



Position Paper

The development of intermodal transport in the SADC region: main challenges and business opportunities

Executive summary

Increasing interconnectivity in SADC is not only important to increase engagement in global value chains, but also to increase intra-regional trade and economic dynamism. Currently, intra-SADC trade accounts for only 16% of total trade, a figure dramatically lower than other geo-economic groupings in the world: EU 60%, Nafta 45%, and Asean 25%.

Multimodality is today the most flexible and cost-efficient solution to boost physical and economic connectivity, also freeing up spaces for small and medium enterprise growth, and allowing the reduction of logistics costs and related negative externalities. In this sense, multimodality is the key to free up the resources SADC has in itself to bolster endogenous and inclusive growth.

Poor regional connectivity is not solely a problem of infrastructure, but also of costly and lengthy customs procedures, inefficient operations and other non-tariff barriers. Improving multimodal connectivity thus requires not only the often-invoked capital-heavy investments in physical infrastructure, but also capital-light reforms to ease intra-regional trade and crack down monopolies and rent-seeking behaviors.

Within this context, cooperation between SADC and European players is a strategic pillar to build a multimodal ecosystem in SADC. Opportunities will be there not only for big investment contractors, but also for smaller contractors along the main value chains involved (logistics operators, providers of digital solutions, components manufacturers).

Dialogue and experience-sharing among local and international players can help to scale best practices and boost connectivity: this is the purpose of the Africa - Europe CEO Dialogue.

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Intermodal transport is a key tool for SADC future competitiveness and growth

1. In the upcoming years, Southern Africa Development Community (SADC) competitiveness will rely not only on its members' economic performance or on their capability to secure growing amounts of investments, but also on its degree of interconnectivity. In a world that keeps structuring its economy across Global Value Chains (GVCs) and where regional production networks represent the minimum scale of production processes, the degree of interconnectedness across SADC and between SADC and the rest of the world will be of paramount importance.

2. Intermodal transportation—mixing rail and road transport and integrating it with port operations and other possible means of transport (such as air)—is today the most flexible and cost-efficient solution to boost connectivity, also allowing the reduction of logistics costs and related negative externalities.¹

3. If deploying a proper intermodal ecosystem in the SADC region would allow for better integration in the global value chains and to attract increasing volumes of capital flows, one should not neglect the **benefits of boosting intra-regional trade and industrial development**. Today, intra-regional economic dynamism is hindered by high logistics costs, lengthy customs procedures and other non-tariff barriers. Eliminating these obstacles is not only a capital-intensive effort, rather it could be done through capital-light administrative reforms.

4. Efficient and multimodal connectivity between SADC members would unleash a significant wave of growth in the region, allowing the Community to find in itself the energies necessary to bolster economic and human development. Indeed, as shown by Figure 1, **intra-regional trade in SADC only accounts today for around 16% of total regional trade value**. In comparison, intra-regional trade accounts for 25% of ASEAN total trade, for 40% of NAFTA total trade and 60% of EU total trade.

5. Low regional multimodality has deep roots. Transport network development across the SADC region has not been organic. Rather, it has followed the routes connecting main industrial hubs and resources extraction areas, typically ending up with ports on the Atlantic and the Indian Oceans. As a

¹ Shifting 50% of long-distance heavy intermodal and siding-to-siding break-bulk road traffic to core rail network would bring 30 cents/ton kilometer savings.

result, transport infrastructure was developed as a point-to-point, unimodal system, rather than a multimodal transportation network.

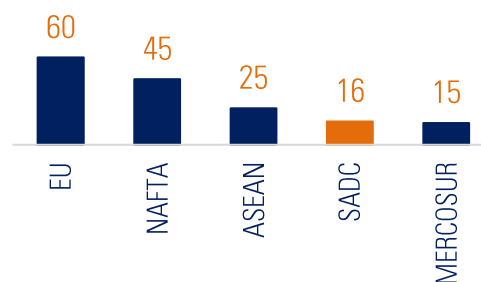


Figure 1. Weight of intra-regional trade on total regional trade (% share), 2017 or latest available year. Source: The European House - Ambrosetti on UNCTADstat data, 2018.

6. The development of a multimodal ecosystem has to be twofold. On the one hand, increasing physical interconnectivity through investment—public and private alike—and policy coordination. On the other, to open up to private operators and to crack down on monopolies and rent-seeking behaviors.

7. Acting soon and in a coordinated way is key. The SADC Regional Infrastructure Development Master Plan recognizes this as a priority, and estimates the infrastructure funding need at \$100 billion within 2030, which amounts to 17.4% of current regional GDP.² However, benefits are even higher: studies have estimated that closing the infrastructure gap—both quantitative and qualitative—relative to the world best performers would bring SADC countries an **additional GDP growth of 2.6% per year**.³

8. This process will not only be a macroeconomic opportunity for the region, but will also provide a solid base for micro-economic cooperation between African and European investors and logistics operators.

9. The present document will first of all briefly highlight the state of SADC infrastructure and analyze the problem of high logistics costs. It will then focus on future developments, analyzing major projects currently in the pipeline and formulate proposal for cooperation between SADC and EU players.

² Source: SADC Regional Infrastructure Development Master Plan, 2017.

³ Source: World Bank, 2017.

The varied performance of SADC infrastructures provides enormous space for development

10. Overall, according to the World Bank, Sub-Saharan Africa ranks as the worst-performer region in terms of logistics, behind the Middle East and North Africa, and far from the best performers. However, **the region displays the highest possible variability in terms of logistics performance**, with South Africa performing even better than OECD countries and the EU (see figure 2).

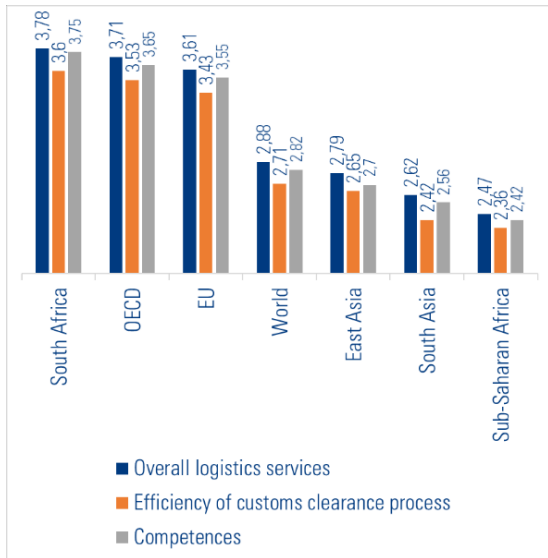


Figure 2. World Bank Logistics Performance Index (relative score: 0 = poor, 5 = good), 2017 or latest available data. Source: The European House – Ambrosetti elaborations on World Bank data, 2018.

11. Varied performance among different SADC countries is **matched by significant intra-country variability**, because in every area of analysis (competences, quality of service, international shipments, infrastructure, customs, timeliness, tracking and tracing) each country has very variegated performance, as shown by figure 3. South Africa outperforms all other regional peers and shows levels of performance aligned to European players. Relevant differences are also present considering in-country performances, with unbalanced outcomes between one area and the others signaling the existence of bottlenecks in overall logistics performance. As an example, Botswana performs well in timeliness, but has rather poor tracking and tracing services. Tanzania is also good in timeliness, but customs hinder logistics

in the country. This heterogeneity signals the presence of bottlenecks that could be reduced by harmonizing practices in line with regional-if not global--best performers.

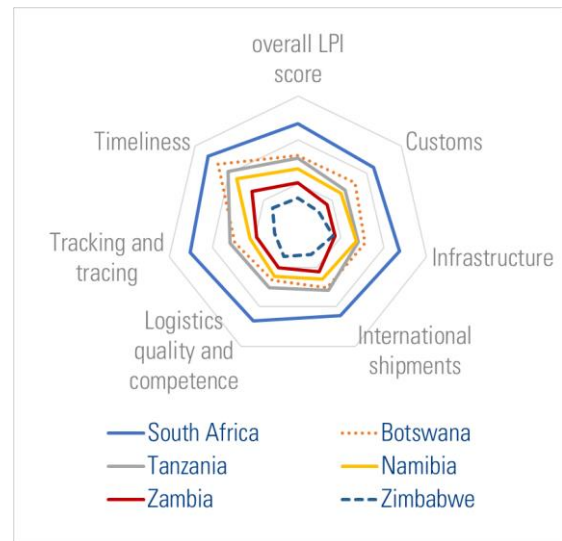


Figure 3. Logistic Performance Index across selected SADC countries (relative score), 2018 or latest data available. Source: The European House Ambrosetti on World Bank data, 2018.

12. Below optimum infrastructural development is first of all an issue related to underinvestment. Whereas at global level private investment in infrastructure is increasing (+37% in 2017 on 2016) up to a total \$93.3 billion expenditure,⁴ Sub-Saharan Africa received the lowest levels of private investment (\$2.1 billion, see Figure 4). More worryingly, data show a 36% decrease from the 2016 level and a 67% decrease from 2015.⁵

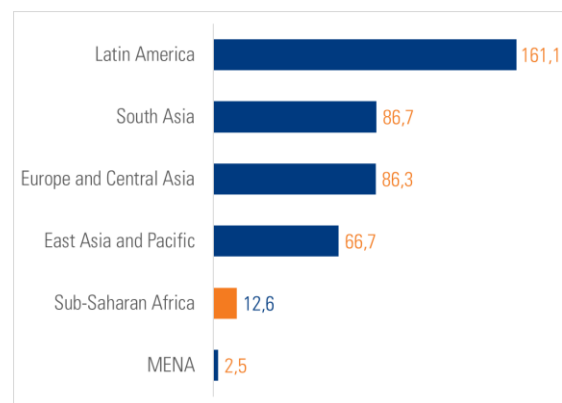


Figure 4. Private investment in transport infrastructure across world regions (\$ billion) aggregate value 2008 - 2018. Source: The European House - Ambrosetti on World Bank data, 2018

⁴ Source: World Bank, 2018.

⁵ Among the 11 countries receiving investments, those receiving the largest PPI commitment in Sub-Saharan Africa were Ghana and Rwanda (\$550 million and \$422 million, respectively). Source: World Bank, 2018.

13. However, it is also a problem of poor and unintegrated planning at intranational and intraregional level, due to the lack of cross-country projects, funds and standards. Particularly in the rail sector, which is suffering the most the poor level of integration despite its role of pivot in a national and regional intermodal transportation strategy. All these elements contribute to disincentivize private investment in enabling infrastructure.

14. Currently, also thanks to deregulation in the road transport industry at regional level, **80% of intra-SADC trade uses roads and trucks**. Taking the case of Zambia, 60% of operators engaged by The World Bank in the country's infrastructure assessment felt that road infrastructure was of low or very low quality, while 100% of respondents believed that none of their road services qualify as being rated high or very high.⁶ Also, high usage of the poor road network further accelerates damage to the infrastructure and consequently to the truck fleet, congestion at borders, high costs and delays.

15. High reliance on roads is mainly caused by poor development of the railway network in the region, which is not integrated in terms of standards and not operated in a commercial fashion. Aged fleet and poor infrastructure resulted in high operating costs which, after deregulation, has moved freight onto the roads. This has further exacerbated financial pressure on railway operators—since railway costs are mostly fixed, low demand resulted in increased operational losses.

16. **The SADC Regional Infrastructure Master Plan aims at increasing the role of railways** in the regional transport ecosystem. Rather than building new lines, the priority is to increase operational efficiency and management of the existing core regional network along the North-South and the North- West corridors. When possible, financing should be on a self-funding basis. Railway transport of goods has a structural advantage over road as it allows faster clearance and border procedures, as they can be carried out at destination and not only at customs. Also, effective interconnectivity of the network with regional ports could significantly boost import-export efficiency and integration with world trade.

⁶ Source: TIPS, "Cross-cutting logistics issues undermining regional integration across SADC", 2018.

⁷ Source: InterVISTAS, "Transforming Intra-African Air Connectivity: The Economic Benefits of Implementing the Yamoussoukro Decision", 2015.

17. The SADC governments, also in coordination with multilateral institutions such as the World Bank, have turned to privatization to boost railway performance. However, private player involvement has not always yielded the desired results. Therefore, **successful experiences in the region, such as development of the "Tambo Spring" intermodal port**, developed with the participation of FS Italiane Group, should be learned from.

18. The last pillar in creating a multimodal network is to integrate air transport with ground transportation. The aviation industry has the potential to make an important contribution to economic growth and development within Southern Africa. Air transport can improve openness and connectedness of the region, facilitating trade and enabling SSA firms to link into GVCs. Air traffic plays a pivotal role in just-in-time global manufacturing production.⁷ Enhancing air connectivity can help raise productivity by encouraging investment and innovation, and improving business operations and efficiency. Air transport is also indispensable for the tourism sector.⁸

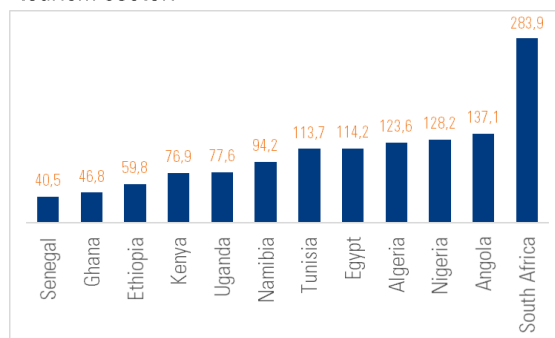


Figure 5. Economic impact of air traffic liberalization on selected African countries, (\$ billion), 2015. Source: The European House - Ambrosetti on IATA data, 2018.

19. Important synergies with passenger transportation should also be pursued, with national agencies and authorities in the region requiring proven expertise in the provision of customer-centric services and integrated station management.

⁸ On this specific topic, refer to The European House – Ambrosetti, "Identifying synergies between different tourism models in the digital age", 2018.

Analysis of SADC high logistics costs proves that they are not only related to infrastructure

20. Low level of inter- and intra-regional trade is not surprising given the extremely high costs of transport registered in SADC and the low value of consumer spending and GDP per capita. The situation is somehow unexpected, since the transport industry cost structure is fairly uniform across the globe, as in developing countries lower fixed costs (lower wages and lower capex due to second-hand truck purchasing) are offset by higher variable costs (mostly maintenance due to aged fleet and poor infrastructure conditions).

21. However, **SADC displays transport and trading costs higher than any other region** in the world. If one of the key levers to overcome the situation is certainly investment in infrastructure, one should not neglect that high logistic costs are not necessarily the result of poor infrastructure, but also poor governance, operational inefficiencies and rent-seeking behaviors. Even with top-notch infrastructure, monopolistic market configurations and weak competition result in higher cost structures.

22. Indeed, high tariffs and border procedure costs are a major obstacle for intraregional and international trade as well. As shown by figure 6, the cost of trading across borders from SADC displays values higher than in any other comparable country, considering border and documentary compliance costs. In major SADC economies like South Africa and Mozambique, the cost of trading is much higher than in countries like India and Indonesia.⁹

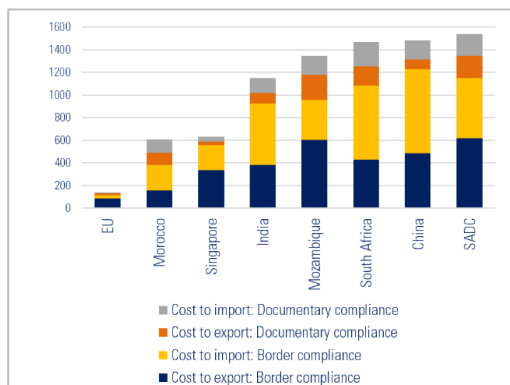


Figure 6. Trading across borders, costs per transaction, avg., in selected countries and regions (\$), 2017. Source: The European House - Ambrosetti on World Bank data, 2018.

⁹ Source: TIPS, "Cross-cutting logistics issues undermining regional integration across SADC", 2018.

23. Particularly for export, border procedures in SADC seem especially onerous. **Exporting a container from South Africa, Angola or Namibia is more expensive than in OECD high-income economies** as well as key competitor countries. Specifically, exporting a 20-foot container costs \$460 in Singapore, \$910 in Chile, \$1,080 on average in high-income OECD countries and \$1,560 in Nigeria, while over \$1,830 in major South African ports, \$2,060 in Angola and \$1,650 in Namibia (see figure 7).¹⁰

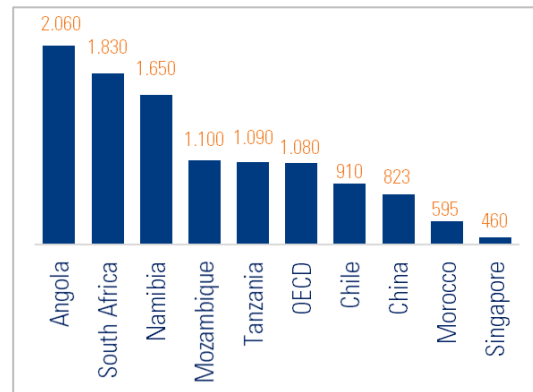


Figure 7. 20-foot container export cost in selected geographical areas (\$). Source: The European House – Ambrosetti on World Bank and WIT data, 2018.

24. Finally, shortage of **skills** and competences in the logistics and transport system also plays a role in pushing up transport costs, especially those related to ICT and new digital technologies (digital platforms, tracking and tracing, robotics, etc.).

South Africa logistics excellence can be the lever to improve regional performance

25. The SADC logistics system can leverage South African world class maturity, an advantage for the whole region and a key lever to increase regional integration in global value chains. South Africa is located at the core of major commercial routes, affirming itself as a key hub for local, regional and global flows. It is the major logistic pivot for SADC countries and one of the main entry points to the African continent.

26. Its strategic role could also grow further as international trade increasingly relies on containerized traffic. South Africa is situated at the

¹⁰ Source: World Bank, 2018.

core of the busiest international sea routes, critical to international maritime transportation.¹¹

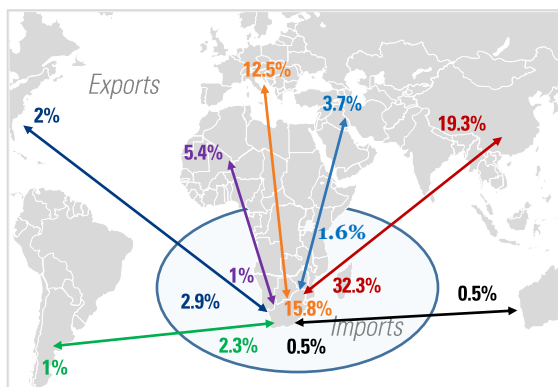


Figure 8. Container traffic, South African vs. selected world regions, import vs. export (%), 2015. Source: The European House – Ambrosetti on Stellenbosch University, 2018

27. The country has three 3rd Tier ports¹² capable of playing a **key role in global containerized traffic** within the “North-South Connector” and “Trans-Oceanic Connector”. The Port of Durban is the busiest container terminal in Africa and among the busiest in the southern hemisphere, challenged only by Jakarta and Melbourne.

28. Also, the country ranks well compared to international competitors in terms of railway network development. South Africa accounts for around 50% (see figure 9) of the railroad extension in SADC and ranks 15th globally in terms of rail network extension. The railway is also well-integrated with the existing port system, thanks to successful investments carried out by the national operator, Transnet.

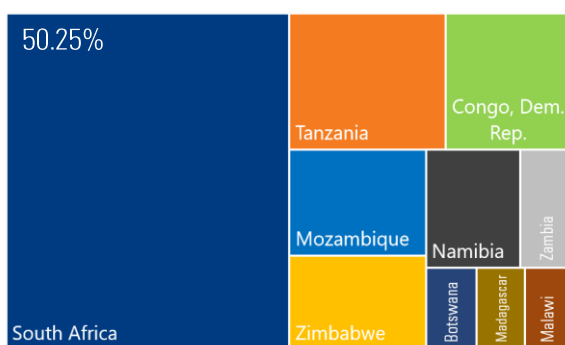


Figure 9. SADC countries' share of total railroad extension in the region. Source: The European House - Ambrosetti on World Bank data, 2018.

29. Therefore, South Africa can act as a competitive regional platform, affirming itself as the pivot capable of initiating the region’s infrastructural and connectiveness development. Recently, the South African government, together with Transnet–South Africa’s public ports and rail company–and other major operators, have decided to interrupt the negative underinvestment trend of the past and adopt a comprehensive approach, intended to **address current imbalances and provide the country with a proper intermodal connectivity platform.**

30. In this sense, South Africa’s dense corridors (such as Gauteng to Durban) are ideal for benefiting from intermodal transportation: density creates economies of scale due to the large volume of tons-kilometers generated.¹³

31. Effective intermodal operations require a well-functioning rail service, adequate ship-to-rail infrastructure and new-generation intermodal terminals. In this sense, South Africa has put in place important strategies and investment schemes.

32. In 2015, **Transnet launched the Market Demand Strategy, a 7-year plan worth \$33.8 billion** that identifies major areas for investment and further development, given that freight transport is expected to grow from 200 million tons to 350 million tons by 2020. The overall target is to make South Africa the 5th largest railway system globally and to develop intermodal transportation.¹⁴

33. The National Infrastructure Plan and National Transport Masterplan adds to this. The former, worth \$407 billion, focuses on upgrading existing infrastructure. The latter devotes \$30 billion to rail upgrade. Rail is also addressed in the 2017 National Rail Policy. An integrated national port strategy is also in place. It provides \$16.5 billion in investment by 2045 given that the total container volume handled by South African ports is expected to triple by that date. Finally, the Road Freight Strategy and National Land Transport Strategy Framework (both 2017) provide a strategy for South African land and road transportation.

¹¹ The Port of Durban is the busiest container terminal in Africa and among the busiest in the southern hemisphere, challenged only by Jakarta and Melbourne. Source: AAPA 2017.

¹² Saldana Bay, Richards Bay and Durban.

¹³ Source: World Bank, “Policy Research Working Paper 7531, Supporting Export Competitiveness through Port and Rail Network Reforms. A Case Study from South Africa”, 2016.

¹⁴ Further details: <https://www.transnet-ir-2017.co.za/6-market-demand-strategy.php>.

The SADC infrastructural investment pipeline reveals a dynamic ecosystem in the making

34. Other than South Africa, other countries in the region are also moving towards the deployment of new infrastructures and the definition of national intermodal connectivity strategies. Overall, this not only provides the chance for a turnaround in the region's connectivity, but also provides **opportunities to private players in the region and to European companies positioned along the entire value chain.**

35. In **Mozambique**, where infrastructural inefficiencies represent a severe brake to economic growth, transport projects worth around \$18 billion are in the pipeline. Aiming at enhancing the Port of Maputo's transport capacity to 48 million tons of goods per year by 2033, the Maputo Port Development Company (MPDC) plans to invest \$750 million in the development of Mozambique's largest port by 2043.¹⁵ On the other hand, the rail network, managed by the state-owned company Caminhos de Ferro de Mozambique (CFM), urgently requires massive investment to improve the safe and efficient transport of goods and passengers. A \$2.7 billion investment has been mobilized to build the new port of Macuse and the 639 km-long Chitima-Macuse railway; both projects are going to be completed by 2021.¹⁶

36. In **Zambia**, infrastructure development is a key issue of the National Vision 2030 and of the 7th National Development Plan, according to which the country is ready to invest over \$8.7 billion to transform the country from land-locked to land-linked. The majority of the investments will be allocated to the reconstruction of the Zambian railways (\$4.7 billion), the development of airport infrastructure (\$788 million) and the promotion of digitalization (\$493 million).¹⁷ For a country with no ports like Zambia, reliable railway lines are crucial to reduce transportation costs and improve national competitiveness before other SADC members. Investment will also increase in road infrastructure, were the Link Zambia 8,000 km project aims at

linking ten Zambian regions and strengthening the 400 km road network around Lusaka.¹⁸

37. Despite the recent economic crisis due to the fall of oil prices, important progress has been made in **Angola** as well. In the last decade, the country spent more than \$3.5 billion to revitalize 2,700 km of railways destroyed by years of civil war. However, the country still lacks a real railway network, since the three main lines linking the coast to inner Angola (Luanda-Malanje, Lobito-Luau and Namibe-Menongue) remain isolated from each other. Urgent intervention is needed also to improve the poor road infrastructure and build new ports: among others, the Barra do Dande maritime project represents an ambitious attempt to unburden the overloaded port of Luanda.¹⁹

38. SADC's most rapidly growing economy, **Tanzania**, is seeking investment to improve its transport network and become the main trade hub for all of Sub-Saharan Africa. Overall, important infrastructural projects are currently in pipeline.²⁰ The largest is the construction of the Bagamoyo Port, started in 2018 to avoid excessive congestion at the port of Dar es Salaam. The project is a three-government venture between Tanzania, China and Oman worth \$11 billion.²¹ Another interesting initiative is the construction of a 1,651-km railway line linking Dar es Salaam, Kigali (Rwanda) and Musongati (Burundi), which will cost around \$5 billion.²²

Actions from private and public players in Southern Africa and the EU are required to deploy intermodal connectivity in the region

39. To create effective intermodal connectivity in SADC that is capable of sustaining effective and competitive transport services and logistics, coordinated planning from public administrations and institutions in the region encompassing a medium- to long-term vision is required.

40. Governments and institutions also have to deploy adequate competences and skills to the

¹⁵ Maputo Port Development Company, 2011.

¹⁶ Mozambique News Reports and Clippings, n. 419, 2018.

¹⁷ U.S. International Trade Administration, 2018.

¹⁸ Zambia Road Development Agency, "Link Zambia 8,000 Road Project", 2016.

¹⁹ The \$1.5 billion government grant promised in 2017 to support the port construction was recently revoked by the new administration. Sources:

Dry Cargo International, 2018; Ministry of National Development Planning of Zambia, 2017.

²⁰ Speech by the Minister for Finance and Planning of Tanzania, presenting to the National Assembly, the estimates of government revenue and expenditure for 2018/19, June 2018.

²¹ Source: Tanzania Ports Authority, 2018.

²² Source: Rwanda Transport Development Agency, 2015.

market. Training and upskilling programs for the workforce in the value chain should be implemented in a coordinated and synergic way with private players in the sector. Training is particularly important at customs and boarding posts to ensure the most seamless transit of goods and people possible. Management competences are also crucial.

41. Cross-country programs for professional education, vocational training and upskilling should also be promoted. This would ease the creation of a seamless logistic grid in the region, to improve coordination at workforce level, thus changing mindset and approaches.²³ In this sense, South Africa and its institutions could play an important role as pivot for the entire region in logistics and transport training, given its current level of expertise and competences (see figure 5).

42. Finally, education should focus on digital technologies, ICT skills and intermodal management to prepare the **workforce for the digital revolution** underway in the logistics sector and promote the creation of a true intermodal network in the region, including at a workforce and individual level. In this sense, exchange programs with European countries and companies could help in creating synergies across extra-regional logistics networks and supply chains to broaden the spectrum of skills and companies and mutual knowledge, also at enterprise level.

43. **The role of private players will also be crucial** in fostering the region's intermodal transition. Effective intermodal operations require a well-functioning rail service, adequate ship-to-rail infrastructure and new-generation intermodal terminals. Private investments from EU and Southern Africa companies will be key to deploy the required hardware across the region. As listed in the previous paragraph, many concrete opportunities are available in each Southern Africa country within the whole extended value chain.

44. Manufacturers of signaling equipment and railroads, together with those companies providing electrification solutions, will be increasingly required given the need to enhance existing railroads. Major opportunities are also available for producers of rolling stock and those providing

maintenance services. In South Africa, among others, a Development Bank of Southern Africa (DBSA) financing scheme is in place to support the export of rolling stock produced by Transnet Engineering. The company has benefited from years of cooperation with international OEMs such as Alstom and GE.

45. Producers of port equipment will also benefit from increasing investment in handling equipment, cranes, ship-to-shore solutions and ship-to-road infrastructure.

46. **Providers of digital solutions for logistics** (e.g., tracking and tracing, booking, customer service, automation of logistics processes, barcode sorting, digital corridors) are also required and their products and services will be at the base of the future hardware and software of connectiveness grid in the region. In this field, not only large players and providers of ICT and digital infrastructures are required, but also those smaller players and service providers along the whole value chain will have an important role and can find increasing business opportunities.

47. European engineering and construction companies can also support the construction or improvement of physical infrastructures in the region (bridges, rail, harbors, etc.), partnering with European SMEs or local companies within consortia. As of now, overseas works in Africa accounted only for 8.8% of the international turnover of EU construction firms in 2015,²⁴ implying that the African market offers currently untapped potential.

48. Finally, a crucial role will be played by those players, from both the EU and the region, providing organizational solutions and competencies for the **creation and management of "intermodal ports" and intermodal solutions**.

49. A combination of local and international players, both large companies and SMEs, will find increasing room in a regional platform shaped according to intermodal concepts. In this sense, larger European groups have to act as trailblazers for European SMEs in the value chain, especially in the provision of digital logistics services and infrastructure management.

²³ Source: TIPS, "Cross-cutting logistics issues undermining regional integration across SADC", 2018.

²⁴ Compared to Chinese construction contractors, which deliver approximately 50% of Africa's internationally contracted engineering, procurement and construction market. Source: European Commission, "Analytical Report – Fostering the international competitiveness of EU construction enterprises", 2017.