



TRADE & INDUSTRIAL POLICY STRATEGIES

**INDUSTRIAL DEVELOPMENT PROJECTS
CONTAINERISED SHORT SEA SHIPPING SERVICE**

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**A contribution to South Africa's Post COVID-19 Recovery Plan:
Tapping into new and unmet sources of demand to support
the establishment of new companies, factories,
value chains and employment opportunities**

Trade & Industrial Policy Strategies (TIPS) is a research organisation that facilitates policy development and dialogue across three focus areas: trade and industrial policy, inequality and economic inclusion, and sustainable growth

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INTRODUCTION

As South Africa responds to COVID-19 and aims to stimulate the economy and job creation post lockdown, an opportunity should not be missed to consider investing in new product markets which could increase the size and dynamism of the manufacturing sector. Such a package could contribute to arresting the current trend of deindustrialisation and shift the trajectory of the industrial base into new, sustainable growth areas and value chains. This would result in new factories, new downstream demand for primary and intermediate inputs, new export products, increased foreign exchange earnings, and importantly new direct and indirect long-term jobs.

Using the idea of “business *unusual*” TIPS economists have put together a Post COVID-19 recovery programme in South Africa that could provide the impetus to arrest the current trend of deindustrialisation and herald in the beginning of a new generation of industrial activity.

Seven initial projects have been identified. They represent a wide array of economic activity in the special purpose machinery, agro-industries, bioplastics, shipping, alternative fuel, biochemicals and automotive component manufacturing sectors.

This project looks at creating a short sea shipping service to increase containerise intra-regional trade between South Africa, Mozambique, Tanzania, Kenya and their hinterlands.

For more information on this or other projects please contact Sandy Lowitt at 082 373 1150.

CONTAINERISED SHORT SEA SHIPPING SERVICE

PROJECT SUMMARY SHEET

TITLE	Creating a short sea shipping (SSS) service to increase containerised intra-regional trade between South Africa, Mozambique, Tanzania, Kenya and their hinterlands.
LEAD DEPARTMENT	Department of Trade, Industry and Competition, Department of Transport (DoT).
PROJECT SUMMARY	<p>The project is a strategic intervention to catalyse and facilitate increased intra-regional trade between South Africa, Mozambique, Tanzania, Kenya and the fast-growing hinterlands of Zambia, Uganda, Burundi, South Sudan, Eastern Democratic Republic of Congo (DRC) and Rwanda. The project is based on the idea that port infrastructure in Southern and Eastern Africa performs well against international benchmarks and that shipping offers economies of scale and distance, lower maintenance costs and fewer border delays than road or rail transport. Intra-regional trade of containerised products has been increasing over the past five years and is expected to continue growing as industrialisation, beneficiation and value adding activity increase across Africa. Currently intra-regional containerised shipping along the Eastern coast of Africa is uncompetitive in terms of cost, frequency of port calls, scheduling and volume of cargo. This project is about creating a containerised intra-regional trade market. It is proposed that the governments of South Africa, Mozambique, Tanzania and Kenya establish a jointly owned short sea shipping service. The service would charter a 1 000 twenty-foot equivalent unit (TEU) container ship and run a subsidised service every 12 days along the coast calling at Durban to Maputo, Beira, Dar es Salaam and Mombassa initially.</p>
APPROXIMATE BUDGET	Working capital costs are estimated at R900 million over three years. The sum is to be divided between the four countries equally. Each country would have to invest R75 million per annum for a three-year period.
STAKEHOLDERS	<ul style="list-style-type: none"> • The governments of South Africa, Mozambique, Tanzania and Kenya. • The Port Authorities and operators in South Africa, Mozambique, Tanzania and Kenya. • A champion with knowledge and contacts in ports and shipping to spearhead the creation of the jointly-owned charter company and service. An appropriate person is on board.
CAPITAL INVESTMENT	None. As the project is based on developing a market which currently does not exist, the most prudent and financially responsible route to supporting the project is to subsidise working capital and avoid the costs of any acquisition of capital or assets. There is currently an oversupply of smaller containerised vessels worldwide and competitive prices for a three-year charter from India or China (inclusive of crew) has been budgeted for.
OUTCOMES	<ul style="list-style-type: none"> • Increased intra-regional trade volumes • Increased competitiveness of regional products in all markets • Increased opportunity to substitute regional products for currently imported deep harbour products • Increased growth and development of regional economies

Creating a short sea shipping service to increase containerise intra-regional trade between South Africa, Mozambique, Tanzania, Kenya and their hinterlands

Introduction

There is a well-established relationship between trade and economic development. African states through regional integration initiatives such as SADC, East African Community (EAC), Economic Community of West African States (ECOWAS) and more recently the African Continental Free Trade Area (AfCFTA) are committed to leveraging the economic advantages of higher levels of intra-regional trade.

Intra-regional trade across SSA has grown faster since 1990 than at any time in the past 50 years. It has increased from 10% in 1990 to 22% in 2018. Nevertheless these values remain below those of globally successful regional blocs such as the North American Free Trade Agreement (NAFTA) (40%) and the EU (60%). In addition southern, eastern and western African blocs trade predominantly within their own geographic regions and on average trade just 5% of their exports with adjacent regional blocs. In terms of composition of trade: extra-regional exports from SSA remain dominated by primary commodities; however, 42% of intra-regional trade is manufactured goods¹ (Naidoo 2018; PwC 2018). Increasing the intra-regional share of manufactured goods and addressing the trade imbalance between South Africa and regional countries is a priority and one which is supported by (among other initiatives) attempts to increase the operation of regional value chains. Intra-regional value chain growth and development is, and will continue to be, constrained by the weakest link in the chain – transport and logistics.

Teravaninthorn and Raballand 2009; Vilikazi and Paelo 2017; World Bank 2007, 2012, 2016; Havenga 2011; and Lowitt 2018 all find that the key impediment to improved intra-regional trade and value chain creation in SSA is the prohibitively high cost of transportation.

SSA transport is 40% to 100% more expensive per unit than in Southeast Asia (Vilakazi and Paelo 2017) and three to four times greater in landlocked SSA countries than developed countries. Limoa and Venables (2008) calculate that a 10% decrease in transport costs leads to a 25% increase in trade.

While trade liberalisation across SSA has been largely successful it has not been matched by an equivalent reduction in non-tariff barriers (NTBs). SSA countries often use NTBs, especially those at ports and border posts as barriers to protect local markets (especially from the perceived mercantilism of South Africa). These NTBs, poor infrastructure and the trade imbalances² in the region are the key reasons driving uncompetitive transport pricing.

General policy consensus suggests that there is little political will across SSA to address these NTBs. Lowitt 2018 and Hartzenberg and Katenga 2015 suggest that future progress in this area may not lie in the linear integration approaches currently adopted by SADC, EAC and ECOWAS, which are based on a governance model that transcends member states sovereignty. Rather it is suggested that

¹ Skewed by exports of South Africa to the rest of SSA.

² Most SSA countries import manufactured and consumer goods from South Africa and export raw materials to the rest of the world. As such road traffic, for example, suffers from full loads on the South to North leg of the journey but empty load on the return leg. This basically doubles the transport cost of goods exported from South Africa to SSA as with no backhaul the outward legs goods must carry the complete roundtrip costs.

future progress is more likely to be achieved by an approach which avoids supranational institutions and focuses more on a bottom-up, project by project approach³.

The proposed project is one such bottom-up idea and aims to reduce transport costs between SSA countries and thereby increase intra-regional trade through the development of a short sea shipping service along the East coast of Africa. Although a coastal service would link South Africa, Mozambique, Tanzania and Kenya, it would also access the hinterland markets of DRC, Rwanda, Burundi, Zambia, Malawi and South Sudan. The project is not about serving an existing market but about creating a new market for intra-SSA containerised trade. The project is based on two pillars.

The first is shifting appropriate landlocked central, southern and eastern SSA regional trade from road (currently accounting for 90% of transport) to containerised sea transport. Sea transportation is preferred to road transport for a number of reasons including: substantial economies of scale for shipping and ports; lower environmental impact; less infrastructure investment and maintenance⁴; and fewer border posts and delays.

The second is lowering the cost of intra-regional SSA containerised trade to be able to compete with deep sea containerised pricing, thereby improving the competitiveness of intra-regional exports.

Transport costs currently negatively impact competitiveness of SSA country exports within the region compared to deep sea products. This limits the potential to increase intra-regional trade. For example, the farm gate price of soya beans in Zambia is lower than that of Brazil, yet the landed cost of soya in Durban harbour from Brazil is lower than the cost of soya arriving from Zambia because of uncompetitive road transport costs between Zambia and South Africa. As such South Africa buys its soya from Brazil (Roberts 2017). Similarly South Africa is the only producer of glass in SSA. Glass traders in South Africa produce glass at a lower cost (and better quality) than Indian producers. Despite this, the landed cost of glass from South Africa in Kenya and Tanzania is uncompetitive with the Indian product because a container of glass from India to Dar es Salaam costs only US\$800 while a container of glass from Durban to Dar es Salaam costs approximately US\$2,400. In these examples Zambia could increase its exports of soya to South Africa⁵ and South Africa could increase its exports of glass to Kenya and Tanzania if containerised transport costs across the region were competitive with global shipping routes.

Coastal shipping routes, with small to medium-sized containerised vessels, stopping at multiple regional ports along a multi-country coastline is known as short sea shipping. It is also known as the motorway of the sea as it provides a direct, easy to access and easy to use service. SSS is commonplace and found in the EU along the Western European coastline as well as in South America and the American/Canadian/Mexican east and west coasts.

This project is based on TIPS research conducted on transportation and logistics costs in SSA. It proposes that the governments of South Africa, Mozambique, Tanzania and Kenya establish a jointly-owned short sea shipping service by chartering a 1 000 TEU container ship and running a subsidised service every 12 days along the coast from Durban to Mombassa calling in at Dar es Salaam, Beira and Maputo⁶.

³ This does not suggest that formal regional integration institutions and processes are not crucial but makes the point that, given political will, space for specifically negotiated projects and solutions may be more likely to succeed in the short run.

⁴ A 1 700 km road needs maintenance along its entire length. A 1 700 km sea voyage requires maintenance only at the port of origin and destination.

⁵ Increasingly agricultural and mineral products are being containerised.

⁶ Initial route suggestion, other ports can be added.

The jointly-owned company, run as a commercial enterprise, will guarantee a maritime route and schedule and take the risk of poor volume take-up for a period of three to five years, after which it should be viable without subsidy⁷. More importantly, over time, as the trade route develops and becomes more viable new players will be attracted, further reducing prices. At that point, a permanent commercially based company can be formed or an outsourced service can be negotiated with an existing shipping line. It is expected that the idea of an African-owned shipping service would be appealing and could cement intra-regional ties.

The shipping industry and the rise of short sea shipping

Maritime trade accounts for 70% of global trade with 95% of the worldwide fleet of ships owned by just six countries and no more than a dozen large shipping lines. The global shipping industry has always been highly concentrated and over the past few years declining traded volumes have seen increased mergers and acquisitions leading to further consolidation and concentration. At the same time, deep sea liner companies seeking economies of scale and distance have: increased the size of their ships; decreased the number of ports of call; and decreased the frequency of their visits to hub ports. This has created a cascading effect whereby smaller ships and operators enter the market to complement and fill the gaps of the deep sea liners. These smaller operators offer: feeder services for deep sea liner companies⁸; domestic transport along a single country's coast; and regional services where short sea shipping supports intra-regional trade by linking ports across multiple countries in a given region.

The strength of SSS lies in its economies of scale, economies of distance, energy efficiency and (importantly in the Southern and East African context) its low associated infrastructure maintenance cost. In terms of economies of scale and distance in shipping port charges and loading and unloading, charges are unaffected by distance. As such total transport costs per ton per kilometre decrease as a trips distance increases (Konstantinus et al. 2019).

In terms of infrastructure, the advantage of sea transport versus road or rail is that shipping lines enjoy the freedom to navigate the seas and oceans at no cost and with no maintenance required. The only infrastructure and maintenance costs pertain to ports. Carruthers (2013) shows that to build a 300m container berth at a port would cost US\$16 million. This is compared to building a road at US\$3.5 million per kilometre and US\$1.0 million per kilometre of rail. Maintenance per annum costs are: US\$1 million per berth for shipping, US\$125 000⁹ per kilometre for road and US\$3 000 per kilometre for rail. As transport infrastructure is a major bottleneck in Southern and Eastern Africa, transport infrastructure expansion at a lower cost than road or rail would be an appealing option.

Maritime ambitions exists in all coastal nations of East and Southern Africa, especially those which service substantial hinterlands (Kenya and Tanzania). In 2010, a continental African Maritime Transport Charter was adopted calling on all African countries to “promote cabotage (the right to offer a transport service in another country) and effective participation of private sector operators at national, regional and continental levels”.

⁷ The creation of Dubai as a regional air hub is an example of government subsidising a route until sufficient volume accumulates to allow transportation at commercial rates.

⁸ Cargo is collected from multiple smaller ports and fed to a hub port where it is collected by the deep-sea liner company once a sufficient volume has been amassed.

⁹ SSA road maintenance costs exceed those of developed countries due to massive and sustained overloading.

Eastern and Southern African intra-regional trade and shipping

Trade flows in Eastern and Southern Africa are dominated by intercontinental trade. Most Eastern and Southern African countries import manufactured goods from overseas markets in containers while exporting agricultural commodities and raw materials on bulk carriers to deep seaports (especially in China and South East Asia). Intra-regional trade accounts for just 22% of total trade.

Intra-regional trade flows (Figure 1) show the substantial imbalance between South Africa and regional players: Mozambique, Kenya and Tanzania. Not only is South Africa a net regional exporter by a substantial magnitude but the values of exports to South Africa include products entering South Africa for transshipment to the Far East and other deep sea destinations. As such the market penetration of Mozambican, Kenyan and Tanzanian products into the South African market are even smaller than suggested by the figures.

Table 1: East and Southern African trade volumes ('000Rands)

TOTAL VALUE OF EXPORTS IN 2019				
	Mozambique	South Africa	Kenya	Tanzania
Mozambique		1,285,878	132,482	4,756,239
South Africa	53,287,041		11,355,813	6,906,048
Kenya	516,982	468,256		4,756,239
Tanzania	125,553	9,794,740	2,922,192	

Source: Trade Map, <https://www.trademap.org/stDataSources.aspx> (Accessed 2020)

Trends show that East and Southern Africa's trade volumes have been growing at 9% per annum for the past 10 years with transit consignments to landlocked countries growing at 16.5% per annum over the same period (World Bank 2018). Containerised trade in Eastern and Southern Africa has been increasing in line with global trends. This is largely due to a shift from bulk cargo to containerised cargo of sugar, malt, paper, chemicals and cosmetics. Increasingly metals and minerals and more agricultural products are being shifted from bulk carriers to containers. Data from private sector operators suggest that about 5% of all Southern and Eastern regional containerised cargo is destined for intra-regional markets. Growth has been strong. In 1995 containerised intra-regional trade was 1.8 million TEUs. This grew to six million TEUs in 2011 – a 230% increase (albeit off a low base). As industrialisation, beneficiation and value addition grows in the region so will demand for containerised transport on an intra-regional basis.

A requirement for such demand, however, requires cost competitive containerised shipping. Currently the containerised cost of imports entering the region from Southeast Asia, the EU, the US and South America are between 1.5 and 3.5 times more expensive than containerised prices in developed countries (PwC 2018). This is due to low volumes, some of the highest port charges in the world and the fact that 80% of containers leaving Southern and Eastern Africa on their return legs are empty (compared to just 30% unloaded TEUs on transpacific routes and 40% unloaded on Asian European routes). These high unloaded return rates mean that roundtrip costs are borne disproportionately by the incoming leg resulting in high containerised costs. It is estimated for example that one third of the cost of a bag of fertiliser in the Malawian market is due to shipping costs alone (World Bank 2018).

Over and above inflated containerised import prices – intra-regional containerised costs are even higher than those on intercontinental shipping routes. A TEU container from China to Dar es Salaam costs on average US\$850 to US\$950 and as little as US\$700 to US\$800 dollars from Mumbai to Dar-es-Salam. An equivalent container from Durban to Dar es Salaam would cost between US\$2 200 and US\$2 400 dollars; while a short haul container from Mombassa to Dar es Salaam costs between US\$1 700 and US\$1 950 dollars. With such price differentials, intra-regional trade will consistently be unable to compete with products from China, India and the rest of Southeast Asia. A similar trend is found for South America (Roberts 2017; Lowitt 2018).

In addition to the lack of price competitiveness of intra-regional containerised shipping several other inhibitors exist. These include: infrequent port service; routes which are not routinely scheduled; and intra-regional ship handling and port services which are inferior to those offered to deep sea liners. As such, an exporter seeking to send goods from Mombassa to Durban would have no guaranteed pickup service and hence no definite delivery date, would face unanticipated port side delays at multiple ports, and have to pay shipping costs higher than those from deep water ports on other continents. These barriers all add to the perception and reality that short sea shipping between Eastern and Southern African countries is not feasible as an alternate to rail and/or road.

Status quo

The East and Southern African region is dominated by foreign shipping lines. The market is dominated by Maersk, MSC, Hamburg Süd, Grindrod, K Line and CMA CGM. There are two ships under the South African flag (Kline and Vuka JV), which are both bulk carriers, and MC5 is a new BEE shipping company but only operates in the oil and gas market. Coastal shipping does not exist a present in SSA or Eastern and Southern Africa due predominantly to insufficient cargo volumes and no economic interest from the large shipping lines (Mabiletsa 2016). What little containerised cargo does move along the coast is serviced by feeder ships servicing deep sea liner hubs (Durban, Mombassa and Port Louis in Mauritius). Feeder ship services are unscheduled, infrequent and uncompetitively priced as deep sea shipping lines create “conferences” whereby they collaborate to supply feeder services to hubs and agree not to compete on price.

Although SSA and Eastern and Southern African transport and logistics are characterised by low levels of infrastructure, surprisingly the region’s ports are relatively strong performers compared to equivalent performance on road and rail. Table 2 highlights a range of important indicators of port performance.

Table 2: Performance indicators of ports 2015

	MOMBASSA	DAR ES SALAAM	SOUTHERN AFRICA	GLOBAL BEST PRACTICE
Container dwell time (days)	5	7	4-8	<7
Truck processing time	5	5	2-12	1
Containers per crane per hour	10	20	8-22	20-30
Container handling charge US\$/TEU	68	275	110-243	80-150
General Cargo handling US\$/ton	7	14	11-15	7-9

Source: World Bank, 2018

All main ports on the Southern-Eastern coast of Africa have seen increases in container traffic and have invested in upgrading infrastructure to handle increased TEU traffic. The table below shows strong growth in TEU throughput, a trend which is expected to continue and accelerate.

Table 3: Containers per annum ('000) and Compound Annual Growth Rate (CAGR) (%)

	2012	2013	2014	2015	2016	CAGR 2012-2016
Mombassa	903	894	1012	1076	1091	4.84%
Dar es Salaam	562	601	665	659	622	5.43%
Nacala	65	83	97	79	71	2.2%
Beira	171	185	207	211	197	7.39%
Maputo	88	111	125	123	97	11.82%
East London	52	44	42	66	72	8.28%
Durban	2568	2633	2664	2770	2620	0.5%

Source: World Bank, 2018

An important point to mention is that while Eastern and Southern African port infrastructure stands up well to international comparison, SSS still needs to compete with the door-to-door service offered by road. This means that intermodal transfer of containers from ships to rail and road will be required to be upgraded and that road and rail services will need to improve in reliability and cost. This could be achieved by breaking the road and rail infrastructure challenges facing SSA countries into smaller pieces and dealing with containerised movement from SSS as a demonstration model of how broader increased efficiency and effectiveness can be achieved.

Making markets

In 2005 the EU declared that SSS was the only freight mode that could offer realistic prospects of a substantial modal shift away from road, as well as improve competitiveness and reduce environmental damage.

Table 4: European Union advantages, disadvantages and goals of SSS

<p>Advantages</p> <ul style="list-style-type: none"> Sustainability: efficient and environmentally friendly transport mode Cost effective: to shift long distance traffic off roads Flexibility: increase in volume does not require infrastructure improvement Attracts freight from other modes Stimulates additional shipping Reduces pressure on other modes
<p>Disadvantages</p> <ul style="list-style-type: none"> Lower frequency than road and rail Lower reliability: departure and arrival times Quality and safety: higher risk of damage to goods Complicated logistics to ensure integration for door to door service Efficiency of ports, port services and hinterland connections need to be strengthened
<p>Goals</p> <ul style="list-style-type: none"> Reduce costs and times of nodes Standardise cargo Improved integration of shipping into door to door service To be both substitute and complement of other transport modes

Source: EU Commission, 2005

The report found that no matter how desirable SSS was as a means of getting cargo off roads, it “would not develop by itself” and required government assistance. The EU set up the Marco Polo programme¹⁰ to develop this new substitute and complementary transport mode. A wide variety of support was offered including: start-up aid for maritime operators; awarding of routes to experienced operators through specific criteria; trade facilitation support at ports in relation to e-documentation and one stop administrative stops; aid and support to upgrade ports and port services; and “a host of support for private modal shift actions and catalytic actions”, to move cargo off Europe’s roads.

In a 2011 study looking at the Maritime Transport Sector undertaken on behalf of DoT it was recommended that South Africa consider developing a coastal shipping service and that such a goal be formalised in an appropriate maritime policy.¹¹ For such a service to be created, the study recommended that “SSS be assured of tariff and port facilities that will support the industry to

¹⁰ Supported by four additional programmes in later years.

¹¹ The report dealt only with SSS along South African coastline but given that the authors raise the issue of low cargo volumes it makes sense that their recommendations would apply equally to a system that extends beyond the countries’ borders and which supports increased throughput and volume.

develop as an alternative mode of transport ... to a greater extent than in the past (NDoT, 2011). By this the authors meant that a SSS would require: i) concessionary port charges that are lower than deep sea liner charges; ii) prioritised service at ports and for container handling services so as to maintain schedules and instil a perception of reliability to positively compare to road transportation; iii) concessions and startup capital and financial support for SSS operators; and iv) a revision of cabotage restrictions. Interestingly the report suggests that the dispensation proposal “should only apply to ships operating on the coast in which South Africans have a genuine beneficial interest irrespective of ship registration”. If the idea was expanded to be a regional initiative instead of a South African initiative, the same support would be required in each participating country and each country would need to have a meaningful financial interest in the SSS. Very rough estimates based on chartering a 1000TEU vessel for three years, operating a service every 12 days and running on north bound volumes of 85% and return volumes of 50% would require approximately R300 million working capital per annum for three years. This amounts to R900 million over three years divided across four nations which would each own an equal share of the service.

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