic Report No. MSP40

Project title	Ngwenya-Oshoek OSBP		
Project contact			
Project sponsors			
Sector	2.1 Transport– Border Posts		
Corridor	Maputo Corridor		
Project location	Between the towns of Ngwenya and Oshoek, at the border of South Africa and Swaziland		
Participating countries	South Africa, Swaziland		
Project objectives	Enhanced border and trade chain security, reduced waiting time for vehicles at borders and reduced transport cost		
Project description	Establishing Ngwenya-Oshoek OSBP		
Expected results	Increase flow of goods through border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP41

Project title	Namibe Railway upgrading, including a link to the Santa Clara border post
Project contact	
Project sponsors	
Sector	2.3 Transport – Rail
Corridor	Namibe Corridor
Project location	From Port of Namibe, western Angola, to Oshikango-Santa Clara border post, southern Angola
Participating countries	Namibia, Angola
Project objectives	The Mocamedes Railway will be rehabilitated and a rail link constructed towards the Oshikango-Santa Clara border post.
Project description	The original line was opened in 1923 with the 756 km long CFM line. In order to transport iron ore from the Cassinga region through the Moçâmedes Railways line, two branch lines (one 17 km line to Jamba and a 96 km line to Tchamutete) had to be built in the 1960s, linking the mines to the main CFM line. The current route now totals 907 km. The set deadline for the rehabilitation of the Namibe-Menongue section (756 km), including the Jamba and Tchamutete branch lines (115 km), is December 2011. The project consists of the total renewal of the line by lifting the existent infrastructure, slightly rectifying the rail line, renewing the ballast and replacing existent material (replacing wood sleepers with monoblock concrete sleepers, and replacubg the 30 kg/m and 45 kg/m rails with 50 kg/m rails). This will enable trains to attain the maximum speed of 120 km/h on some stretches of the line. The implementation of the works corresponds to practically 50% of the assignment in the following aspects: • Replacement of all old 30 and 40 kg/m rails with new 50kg/m rails • Installation of new track change devices • Replacement of metal and wood sleepers with monoblock concrete sleepers • Appliance of new ballast with adequate characteristics • Building and reparation of bridges • Execution of the platform of the line • Installation of signalling and telecommunication equipment
Expected results	Improved connectivity for Namibian exports
Ongoing and related activities in SADC/Tripartite region	
Description of national project plan	
Current status	Concept stage
Planned or actual year of commencement	
Planned or actual year of completion	
Next steps	
Business model	
Implementing agency	
Main parties in place	
Main parties to be procured	
Technical/operational notes	
Available project documentation	

Funding status and interventions for which financing is required	World Bank to be approached		
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Namibe port: 13.7 Moçamedes railway: 76.75			
Source			
Remarks			

SADC Diagnostic Report No. MSP42

Project title	Lobito Corridor Railway		
Project contact	Ministry of Transport, Lobito Corridor Authority		
Project sponsors	Angolan,DRC and Zambian governments		
Sector	2.3 Transport – Rail		
Corridor	Lobito-Benguela Corridor		
Project location	From Lobito, western Angola to Dilolo, western DRC		
Participating countries	Angola		
Project objectives	Railway link upgrade to Lobito port (from Tilolo). Possible future link to Zambia		
Project description	Railway line rehabilitation: The rolling stock, ancillary facilities (including workshops), operating plant and equipment, as well as telecommunication system would have to be replaced, refurbished and modernised. Institutional support will be vital in ensuring the satisfactory implementation and adequate management of the railway system		
Expected results	New rail service between Tilolo and Lobito		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Completed		
Planned or actual year of commencement	2005		
Planned or actual year of completion	2011		
Next steps	Project is completed, no action to be taken		
Business model	Public		
Implementing agency	Ministry of Transport, Lobito Corridor Authority		
Main parties in place	Chinese		
Main parties to be procured			
Technical/operational notes	The Lobito-Luau section, including the Benguela branch line, consists of 1 348 km subdivided into: • Main Lobito-Luau line – 1 303 km • Lobito-Benguela branch ine – 45 km • The ongoing rehabilitation works of the Benguela Railways. The works consisted of the total renewal of the line by lifting the existent infrastructure, slightly rectifying the rail line, renewing the ballast and replacing existent material (wood sleepers with monoblock concrete sleepers and 30kg/m and 45kg/m rails with 50kg/m rails). This will enable trains to attain a maximum speed of 120 km/h on some stretches of the line. Other activities such as the rehabilitation of bridges on the Cuiva, Catumbela and Kwanza rivers were carried out. The set deadline for the conclusion of the rehabilitation of this section is 2012 • Ongoing feasibility study and detailed design for the construction of a railway line from Chingola – Solwezi – Jimbe, joining with the Lobito Corridor rail at Luena (Angola)		
Available project documentation	Nothing recent		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source	World Bank, AFDB		
Remarks			

SADC Diagnostic Report No. MSP43

Project title	DRC roads on NSC		
Project contact			
Project sponsors			
Sector	2.2 Transport – Road		
Corridor	North-South Corridor		
Project location			
Participating countries	DRC		
Project objectives			
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP44

Project title	Luanda-Windhoek Corridor roads		
Project contact			
Project sponsors			
Sector	2.2 Transport – Road		
Corridor			
Project location	Luanda-Windhoek Corridor		
Participating countries	Angola, Namibia		
Project objectives			
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No MSP45

Project title	Nacala port modernisation and expansion		
Project contact	Nacala Development Corridor (CDN)		
Project sponsors			
Sector	2.5 Transport – Ports		
Corridor	Nacala Corridor		
Project location			
Participating countries	Mozambique		
Project objectives	Upgrading of existing Nacala port		
Project description	Upgrading of existing Nacala port		
Expected results	Increased capacity		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	PIM		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency	CDN		
Main parties in place			
Main parties to be procured			
Technical/operational notes	The Nacala Port Master Plan, which is being funded by JICA, will be executed in two phases: • Phase 1 (2009 – 2014): o Rehabilitation of the fuel and general cargo terminal o Construction of a bypass road o Procurement of equipment such as rubber tyre gantry cranes (RTGs) and stackers • Phase 2 (2014 – 2017): includes o Dredging of the channel o Expanding storage space to 600 000 TEUs o Construction of a new container terminal o Construction of a coal terminal The projected funding requirements for the above is US$260 million. The final report was submitted in 2011, and construction will be subject to the conclusion of an environment impact assessment (EIA).		
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
200			
Source			
Remarks			

SADC Diagnostic Report No. MSP46

Project title	Trans-Caprivi-western Zambia Railways from Kolwezi (DRC), through Solwezi (Zambia) to Mongu, Sesheke (Zambia) and Katima Mulilo (Namibia)		
Project contact			
Project sponsors			
Sector	2.3 Transport – Rail		
Corridor	Western Corridor		
Project location	From Kolwezi (DRC), through Solwezi (Zambia) to Mongu, Sesheke (Zambia) and Katima Mulilo (Namibia)		
Participating countries	Zambia, Namibia		
Project objectives	Construction of new rail route for exports to Walvis Bay		
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Increasing railway network to spur economic growth		
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Prefeasibility study to be conducted, and apparently an Epinsan feasibility study is underway		
Business model	Public-private partnership		
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP47

Project title	Trans-Caprivi roads upgrading of Sinanga-Katima Mulilo road (205 km)		
Project contact	Walvis Bay-Ndola-Lubumbasi Development Corridor (WBNLDC)		
Project sponsors			
Sector	2.2 Transport – Road		
Corridor	Trans-Kalahari Corridor		
Project location			
Participating countries	Namibia, Zimbabwe		
Project objectives	Upgrading of Katima Mulilo – Sesheke – Sinanga road from gravel to bitumen standard. The entire 205 km road network from the Katima Mulilo border to Senanga is being currently upgraded from gravel to bituminous standard (tar) in order to linkit to Mongu. This project includes a bridge at Maziba		
Project description	Upgrade of road		
Expected results	Increase of road capacity and shorter travel times		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Concept stage		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP48

Project title	There is an additional list of roads and rail projects linking the DRC to Angola, Cabinda,Tanzania and Zambia		
Project contact			
Project sponsors			
Sector			
Corridor			
Project location			
Participating countries	Congo, Angola, Tanzania and Zambia		
Project objectives			
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP49

Tanzania submitted list of new Railway Projects some of which may be part of COMESA and or EAC Master Plan.

SADC Diagnostic Report No. MSP50

Project title	Establishment of a cargo freight station (CFS) in Kisarawe
Project contact	
Project sponsors	Government of Tanzania, (TPA/public-private partnership/donors), World Bank
Sector	2.2 Transport – Road
Corridor	Dar-es-Salaam Corridor
Project location	
Participating countries	
Project objectives	Provision of a dry port on the outskirts of Dar-es-Salaam, which will act as an extension of the port for container and vehicle traffic, both for local and transit freight to landlocked countries, and to facilitate the decongestion of the Dar-es-Salaam port and the city in general
Project description	• Rail shuttle transport linkage • Re-alignment of existing container yards at Dar-es-Salaam port • New dry port terminal • New truck road access • New mainline (RAHCO and TAZARA), spur lines and freight stations • New customs, clearing and forwarding buildings • Truck parking spaces and other associated facilities
Expected results	• The project will create additional cargo storage space , improve dwell container and ship turn-around time, hence enhancing the port's operational efficiency • Lower shipping freight rates as a result of reduced waiting time for ships in the port and increased ship load • Reduced transit time and permitting movement in most tides and at night • Greater throughput capacity for the port, arising from efficient use of CFS • High rating of the port in terms of safety considerations • Generate revenue from handling and storage operations • Create more employment • Provide cost-effective transport and a total logistical chain • Serves the economies of Tanzania and its landlocked neighbouring countries
Ongoing and related activities in SADC/Tripartite region	The ongoing projects related to this project are; • The strengthening/conversion of general cargo berths 1 to 7 in the Dar-es-Salaam port, into dedicated berths for bulk carriers and RoRo vessels • The dredging of the Dar-es-Salaam port entrance channel
Description of national project plan	The project is under consideration in line with the port's Master Plan, the National Five-year Development Plan (FYDP 2011/12 – 2015/16) and the Public-private Partnership Policy
Current status	Pre-feasibility study report and the call for expression of interest (EoI) published in the *Guardian* newspaper and on the TPA websiteto obtain the services of interested consultants to undertake a feasibility study
Planned or actual year of commencement	
Planned or actual year of completion	
Next steps	Procure a feasibility study consultant by 2011/12. The feasibility study will establish findings and provide a detailed assessment of all economic, financial and technical aspects for developing a dry port, which will deliver best value for money
Business model	Public-private partnership under consideration
Implementing agency	
Main parties in place	Evaluation Committee for the call of EoI for consultants to undertake the project's feasibility study
Main parties to be procured	The consultant for feasibility study in 2012, followed by the procurement of a consultant for the design detail

Technical/operational notes			
Available project documentation	Ports Master Plan 2009, Pre-feasibility Study 2010		
Funding status and interventions for which financing is required	Construction work and ongoing operations		
Revenues for repayment of financing	To be established by the feasibility study		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
According to the Port Master Plan, a total of US$120 million is required for the the project			
Source			
Remarks			

SADC Diagnostic Report No. MSP51

Project title	Development of new berth at Kigamboni
Project contact	
Project sponsors	The project to be implemented under a public-private partnership arrangement, (TPA/public-private partnership/Donors)
Sector	2.5 Transport – Ports
Corridor	Dar-es-Salaam Corridor
Project location	
Participating countries	
Project objectives	Provision of new berths to meet forecast growth in the near future. The expected new berths are expected to handle dry, container and liquid bulk. The plan is to develop a container quay with the capacity to handle 1 500 TEUs/m/yr and a vehicle quay with the capacity for 3 330veh/m
Project description	The Tanzania Ports Master Plan (2008 – 2028) identified potential areas for the expansion of the Dar-es-Salaam port footprint to accommodate forecasted traffic cargo flows. The new area is on the opposite side of the existing port at Kigamboni areas 1 -3, with the following estimated dimensions: Area 1 with a quay length of 1 700 m and 60 ha, Area 2 with a 1 300 m quay and 35 ha and Area 3 with a 1 700 m quay and 65 ha
Expected results	• Reduced overall ship staying and turn-around time • Lower shipping freight rates as a result of reduced waiting time in the port and increased shipload • Reduced transit time, permitting movement in most tides and at night • Greater throughput capacity for the port arising from efficient use of berths, with more freedom of movement through the channel • High rating of the port in terms of safety considerations • Attract bigger ships and trans-shipment cargo • Generate more revenue • Provide cost-effective transport and a total logistical chain • Serve the economies of Tanzania and its landlocked neighbouring countries • Create direct and indirect employment opportunities • Facilitate the least freight costs for both imports and exports • Enhance cost-effective farming and trading at commercial and subsistence levels
Ongoing and related activities in SADC/Tripartite region	The ongoing activities related to this project are: • The strengthening/conversion of general cargo berths 1 to 7 in the Dar-es-Salaam port to dedicated berths for bulk carriers and RoRo vessels • The dredging of the Dar-es-Salaam port entrance channel
Description of national project plan	
Current status	Suitable sites have been identified and the land acquisition process is underway
Planned or actual year of commencement	
Planned or actual year of completion	
Next steps	Feasibility study
Business model	Public-private partnership under consideration
Implementing agency	
Main parties in place	
Main parties to be procured	
Technical/operational notes	
Available project documentation	

Funding status and interventions for which financing is required	Feasibility study consultant		
Revenues for repayment of financing	To be established by the feasibility study		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Estimated total cost for developing two port terminals at Kigamboni in three phases is US$657.2 million			
Source			
Remarks			

SADC Diagnostic Report No. MSP52

Project title	Road link at Stevenson Delhomme-Dan Koko (St. Louis)		
Project contact			
Project sponsors	Seychelles Government		
Sector	2.2 Transport – Road		
Corridor	Victoria		
Project location			
Participating countries			
Project objectives	To relieve the capital city of Seychelles, Victoria, of its heavy traffic congestion		
Project description	This bypass will create a traffic diversion from Victoria, leading to less congestion		
Expected results	To improve traffic flow in Victoria over the long-term		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Planning/conceptual phase		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
US$776 000 at an exchange rate of SR12.90 per US$			
Source			
Remarks			

SADC Diagnostic Report No. MSP53

Project title	Road link between Mt. Fleuri road to Bois De Rose road, Victoria		
Project contact			
Project sponsors	Seychelles government		
Sector	2.2 Transport – Road		
Corridor	Victoria		
Project location			
Participating countries			
Project objectives	To relieve the capital city of Seychelles, Victoria, of its heavy traffic congestion		
Project description	This bypass will create a traffic diversion from Victoria, leading to less congestion		
Expected results	To improve traffic flow in Victoria over the long-term		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Planning/conceptual phase		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
US$7 million at an exchange rate of SR12.90 per US$			
Source			
Remarks			

SADC Diagnostic Report No. MSP54

Project title	Victoria Waterfront bypass		
Project contact			
Project sponsors	Seychelles government		
Sector	2.2 Transport – Road		
Corridor	Victoria		
Project location			
Participating countries			
Project objectives	To relieve the capital city of Seychelles, Victoria, of heavy traffic congestion.		
Project description	This bypass will create a traffic diversion from Victoria, leading to less congestion		
Expected results	To improve traffic flow in Victoria over the long-term		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Planning/conceptual phase		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
US$6.395 million at an exchange rate of SR12.90 per US$			
Source			
Remarks			

SADC Diagnostic Report No. MSP55

Project title	Development of deep water port at Mwambani Tanga
Project contact	
Project sponsors	Tanzania government; Tanzania Ports Authority (TPA)
Sector	2.5 Transport – Ports
Corridor	Central Corridor
Project location	Tanzania
Participating countries	Tanzania
Project objectives	The TPA's plan is to enhance the country's maritime ports capacity with regard to international trade transport facilitation, and to ensure that sufficient capacity is available to meet forecasted demand, without creating over-capacity
Project description	Mwambani Bay, 10 km south of the existing port, is earmarked for Greenfield port and EPZ developments to be operational by 2016. The entrance to Mwambani Bay is about 1 000 m wide. The TPA acquired an area of 174 ha for this purpose. The development can be connected to the main road networks and TRL rail system withinf 7 km. Connection to TAZARA would require 350 km of new railway line. The new port could either be concessioned to a single operator, or split between three terminals, a specialist dry bulk terminal, break bulk and container terminal. After the pre-rationalisation of new port, probably in 2016, the lightering services at the existing port will mostly be used by dhows and some small coasters serving the local markets. Equipment can be relocated to the Mwambani port.
Expected results	• Attract bigger ships and transhipment cargo, as well as improve traffic movement from the congested ports of Mombasa and Dar-es-Salaam • Generate more revenue • Create more employment • Provide cost-effective transport total logistical chain • Serves the economies of Tanzania and its landlocked neighbouring countries
Ongoing and related activities in SADC/Tripartite region	Roads, rails and other ports along the Northern Corridor
Description of national project plan	
Current status	Concept stage
Planned or actual year of commencement	2011
Planned or actual year of completion	
Next steps	To procure consultants for feasibility, detail design and construction works
Business model	Public-private partnership
Implementing agency	
Main parties in place	Interested investors are being sought under public-private partnership arrangements. Development to take place in phases under BOT arrangements for three years starting from 2011/12
Main parties to be procured	Consultants for detail design and construction works
Technical/operational notes	Feasibility Study Completed in 2011
Available project documentation	Ports Master Plan 2009, and Feasibility Study Report 2011
Funding status and interventions for which financing is required	Procure consultant for detailed studies and construction works
Revenues for repayment of financing	To be established during the detailed study

Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
According to the Ports Master Plan, the project is estimated at US$188 million			
Source			
Remarks			

SADC Diagnostic Report No. MSP56

Project title	Development of new port at Mbegani Bagamoyo
Project contact	
Project sponsors	The Tanzanian government through the Tanzania Ports Authority
Sector	2.5 Transport – Ports
Corridor	Dar-es-Salaam Corridor
Project location	60 km north of the Dar-es-Salaam port at Mlingotini, Bagamoyo
Participating countries	Tanzania
Project objectives	Provision of a new port closer to the Dar-es-Salaam port, which will carter for the overflow forecasted traffic growth both container and other cargo after 2018. The project includes the provision of EPZ and other port-related facilities
Project description	A SWOT analysis indicated that the planned Mbegani port is in a good location with significant growth potential for container and vehicle handling. To be constructed in three phases: Phase 1 to be operational by 2018 and handle 6 000 TEUs and 100 000 vehicle units per annum, Phase 2 to be completed ny 2023 ando handle i 1.5 million TEUs and 175 000 vehicle units per annum and Phase 3 to be completed by 2028 and increase TEUs to 2.8 million and vehicle units per annum to 270 000
Expected results	According to the Port Master Plan, the financial internal rates of return (FIRR) are 70% in the high forecast and 44% in the low forecast. The Mbegani Bagamoyo port will provide a solution to the growing traffic numbers at the Dar-es-Salaam port. Other benefits include: • Matching development with technological changes in both port and shipping industries towards a hub port • Fast clearance of vessels and cargo • Reducing minimum cargo idle time in the transport intermodal centre • Attain high port performance efficiency and productivity • Improve ship turn-round time • Sharpening the competitive edges towards efficient saving of the regional countries • Facilitating the achievement of the government's Mini-Tiger Programme goals • Generate employment
Ongoing and related activities in SADC/Tripartite region	Other roads, rails and ports in the Central and Southern Corridor
Description of national project plan	Under consideration in the National FYDP 2011/12 – 2015/16
Current status	Concept stage
Planned or actual year of commencement	2010
Planned or actual year of completion	
Next steps	To procure a consultant for detail design in 2013 and construction between 2015 – 2018
Business model	Public-private partnership
Implementing agency	
Main parties in place	Negotiation between government and interested investors to implement the project
Main parties to be procured	Consultant for detail design in 2012 Construction between 2015 – 2018 (project developers)
Technical/operational notes	Feasibility study completed in 2010
Available project documentation	Feasibility study 2010 and preliminary hydrographical survey for water depth/drafts

Funding status and interventions for which financing is required	Consultant for detail design in 2012 and construction between 2015 – 2018		
Revenues for repayment of financing	To be determined during the detailed design		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
According to the feasibility study, the project costs are estimated at total of US$1.6 billion			
Source			
Remarks			

SADC Diagnostic Report No. MSP57

Project title	Mtwara Port and EDZ development
Project contact	
Project sponsors	Tanzanian government through the Tanzania Ports Authority
Sector	2.5 Transport – Ports
Corridor	Mtwara Corridor covering the southern part of Tanzania and neighbouring landlocked countries of Malawi and Zambia
Project location	Tanzania
Participating countries	Tanzania (benefiting countries include Malawi, Mozambique and Zambia)
Project objectives	The existing port covers an area of about 71 ha. TPA acquired an additional 2 646 ha of land for the port expansions and the establishment of EPZ. Cargo forecasts are based on the proposed Mtwara Corridor activities, and the major commodities considered include compressed natural gas (CNG), export of wood, hardwood timber, cement, urea, coal, the import of bitumen, steel and other building materials, the development of a local ship breaking and sesame seeds
Project description	The major port facilities required between 2013 – 2028 are: • Oil jetty with two berths • Conveyor belt for dry bulk • Dry bulk terminal • Container terminal and expansion of the stacking/storage areas and procurement of cargo handling equipment
Expected results	The project is expected to provide facilities for handling all types of ships, conventional, container, coasters and tankers. With expanded berthing facilities, services to ships will be improved, thereby reducing ships' time in port and ship turn-round time. More ships will be calling at Mtwara port, resulting in increased revenue. Oil and gas exploration activities and the development of the Mtwara port infrastructure forms part of the Mtwara Development Corridor (MtDC) initiatives. The corridor covers the southern part of Tanzania including 20 regions and the neighbouring countries of Malawi, Mozambique and Zambia. These areas are rich in diverse natural resources and provide a large potential market which can generate large volumes of imports and exports. These imports and exports are likely to be handled at the Mtwara port, thus boosting the national economy and creating employment and generating revenue
Ongoing and related activities in SADC/Tripartite region	Roads, railways and other projects are considered along Mtwara Corridor
Description of national project plan	The project is considered under the National FYDP 2011/12 – 2015/16 and under the Ports Master Plan
Current status	Concept stage
Planned or actual year of commencement	2011
Planned or actual year of completion	
Next steps	To procure consultants for the detailed study and project developers (public-private partnerships)
Business model	Public-private partnership
Implementing agency	
Main parties in place	Negotiations under way between government and interested investors in order to implement the project
Main parties to be procured	Consultant for detail design in 2013 and construction between 2013 – 2018
Technical/operational notes	The Ports Master Plan was compiled March 2009, while a full feasibility study will be completed in April 2012. Interested investors are being sought under public-private partnership arrangements. The construction of terminals for

	container and break bulk cargoes will commence in 2012/13, depending on the availability of funds under the public-private partnership arrangement		
Available project documentation	Ports Master Plan 2009 and feasibility study 2011		
Funding status and interventions for which financing is required	Consultant for detailed study and construction works in 2013 – 2018		
Revenues for repayment of financing	To be established during the detailed study		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
According to the Ports Master Plan, the estimated cost for the upgrading of the Mtwara port is US$ 184.1 million			
Source			
Remarks			

SADC Diagnostic Report No. MSP59

Project title	Toll the N1 from Maputo to Maxixe and the N7 from Beira to Machipanda, including the link between Vanduzi and Changara		
Project contact			
Project sponsors			
Sector	2.2 Transport – Road		
Corridor	Maputo Corridor		
Project location	The N1 from Maputo to Maxixe and the N7 from Beira to Machipanda including the link between Vanduzi and Changara		
Participating countries	Government of Mozambique		
Project objectives	Setting up tolling facilities on the N1 from Maputo to Maxixe and the N7 from Beira to Machipanda including the link between Vanduzi and Changara		
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	The invitation for the EoI was sent out		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Invite parties to submit EoI		
Business model			
Implementing agency	Government of Mozambique		
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Source			
Remarks			

SADC Diagnostic Report No. MSP60

Project title	Construction of two additional aircraft parking stands (Code E aircraft)		
Project contact			
Project sponsors	Airports Of Mauritius Co Ltd		
Sector	2.4 Transport – Air		
Corridor			
Project location	Mauritius		
Participating countries	Mauritius		
Project objectives	To have sufficient aircraft parking stands for large wide-bodied aircraft (Code E) during future peak periods. Construction to start around 2014		
Project description	Construction of two fully-equipped offbridge aircraft parking stands (Code E)		
Expected results	Sufficient parking capacity on the apron during peak periods		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Project brief		
Planned or actual year of commencement	2014		
Planned or actual year of completion			
Next steps	Appointment of a design consultant in due course		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured	Consultants and works contractor		
Technical/operational notes			
Available project documentation	Airport Master Plan		
Funding status and interventions for which financing is required			
Revenues for repayment of financing	Airport charges to users		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
US$ 5.2 million (MUR150 million)			
Source			
Remarks			

SADC Diagnostic Report No. MSP61

Project title	The new Walvis Bay container terminal on reclaimed land		
Project contact			
Project sponsors	NAMPORT		
Sector	2.5 Transport – Ports		
Corridor			
Project location	Walvis Bay, Namibia		
Participating countries	Namibia		
Project objectives	To expand the Walvis Bay port's container and bulk handling capacity ahead of demand, by the constructing a modern 30 ha container terminal on reclaimed land with 600 m long quay wall designed for a water depth of -16.5 m alongside it, but dredged to an initial -14.0 m. In so doing the current container terminal will be converted back to a multipurpose terminal, capable of handling more bulk and break bulk cargo		
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement	Mid-2012		
Planned or actual year of completion	December 2014		
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance secured (US$ million)**	**Finance unsecured (US$ million)**	**Financier(s)**
NAD2.75 billion			
Source			
Remarks	Scope for private investment: none at this stage		

SADC Diagnostic Report No. MSP62

Project title	Walvis Bay new tanker berth		
Project contact			
Project sponsors	Namport		
Sector	2.5 Transport – Ports		
Corridor			
Project location	Walvis Bay, Namibia		
Participating countries	Namibia		
Project objectives	The construction of a modern marine petroleum offloading facility. The new tanker berth will be constructed to accommodate larger tanker vessels/fuel carriers and will replace the current ageing facility. The new facilitiy will be effective for both the import and export of a range of hydrocarbon products into Namibia and/or other SADC countries		
Project description			
Expected results capable	The new facility will be effective for both the import and export of a range of hydrocarbon products into Namibia and/or other SADC countries		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement	Mid-2012		
Planned or actual year of completion	May 2015		
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
NAD650 million			
Source			
Remarks	Scope for private investment: open for discussion		

SADC Diagnostic Report No. MSP63

Project title	Walvis Bay ship and rig repair quay		
Project contact			
Project sponsors	Namport		
Sector	2.5 Transport – Ports		
Corridor			
Project location	Walvis Bay, Namibia		
Participating countries	Namibia		
Project objectives	The construction of a new jetty, suitable for accommodating two large semi-submersible oil rigs as well as drill ships. The oil rigs and drill ships will be berthed at the new jetty and then repaired or worked on by private marine contractors from Walvis Bay. Namport realised several years ago that the ship and rig repair operations in Walvis Bay has great potential in terms of direct work creation in the local mechanical engineering industry. To date, several large oil rigs operating in the Angolan oil fields have used the Walvis Bay port for major repairs, modifications and scheduled maintenance		
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement	Mid-2012		
Planned or actual year of completion	June 2014		
Next steps			
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
NAD600 million for Phase 1			
Source			
Remarks	Scope for private investment: open for discussion		

SADC Diagnostic Report No. MSP64

Project title	Walvis Bay marina development		
Project contact			
Project sponsors	Namport		
Sector	2.5 Transport – Ports		
Corridor			
Project location	Walvis Bay, Namibia		
Participating countries	Namibia		
Project objectives	To allow a private investor to build, own and operate a modern marina facility through a long-term concession		
Project description			
Expected results			
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status			
Planned or actual year of commencement	Pre-feasibility study conducted in 2012. Construction to commence by January 2013		
Planned or actual year of completion			
Next steps	Construction to commence by January 2013		
Business model			
Implementing agency			
Main parties in place			
Main parties to be procured			
Technical/operational notes			
Available project documentation			
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
None – private development			
Source			
Remarks	Scope for private investment: full private development		

SADC Diagnostic Report No. MSP3

Project title	Upgrading of the Dar-es-Salaam – Isaka railway line to Standard Gauge, and the construction of Isaka – Keza – Kigali (Rwanda) – Musongati (Burundi) railway line
Project contact	Reli Assets Holding Company (RAHCO), Tanzanian government, Burundi, Rwanda and Uganda
Project sponsors	Governments of Tanzania, Rwanda, Burundi and DRC
Sector	2.3 Transport – Rail
Corridor	Central Corridor
Project location	TRL network
Participating countries	Tanzania
Project objectives	Upgrading of the existing line to Standard Gauge and connecting it to the new railway to be constructed between Isaka – Keza – Kigali (Rwanda) – Gitega – Musongati
Project description	• Upgrading of the existing line to Standard Gauge. The 982 km railway section is part of the former TRC railway network running from east to west (Central Corridor) and passing through the seven regions of Shinyanga, Tabora, Singida, Dodoma, coastal Morogoro and Dar-es-Salaam. • Upgrading of the Tabora – Kigoma section (411 km) to Standard Gauge, which will connect Tanzania to Burundi and the DRC • Upgrading the Isaka – Mwanza section to Standard Gauge, which will connect Tanzania to Uganda through Lake Victoria and eventually connect Uganda to the DRC • The newly-constructed 691.7 km railway section will initially connect three countries, Tanzania, Rwanda and Burundi, and will run from Isaka to Keza in Tanzania, where after it will branch to Kigali in Rwanda and Musongati in Burundi. The proposed railway line will be constructed at Standard Gauge
Expected results	• Reduced transportation costs • Reduced travelling time • Easy access by the community to various social services in the project area • Facilitate trade between Tanzania and neighbouring countries (DRC, Rwanda, Burundi and Uganda) • Create employment for locals during the implementation period, which will generate income in the community • Reduced transport costs and increased reliability will facilitate the movement of agricultural products from production centres to the market and hence increase farm gate prices • Promote trade along the project route and generate income for the local community • Promote the mining sector in the area, particularly gold, diamond and nickel
Ongoing and related activities in SADC/Tripartite region	Consultant (CANARAIL of Canada) busy with a detailed engineering study
Description of national project plan	Tanzania, Malawi, Mozambique, Zambia, and Zimbabwe will benefit from the project
Current status	The planned works are critical, as this will improve the efficiency of the Central Corridor in the transportations of goods within Tanzania and to Rwanda, western DRC, Uganda and Burundi, as well as the SADC region as a whole
Planned or actual year of commencement	2013
Planned or actual year of completion	2017
Next steps	Secure financing and procure contractor for the upgrading and construction works
Business model	Public-private partnership model preferred
Implementing agency	RAHCO
Main parties in place	The contractor for upgrading exercise and constructions, as well as the procurement of sleepers, rails and fittings
Main parties to be procured	Awaiting financing and procurement
Technical/operational notes	The feasibility study for upgrading is in place and was undertaken by BNSF from the USA. The feasibility study for construction is also in place and was undertaken by Germany's DB International
Available project documentation	Upgrading from Meter Gauge to Standard Gauge and the construction of a new

	railway line		
Funding status and interventions for which financing is required	Public service		
Revenues for repayment of financing	Secure financing and procure contractor for the upgrading and construction works		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
Rehabilitation: US$ 1.000 million (same formation), US$2.450 million (new formation), or US$3.130 million for new line construction	None	US$ 1.000 million (same formation), US$2.450 million (new formation), or US$3.130 million for new line construction	
Source	Being sought		Being sought
Remarks	Existing railway infrastructures need rehabilitation and extension to neighbouring countries		

SADC Diagnostic Report No. MSP3

Project title	Construction of the Mtwara – Songea – Mbambabay railway line with spurs to Mchuchuma – Liganga		
Project contact	RAHCO, Tanzanian government		
Project sponsors	Tanzanian government		
Sector	2.3 Transport – Rail		
Corridor	Mtwara Development Corridor		
Project location	Mtwara – Liganga – Mchuchuma – Songea – Mbambabay		
Participating countries	Tanzania, Malawi, Mozambique and Zambia		
Project objectives	Construction of a new railway line from the Mtwara port to Songea and Mbambabay with spurs to the mineral fields of Mchuchuma and Liganga, south-west of Tanzania (approx 1 000 km). The proposed railway line will be constructed at Standard Gauge, with 120 pound rails and concrete sleepers		
Project description	The railway line will connect the Mtwara port to the Liganga iron ore fields, located about 874 km west of the port. The Liganga reserve size is estimated to be between 200-2 000 million tonnes. The railway line will also connect the Mtwara port to the Mchuchuma coal fields, located 946 km from Mtwara around Lake Nyasa in the south-western part of the country. Mineral reserves in the Mchuchuma coal fields are estimated at 159 million tonnes as proven and 377 million tonnes as inferred		
Expected results	• Reduced of transportation costs • Promote the Mtwara port • Facilitate the transportation of minerals by rail, which is cheaper than road • Reduce travelling time • Easy access by the community to various social services in the project area • Facilitate trade between Tanzania, Malawi, Mozambique and Zambia • Create employment for locals during the implementation period, which will generate income in the community		
Ongoing and related activities in SADC/Tripartite region	Detailed study in the 2012/13 financial year		
Description of national project plan	Tanzania, Malawi, Mozambique, Zambia, and Zimbabwe will benefit from the project		
Current status	The planned works are critical, as this will improve the efficiency of the Central Corridor in the transportations of goods within Tanzania and to Rwanda, western DRC, Uganda and Burundi, as well as the SADC region as a whole		
Planned or actual year of commencement	Detailed study to be conducted in the 2012/13 financial year		
Planned or actual year of completion	2015		
Next steps	Secure financing and procure a contractor for the constructions works		
Business model	Public-private partnership model preferred		
Implementing agency	RAHCO		
Main parties in place	The consultant who will undertake the detailed design		
Main parties to be procured	Secure financing and procure a contractor for the constructions works		
Technical/operational notes	Awaiting financing and procurement		
Available project documentation	Feasibility study conducted by JICA through the NDC		
Funding status and interventions for which financing is required	Construction of a new railway line from Mtwara port to Songea – Mbambabay, with spurs to the mineral fields of Mchuchuma and Liganga, south-west of Tanzania (approximately 1 000 km)		
Revenues for repayment of financing	Revenues from transportations of Iron ores and coal from Liganga and Mchuchuma plants		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
US$ 1,386 million	None	US$ 1,386 million	
Source	Being sought		Being sought
Remarks	Construction of the new railway line to the mining sites in Mchuchuma and Liganga is important, as it will provide access to the Mtwara port and connectivity to Malawi		

SADC Diagnostic Report No. MSP3

Project title	Tanzania Railways Limited Revival		
Project contact	TRL		
Project sponsors	Government of Tanzania		
Sector	2.3 Transport – Rail		
Corridor	Central Corridor		
Project location	TRL Network		
Participating countries	Tanzania		
Project objectives	Recapitalisation and revival of TRL		
Project description	• Procurement of rolling stock • Revival/maintenance of signals and telecommunication of existing equipment • Maintain existing 2 707 km railway line		
Expected results	Improving the competitiveness of the rail service, increase in modal share		
Ongoing and related activities in SADC/Tripartite region	Revival of the SADC regional railways services		
Description of national project plan	Revival of the Tanzanian railway services		
Current status	In progress		
Planned or actual year of commencement	2012/13		
Planned or actual year of completion	2019		
Next steps	Secure funds		
Business model	Public		
Implementing agency	Tanzania Railways Limited (TRL), Tanzanian government		
Main parties in place	Trademark, World Bank, government of Tanzania		
Main parties to be procured	Tanzanian government, through the Ministry of Transport and TRL as an executing agency		
Technical/operational notes	Awaiting financing and procurement		
Available project documentation	Document preparations in progress		
Funding status and interventions for which financing is required	Funds not yet secured		
Revenues for repayment of financing	Income from operations		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
361.54		• Procurement of rolling stock: 251.9 • Revival/maintenance of signals and telecommunication of existing equipment: 106.3 • Maintain existing 2 707 km railway line: 3.34	
Source		Being sought	
Remarks	Railway services have deteriorated drastically and thus need immediate revival		

SADC Diagnostic Report No. MSP4

Project title	Dar-es-Salaam – Chalinze toll road		
Project contact	Tanzanian Ministry of Works		
Project sponsors	Government of Tanzania		
Sector	2.2 Transport – Road		
Corridor	Central Corridor		
Project location	Dar-es-Salaam, eastern Tanzania, to Chalinze, central Tanzania		
Participating countries	Tanzania		
Project objectives	Widen the road between Dar-es-Salaam and Chalinze from four to six lanes and convert it into a toll road		
Project description	Planning, design and construction of extra lanes on road between Dar-es-Salaam and Chalinze, as well as the construction of toll booths		
Expected results	Relieve congestion on the most important road artery in Tanzania		
Ongoing and related activities in SADC/Tripartite region	Rehabilitation of the Mandela port access road has just been completed. The Dar-es-Salaam port is undergoing modernisation and expansion and the new Bagamoyo road in Dar-es-Salaam is being expanded to a dual carriageway		
Description of national project plan	The planned works are critical, as this will improve the efficiency of the TANZAM Highway in the transportation of goods and people within Tanzania and to Zambia, Malawi, the DRC and the SADC region as a whole		
Current status	A feasibility study was undertaken by Egisbceom International and completed in 2010. A public-private partnership viability study was undertaken by M/s Intercontinental Technocrats Pvt from India, which found that the project is economically viable, with an economic internal rate of return of 23%, a project and equity financial internal rate of return of 15% and payback period of 14 years		
Planned or actual year of commencement	2013		
Planned or actual year of completion	2016		
Next steps	Secure financing, transaction advisor and procure a contractor for the civil works		
Business model	Considering a public-private partnership model toll road as described above		
Implementing agency	Ministry of Works through the Tanzania National Roads Agency (TANROADS)		
Main parties in place	Government of Tanzania through the Ministry of Works and with TANROADS as the executing agency		
Main parties to be procured	Transaction advisor, detail engineering design consultant and civil works contractors		
Technical/operational notes	Awaiting financing and procurement		
Available project documentation	A feasibility study was undertaken by Egisbceom International and completed in 2010. A public-private partnership viability study was undertaken by M/s Intercontinental Technocrats Pvt from India.		
Funding status and interventions for which financing is required	Construction		
Revenues for repayment of financing	The project would generate revenues through toll charges. The repayment and financing arrangements will be concluded with assistance of the transaction advisor		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
585	None	585	
Source		Being sought	
Remarks	The road is crucial to relieve congestion at the Dar-es-Salaam port		

SADC Diagnostic Report No. MSP

Project title	Manyoni – Tabora – Kigoma Road		
Project contact	Ministry of Works		
Project sponsors	Government of Tanzania		
Sector	2.2 Transport – Road		
Corridor	Central Corridor		
Project location	Located in Singida, Tabora and Kigoma regions of central Tanzania		
Participating countries	Tanzania		
Project objectives	Upgrading the road between Manyoni, Tabora and the Kigoma port to a bitumen standard dual carriageway		
Project description	The road is part of the Central Corridor, which starts in Manyoni through Kigoma to Tabora, and links Tanzania to its neighbouring countries, the DRC in the east and Zambia through Lake Tanganyika		
Expected results	• Reduce vehicle operating costs and travelling time • Stimulate the area's economic potential tourism, mining, fishing, timber, etc • Enhance inter-regional and regional economic integration		
Ongoing and related activities in SADC/Tripartite region	• Construction to bitumen standard for Kigoma – Kidahwe road section (36 km) was completed in 2010 • Ongoing construction to bitumen standard include: Kidahwe – Uvinza road section (30 km), Uvinza – Kidahwe road section (77 km), Malagarasi Bridge and approaching roads (48 km), Tabora – Urambo road section (94 km),and Chaya – Itigi - Manyoni road section (80 km)		
Description of national project plan	Construction to bitumen standard for other non-funded road section in Central Corridor are required. These include: • Upgrading of Kidahwe –Kasulu- Nyakanazi (310 km) to link with Tanzania and Zambia, DRC, Rwanda, Burundi and Uganda • Upgrading of Chaya – Nyahua road section (90 km) • Urambo – Kaliua road section (100 km)		
Current status	Detailed design has been completed and roads works are ongoing in some of the road sections as described above		
Planned or actual year of commencement	2012		
Planned or actual year of completion	2017		
Next steps	Secure financing for non-funded road sections		
Business model	Public financing/public procurement		
Implementing agency	Ministry of Works through TANROADS		
Main parties in place	Government of Tanzania through the Ministry of Works and with TANROADS as the executing agency		
Main parties to be procured	Civil works contractors		
Technical/operational notes	Awaiting financing and procurement		
Available project documentation	Detailed design reports and tender documents		
Funding status and interventions for which financing is required	Construction		
Revenues for repayment of financing	Public financing, loans or grants		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
450	None	450	
Source		Being sought	
Remarks	The completion of construction of the non-funded road sections will enhance trade facilitation between Tanzania and neighbouring countries		

SADC Diagnostic Report No. MSP

Project title	Upgrading of Matai-Kasesya road		
Project contact	Ministry of Works		
Project sponsors	Government of Tanzania		
Sector	2.2 Transport – Road		
Corridor	Dar-es-Salaam Corridor		
Project location	Located along Tanzania-Zambia border in the Rukwa region, south-west of Tanzania		
Participating countries	Tanzania		
Project objectives	Upgrading the road between Matai and the Kasanga port in Lake Tanganyika to a bitumen standard dual carriageway that links with Zambia		
Project description	The road is section is 50 km long and is part of the Tunduma – Sumbawanga – Matai – Kasesya road. The Tunduma – Sumbawanga –Matai – Kasanga port road (342 km) is currently undergoing upgrading through financing from the American Millennium Challenge Account and the government of Tanzania. The upgrading works will involve the construction of a two lane trunk road with service roads in built up areas and safety barriers at high fills and bends. The Pavement structure will be composed of a cement-stabilised base, crushed stone base and a double bituminous surface dressing		
Expected results	• Reduce vehicle operating costs and travelling time • Facilitate transportation of food crops from surplus in southern regions to deficit regions, including the neighbouring countries of Zambia and the eastern DRC • Enhance inter-regional and regional economic integration		
Ongoing and related activities in SADC/Tripartite region	• Both the upgrading of the Kasanga port on Lake Tanganyika and the modernisation of the Dar-es-Salaam port are ongoing • The upgrading of the Iringa – Dodoma – Arusha – Namanaga – Arthi River – Nairobi road as part of the Great North road (Cairo – Cape Town) and the Mtukula (Uganda) – Nyakanazi – Kasulu – Kasesya road, which will receive traffic from the above routes to Zambia and the SADC region		
Description of national project plan	The planned works are critical, as this will improve efficiency of Zambia and the SADC region as a whole		
Current status	Detailed design has been completed, ongoing road works in some road sections as described above		
Planned or actual year of commencement	2013		
Planned or actual year of completion	2016		
Next steps	Secure financing for the road section		
Business model	Public financing/ procurement		
Implementing agency	TANROADS through Ministry of Works		
Main parties in place	Government of Tanzania through the Ministry of Works and with TANROADS as the executing agency		
Main parties to be procured	Civil works contractors		
Technical/operational notes	Awaiting financing and procurement		
Available project documentation	Detailed design reports and tender documents		
Funding status and interventions for which financing is required	Upgrading works		
Revenues for repayment of financing	Public financing, loans or grants		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
34	None	34	
Source		Being sought	
Remarks	The completed upgrading of the road section will enhance trade facilitation between Tanzania and neighbouring countries		

SADC Diagnostic Report No. MSP19

Project title	Nakonde-Tunduma OSBP		
Project contact			
Project sponsors	TMSA		
Sector	2.1 Transport – Border Posts		
Corridor	Dar-es-Salaam Corridor		
Project location	The Tunduma border post is located in Mbozi district, Mbeya region, some 103 km from the Mbeya Municipality. The Nakonde border post falls under the Nakonde district council of Zambia		
Participating countries	Tanzania, Zambia		
Project objectives	To achieve a fast and unobstructed flow of traffic through the OSBP		
Project description	Construction of Nakonde/ Tunduma OSBP		
Expected results	Increase flow of goods through the border post		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	Being implemented		
Planned or actual year of commencement			
Planned or actual year of completion			
Next steps	Finalising the construction		
Business model			
Implementing agency			
Main parties in place	MoU signed between Tanzania and Zambia		
Main parties to be procured			
Technical/operational notes	Tunduma-Nakonde (Tanzania-Zambia) OSBP under development with support from TMEA and JICA. Feasibility study completed and design under consideration. The provision of infrastructure on Zambia's side was outsourced to a private company and is under construction. Tanzania's enabling law will be passed through the EAC OSBP law, while Zambia's enabling law has already been enacted.		
Available project documentation	Needs assessment done by Tom O. Oketch and Associates, November 2010		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
8			
Source			
Remarks	Government concession with Five Borders Co		

SADC Diagnostic Report No. MSP33

Project title	Cargo freight stations at Kisarawe, Dar-es-Salaam
Project contact	Tanzania Ports Authority
Project sponsors	Government of Tanzania
Sector	2.5 Transport – Ports
Corridor	Central Corridor
Project location	Kisarawe, 35 km from the Dar-es-Salaam port
Participating countries	Tanzania, Zambia, Malawi DRC, Malawi
Project objectives	Provision of a dry port on the outskirts of Dar-es-Salaam, as an extension of the port for container and vehicle traffic, both local and for transit to landlocked countries, to facilitate the decongestion of the Dar-es-Salaam port and the city in general
Project description	• Rail shuttle transport link • Re-alignment of existing container yards at the Dar-es-Salaam port • New dry port terminal • New truck road access • New mainline (RAHCO and TAZARA) and spur lines • New freight stations, as well as customs, clearing and forwarding buildings • New truck parking spaces and other associated facilities
Expected results	• Create additional cargo storage space , improve dwell container time and ship turn-round time, hence enhancing the port's operational efficiency • Lower shipping freight rates as a result of reduced waiting time for ships in the port and increased shiploads • Reduce transit time, permitting movement in most tides and at night • Greater port throughput capacity arising from the efficient use of CFS • High rating of the port in terms of safety considerations • Generate revenue from handling and storage operations and create more employment • Provide cost-effective transport and a total logistical chain • Serves the economies of Tanzania and its landlocked neighbouring countries
Ongoing and related activities in SADC/Tripartite region	The ongoing projects related to this project are: • The strengthening/conversion of general cargo berths 1 to 7 in the Dar-es-Salaam port into dedicated berths for bulk carriers and RoRo vessels • The dredging of the Dar-es-Salaam port entrance channel
Description of national project plan	The project is under consideration in line with the Ports Master Plan, the FYDP 2011/12 – 2015/16 and the Public-private Partnership Policy
Current status	Feasibility and design studies completed
Planned or actual year of commencement	2012/13
Planned or actual year of completion	2014
Next steps	Procurement of consultant to undertake the feasibility study by 2011/12. Conduct a detailed assessment of all economic, financial and technical aspects for developing a dry port which will deliver best value for money
Business model	Public-private partnership
Implementing agency	Tanzania Ports Authority, TANROADS, Ministry of Infrastructure Development
Main parties in place	Negotiations between government and interested investors to implement the project
Main parties to be procured	• Consultant for feasibility study appointed early in 2012 • Project developers to follow
Technical/operational notes	Pre-feasibility study completed. Call for EoI sent in October 2011 for interested consultants to undertake a full feasibility study
Available project documentation	World Bank Pre-feasibility Study Report, CDS Action Plan Vol 1 Appendix A, Tanzania Ports Authority Development Plan, Ports Master Plan 2009 and Pre-feasibility Study Report 2010
Funding status and interventions for which financing is required	Construction work and operations
Revenues for repayment of financing	To be established by the feasibility study

Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
According to the Port Master Plan 2009 – 2028, a total of US$120 million is required for development of the project	None	US$120 million	
Source	None yet		
Remarks			

SADC Diagnostic Report No. MSP34

Project title	Berths at Kigamboni to expand the Dar-es-Salaam port		
Project contact	Tanzania ports Authority P. O. Box 9184 Dar-es-Salaam		
Project sponsors	The project to will be implemented under a public -private partnership arrangement (TPA/public-private partnership/donors)		
Sector	2.5 Transport – Ports		
	Dar-es-Salaam Corridor		
Project location	Dar-es-Salaam		
Participating countries	Tanzania, Zambia, Malawi, DRC, Malawi		
Project objectives	Provision of a news berth to meet forecasted cargo traffic growth in the near future. The new berths are expected to handle dry bulk, container and liquid bulk. The plan is to develop a container quay with a capacity of handling 1,500 TEUs/m/yr and a motor-vehicle quay with capacity of 3,330veh/m.		
Project description	The Tanzania Ports Master Plan (2008 – 2028) identified potential areas for the expansion of the Dar-es-Salaam port footprint to accommodate forecasted traffic cargo flows. The new area is on the opposite side of the existing port at Kigamboni areas 1 -3, with the following estimated dimensions: Area 1 with a quay length of 1 700 m and 60 ha, Area 2 with a 1 300 m quay and 35 ha and Area 3 with a 1 700 m quay and 65 ha		
Expected results	• Reduced overall port staying time and ship turn-around time • Lower shipping freight rates as a result of reduced waiting time for ships in the port and increased shiploads • Reduce transit time, permitting movement in most tides and at night • Greater port throughput capacity arising from the efficient use of berths with more freedom of movement through the channel • High rating of the port in terms of safety considerations • Will attract bigger ships and trans-shipment cargo • Generate more revenue • Provide cost-effective transport and a total logistical chain • Serves the economies of Tanzania and its landlocked neighbouring countries • Create direct and indirect employment opportunities • Facilitate least freight costs for both imports and exports. Enhancing cost-effective farming, and trading at commercial and subsistence levels		
Ongoing and related activities in SADC/Tripartite region	The ongoing activities related to this project are: • The strengthening/conversion of general cargo berths 1 to 7 in the Dar-es-Salaam port into dedicated berths for bulk carriers and RoRo vessels • The dredging of the Dar-es-Salaam port entrance channel		
Description of national project plan	Under consideration in the FYDP 2011/12 – 2015/16		
Current status	Concept stage		
Planned or actual year of commencement	2019/20		
Planned or actual year of completion	2022		
Next steps	Feasibility study		
Business model	Public-private partnership		
Implementing agency	Tanzania Ports Authority		
Main parties in place	Negotiations between the government and interested Investors in order to undertake the detailed study		
Main parties to be procured	Consultant for feasibility/detailed study and construction works		
Technical/operational notes	Suitable sites have been identified and the land acquisition process is underway		
Available project documentation	Tanzania Ports Authority Development Plan, Ports Master Plan 2009		
Funding status and interventions for which financing is required	Feasibility study consultant, detailed study and construction works		
Revenues for repayment of financing	To be established by the feasibility/detailed studies		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
The estimated total cost for developing two port terminals at Kigamboni in		US$657.2 million	

three phases is US$657.2 million			
Source			
Remarks			

SADC Diagnostic Report No. MSP55

Project title	Development of a deepwater port at Mwambani Tanga		
Project contact	Tanzania Ports Authority, Dar-es-Salaam, Tanzania		
Project sponsors	Tanzanian government, Tanzania Ports Authority		
Sector	2.5 Transport – Ports		
Corridor	Central Corridor		
Project location	Tanzania, Zambia, Malawi DRC, Malawi		
Participating countries	Tanzania		
Project objectives	The TPA's plan is to enhance the country's maritime port capacities in international trade transport facilitation, and to ensure that sufficient capacity is available to meet forecasted demand, without creating over-capacity		
Project description	The Mwambani Bay area, 10 km south of the existing port, is earmarked for Greenfield port and EPZ developments planned to be operational by 2016. The entrance to Mwambani Bay is about 1 000m wide, and an area of 174 ha has been acquired by TPA for this project. The port can be connected to the main road networks and the TRL rail system within 7 km, while the connection to TAZARA would require 350 km of new rail lines. The new port could either be concessioned to a single operator, or be split between three terminals, a specialist dry bulk, break bulk and container terminal. After the pre-rationalisation of the new port, probably in 2016, the lightering services at the existing port will mostly be used by dhows and some small coasters serving the local markets. Equipment can be relocated to the Mwambani port.		
Expected results	• Attract bigger ships, trans-shipment cargo and move traffic from the congested ports of Mombasa and Dar-es-Salaam • Generate more revenue • Create employment • Provide cost-effective transport and a total logistical chain Serves the economies of Tanzania and its landlocked neighbouring countries		
Ongoing and related activities in SADC/Tripartite region	Roads, rails and other ports along the Northern Corridor		
Description of national project plan	Under consideration in the FYDP 2011/12 –2015/16		
Current status	Feasibility and design completed		
Planned or actual year of commencement	2015		
Planned or actual year of completion	2020		
Next steps	To procure consultants for feasibility and detail design, as well as construction works		
Business model	Public-private partnership		
Implementing agency	Tanzania Ports Authority		
Main parties in place	Interested investors are being sought through public-private partnership arrangements. Development to take place in phases for three years, starting from 2011/12, under BOT arrangements		
Main parties to be procured	Consultants for detail design and construction works		
Technical/operational notes	Feasibility study completed in 2011		
Available project documentation	Ports Master Plan 2009 and Feasibility Study Report 2011		
Funding status and interventions for which financing is required	To procure consultants for detailed studies and construction works		
Revenues for repayment of financing	To be established by the detailed study		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
According to the Ports Master Plan, the project is estimated at US$88 million		US$88 million	
Source			
Remarks			

SADC Diagnostic Report No. MSP56

Project title	Development of new port at Mbegani Bagamoyo		
Project contact	Tanzania Ports Authority P.O. Box 9184 Dar-es-Salaam		
Project sponsors	Tanzanian government through the Tanzania Ports Authority		
Sector	2.5 Transport – Ports		
Corridor	Dar-es-Salaam Corridor		
Project location	60 km north of the Dar-es-Salaam port in Mlingotini, Bagamoyo		
Participating countries	Tanzania, Zambia, Malawi, DRC, Malawi		
Project objectives	Provision of a new port closer to the Dar-es-Salaam port, which will carter for the overflow forecasted traffic growth both container and other cargo after 2018. The project includes the provision of EPZ and other port-related facilities.		
Project description	A SWOT analysis indicated that the planned Mbegani port is in a good location with significant growth potential for container and vehicle handling. To be constructed in three phases: Phase 1 to be operational by 2018 and handle 6 000 TEUs and 100 000 vehicle units per annum, Phase 2 to be completed ny 2023 ando handle i 1.5 million TEUs and 175 000 vehicle units per annum and Phase 3to be completed by 2028 and increase TEUs to 2.8 million and vehicle units per annum to 270 000		
Expected results	According to the Port Master Plan, the financial internal rates of return (FIRR) are 70% in the high forecast and 44% in the low forecast. The Mbegani Bagamoyo port will provide a solution to the growing traffic numbers at the Dar-es-Salaam port. Other benefits include: • Matching development with technological changes in both port and shipping industries towards a hub port • Fast clearance of vessels and cargo • Reducing minimum cargo idle time in the transport intermodal centre • Attain high port performance efficiency and productivity • Improve ship turn-round time • Sharpening the competitive edges towards efficient saving of the regional countries • Facilitating the achievement of the government's Mini-Tiger Programme goals • Generate employment		
Ongoing and related activities in SADC/Tripartite region	Other roads, rails and ports in the Central and Southern Corridor		
Description of national project plan	Under consideration in the FYDP 2011/12 – to 2015/16		
Current status	Feasibility study and design completed		
Planned or actual year of commencement	2018		
Planned or actual year of completion	2021		
Next steps	Construction		
Business model	Public-private partnership		
Implementing agency	Tanzania Ports Authority		
Main parties in place	Negotiation between the government and interested investors in order to implement the project		
Main parties to be procured	Constructor		
Technical/operational notes	Feasibility study completed in 2010		
Available project documentation	Feasibility study 2010 and Preliminary hydrographical survey for water depth/drafts.		
Funding status and interventions for which financing is required	Consultant for Detail design in 2012 and construction works		
Revenues for repayment of financing	To be determined during the detailed design		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**

According to the Project Feasibility Study, the project costs are estimated at total US$1.6 billion		US$1.6 billion	
Source			
Remarks			

SADC Diagnostic Report No. MSP

Project title	Julius Nyerere International Airport (JNIA) development project comprising the Rehabilitation and extension of the existing Terminal II building and the construction of a complete new Terminal III building
Project contact	Ministry of Transport, Tanzania Airports Authority(TAA) and Tanzania Investment Centre(TIC)
Person/Entity	Public
Project sponsors	Tanzanian government
Corridor	Central (Dar-es-Salaam) Corridor
Participating countries	Tanzania
Project location	JNIA in Dar-es-Salaam
Sector	2.4 Transport – Air
Objectives	Restore the capacity of airport terminal facilities at the airport, which is the main gateway to Tanzania
Project description	Rehabilitation and extension of Terminal II building: • Renovation of exiting, approximately 14 000 sqm building • Construction of a new administration block Construction of the new Terminal III building: • A completely new (turn-a-key), approximately 70 000 sqm Terminal III building for eight million passengers • Air-side pavements for all facilities such as the apron, taxiways, aerobridges etc. • Land-side pavements such as for access roads and car parking • Development of aviation fuel farm, including a hydrant system
Expected results	• Improved efficiency and comfort to passengers • Improved capacity to handle more aircrafts • Improved security thanks to the implementation of security programmes
Ongoing and related activities in SADC/Tripartite region	• Construction of new Songwe Airport in Mbeya in the final stage with BADEA and government funding • Rehabilitation and upgrading of Kilimanjaro International Airport with ORIO-Dutch funding • Rehabilitation and upgrading of Kigoma, Tabora and Bukoba airports with World Bank funding
Status	Feasibility study and detailed design need to be done for most of the items. Only basic concepts available
Social and/or environmental impact statements	To be undertaken before project implementation
Next steps	Secure financing, transaction advisor, consultants and civil works contractors
Business model	A public-private partnership model
Implementing agency	Tanzania Airports Authority on behalf of the Ministry of Transport
Main parties in place	The Tanzanian government, through the Ministry of Transport with TAA as the executing agency. No feasibility study done.
Main parties to be procured	Transaction advisor, detailed engineering design consultant and civil/buildings works contractors
Technical/operational notes	Awaiting financing and procurement
Available project documentation	Only old Airport Master Plan (2000)
Funding status and interventions for which financing is required	Needed for project development and construction
Revenues for repayment of financing	The project will generate revenues through passenger service charges and rentals
Projects cost estimates	• Rehabilitation of existing Terminal II: Approximately US$20 million • New Terminal III: Approximately US$350 million No funds secured as yet.
Start and end period	2013 – 2016

SADC Diagnostic Report No. MSP

Project title	Mtwara Airport Development Project, including the construction of a new Terminal Building apron and taxiways, as well as the rehabilitation and extension/upgrading of runway apron and taxiways (to CODE 4E)
Project contact	Ministry of Transport, Tanzania Airports Authority(TAA) and Tanzania Investment Centre(TIC)
Person/Entity	Public
Project sponsors	Tanzanian government
Corridor	Mtwara Corridor
Participating countries	Tanzania
Project location	Mtwara Airport, Mtwara
Sector	2.4 Transport – Air
Objectives	• Improved efficiency and comfort to passengers upon construction of the terminal building • Improved safety and capacity to handle larger aircrafts upon runway extension and larger apron size
Project description	• Rehabilitation and construction of pavements on access road, passenger apron and taxiways • Construction of a new terminal building • Security improvement and purchase of new fire extinguishers
Expected results	• Improved efficiency and comfort to passengers • Improved safety and capacity to handle larger aircrafts • Enhancement of passenger traffic to Malawi, Mozambique, Zambia and the southern parts of Africa
Ongoing and related activities in SADC/Tripartite region	• Construction of new Songwe Airport in Mbeya in the final stage with BADEA and government funding • Rehabilitation and upgrading of Kilimanjaro International Airport with ORIO-Dutch funding • Rehabilitation and upgrading of Kigoma, Tabora and Bukoba airports with World Bank funding
Status	Feasibility study and detailed design need to be done
Social and/or environmental impact statements	To be undertaken before project implementation
Next steps	Secure financing, transaction advisor, consultants and civil and building works contractors
Business model	A public-private partnership model
Implementing agency	Tanzania Airports Authority on behalf of the Ministry of Transport
Main parties in place	The Tanzanian government, through the Ministry of Transport and with TAA as the executing agency. No feasibility study done to date.
Main parties to be procured	Consultant for design and civil/buildings works contractors
Technical/operational notes	Awaiting financing and procurement
Available project documentation	Only old Airport Master Plan, which may need to be reviewed
Funding status and interventions for which financing is required	Design and construction
Revenues for repayment of financing	The project would generate revenue through passenger service charges, landing/parking as well as rentals
Projects cost estimates	Estimated at US$70 million No funds secured to date
Start and end period	2013 – 2016

SADC Diagnostic Report No. MSP

Project title	Kigoma Airport Development Project, including the rehabilitation and upgrading of the runway, taxiways, apron (to CODE 4C) and the construction of a new terminal building, access road and car parking bay
Project contact	Ministry of Transport, Tanzania Airports Authority(TAA) and Tanzania Investment Centre(TIC)
Person/Entity	Public
Project sponsors	Tanzanian government
Corridor	Central (Dar-es-Salaam) Corridor
Participating countries	Tanzania
Project location	Kigoma Airport, Kigoma
Sector	2.4 Transport – Air
Objectives	• Improved efficiency and comfort to passengers upon the construction of terminal building and facilities • Improved safety and capacity to handle larger aircrafts through the increase of terminal and; apron size and the extension of the runway • Improved safety through the construction of a control tower
Project description	• Rehabilitation and construction of pavements on the access road, passenger apron and taxiways • Construction of new terminal building and control tower • Security improvement and purchase of new fire extinguishers
Expected results	• Improved efficiency and comfort to passengers • Improved safety and capacity to handle larger aircrafts • Improved safety • Enhancement of cargo shipment to refugee camps, including Rwanda and Burundi • Enhancement of passenger traffic to DRC, Rwanda and Burundi
Ongoing and related activities in SADC/Tripartite region	• Construction of new Songwe Airport in Mbeya in the final stage with BADEA and government funding • Rehabilitation and upgrading of Kilimanjaro International Airport with ORIO-Dutch funding • Rehabilitation and upgrading of Kigoma, Tabora and Bukoba airports with World Bank funding
Status	Detailed design and feasibility study already done, but it may need: • Reviewed designs for aprons, taxiways, turning bays and runway extension • Reviewed designs for terminal and cargo buildings • Reviewed designs for car parks and access roads
Social and/or environmental impact statements	Already done in 2009
Next steps	Secure financing, transaction advisor, consultants and civil and building works contractors
Business model	A public-private partnership model
Implementing agency	Tanzania Airports Authority on behalf of the Ministry of Transport
Main parties in place	Tanzanian government through the Ministry of Transport with TAA as the executing agency. No feasibility study done to date
Main parties to be procured	Civil/buildings works contractors
Technical/operational notes	Awaiting additional financing and procurement
Available project documentation	Detailed engineering designs
Funding status and interventions for which financing is required	Supervision consultancy and construction
Revenues for repayment of financing	The project would generate revenue through passenger service charges and rentals
Projects cost estimates	• Only about US$30 million available from World Bank and EIB • Total estimated project value is US$65 million
Start and end period	2012 – 2016

SADC Diagnostic Report No. MSP

Project title	The Civil Aviation Training Centre (CATC), Dar-es-Salaam
Project contact	Ministry of Transport, Tanzania Civil Aviation Authority
Personal/Entity	Public
Project sponsors	Tanzanian government
Corridor	
Participating countries	
Project location	Dar-es-Salaam, Tanzania
Sector	2.4 Transport – Air
Objectives	The Tanzanian government, through the Ministry Transport, aims to strengthen the Civil Aviation Training Centre in order to offer training to many local students, thus reducing the costs of training abroad
Project description	The Training Centre is situated at JNIA and offers various courses to both local students and students from abroad, including other SADC countries.
Expected results	Reduction in cost of training abroad
Ongoing and related activities in SADC/Tripartite region	Nil
Description of national project plan	The planned construction is important to the country, since the training of students in the aviation industry will bridge the shortages of skills in this sector
Status	
Social and/or environmental impact statements	To be undertaken before the project implementation
Next steps	Pre-feasibility to be undertaken, architectural drawings is underway and will be financed through local sources
Business model	A public-private partnership model is being considered
Implementing agency	Tanzania Civil Aviation Authority on behalf of the Ministry of Transport
Main parties in place	Tanzania Civil Aviation Authority
Main parties to be procured	Project consultancy, detailed design consultant and civil works consultant
Technical/operational notes	Financing and procurement
Available project documentation	Nil
Funding status and interventions for which financing is required	Construction
Revenues for repayment of financing	The project will generate revenue through school fees to be paid by students
Estimated total cost	Unsecured funds of US$9.3 million
Source	A public-private partnership model
Start and end period	2013 – 2015

SADC Diagnostic Report No. MSP: Sir Seretse Khama International Airport

Project title	Upgrading of Sir Seretse Khama International Airport (SSKIA)
Project contract	Ministry of Transport and Communication, Botswana
Sector	2.4 Transport – Aviation
Corridor	North-South Corridor
Project location	Gaborone, Botswana
Participating countries	Botswana
Project objective	To promote SSKA as one of the international air gateways into the SADC region
Project description	Extension/upgrading of SSKIA runway from 3 km to 4 km, the provision of a parallel taxiway and associated movement areas and the provision of a terminal building for the typical peak hour capacity (TPHP) of 976 passengers
Expected result	Position Botswana as a potential regional air passenger hub
Description of national project plan	Promote SSKIA as one of the international air gateways into the SADC region
Current status	Runway extension and associated movement areas has been completed. The passenger terminal building is planned for completion in August 2012.
Planned or actual year of commencement	Runway component May 2007; building component April 2008
Next step	
Business model	Government funded
Implementing agency	Ministry of Transport and Communications (MT&C) and Ministry of Infrastructure Science and Technology (MIST), Botswana
Estimated total cost US$ million	103.6

SADC Diagnostic Report No. MSP: Maun International Airport

Project title	Maun Airport upgrade
Project contract	MT&C, Botswana
Sector	2.4 Transport – Air
Corridor	
Project location	Maun, Botswana
Participating countries	Botswana
Project objective	Upgrading of airport to suit high-end entry point in order to promote Maun as a gateway to the Okavango Delta
Project description	Construction of a new runway, converting the existing runway into a full-length parallel taxiway, provide support facilities for operations of B737 or equivalent class aircraft, as well as the provision of a new terminal and support buildings
Expected result	Improved passenger facilitation, tourism, especially tourism traffic to the Okavango Delta and other tourist attractions, and trade
Description of national project plan	To facilitate the efficient throughput of passengers in order to promote Maun as a gateway to the Okavango Delta
Current status	Runway and associated works are planned for completion in August 2012. The construction of the terminal and other buildings are planned for commencement in June 2013
Planned or actual year of commencement	Civil works: March 2009, building: June 2013 (planned)
Next step	
Business model	Government funded
Implementing agency	MT&C, Botswana
Estimated total cost US$ million	134

SADC Diagnostic Report No.: Kasane International Airport

Project title	Kasane Airport update
Project contract	MT&C, Botswana
Sector	2.4 Transport – Air
Corridor	
Project location	Kasane, Botswana
Participating countries	Botswana
Project objective	Upgrade Kasane International Airport to as entry point for high-end tourism
Project description	Extension of runway to cater for B737 or equivalent class aircraft, as well as the provision of a new terminal and support buildings
Expected result	
Description of national project plan	To position Kasane as the airport entry point of choice into the Chobe/Livingstone and Victoria Falls tourism area
Current status	Pavements and support facilities are planned for completion in May 2013. The terminal building and associated buildings are planned for completion in December 2014
Planned or actual year of commencement	Civil works: November 2011 and buildings: June 2013 (planned)
Next step	
Business model	Government funded
Implementing agency	MT&C, Botswana
Estimated total cost US$ million	37.1

SADC Diagnostic Report No.: Francistown International Airport

Project title	Francistown Airport Reconstruction
Project contract	(MT&C, Botswana
Sector	2.4 Transport – Air
Corridor	
Project location	Francistown, Botswana
Participating countries	Botswana
Project objective	Reconstruction of the airport to cater for B737 or equivalent class aircraft, in line with development of business and mining activities in the area
Project description	Construction of new facilities: runway and associated movement areas, buildings and support facilities and security fence
Expected result	Improve the airport and re-align the airport infrastructure to accommodate traffic growth due to the development of business and mining activities
Description of national project plan	To facilitate efficient throughput of passengers in the northern part of Botswana
Current status	The project was completed in August 2011
Planned or actual year of commencement	August 2011
Next step	
Business model	Government of Botswana
Implementing agency	MT&C, Botswana
Estimated total cost US$ million	60.6

SADC Diagnostic Report No. MSP30

Project title	Botswana dry port at Walvis Bay		
Project contact	Ministry of Transport, Botswana		
Project sponsors	Government of Botswana		
Sector	2.3 Transport – Ports		
Corridor	Trans-Kalahari		
Project location	Walvis Bay port, Namibia		
Participating countries	Botswana		
Project objectives	To facilitate the import/export activities of SADC Member States in general		
Project description	Dry port location comprises an area of 36 200 sqm and is located at the south-eastern side of the Walvis Bay port, next to the Trans-Namib locomotive maintenance and road depots. It borders 5th Street, which eventually links with the Trans-Kalahari Highway		
Expected results	The development of this facility will reduce transport cost and time by providing access to the port on the Atlantic coast. This will increase the trade competitiveness of SADC, especially with countries in Europe and America. Furthermore, it will increase the contribution of the transport sector to GDPs		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Being considered in the Botswana Integrated Transport Policy		
Current status	Ongoing contract negotiations with a private party for the development and operation of the dry port		
Planned or actual year of commencement	2012		
Planned or actual year of completion	2013		
Next steps	Detailed design phase, construction and project operation		
Business model	Public-private partnership		
Implementing agency	Ministry of Transport and Communications, Botswana		
Main parties in place	Project team		
Main parties to be procured	Private sector		
Technical/operational notes			
Available project documentation	Dry Port Feasibility Study Final Report (2010)		
Funding status and interventions for which financing is required	Private sector funding		
Revenues for repayment of financing	Project operational revenues		
Estimated total cost	**Finance, secured**	**Finance, unsecured**	**Financier(s)**
P70 million	All		Private sector
Source			
Remarks	The dry port will enhance utilisation and competitiveness of the Trans-Kalahari Corridor		

SADC Diagnostic Report No. MSP37

Project title	Trans-Kalahari railway line and a port in Namibia		
Project contact	Ministries of Transport, Botswana and Namibia		
Project sponsors	Ministries of Transport, Botswana and Namibia		
Sector	2.3 Transport – Rail		
Corridor	Trans-Kalahari Corridor		
Project location	The corridor stretches from Gauteng, South Africa, through Botswana to Walvis Bay, western Namibia		
Participating countries	Botswana, Namibia		
Project objectives	New rail line to provide a new coal export route, but can also be used as a shorter route for container freight to Gauteng		
Project description	Construction of a new railway line to link up to rail line in Namibia		
Expected results	New coal export route for Botswana, or alternatively provide a west coast port for Gauteng		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Being considered in the Botswana Integrated Transport Master Plan		
Current status			
Planned or actual year of commencement	2012		
Planned or actual year of completion	2020		
Next steps	Recruit a transaction advisor to facilitate development of the project		
Business model	Public-private partnership		
Implementing agency	Ministries of Transport of Botswana and Namibia		
Main parties in place	In November 2010, Namibia and Botswana signed a MoU to cooperate in facilitating the development of the TKR. The MoU formalises the relationship between the countries with regards to the development of the railway line. To date, a project implementation structure was established comprising a Joint Ministerial Committee, Joint Steering Committee, Joint Technical Committee and Project Implementation Team		
Main parties to be procured			
Technical/operational notes	• The main constraint is the long distances when compared to competing routes (about 1 500 km) • Pre-feasibility study for the Trans-Kalahari railway line was completed in July, 2011 • A transaction advisor still need to be appointed • The two governments have agreed on the railway route alignment through Gobabis • Rail gauge still to be decided • Investment model still to be decided		
Available project documentation	Prefeasibility study, 2011		
Funding status and interventions for which financing is required			
Revenues for repayment of financing			
Estimated total cost	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
About US$15 billion	None	All	Public-private partnerships
Source			
Remarks			

SADC Diagnostic Report No. MSP38

Project title	A heavy haul railway line and a port at Ponta Techobanine, Mozambique		
Project contact	Ministries of Transport – Botswana, Mozambique and Zimbabwe		
Project sponsors	Governments of Botswana, Mozambique and Zimbabwe		
Sector	2.3 Transport – Rail		
Corridor	Maputo Corridor		
Project location	Techobanine, Mozambique, through Zimbabwe to eastern Botswana		
Participating countries	Mozambique, Botswana, Zimbabwe		
Project objectives	New rail line to serve as coal export route from Botswana and Zimbabwe to Mozambique. The aim is to develop a modern, high speed, heavy haul railway system to open the gateway to the Eastern markets.		
Project description	The Ponta Techobanine Project is a project to be developed in the three countries and it consists of onshore deep sea port designed to cater for various types of cargoes and heavy haul railway line linking Botswana, Mozambique and Zimbabwe		
Expected results	Zimbabwe, and Botswana, as landlocked countries, will benefit significantly from the extended inter-regional railway system that will link them to the deep-water port at Ponta Techobanine, Mozambique		
Ongoing and related activities in SADC/Tripartite region	Countries are in the process of formalising Implementation Framework		
Description of national project plan			
Current status	Project brief: The three countries are in the process of recruiting a consultant to carry out a pre-feasibility		
Planned or actual year of commencement	2012		
Planned or actual year of completion	2019		
Next steps	Pre-feasibility study, funding plan and detailed design phase, construction and implementation phase, project operational phase		
Business model	Public-private partnership		
Implementing agency	Transport Ministries of the three countries through a Joint Implementation Framework		
Main parties in place			
Main parties to be procured	Ministries of Transport, the national railway companies and the country-specific private sector companies		
Technical/operational notes			
Available project documentation	Ponta Techobanine Inter-regional Heavy haul Railway Line and Deepwater Port Project – Abridged Executive Summary (August 2010)		
Funding status and interventions for which financing is required	The three countries have agreed to finance the pre-feasibility study at a cost of US$1.8 million, equally shared among them		
Revenues for repayment of financing	Project will use coal as the anchor commodity		
Estimated total cost	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
US$7.0-11.0 billion	All	All	Private sector
Private listings	4 724		
Source			
Remarks	Railway line is needed to make deep-sea port feasible		

SADC Diagnostic Report No.

Project title	Platjan bridge		
Project contact	Ministry of Transport and Communication/Roads Department		
Project sponsors	Government of Botswana DDF		
Sector	2.2 Transport – Road		
Corridor	North-South Corridor		
Project location	Between the Botswana and South African border posts		
Participating countries	Botswana and South Africa		
Project objectives	The construction of an appropriate river-crossing structure will alleviate the unnecessary inconvenience and severe disruptions to the social and economic life of the people living within the catchment area of the project site. The crossing facilities will provide an uninterrupted and direct access to residents of both countries, as well as those travelling between the two countries. More so, this will help revive the developments in the nearby villages and towns.		
Project description	The proposed bridge construction, which is 120 meters long, consists of six 20 meter spans of reinforced concrete. The approaches will be improved to a cumulative length of 800 meters, and will be constructed to bituminous standard with a width of 7.5 meters with 2 meters sealed shoulders on either side		
Expected results	Permanent all weather concrete bridge in place		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan	Botswana to fully construct and finance the construction of the Platjan Bridge, whereas South Africa will fully construct and finance the other border bridge at Ramotswa		
Current status			
Planned or actual year of commencement	Planned to commence in the year 2012		
Planned or actual year of completion	Planned to be completed in the 2013		
Next steps	Following the approval of the draft final EIA report by South Africa, the project will be ready for construction		
Business model			
Implementing agency	Botswana Roads Department		
Main parties in place	Both countries		
Main parties to be procured	Ministry of Transport and Communication, Ministry of Finance and Development Planning		
Technical/operational notes	Verbal agreement currently in place, but the MoU and MoA are ready to be signed		
Available project documentation	Draft bridge drawings, Preliminary Design Report, EIA Scoping Report and Final Draft EIA Report		
Funding status and interventions for which financing is required	Project Memorandum submitted to the Ministry of Finance and Development Planning (MFDP) requesting project funding for construction		
Revenues for repayment of financing			
Estimated total cost (Pula million)	**Finance, secured (Pula million)**	**Finance, unsecured (Pula million)**	**Financier(s)**
		83 901 427.42	
Source			
Remarks			

SADC Diagnostic Report No. MSP (88) 6

Project title	Construction of the Kazungula Bridge, boarder facilities and access roads within Botswana and Zambia		
Project contact	Ministry of Transport and Communication/Roads Department		
Project sponsors	Government of Botswana		
Sector	2.2 – Transport		
Corridor	North-South		
Project location	Between Botswana and Zambia border posts		
Participating countries	Botswana and Zambia		
Project objectives	The construction of an appropriate river-crossing structure will alleviate unnecessary inconvenience and severe disruptions to the social and economic life of the people living in Zambia, Botswana and the rest of the SADC region. Residents of both countries, as well as those travelling between these destinations, will be provided with uninterrupted, direct access to both countries through the crossing facilities. The facilities will also alleviate the congestion of heavy vehicles, which usually take more waiting days to cross the border using the pantoon		
Project description	Construction of Kazungula Bridge, boarder facilities and 3 km access roads in Botswana and Zambia. The bridge, which is 923 m long with cable stays and a pre-stressed box girder with main spans of 129 m, crosses the Zambezi River at its confluence with the Chobe river. There is also a 1 923 mt rail line with 500 mt in Botswana and Zambia respectively		
Expected results	Permanent, all-weather concrete bridge, rail line, access roads and border facilities in place		
Ongoing and related activities in SADC/Tripartite region			
Description of national project plan			
Current status	The detailed design and feasibilities study has been completed. The estimated total cost of the project is US$272.5 million. The AfDB and JICA are committed to finance the project. Currently, the two governments are discussing the production of the bidding documents for the contractor and supervising consultant		
Planned or actual year of commencement	2013		
Planned or actual year of completion	2016		
Next steps	Establishment of the project office and EoI for design review consultant		
Business model			
Implementing agency	Both countries		
Main parties in place	Both countries		
Main parties to be procured	A contractor and a construction supervisor		
Technical/operational notes			
Available project documentation	The feasibility study documents		
Funding status and interventions for which financing is required	Sponsor Agreement has been signed by the two heads of states, and the Loan Agreement is will be signed in near future		
Revenues for repayment of financing	From toll tax revenues in both countries		
Estimated total cost (US$ million)	**Finance, secured (US$ million)**	**Finance, unsecured (US$ million)**	**Financier(s)**
		272.5 million	The governments of Botswana and Zambia, the AfDB and JICA
Source			
Remarks			

Annexure B: Road and Rail-based Port-specific Matrices

Table 6-7: 2009 Rail Based Port Specific Matrix

Destination/ Origin	Angola	Beira	Benguela	Botswana	Burundi	Cape Town	DRC	Dar-es-Salaam	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Walvis Bay	Zambia	Zimbabwe	Grand Total
Angola	0	-	19 599	0	0	-	0	-	-	-	0	-	0	19 599	0	-	-	8	-	3	-	20 193	-	-	0	4 169	3 894	169	0	0	-	0	0	67 633
Beira	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 172
Benguela	3 794	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 794
Botswana	0	-	-	0	0	-	0	-	-	-	0	-	0	-	0	0	-	2	-	13	-	-	-	56	0	1 680	-	0	1	0	56	15	512	2 334
Burundi	0	-	-	0	0	-	1	11	-	-	0	-	17	-	0	-	11	0	-	0	-	-	-	-	3	0	0	-	0	1	-	0	0	43
Cape Town	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12 754	-	-	-	-	-	-	-	12 754
DRC	0	-	-	-	0	-	0	618	-	-	0	162	12	-	0	-	-	0	-	10	-	618	-	-	60	5	214	-	1	0	-	124	65	1 889
Dar-es-Salaam	-	-	-	-	51	-	211	-	-	-	-	-	3 431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5 027	-	-	-	-	8 720
Durban	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12 754	-	-	-	-	-	-	-	12 754

Destination/ Origin	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara
Grand Total	3 665	683	8 483	3 046	3 794	1 610	1538	3649	4672	1 172
Zimbabwe	93	0	1 320	7	-	44	0	-	0	-
Zambia	149	0	1 232	113	-	23	43	-	73	-
Walvis Bay	-	-	-	-	-	-	-	-	-	-
Uganda	866	1	1 013	432	-	0	368	-	5	-
Tanzania	-	1	-	713	-	48	-	-	8	-
South Asia	0	41	0	-	-	-	0	-	28	-
South America	0	3	0	-	-	0	0	-	0	-
South Africa	-	3	-	20	-	296	-	-	2 044	-
Rwanda	-	0	-	267	-	0	-	167	0	-
Richards Bay	-	-	-	-	-	-	-	-	-	-
Port Elizabeth	-	-	-	-	-	-	-	-	-	-
N'zeto	-	-	-	-	-	-	-	-	-	-
North America	0	172	0	-	-	-	0	-	145	-
Namibia	391	0	1 475	0	-	0	78	-	4	-
Mtwara	-	-	-	-	-	579	-	-	-	-
Mozambique	688	0	1 892	2	-	18	109	-	0	-
Mombasa	-	-	-	561	-	-	-	-	-	-
Middle East	0	300	0	-	-	-	0	-	18	-
Malawi	-	0	-	44	-	0	-	-	493	1 172
Luanda	-	-	-	-	-	-	-	-	-	-
Kenya	-	5	-	0	-	24	-	3 431	4	-
Europe	0	128	0	-	-	-	0	-	1 499	-
Ethiopia	1 478	0	650	48	-	0	936	-	0	-
Eastern Asia	0	29	0	-	-	-	0	-	320	-
Durban	-	-	-	-	-	-	-	-	-	-
Dar-es-Salaam	-	-	-	561	-	-	-	-	-	-
DRC	-	0	901	251	-	0	-	-	4	-
Cape Town	-	-	-	-	-	-	-	-	-	-
Burundi	-	0	-	21	-	0	-	51	0	-
Botswana	-	0	-	0	-	0	4	-	9	-
Benguela	-	-	-	-	-	-	-	-	-	-
Beira	-	-	-	-	-	579	-	-	-	-
Angola	-	0	-	7	3 794	0	-	-	18	-

Destination/ Origin	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania
Grand Total	2 020	2 409	4 120	12 754	12 812	38	60 923	1992	3 968	1 618
Zimbabwe	0	122	-	-	-	0	1 291	0	60	9
Zambia	8	66	-	-	-	0	1 396	0	171	15
Walvis Bay	-	-	-	-	-	-	-	-	-	-
Uganda	0	50	-	-	-	2	436	50	9	109
Tanzania	2	-	-	-	-	0	740	-	-	0
South Asia	27	0	-	-	-	-	-	0	0	-
South America	0	0	-	-	-	-	-	0	0	-
South Africa	529	-	-	12 754	12 754	0	0	-	-	55
Rwanda	0	-	-	-	-	0	0	-	-	19
Richards Bay	-	-	-	-	-	-	1 0647	-	-	-
Port Elizabeth	-	-	-	-	-	-	1 0647	-	-	-
N'zeto	-	-	-	-	-	-	-	-	-	-
North America	268	0	-	-	-	-	-	0	0	-
Namibia	0	702	-	-	-	0	5 014	0	27	0
Mtwara	-	-	-	-	-	-	-	-	-	-
Mozambique	7	64	-	-	-	0	1 075	69	332	16
Mombasa	-	-	-	-	-	33	-	-	-	-
Middle East	1	0	-	-	-	-	-	0	0	-
Malawi	0	-	-	-	-	0	1 780	0	-	136
Luanda	-	-	-	-	-	-	-	-	-	-
Kenya	0	-	-	-	-	0	934	-	-	73
Europe	310	0	-	-	-	-	-	0	0	-
Ethiopia	0	1 405	-	-	-	0	76	196	1 000	0
Eastern Asia	631	0	-	-	-	-	-	0	0	-
Durban	-	-	-	-	-	-	10 647	-	-	-
Dar-es-Salaam	-	-	-	-	-	-	-	-	-	1 102
DRC	32	-	211	-	-	2	2 133	153	-	73
Cape Town	-	-	-	-	-	-	10 647	-	-	-
Burundi	0	-	-	-	-	1	1	0	-	5
Botswana	35	-	-	-	58	0	2 664	-	3	0
Benguela	-	-	-	-	-	-	-	-	-	-
Beira	-	-	-	-	-	-	-	-	-	-
Angola	170	-	3 909	-	-	0	797	1 524	2 366	7

Destination/ Origin	Angola	Beira	Benguela	Botswana	Burundi	Cape Town	DRC	Dar-es-Salaam	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Walvis Bay	Zambia	Zimbabwe	Grand Total
Uganda	0	-	-	0	42	-	861	-	-	13	0	162	140	-	0	0	-	0	-	0	0	-	-	-	611	32	0	0	272	0	-	0	2 133
Walvis Bay	-	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	-	58
Zambia	0	-	-	3	4	-	288	-	-	1 240	0	461	43	-	284	1	-	21	-	71	0	-	-	-	0	59	0	0	66	0	-	0	394	2 935
Zimbabwe	0	-	-	231	0	-	407	-	-	5	0	1 377	0	-	91	3	-	46	-	31	1 407	-	-	-	0	580	17	14	8	1	-	135	0	4 352
Grand Total	16 386	579	19 599	3 064	177	10 647	5 527	2 292	10 647	2 238	5 789	40 99	8 114	19 599	5 172	323	604	4 349	579	7 819	1 992	20 811	10 647	10 702	1 127	60 489	4 128	279	6 887	3 343	56	3 562	3 917	255 538

Table 6-8: 2009 Road Based Port Specific Matrix

Destination/ Origin	Angola	Beira	Benguela	Botswana	Burundi	Cape Town	DRC	Dar-es-Salaam	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Walvis Bay	Zambia	Zimbabwe	**Grand Total**
Angola	0	-	19 599	0	0	-	0	-	-	-	0	-	0	19 599	0	-	-	8	-	3	-	20 193	-	-	0	4 169	3 894	169	0	0	-	0	0	**67 633**
Beira	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1 172**
Benguela	3 794	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3 794**
Botswana	0	-	-	0	0	-	0	-	-	-	0	-	0	-	0	0	-	2	-	13	-	-	-	56	0	1 680	-	0	1	0	56	15	512	**2 334**
Burundi	0	-	-	0	0	-	1	11	-	-	0	-	17	-	0	-	11	0	-	0	-	-	-	-	3	0	0	-	0	1	-	0	0	**43**
Cape Town	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12 754	-	-	-	-	-	-	-	**12 754**
DRC	0	-	-	0	0	-	0	618	-	-	0	162	12	-	0	-	-	0	-	10	-	618	-	-	60	5	214	-	1	0	-	124	65	**1 889**
Dar-es-Salaam	-	-	-	-	51	-	211	-	-	-	-	-	3 431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5 027	-	-	-	-	**8 720**

Destination/ Origin	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East
Grand Total	**12 754**	**3 665**	**683**	**8 483**	**3 046**	**3 794**	**1 610**	**1 538**
Zimbabwe	-	93	0	1 320	7	-	44	0
Zambia	-	149	0	1 232	113	-	23	43
Walvis Bay	-	-	-	-	-	-	-	-
Uganda	-	866	1	1 013	432	-	0	368
Tanzania	-	-	1	-	713	-	48	-
South Asia	-	0	41	0	-	-	-	0
South America	-	0	3	0	-	-	0	0
South Africa	12 754	-	3	-	20	-	296	-
Rwanda	-	-	0	-	267	-	0	-
Richards Bay	-	-	-	-	-	-	-	-
Port Elizabeth	-	-	-	-	-	-	-	-
N'zeto	-	-	-	-	-	-	-	-
North America	-	0	172	0	-	-	-	0
Namibia	-	391	0	1 475	0	-	0	78
Mtwara	-	-	-	-	-	-	579	-
Mozambique	-	688	0	1 892	2	-	18	109
Mombasa	-	-	-	-	561	-	-	-
Middle East	-	0	300	0	-	-	-	0
Malawi	-	-	0	-	44	-	0	-
Luanda	-	-	-	-	-	-	-	-
Kenya	-	-	5	-	0	-	24	-
Europe	-	0	128	0	-	-	-	0
Ethiopia	-	1 478	0	650	48	-	0	936
Eastern Asia	-	0	29	0	-	-	-	0
Durban	-	-	-	-	-	-	-	-
Dar-es-Salaam	-	-	-	-	561	-	-	-
DRC	-	-	0	901	251	-	0	-
Cape Town	-	-	-	-	-	-	-	-
Burundi	-	-	0	-	21	-	0	-
Botswana	-	-	0	-	0	-	0	4
Benguela	-	-	-	-	-	-	-	-
Beira	-	-	-	-	-	-	579	-
Angola	-	-	0	-	7	3 794	0	-

Destination/ Origin	Angola	Beira	Benguela	Botswana	Burundi	Cape Town	DRC	Dar-es-Salaam	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Walvis Bay	Zambia	Zimbabwe	**Grand Total**
Mombasa	-	-	-	-	51	-	-	-	-	-	-	-	3 431	-	-	-	-	-	-	-	-	-	-	-	167	-	-	-	-	-	-	-	-	**3 649**
Mozambique	18	-	-	9	0	-	4	-	-	320	0	1 499	4	-	493	18	-	0	-	4	145	-	-	-	0	2 044	0	28	8	5	-	73	0	**4 672**
Mtwara	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1 172**
Namibia	170	-	-	35	0	-	32	-	-	631	0	310	0	-	0	1	-	7	-	0	268	-	-	-	0	529	0	27	2	0	-	8	0	**2 020**
North America	-	-	-	-	-	-	-	-	-	0	1 405	0	-	-	-	0	-	64	-	702	0	-	-	-	-	-	0	0	-	50	-	66	122	**2 409**
N'zeto	3 909	-	-	-	-	-	211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4 120**
Port Elizabeth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12754	-	-	-	-	-	-	-	**12 754**
Richards Bay	-	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12 754	-	-	-	-	-	-	-	**1 2812**

Destination/ Origin	Angola	Beira	Benguela	Botswana	Burundi	Cape Town	DRC	Dar-es-Salaam	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Walvis Bay	Zambia	Zimbabwe	**Grand Total**
Rwanda	0	-	-	0	1	-	2	-	-	-	0	-	0	-	0	-	33	0	-	0	-	-	-	-	0	0	0	-	0	0	-	0	0	**38**
South Africa	797	-	-	2 664	1	10 647	2 133	-	10 647	-	76	-	934	-	1 780	-	-	1 075	-	5 014	-	-	10 647	10 647	0	0	1 291	1 396	740	436	-	-	1 240	394	0	**60 923**
South America	1 524	-	-	-	0	-	153	-	-	0	196	0	-	-	0	0	-	69	-	0	0	-	-	-	-	0	0	0	-	50	-	-	-	-	**1 992**
South Asia	2 366	-	-	3	-	-	-	-	-	0	1 000	0	-	-	-	0	-	332	-	27	0	-	-	-	-	0	0	60	171	9	-	-	-	-	**3 968**
Tanzania	7	-	-	0	5	-	73	1 102	-	-	0	-	73	-	136	-	-	16	-	0	-	-	-	-	19	0	0	9	15	109	0	-	-	0	**1 618**
Uganda	0	-	-	0	42	-	861	-	-	13	0	162	140	-	0	0	-	0	-	0	0	-	-	-	611	0	32	-	272	0	0	-	0	0	**2 133**
Walvis Bay	-	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**
Zambia	0	-	-	3	4	-	288	-	-	1 240	0	461	43	-	284	1	-	21	-	71	0	-	-	-	0	59	0	0	66	0	-	0	394	0	**2 935**
Zimbabwe	0	-	-	231	0	-	407	-	-	5	0	1 377	0	-	91	3	-	46	-	31	1 407	-	-	-	0	580	-	14	8	1	-	135	-	0	**4 352**

Destination/ Origin	Angola	Beira	Benguela	Botswana	Burundi	Cape Town	DRC	Dar-es-Salaam	Durban	Eastern Asia	Ethiopia	Europe	Kenya	Luanda	Malawi	Middle East	Mombasa	Mozambique	Mtwara	Namibia	North America	N'zeto	Port Elizabeth	Richards Bay	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Walvis Bay	Zambia	Zimbabwe	Grand Total
Grand Total	16 386	579	19 599	3 064	177	10 647	5 527	2 292	10 647	2 238	5 789	4 099	8 114	19 599	5 172	323	604	4 349	579	7 819	1 992	20 811	10 647	10 702	1 127	60 489	4 128	279	6 887	3 343	56	3 562	3 917	255 538

Table 6-9: 2030 Road-based Port-specific Matrix

COMESA Destination	Total of Other	Angola	Botswana	Burundi	DRC	Eastern Asia	Ethiopia	Europe	Kenya	Malawi	Middle East	Mozambique	Namibia	North America	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Zambia	Zimbabwe
Angola	12 8391	0	0	0	0	40 657	0	22 197	0	0	219	54	0	54 161	0	11 103	0	0	0	0	0	0
Botswana	6 901	0	0	0	0	557	0	141	0	0	0	9	5	79	0	4 756	8	0	4	0	59	1 283
Burundi	307	0	0	0	0	111	0	60	45	0	75	0	0	2	2	0	0	9	0	3	0	0
DRC	27 113	0	0	14	0	20 622	0	0	90	0	0	0	37	0	148	18	4 861	0	0	0	388	935
Eastern Asia	128 690	17 406	0	235	775	0	369	0	14 573	1 593	0	6 772	0	0	36	70 228	0	0	10 110	5 368	1 053	172
Ethiopia	5 322	0	0	0	0	0	0	0	7	0	4 979	0	0	289	0	8	9	0	18	6	2	4
Europe	49 145	0	48	44	2 864	0	0	0	3 579	4 004	0	3 950	1 375	0	48	22 952	0	0	5 705	2 367	2 209	0
Kenya	9 505	6	1	57	798	979	42	2 133	0	166	108	9	1	258	525	59	64	479	1 976	1 446	332	66
Malawi	6 420	0	0	0	0	105	0	3 173	98	0	154	74	0	917	0	1179	0	264	187	0	93	176

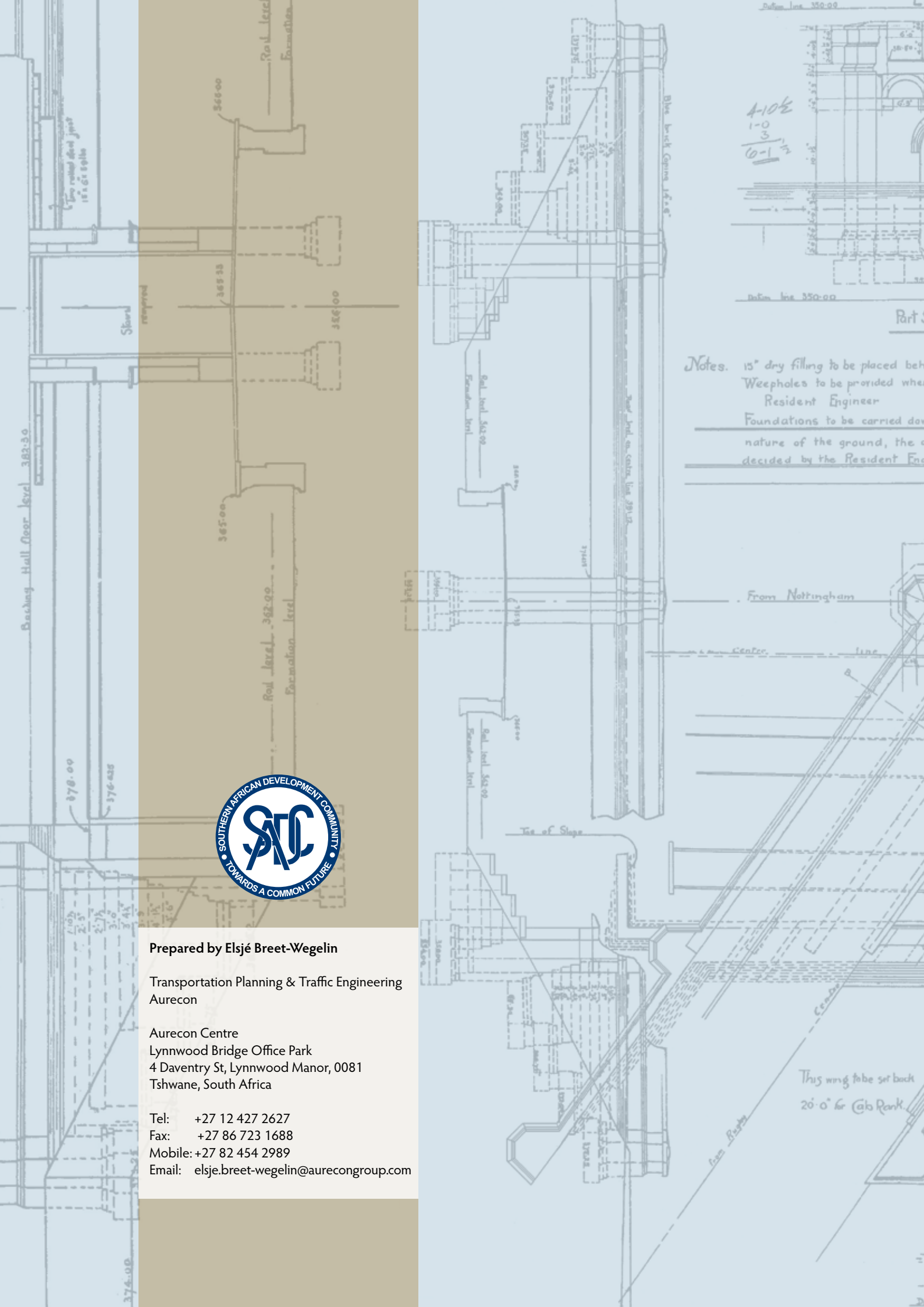
Middle East	54 023	625	80	0	1 530	0	2 404	0	5 856	1 504	0	2 001	0	0	1 168	27 854	0	0	5 336	0	5 665	0
Mozambique	18 774	82	37	0	0	3 421	0	0	0	1 851	526	0	30	605	0	10 852	0	1 302	68	0	0	0
Namibia	11 522	197	46	0	114	7 514	0	1 292	0	0	0	15	0	409	0	1 344	1	557	6	0	27	0
North America	20 681	8 129	188	11	165	0	6 453	0	269	632	0	0	1 885	0	0	1 284	0	0	1 237	0	0	428
Rwanda	655	0	0	0	7	456	0	0	1	0	162	0	0	8	0	4	5	2	1	9	0	0
South Africa	348 792	909	10 397	2	8 125	179 606	211	65 976	3 184	6 688	40 855	40	11 740	11 220	0	0	0	0	1 097	1 537	3 083	4 122
South America	15 427	0	0	1	0	0	0	0	409	0	0	708	109	0	2	11 679	0	0	1 590	884	45	0
South Asia	85 153	9 183	46	133	17 235	0	0	0	9 583	1 076	0	1 697	852	0	180	40 698	0	0	4 125	2	154	189
Tanzania	8 565	8	1	0	79	2 129	17	1 830	360	509	872	36	0	1 623	48	234	82	0	0	514	115	108
Uganda	9 965	0	0	173	3 168	80	0	683	753	0	4	0	0	0	3 663	103	0	0	1 337	0	1	0

Zambia	10 379	0	13	11	1 388	0	3	1 122	144	1 066	125	116	322	0	1	183	0	516	438	0	0	4 931
Zimbabwe	30 323	0	0	0	1909	0	1	11 860	0	341	311	445	0	12 732	0	2 554	0	0	143	2	25	0

Table 6-10: 2030 Rail-based, Port-specific Matrix

COMESA Destination	Rail Total	Angola	Botswana	Burundi	DRC	Eastern Asia	Ethiopia	Europe	Kenya	Malawi	Middle East	Mozambique	Namibia	North America	Rwanda	South Africa	South America	South Asia	Tanzania	Uganda	Zambia	Zimbabwe	
Angola	0								0											0	0		0
Botswana	2 003																		0		78	1 925	2 003
Burundi	47					15		15	0		17			0	0					0	0	0	47
DRC	70			0		0			0		5		0		0	12	0				53		70
Eastern Asia	8 565			184	2 747		4		152	49					243				3 510	196	1 340	140	8 565
Ethiopia	5								0						0	5			0	0	0	0	5
Europe	2 609			65	545				639	0					23				69	26	1 242		2 609
Kenya	3 057	0	0	0	0	186	0	914		0	1 242	20	0	53	0	22	0		0	620	0	0	3 057
Malawi	4 723					89		4 565	0		60	0		9		0			0		0	0	4 723
Middle East	1 595				0		0		0	0					1 035				0		560		1 595

Mozambique	0									0								0				0
Namibia	0				0													0		0		0
North America	2 668			0	2 577		0		3	0								13			75	2 668
Rwanda	225				0	62			0		162			1		0	0	0	0			225
South Africa	5 622			4	0		0		65	0					27			0	64	3 339	2 123	5 622
South America	149								78						0			0	27	44		149
South Asia	11 980			0	0				11 713	0					0			84	181	0	2	11 980
Tanzania	599		1			0	0	138	0	0	132			33	1	0	0		0	294		599
Uganda	2 767			0	0	80	0	266	2 384		19		0		0	18	0	0		0	0	2 767
Zambia	12 029		120	0	1 230		0	3 033	1	1 05	1 662	0	0		0	1 846		745			3 287	12 029
Zimbabwe	918						0	242		0	60	0		129		486				1		918
	59 631	0	121	253	7 099	432	4	9 173	15 035	154	3 359	20	0	225	1329	2 389	0	4421	1114	6 951	7 552	59 631



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