Chapter 2

Regional transport challenges within the Southern African Development Community and their implications for economic integration and development

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1. Introduction

With the Southern African Development Community (SADC) forging ahead with effecting deeper economic integration, progressive reduction of tariff and non-tariff barriers to trade becomes the key issues. Transport and communications systems within the region pose significant non-tariff barriers and so the SADC Protocol on Transport, Communications and Meteorology is the instrument through which transport and communications constraints are to be addressed.

The neo-functional integration approach is a relevant theoretical framework for analysing transport and communications issues. The approach is also known as integration through project cooperation in planning and implementing joint sectoral projects in areas that impact on overcoming development-related deficiencies in production and infrastructure. Transport and communications fall in this category of projects and therefore the SADC region stands to benefit from functional cooperation in this sector.

2. An overview of road and railway networks within SADC

Road and rail transport are the dominant modes of transporting goods and people within SADC. They handle the bulk of imports and exports in the respective countries, thus providing a vital transport link for the countries' diverse import and export commodities.

Most of the SADC countries are landlocked, making road and rail networks very important in linking countries to principal ports in South Africa, Mozambique, Angola and Namibia. The national road and rail systems provide links to all major centres in each country as well as to neighbouring countries. The road system provides access to remote districts, thus serving as strategic links to these areas.

2.1 Conditions of road networks and initiatives to improve networks

While SADC has an extensive road network, there is a variation between members in the general condition of their respective road networks. In general, less than 20% of total roads are paved[1]. Mauritius had 100% of its road network paved by 2005, and has the best road conditions with 95% rated as in good condition. Botswana ranks second best with 94% regarded as in good condition although only 36% was paved by 2004. In some countries (*viz*: Namibia, South Africa, Swaziland and Zambia), despite the low percentage of paved roads, the networks are considered to be in good condition. The condition of a number of road networks in individual countries has improved greatly due to the construction, rehabilitation and maintenance of inter-country regional corridors. However, a number of road networks in some countries are still in unsatisfactory conditions due to floods, neglect and lack of maintenance, thus deteriorating at alarming rates. The prolonged civil wars in Mozambique, Angola and the DRC resulted in significant damage to road and rail networks in these countries, and the effects continue to be felt despite current initiatives to rebuild the networks. Niekerk and Moreira (2002:17) and SADC (2007:54) note that unsatisfactory network conditions have also been due to increased diversion of rail freight to road transport which puts pressure on roads, as well as overloading by transporters which reduces the economic life of road infrastructure.

Each SADC country has been taking to rehabilitate, upgrade and maintain existing road networks as well as construction of new roads. For example, in Lesotho, the road network is constantly being expanded and upgraded, especially with the Lesotho Highlands Water Project. Development of road network seeks to access the more remote areas. In Madagascar, reforms and rehabilitation are taking place through the Transport Sector Programme. In Mozambique, the Roads and Coastal Shipping Programme led by the World Bank has made developing the internal transport system a priority. Periodic and routine maintenance and rehabilitation are planned for by the government with annual targets set. In Swaziland, resources have been allocated for repair and maintenance of existing roads as well as for paving

[1] The most recent year for which statistical data is available for the percentage of paved road varies between countries, e.g. for Mauritius it is 2005; for Botswana it is 2004; for Malawi and Tanzania it is 2003; for Namibia and Zimbabwe it is 2002; for Angola, South Africa and Zambia it is 2001 and for Lesotho and Mozambique it is 1999 (SADC 2005 & 2006; World Bank 2007; Mutambara 2004).

more roads. Resources are also being made available for roads to provide rural communities with access to the main road network. In Tanzania, the government has a road upgrading and rehabilitation programme to improve accessibility to economically productive areas, the implementation of which began in 2001 (SADC 2006; 2007a).

Initiatives to rehabilitate, upgrade and maintain road networks have to an extent taken off, in part, because countries have, as per Chapter 4 Article 4.4 of the SADC Protocol on Transport, Communications and Meteorology, established the institutional arrangements (*viz*: Roads Boards, Autonomous Road Authorities, and Road Funds) needed to oversee, construct, manage, maintain and regulate road networks on a commercial basis. For SADC countries which are also members of the Common Market for Eastern and Southern Africa (COMESA), the encouragement to establish these institutions has also come from COMESA since the management and funding of road infrastructure in COMESA have always been linked with establishing these institutions (COMESA 2004:9).

The establishment of dedicated Road Funds and Roads Boards with active private sector participation was evident in Lesotho, Mauritius, Malawi, Mozambique, Namibia, South Africa, Tanzania and Zambia. Autonomous Road Authorities had been established in Malawi, Mozambique, Namibia, South Africa and Tanzania, while the other countries were processing legislation required to effect the reform (SADC 2002; 2006; 2007a; Van Niekerk and Moreira 2002:61, 62). Positive effects of these institutions are found, in for example, Malawi where, through its National Roads Authority set up in 1997, a number of roads have been constructed and rehabilitated since 2000. In Namibia, the Roads Authority was established in 2000 and since then routine maintenance is contracted out through it. In South Africa, the National Roads Agency manages the national road network. The formation of Tanzania Roads Agency has improved road maintenance (SADC 2005; 2006; 2007a).

Governments within SADC have realised the importance of public-private sector partnerships in infrastructure provision and SADC (2002) notes that governments agreed that policy reforms were needed so as to promote 'market-based and private sector-led infrastructure and private service provision as well as divestiture by governments'. Promoting private sector participation in road infrastructure

provisioning is in line with Chapter 2 Article 2.4 Paragraphs (i) and (j) of the SADC Protocol on Transport, Communications and Meteorology.

While the involvement of the private sector in financing road infrastructure has been slow, increased private sector involvement has been evident in some countries. For example, currently in South Africa, delivery of infrastructure and services is based on public-private partnerships while government is confined to policy, planning and regulation. In Swaziland, the private sector is earmarked for an increasing role in the operations of roads and government planned to complete the privatisation of maintenance for the main road network during 2000. In Zambia, the Road Sector Investment Programme is in place and aims to commercialise road maintenance and ensure availability of resources from both the public and the private sector. Identified investment opportunities in which the private sector can actively participate are in road rehabilitation, maintenance and consultancy. In Madagascar, the country focusses on creating independent agencies through partnerships with private sector to be involved in rehabilitation and maintenance of infrastructure and equipment through privatisation, concession or leasing (SADC 2002; 2006; 2007a).

2.2 Conditions of rail networks and initiatives to improve networks

SADC has an extensive railway network which complements road networks to move millions of tons of freight all year round. For many years, the conditions of some of the railway networks in the region have been deteriorating since track maintenance was being deferred due to lack of funding. Angola and the DRC have the worst rail network conditions due to the long periods of civil war which damaged most of their infrastructure. In Madagascar, there is a need to rehabilitate infrastructures and equipment and huge sums of money are needed for urgent works. In Zambia, there is a vital need to rehabilitate and keep the network in good working order as it handles huge volumes of goods on local and international routes (SADC 2006; 2007a). Van Niekerk and Moreira (2002:18) observe that performance standards of rail transport within SADC have declined due to, among other things, frequent unavailability of appropriate wagons, poor maintenance of tracks, border delays, unpredictable delivery times, and difficulties in obtaining information on wagon and consignment. However, SADC (2006; 2007a) notes that the conditions of some rail networks have been improving due to the construction, rehabilitation and

maintenance of SADC inter-country regional corridors. This is evident in, for example, Malawi, Mozambique, and Tanzania.

Governments have taken initiatives to invite and encourage private sector participation in railway network development so as to improve conditions of railway infrastructure and achieve sustainable commercial viability. This is being done through joint venture partnerships with the private sector or concessioning[2] the railway infrastructure. For example, the Mozambique government privatised the EP (CFM) railway operations through long term lease concessions to a consortium of companies. Other railway systems concessioned are the Ressano Garcia line and the Sena line. The Madagascar government established a 2003-2008 programme aimed at handing over management of railway to private entities. In Malawi, Malawi Railways became the Central East African Railways Company and became fully operational as a private company in 2000 (SADC 2002; 2006; 2007a; Van Niekerk and Moreira 2002:61-62).

In South Africa, rail network falls under the control of Spoornet and the South Africa Rail Commuter Corporation of which the former runs an extensive network throughout the country. In Tanzania, both the Tanzania Railway Corporation and the Tanzania-Zambia Railway were up for privatisation by 2002. In Zambia, the Zambia Railways was concessioned in 2003 to a consortium of companies and is now known as the Railway Systems of Zambia. A rail line linking Zambia and Tanzania underwent privatisation and was to be leased to the private sector (SADC 2002; 2006; 2007a; COMESA 2004:9-10). In Zimbabwe, the Bulawayo-Beitbridge line which links Zimbabwe and South Africa was concessioned in 1999. Angola and Mauritius have passed Port Authority Acts (SADC 2002; 2006; Van Niekerk and Moreira 2002:62).

The SADC Railway Restructuring Programme is an initiative to increase autonomy of railways and thus increase private sector involvement in the provision, operation and management of railway systems. This initiative is in line with Chapter 13, Article 13.6 of the SADC Protocol on Transport, Communication and Meteorology. For SADC

[2] The concessionaire will provide the railway services for a specified period, has the responsibility for financing specified new investment, and must transfer the railway infrastructure back to the government on the expiration of the agreement (SADC 2002). The private operator retains ownership over any improvements made during the concession period.

countries which are also members of COMESA, measures to improve rail networks have benefited and been complemented by initiatives by COMESA, for example the COMESA Infrastructure Priority Investment Plan, which, among other things, seeks to identify and address the issue of missing railway links in various corridors (COMESA 2004:10).

2.3 Challenges in private sector participation in road and rail infrastructure provision

As SADC (2002) rightly argues, the private sector has finance, skills and technology to more easily transform and modernise the transport and communication sector so that it performs efficiently. Deloitte (undated) notes that with private sector participation in infrastructure provision, costs of the investment are spread over the lifetime of the asset, thus allowing infrastructure projects to be brought forward compared to the traditional pay-as-you-go way of financing infrastructure projects which governments often adopt when they provide infrastructure. Furthermore, the private sector often has a track record of on-time, on-budget delivery compared to the long and expensive delays often experienced when governments provide infrastructure. Certain risks are transferred to the private sector, thus providing an incentive for assets to be properly maintained, while the cost of infrastructure can be lowered by reducing both construction costs and overall lifecycle costs.

Despite the possible positive effects of private sector participation in infrastructure development and government initiatives to invite and encourage private sector participation in road and rail infrastructure development in SADC, the response has generally been slow and this has negatively affected the pace at which infrastructure has been developed. Private participation in infrastructure (PPI) and public-private sector partnerships (PPPs) as investment methods in infrastructure development within SADC face challenges related to, among other things, government agencies or departments which generally lack skills required to drive the PPPs; in some cases there is lack of political will; the limited PPP experience that countries have, create an element of risk and fear by the private sector; substantial capital investment is needed and there is always increased competition for limited investment and financial resources. To these can be added weak and ineffective legal, regulatory and enforcement frameworks to support complex PPP ventures, government/political interference with the autonomy of PPPs, fluctuating budgetary allocations or non-

availability of government funds for PPPs initiated but requiring government support; high levels of political uncertainty in some countries which make cross-border financing of trans-boundary road and rail projects risky, lack of multilateral agreements amongst affected states to jointly implement and finance trans-boundary projects, difficult access to long-term capital at affordable rates due to the underdeveloped local capital markets, and lack of bankable projects that can be marketed for investment by interested parties (Madzongwe 2005; Salomao 2008; Viljoen Undated; Shaw Undated).

3. A regional approach to infrastructure development within the SADC region

The Southern African Development Coordination Conference (SADCC) was transformed into Southern African Development Community (SADC) in August 1992. While the thrust of the regional grouping shifted to trade and market integration, the spirit of collective self-reliance and sectoral coordination remained. Therefore cooperation and coordination in infrastructural development projects continued as it was still regarded as important in providing a basis for the development of the region. The rationalisation and centralisation of the SADC Programme of Action in 2004 saw the setting up of four directorates at the SADC Secretariat to implement the SADC Programme of Action instead of continuing to have specific countries coordinating specific sectoral projects (see Table A-1, Appendix 1).

3.1 Theoretical justification for a joint approach to sectoral projects

The neo-functional integration model provides justification for the joint approach to sectoral projects which SADC has adopted and continues to pursue through the four directorates. The approach originates in the functionalism of Mitrany (1943) and Haas (1972). It is argued that the economic integration process can begin from functional cooperation, where cooperation by countries in one sector, for example, transport, could spur on and necessitate further cooperation in other areas and later facilitate economic integration through spill-over effects of cooperation in the sectoral projects.

Stewart and McCarthy (1995) and Balassa and Stoutjesdyk (1975) note that this approach is also known as integration through project cooperation involving

cooperation in planning and implementing joint projects or schemes between countries in areas such as transport, communications, water, mining, and so forth. Davies (1994) observes that the model gives priority to cooperation of joint projects that aim at overcoming underdevelopment-related deficiencies in the spheres of production and infrastructure.

It is important to note that the selection of projects should be closely adjusted to meet functional requirements of countries involved and to focus on those areas where there are possible benefits for all parties involved. According to Haarlov (1988), agreements can range from matching of under-utilised capacity in one country with needs in another, and specialisation or complementarity agreements between existing or planned industries to the establishment of plants that can supply the needs of the whole region.

A number of factors that determine the success of the model have been cited by various authors, viz (i) cooperation should begin with areas like infrastructure that are not politically controversial so as to avoid political frustrations that arise as a result of lack of immediate benefits from a free trade area; (ii) having spill-over effects from one area makes it necessary to intensify cooperation and gradually spread it to cover other sectors as well; (iii) challenging existing nationally-based power structures and special interest groups should be avoided; (iv) adopting mutually reinforcing complementary measures and policies that increase demand for goods and services so that the improved regional infrastructure can be of value in the regional integration process; (v) phasing in programmes that address critical barriers to regional integration; (vi) encouraging subgroups of two or more countries to integrate more rapidly than others where necessary (without necessarily forming a separate regional grouping) whenever they perceive mutual benefits (variable geometry), thus countries which are eager to proceed more quickly would not be held back by the more cautious or reluctant ones; and (vii) geographic proximity of participating countries as well as cultural and historical links (Haarlov 1988; Stewart and McCarthy 1995).

The neo-functional integration model gives rise to economic benefits. For example, functional cooperation in projects can help to prepare the region for market integration. The loose, function-based model helps to develop regional political

cohesion which is necessary for the countries to move to the more comprehensive market-driven integration approach. The project-orientated nature of the approach may also serve to provide the necessary physical requirements for balanced and desirable higher-order market integration in the long term. For example, by improving and upgrading transport, communications or electricity-generating infrastructure or availability of water in all participating countries, locational decisions of firms may be influenced positively and industrial development depolarised (Stewart and McCarthy 1995).

Balassa and Stoutjesdyk (1975) note that the ripple effects of the projects can bring economic benefits if production on a regional scale leads to cost savings compared to production on a national scale, taking into account production and distributional costs. Cost savings can be achieved directly through large-scale operations, fuller utilisation of existing capacity and greater specialisation in production, joint management and coordinated use of jointly owned resources like water basins and lakes. Cost savings may also be achieved through coordinated planning, construction and operation of transport facilities, for example regionally integrated railway networks with identical railway gauges, regional shipping companies and integrated highway and communications systems. Such coordinated investments in transport and communications may have beneficial effects of an indirect nature in promoting trade among the partner countries. The improvement of intra-regional trade will help to facilitate deeper integration.

It has also been noted that the sector-by-sector approach minimises the problem of distributing costs and benefits among member states. It also circumvents the problems inherent in the ceding of powers from national to supranational institutions. It also holds more promise as it presents integration from below (Haarlov 1988 cited in Ostergaard 1993).

Despite the relevance of the neo-functional model, criticisms have been levelled against this model. For example, the model has the implicit assumption of a direct link between project cooperation and integration. Stewart and McCarthy (1995) argue that while project cooperation has the potential to reduce real barriers to intra-regional trade and may contribute towards the generation of a common regional identity, this may not in itself lead to any deeper integration.

Ostergaard (1993:41) notes that interest groups, which are the major force in neo-functional integration, have to be properly organised and active. However, such highly organised groups may not necessarily be found in developing countries, and as a result, the head of states or governments become the sole and supreme decision-making authority. Therefore the integration process initiated will either stand or fall depending on whether or not cordial relations are maintained between the personalities concerned.

There are complex and time-consuming negotiations at state, industry and firm level if an agreement is to be concluded. If countries regard the project as a zero-sum game, then problems are bound to arise and negotiations may stall. Some projects could be too ambitious and thus equitable distribution of costs and benefits could be quite a challenge (Haarlov 1988:24; Haarlov 1997:47-50; Balassa and Stoutjesdyk 1975:50-55).

Despite the criticisms, the neo-functional integration model is relevant for SADC's approach for a joint infrastructure development approach to try and address the transport and communications constraints the region faces. The joint approach would help the region to address the transport problems more easily and faster as resources are pooled. The ultimate effects of these initiatives are to boost traffic and capacity, improve linkages between countries, reduce transport and communication costs, and improve transport reliability and efficiency within the region. This would help to reduce transport-related investment risks, thereby helping the region to provide much-needed support to the current industrial base as well as to build a favourable investment climate.

3.2 The regional joint approach to transport infrastructure development

With the transformation to SADC, Mozambique continued to be in charge of the SADC transport and communication coordinating unit (SATCC) which was responsible for the region's transport and communication. In line with the regional grouping's spirit of cooperation and coordination in sectoral projects The SADC Protocol on Transport, Communications and Meteorology was signed on 24 August 1996 in Maseru, Lesotho, as the instrument through which transport and

communications constraints were to be jointly addressed within the SADC region. This protocol entered into force in 1998.

Through the protocol (Chapter 2, Article 2.3), an efficient, cost-effective and fully integrated infrastructure will be provided to meet the needs of the region in terms of service standards, adequacy and capacity. Mobilisation of resources for infrastructure development is to take the form of public-private sector partnerships with strategic partnerships between government and a responsible and competent regional private sector, as well as partnerships between international cooperating partners and regional stakeholders (Chapter 2, Article 2.4 Paragraphs (i) and (j)).

The SADC joint approach to transport infrastructure projects led to constructing inter-country regional transport corridors. Some of the projects were completed as far back as 1999 while others are still underway. Eight SADC countries are also members of COMESA, which through its Sub-Saharan African Transport Programme (SSATP), also implements and supports the inter-country corridor approach as one of the most effective methods of transport facilitation in a regional grouping (COMESA 2004:10). In this regard therefore, some of the SADC inter-country regional transport corridors are recognised and supported financially within COMESA. Therefore, to date, most of SADC's strategic corridors have been equipped with modern technology.

The inter-country transport corridors are meant to enhance regional cooperation and integration and to stimulate economic development and promote tourism. As a result, a number of inter-country transport corridors are being transformed into regional development corridors and spatial development initiatives because SADC's focus is no longer sorely on investment to develop its ports and the connecting road and rail network systems as was before – this is now being done in conjunction with developing and promoting investment opportunities.

Thus, regional development corridors and spatial development initiatives now serve a dual purpose: (i) to serve as effective transport and communication networks that facilitate intra-regional trade and integrate regional countries; and (ii) stimulate investment in sectors along the corridors and help develop the region as investment opportunities can be harnessed more easily due to easier transport and access to resources, markets and ports. In this regard, the development corridors and spatial

development initiatives become defined anchor projects around which business and development-related projects would be built. The regional trunk road and rail network in these corridors continue to be developed so as to reduce non-tariff barriers and disruptions.

By 2006, ten development corridors were in place, that is the Beira and Zambezi Development Corridors which link Malawi, Mozambique, Zambia and Zimbabwe; the Limpopo Development Corridor linking Mozambique, South Africa, Zimbabwe, Botswana, and Zambia; the Lobito Development Corridor linking the DRC, Zambia and Angola; the Maputo Development Corridor which links South Africa and Mozambique; the Mtwara Development Corridor linking Malawi, Mozambique, Tanzania and Zambia; the Nacala Development Corridor linking Malawi and Mozambique; the Tazara Development Corridor which links South Africa, Zimbabwe, Zambia, and Tanzania; the North-South Corridor (the Durban Corridor) which links to other corridors such as the Trans-Kalahari, Beira, Dar es Salaam, Maputo, and Nacala Corridors and links Botswana, the DRC, Malawi, Mozambique, South Africa, Zambia and Zimbabwe; the Swaziland-South Africa Tourism and Biodiversity Corridor which links South Africa and Swaziland; and the Walvis Bay Corridor linking Botswana, Namibia, South Africa, Zambia, the DRC, Zimbabwe, and Angola. Two spatial development initiatives were in place by 2006, *viz*, the Okavango Upper Zambezi International Tourism (OUZIT) Spatial Development Initiative linking Angola, Botswana, Namibia, Zambia and Zimbabwe and the Lubombo Spatial Development Initiative linking Swaziland, Mozambique and South Africa (SADC 2005; 2006; Makumbe 2007:5; Van Niekerk and Moreira 2002:65).

4. Policy recommendations

Regional transport infrastructure is central to the sustainability of regional economic development, deeper market integration and intra-regional trade through facilities such as hubs, domestic internal transport links and regional development corridors. To this end, as shown in Section 3 above, the roadmap for SADC transport infrastructure development compelled the region to put in place a robust programme of corridor infrastructure development to facilitate and support the free movement of people, goods and services. However, on evaluating the performance of the corridors, Madakufamba (2008) notes that the Director of the SADC Infrastructure

and Services Directorate observes that the operations of some of the corridors are hampered by poor roads, bridges, curves and logistics. Furthermore, the performance of the corridors when compared to other corridors around the world reveal high costs of transportation due to poor levels of efficiency and poor turnaround, resulting in poor competitiveness of exports from the region in the global markets. Ragoobur (2008) notes that inadequate and inefficient transport networks continue to represent the biggest obstacle to doing business and trade within SADC as this entails high transport costs, which does not augur well for a conducive regional business and trade environment. COMESA (2004:2) and Van Niekerk and Moreira (2002:59) note that the cost of transport in the region constitute up to 40% of business (or the total value of goods sold within the sub-region) compared to an average of 12% in developed countries.

Given the above assessment, it is important to note that there is a serious need to make constant follow-ups and ensure implementation of the initiatives that have been put in place to monitor, improve, and address transport infrastructure effectiveness and efficiency problems. Initiatives that need close monitoring to ensure that they achieve the desired and expected results of improving the performance of the corridors include the Road Sector Development Programmes, the SADC Regional Infrastructure Development Plan, the Southern African Regional Action Agenda, the SADC Subsidiary Bodies in Infrastructure Development, the NEPAD transport programme, the NEPAD business foundation, and the SADC Corridor Strategy. The status of each of these should be reviewed constantly so as to identify constraints and address them timeously.

As Radebe (2008) and Salomao (2008) rightly note, the responsibility for ensuring the rapid expansion of infrastructure within SADC lies directly and largely with each member state, and therefore government budgets have to continue to be the main drivers of infrastructure development. Be as it may, one should note that for most SADC countries, public sector driven infrastructure development is a huge challenge due to severe financial constraints. In this regard. it is therefore imperative for individual countries to continue to encourage and reinforce PPPs, encourage business to business cooperation on infrastructure projects, as well as to engage with investment and merchant banks for expertise and access to funding. This would

entail that each country needs to create a conducive environment by addressing the constraints raised earlier in Section 2.3.

COMESA (2004:10) notes that USAID is providing assistance to some of the corridors within the COMESA region. Therefore sections of the SADC corridors that form parts of the COMESA corridors will be able to benefit. The COMESA Fund (which seeks to mobilise financial resources for transport infrastructure development within COMESA) is another funding instrument which would also help transform infrastructure development in those SADC countries which are also members of COMESA. Salomao (2008) notes that through the NEPAD Infrastructure Project Preparation Facility (IPPF), NEPAD has provided financial support for several infrastructure projects within SADC. Van Niekerk and Moreira (2002:65) note the financial support which the World Bank has given to SADC in terms of a combination of loans, grants, and technical assistance towards the SADC transport corridors, most notably the Maputo Development Corridor. SADC (2006; 2007a) note that the Roads and Coastal Shipping programme in Mozambique is led by the World Bank and this has made developing the internal transport system a priority. Van Niekerk and Moreira (2002:105, 106) also note financial support by the European Union for the Namibian Corridor, sections of national roads in Zambia, as well as the Nacala Corridor. The Development Bank of Southern Africa (DBSA) focuses on infrastructure funding where the SADC regional transport initiatives have benefited, for example the Maputo Development Corridor which is a PPP-based infrastructure project and other infrastructure projects (Madzongwe, 2005; Viljoen, Undated).

In order for SADC to get adequate financial support for infrastructural projects, there is a need to properly plan regional transport projects and package them appropriately so that they can attract funding; and this can be realised through increased technical assistance to prepare and package projects. There is also a need for capacity building for skills and institutional to handle and facilitate PPPs. Notable also is the need to develop local capital markets so as to mobilise local currencies to support and augment private sector investment. The DBSA is willing to offer assistance to the region so that it can meet these challenges. Furthermore, there is also a need to explore co-financing through collective investment by signing inter-governmental and inter-state memoranda of understanding for trans-boundary projects. Innovative

credit structures that encourage diversity of funds as well as improving access to long-term capital should also be explored. There is also a need to put in place cost recovery frameworks (e.g. toll gates), for users of the infrastructure so that costs can be recovered as well as for building revolving funds (Madzongwe 2005; Salomao 2008; Viljoen Undated).

Notable constraints to the effective operations of the SADC corridors that have often led to significant transport delays and increased transport costs hinge around differing regulations in each of the countries the corridors pass through. These include complicated and non-harmonised customs border procedures and documents, inefficient border infrastructure and services (i.e. unharmonised weighbridge equipment, weighbridge equipment, weighing procedures, acceptable tolerance limits, overload control certificates, management of weighbridges), differing axle load limits and vehicle dimensions between countries, vehicle licensing and insurance issues, road user charges, bond guarantee schemes, and others. SADC is reportedly in the process of identifying specific trade facilitation measures to address these issues through compatible and harmonised policies and legislation (Madakufamba 2008; Radebe 2008; Ragoobur 2008; COMESA 2004:9; Makumbe 2007:4, 8; Van Niekerk and Moreira 2002:63).

However, it is interesting to note that COMESA introduced trade and transit transport facilitation instruments several years ago which are currently in operation to address these very same issues which SADC is battling with. Such instruments are Harmonised Road Transit Charges, COMESA Carrier's License, Harmonised Axle Loading and Maximum Vehicle Dimension, COMESA Insurance Scheme and COMESA Customs Bond Guarantee Scheme (COMESA 2008:35, 48). It is not clear why SADC as a regional grouping cannot adopt these same instruments and use them to address the aforementioned challenges it currently faces – bearing in mind that: (i) most of the SADC member states are also members of COMESA; and (ii) the Acting Director for the SADC Infrastructure and Services Directorate indicated at the fifth intermodal Africa conference in 2007 that SADC agreed with COMESA and the East African Community to jointly implement transport programmes and instruments so as to have harmonised regulations and services across the three sub-regions. Implementing the existing COMESA instruments would save SADC the costs and

energy of coming up with separate trade and transit transport facilitation instruments and thus refocus its energies on other important outstanding transport infrastructure development issues.

To date, very few SADC countries have adopted and are using the COMESA trade and transit transport facilitation instruments. For example, (i) the COMESA harmonised axle load limits are being implemented in only five SADC countries, i.e. the DRC, Malawi, Swaziland, Zambia and Zimbabwe; (ii) the COMESA Carrier's Licence which harmonises licensing requirements and thus enables a carrier to operate throughout the region, thus enabling more efficient use of the region's transportation fleet and reducing transport costs is currently operational in only four SADC countries, namely Malawi, Swaziland, Zambia and Zimbabwe; (iii) the Harmonised Road Transit charges to enable governments to meet costs of maintaining national transport infrastructure are only implemented in three SADC countries, namely Malawi, Zambia and Zimbabwe; while (iv) the COMESA Yellow Card Scheme which is a motor vehicle insurance scheme facilitating cross-border movement of vehicles is implemented in only five SADC countries, namely the DRC, Malawi, Tanzania, Zambia and Zimbabwe (COMESA Undated).

Poor domestic road and rail networks in any one country, if not addressed, have serious negative implications for the region as a whole because national road and rail network systems provide links or feeder roads to the corridors that link the neighbouring countries. Therefore each member states should seriously take up its responsibility of continuously upgrading, rehabilitating and maintaining its internal transport networks, otherwise the region becomes less reliable and less able to reduce transport delays and costs. This would mean that road and rail networks would continue to be a significant non-tariff barrier which would hinder intra-regional trade despite tariff reductions initiatives to implement the SADC Free Trade Agreement (FTA). Implications on industry would be poor performance and underutilisation of installed industrial capacity.

The coming into effect of the SADC FTA in January 2008 and officially launched in August 2008 entails intensifying the use of corridors as traffic increases due to easier accessibility of countries. It is therefore important to constantly evaluate the effectiveness of corridors with measures put in place to improve performance. In this

regard, it is commendable that SADC (2006) highlights that by 2006 major progress had been made with corridor facilitation effectiveness for the Beira Corridor, Walvis Bay Corridor, North-South Corridor, and the Dar es Salaam-Kapiri-Mposhi Corridor, and that measures were also put in place for performance improvement, for example measures relating to control of overloading, infrastructure improvements and road safety.

Poor road and rail conditions have effects on the investment attractiveness of the region in general as transport costs are one of the locational factors. Therefore, countries with better road and rail conditions, *ceteris paribus*, would present more favourable investment climates, possibly luring investors away from those with sub-standard transport conditions. Therefore, as integration proceeds, polarisation of industries could occur, raising concerns in the distributional effects of economic integration since this has implications for development in member states. However, it is important to note that polarisation does not need to be inevitable because, if transport and communications constraints are adequately addressed and reduced substantially and eventually removed, weaker SADC countries need not lose industries to the core with the SADC FTA in place.

5. Conclusion

This paper has attempted to give an overview of the nature of the transport network systems within SADC, discussing initiatives at both country and regional levels to address transport constraints.

The ultimate effects of SADC initiatives in infrastructure development will be to boost traffic and carrying capacity of rail and road networks, reduce transport and communication costs, and improve transport reliability and efficiency within the region. Infrastructural development initiatives would also enhance internal connectivity within the domestic economies as well as achieve increased regional interconnectivity. This would therefore help to develop a strong regional integrated market (by making it easier for countries to access each other) and cross-border trade facilitation.

The initiatives would also help to reduce transport-related investment risks, thereby helping the region to provide the much-needed support to the current industrial base

as well as to build a favourable investment climate. It can also be argued that while resources are unevenly distributed between member states, polarised location on the basis of availability of resources would be reduced as firms could locate in countries which could be less endowed with resources but offering other unique locational advantages, and still access the needed resources from the resource-rich countries through an improved transport system. Also, polarised industrial location on the basis of market availability could be reduced as industries could still locate in countries with a limited domestic market but with other locational advantages, and still access the required markets in other countries more easily through the improved transport and communication infrastructures.

The implementation of the SADC FTA in January 2008 is a firm step toward deeper economic integration of member states. Therefore, among other things, continued cooperation in transport infrastructure development would help to drive forward the agenda of economic integration.

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Appendix 1: Additional Information for Section 4

Table A-1: The SADC programmes (2004 to the present)

SADC Directorates	Programmes/ technical units
Food, Agriculture and Natural Resources (FANR)	Agricultural Information Management (AIMS). Crop Development. Livestock Development. Natural Resources Management (NRM). Environment and Sustainable Development. Agricultural Research and Development.
Trade, Industry, Finance and Investment (TIFI)	Customs Cooperation and Modernisation. Investment and Development Finance. Macroeconomic Convergence. Mining. Productive Competitiveness. Regional and Multilateral Trade Policies.
Infrastructure and Services (I & S)	Communication and Meteorology Programmes. Energy Programmes. Regional Tourism Organisation of Southern Africa. Transport Programmes. Water Programmes.
Social and Human Development and Special Programmes (SHD & SP)	Culture and Information. Health and Pharmaceuticals. HIV and AIDS. Education, Skill, Development and Capacity Building. Employment, Productivity, Labour, Social Security. Special Programmes.

Source: SADC (2007b).