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From the Cape to Cairo? The Potential of the Tripartite Free Trade Area

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South African Institute of International Affairs

African perspectives. Global insights.

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ABSTRACT

This paper shows that there is a sound case for regional economic integration in the form of the Tripartite Free Trade Area (TFTA). The three main countries involved in this project – Egypt, Kenya and South Africa – have a considerable regional trade complementarity. The de facto regional trade of these three countries is also high but concentrated in subregions of the TFTA. The regional trade complementarity of Ethiopia, another potentially major player, is much lower, as is its regional trade intensity. The authors moreover analyse similarity in regional exports to shed light on the competition that markets face and resulting disincentives for the TFTA.

The paper then shows that South African decision makers see the TFTA as a means of poverty reduction through industrialisation. Transregional transport infrastructure and the co-ordination of industrial-development policies are essential for what South Africa's Department of Trade and Industry labels 'developmental regionalism'. Kenyan business advisers also emphasise the relevance of transport infrastructure. And, like the Department of Trade and Industry representatives interviewed for this paper, they see regional economic integration as a way of increasing foreign investment in strategic sectors. The TFTA is moreover expected to generate regional commodity chains in which Kenya and South Africa, linked to economically less advanced partners in the region, will produce manufactured goods.

The regional member states in the envisaged TFTA have already begun to harmonise administrative procedures and legislation on transport. One-stop border posts, common axle load limits and mutually recognised carrier licences are on their way. Road and railway corridors, and ports across the region are being upgraded. Significantly expanding co-operation on energy is a long-term objective.

ABOUT THE AUTHORS

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ABBREVIATIONS AND ACRONYMS

APR	Asia–Pacific region
COMESA	Common Market for Eastern and Southern Africa
DRC	Democratic Republic of the Congo
diti	Department of Trade and Industry
EAC	East African Community
Frelimo	Frente de Libertação de Moçambique (Mozambican Liberation Front)
GDP	gross domestic product
GERD	Grand Ethiopian Renaissance Dam
MW	megawatts
PIDA	Programme for Infrastructure Development in Africa
Renamo	Resistência Nacional Moçambicana (Mozambican National Resistance)
SAPP	Southern African Power Pool
SNEL	Société Nationale d'Electricité (National Electricity Company [of the DRC])
TANZAM	Tanzania–Zambia Highway
TAZARA	Tanzania–Zambia Railway
TFTA	Tripartite Free Trade Area

INTRODUCTION

In October 2008, the 26 member states of the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and SADC declared a desire to form a joint customs union, known as the Tripartite Free Trade Area (TFTA). They later agreed on a road map, which sets the framework for harmonising what has been achieved at the level of these three subregional communities. Principles for the upcoming negotiations have been specified. Market integration, upgrading transport infrastructure and industrial development are the three pillars for future economic growth, as envisaged by the potential TFTA members.

Assuming that the success of the TFTA depends on the commitment of the largest regional economies, this paper assesses the regional trade complementarity and regional trade intensity of South Africa and the three largest non-SADC economies that seek to join the TFTA – Egypt, Ethiopia and Kenya. Based on export and import patterns, the trade complementarity index reveals how intensively Egypt, Ethiopia, Kenya and South Africa can theoretically trade with each of their possible fellow TFTA members. The trade intensity index shows how intensively they do trade with them.

The authors find there may be friction between South Africa, which is the region's primary power, and the three secondary powers because of the similarity of their exports to the markets of the possible TFTA members. Based on the assumption that South African products outcompete those of Egypt, Ethiopia and Kenya, the secondary powers will have reason to be concerned about South African competition if their exports to non-SADC markets in the TFTA match those of South Africa. In other words, high regional trade complementarity and trade intensity suggest commitment to the TFTA, whereas a high export similarity with South Africa works in the opposite direction. The authors capture the latter with the export similarity index, which measures the similarity of the exports of two countries to a target market.

Data on bilateral trade is taken from the *Atlas of Economic Complexity* published by the Center for International Development at Harvard University.¹ Even though this data remains incomplete, sound conclusions can be drawn, putting the often speculative debate about the TFTA on a quite robust quantitative foundation. The main findings of the authors' econometric analysis are as follows:

- Egypt and South Africa possess a very strong trade complementarity, and Kenya a strong trade complementarity with the possible TFTA members. On average, 69.45%, 50.37% and 62.08% of the imports of the countries that seek to join the TFTA match with the exports of Egypt, Kenya and South Africa, respectively. Hence, Egypt, Kenya and South Africa can gain a lot from regional economic integration. The regional trade complementarity of Ethiopia is much lower. Only 25.60% of the imports of the regional countries match Ethiopia's exports, which suggests that access to regional markets is not an important driver of Ethiopia's commitment to the TFTA.
- The potential regional trade is only partly reflected by the current regional trade, indicating that there are significant tariff and non-tariff barriers to trade. Ethiopia's regional trade intensity is negligible, as is Kenya's beyond the EAC region. The EAC, however, features an extremely high level of trade intensity with Kenya. Egypt achieves a high trade intensity with countries north of the equator. Its trade is less but still

considerable in the Great Lakes region and declines further south. South Africa trades intensively with its fellow SADC members and the EAC, in particular Kenya. Its trade intensity declines north of the equator but still remains above global average values there.

- The export similarity index does not provide a clear picture. For Ethiopia, considerations are hardly relevant given its predominant overseas trade orientation. Egypt and Kenya's exports to the potential TFTA members overlap partly with those of South Africa. Egypt and Kenya have high export similarity with South Africa in the markets of their respective neighbours, namely Libya, Sudan and the EAC. Other than that, export similarity with South Africa is below average for most regional countries that are marked by an above-average trade intensity and/or trade complementarity with Egypt and Kenya. Egyptian and Kenyan enterprises are also set to gain easier access to SADC markets, whose imports partly match Egyptian and Kenyan exports.

Complementing this econometric analysis with an actor-centred perspective, the paper then analyses the expectations of bureaucrats, politicians and representatives of business organisations from South Africa and Kenya – the two countries that will probably take the first steps towards realising the TFTA. These expectations are presented as cognitive maps – diagrams that show how the interviewees logically structure the issues that the authors discussed with them, how they identify obstacles and opportunities, and how they link them to agendas that guide their actions. The authors conducted written, semi-structured interviews with three government officials and six representatives of non-governmental business organisations in December 2013 and January 2014. They combine these with strategy papers of the Kenyan and South African governments.

The qualitative part of the paper confirms what the econometric analysis suggests: the potential for regional trade is a relevant motivation for Kenya and South Africa. Yet there is more to the TFTA than that. South African decision makers from the Department of Trade and Industry (dti) see the TFTA in the context of 'developmental regionalism', which aims to reduce poverty through industrialisation and economic growth. Transregional transport infrastructure and the co-ordination of industrial development policies are essential for meeting this goal. Kenyan business advisers also emphasise the relevance of transport infrastructure projects in the context of the TFTA, along with foreign investment in strategic sectors. Both Kenyan and South African decision makers argue that the larger market that is realisable through the TFTA will attract more foreign investment. The TFTA is also expected to generate regional commodity chains in which Kenya and South Africa will produce manufactured goods in commodity chains that link them to providers of raw materials and semi-manufactured inputs in the regional periphery.

Transport infrastructure is essential for regional commodity chains and the impulses for economic development that they are expected to trigger. The paper therefore pays close attention to such projects in the last main section, pointing out that there is much potential to develop ports that will better link the landlocked countries to global markets, increasing their competitiveness and hence their attractiveness to overseas investors.

Significantly expanding co-operation on energy within the TFTA is, conversely, a long-term objective. Despite serious obstacles, the supply of much needed electricity to South Africa by means of giant hydropower stations in the Democratic Republic of the Congo (DRC) and Ethiopia, which are yet to be built, appears to be an important consideration for policymakers.

TRADE COMPLEMENTARITY, TRADE INTENSITY AND EXPORT SIMILARITY IN THE TFTA

The prime objective of regional economic integration is to facilitate intraregional trade. By lowering tariffs and easing non-tariff barriers – especially costs of transportation – regional economic integration has the potential to trigger a dynamic that leads to economic development.

Speaking about the vision of continental free trade, Kenya's former president Mwai Kibaki pointed out that 'countries with advanced levels of market integration trade more among themselves, produce more goods and services and have well-developed infrastructure. This leads to high economic growth and development as well as better living standards for the people.'² The EAC's secretary general, Richard Sezibera, expects the TFTA to 'further boost [the] EAC's market advantage and strength', increasing, among other things, its attractiveness to overseas investors.³

In an article in the *Mail & Guardian*, South African Minister of International Relations and Cooperation Maite Nkoana-Mashabane compares South Africa's intense intra-SADC trade with its negligible intra-African trade, suggesting that SADC as a well-functioning and highly advanced project of regional integration accounts for high levels of regional trade.⁴ Ashley Benjamin, vice president of the Federation of Unions of South Africa, associates the TFTA with 'infrastructure development, industrial development and ... trade diversification'.⁵

Regional commodity chains are essential for economic dynamics induced by regional integration. Director general of South Africa's dti, Lionel October, argues that his country may become a springboard and 'production base' for overseas companies that seek low-duty access to other parts of the continent. As a consequence, South Africa will capitalise on overseas investment in the sub-Saharan mining sector and the increasing consumption by the new middle class if infrastructures are upgraded and regional commodity chains in manufacturing established, as Trade and Industry Minister Rob Davies has suggested.⁶

Economic development based on industrialisation is an objective of the governments of Egypt, Ethiopia, Kenya and South Africa. However, the degree to which policy papers link this goal to regional economic integration varies:

- Egypt's economic and political course has been unclear since the end of the Mubarak regime. The recently published strategy paper known as Egypt 2022 sets the goal of doubling the national income by 2022.⁷ It states that industrial clusters, and trade and industrial zones, established in co-operation with African and Arab countries, are prime tools of Egypt's economic policy. These are to attract foreign technologies and, as a consequence, contribute to higher value addition in the industrial sector.⁸ A larger regional market created through the TFTA therefore fits well with Egypt's economic policy.
- Ethiopia's Growth and Transformation Plan calls for annual growth rates of 11–15% of its gross domestic product (GDP) for the period from 2010 to 2015.⁹ The government plans to upgrade electricity generation and infrastructure for telecommunications and transportation,¹⁰ apparently to facilitate investment. This way, Ethiopia would achieve the level of a mid-income country by the early 2020s. Regional co-operation is not explicitly mentioned in the Growth and Transformation Plan but, as the authors

argue at the end of this paper, scaling up electricity generation in Ethiopia will almost certainly lead to electricity exports to the potential TFTA members.

- Kenya's Vision 2030 calls for an average annual growth rate of 10% to the country's GDP. It presents Kenya as a newly industrialising country and ascribes considerable importance to Central and East African markets,¹¹ as summarised later in the paper.
- South Africa's New Growth Path, the government's framework for economic policy, sets the target of 5 million new jobs by 2020. Economic growth will be a determining factor of such intense job creation.¹² According to the dti, producing tradable goods and services in labour-intensive and value-adding sectors plays a fundamental role for achieving this objective,¹³ which implies relying more on manufactured goods for export as a driver of growth. Regional commodity chains, based on the competitive advantages of African countries, are to be investigated.¹⁴ As discussed below, officials of the dti are convinced that the TFTA will provide new opportunities for South African enterprises and therefore contribute to job creation through economic growth.

The causal chain from regional economic integration to economic growth depends on something that is often very limited in the global South: the potential for neighbouring countries to trade with one another. Having traditionally been exporters of raw materials and importers of consumer goods, developing countries primarily trade with the global North (and, increasingly, with China, following the same disadvantageous pattern). As a starting point for an assessment of the TFTA, it therefore makes sense to take a closer look at the feasibility of trade among its potential members. Concentrating on Egypt, Ethiopia, Kenya and South Africa as the main drivers of the TFTA, the authors seek to find out how much these big players can theoretically gain from free trade within the TFTA. The measurement used for these purposes is the trade complementarity index, which shows to what degree the imports of one country overlap with the exports of another.

Mathematically, the trade complementarity index is represented as:

$$TC_{ij} = 100 - \sum \left| \frac{y_{ki} - x_{kj}}{2} \right| \quad \text{where}$$

y_{ki} is the share of good k in all imports of country i and

x_{kj} is the share of good k in all exports of country j .

Interpreting the trade complementarity index is easy because it can be thought of as a percentage value that indicates the share of the imports of a target market that match the exports of another market – in this case, Egypt, Ethiopia, Kenya and South Africa. The index has the value 0 if there is no overlap at all; it is 100 if imports and exports match perfectly.

One should nonetheless be cautious about the results, as the calculations in this paper are based on aggregated data. The trade complementarity index increases with the level of aggregation of traded items because what is captured as complementarity is, for instance, Eritrea's imports of goods classified as machinery and transport equipment matching South Africa's exports of identically classified goods. In practice, however, the specific machinery and transport equipment supplied by South Africa may be somewhat different from the machinery and transport equipment demanded by Eritrea. Furthermore, the

trade complementarity index measures a match in percentage terms, and not in volumes. If the exports of one country structurally match the imports of another, the volume of the supply may not necessarily be sufficient to satisfy the demand. Alternatively, exports may be too numerous to be fully absorbed by the importing country.

And, more importantly, a match between the imports of one country with the exports of another, as captured by the trade complementarity index, does not necessarily mean that trade is feasible because the index does not take into account tariff and non-tariff barriers. Considering that there are major tariff and non-tariff barriers in Africa, it therefore makes sense to compare the trade complementarity of the potential TFTA members with the intensity of their trade. In other words, the authors compare the potential relevance of national markets in the TFTA for Egypt, Ethiopia, Kenya and South Africa with their de facto relevance. The authors do so with the help of the trade intensity index. One can think of the trade intensity index as a uniform export share. It shows whether a country exports more – as a percentage – to another country than the world does on average. This index has a value between 0 and ∞ . Values greater than 1 indicate an intense trade relationship – that is, more than the world average.

Mathematically, the trade intensity index is represented as:

$$TI_{ij} = \frac{x_{ij}}{x_{wj}} \quad \text{where}$$

x_{ij} is the share of exports to country j of all exports of country i and

x_{wj} is the share of world exports to country j of all world exports.¹⁵

For both indexes, the data is based on the Standard International Trade Classification (SITC-4) and is highly aggregated, with 11 categories of tradable items. This level of aggregation makes composing data matrices for the regional trade relations of Egypt, Ethiopia, Kenya and South Africa a feasible task. Working at a medium level of aggregation would require converting data for 99 subcategories per country to create the indexes. Moreover, splitting some of the 11 categories into subcategories does not make sense given the small volume of trade.

After having determined the potential and de facto relevance of regional trade for South Africa and the three secondary economic powers, the authors analyse whether regional economic integration is likely to increase friction among them. For this purpose, the authors calculate the export similarity index for South Africa, on the one hand, and for each of the three secondary powers, on the other. The export similarity index shows how similar the exports of two countries to a target market are on a scale from 0 to 100. The higher the index value, the more similar the exports. It can, hence, be thought of as a percentage.

Mathematically, the export similarity index is represented as:

$$ES(ij, r) = \sum \min(x_i^k, x_j^k) \quad \text{where}$$

x_i^k is the share of total exports to the target market of products k of country i and

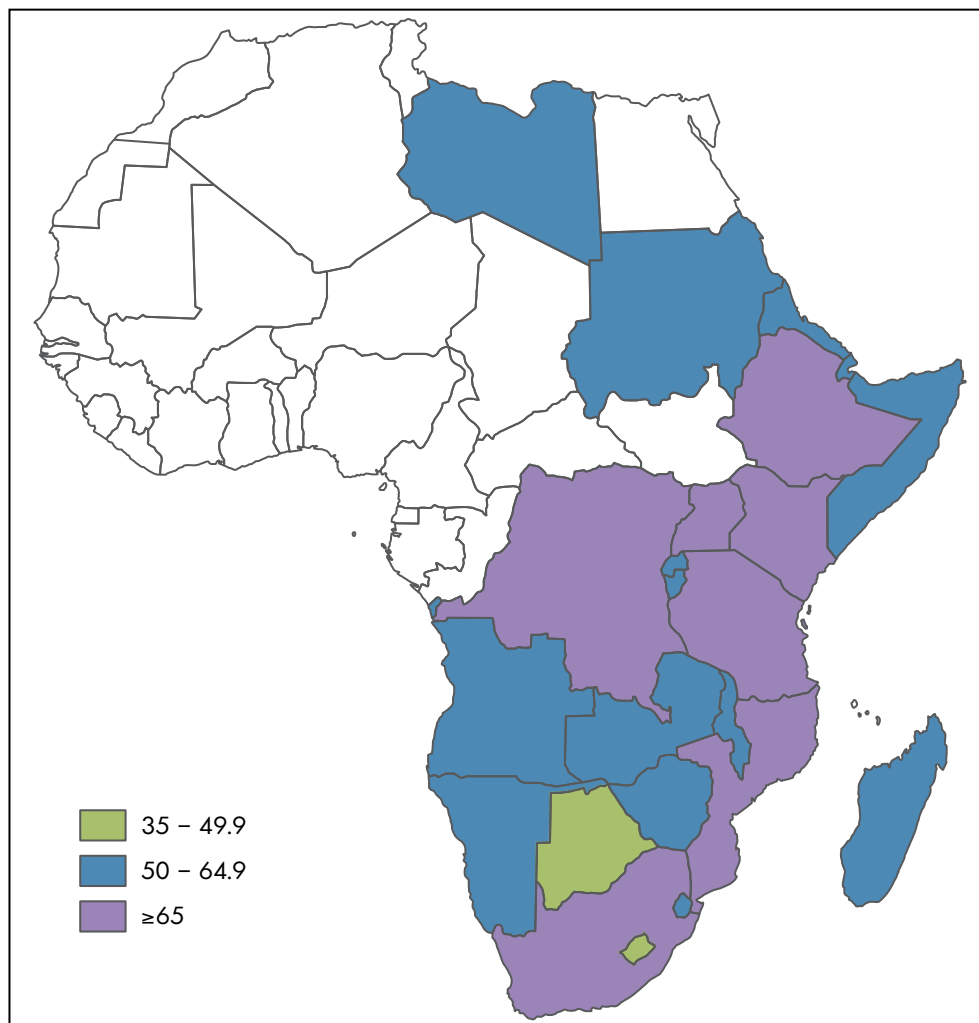
x_j^k is the share of total exports to the target market of products k of country j .

When interpreting the export similarity index, caution is necessary for two reasons. First, the index is not affected by the relative volume of exports, meaning that a high degree of similarity in exports of two countries to a target market does not necessarily make them fierce competitors. The target market may be much larger than their combined exports. Second, and as said before, the index is based on aggregated data and therefore measures the similarity in exports of product categories, which does not always mean an exact match of the products that compose the respective categories.

Egypt's regional trade complementarity and trade intensity

As shown by Table 1 and Figure 1, Egypt has a very high regional trade complementarity. The arithmetic mean of Egypt's trade complementarity with the potential members of the TFTA is 69.45 – slightly higher than South Africa's. Its range is 34.03 percentage points. Most interestingly, the highest trade complementarity is reached in some East and Southern African countries, i.e. not in Egypt's neighbourhood.

Figure 1: Egypt's regional trade complementarity, 2010



Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

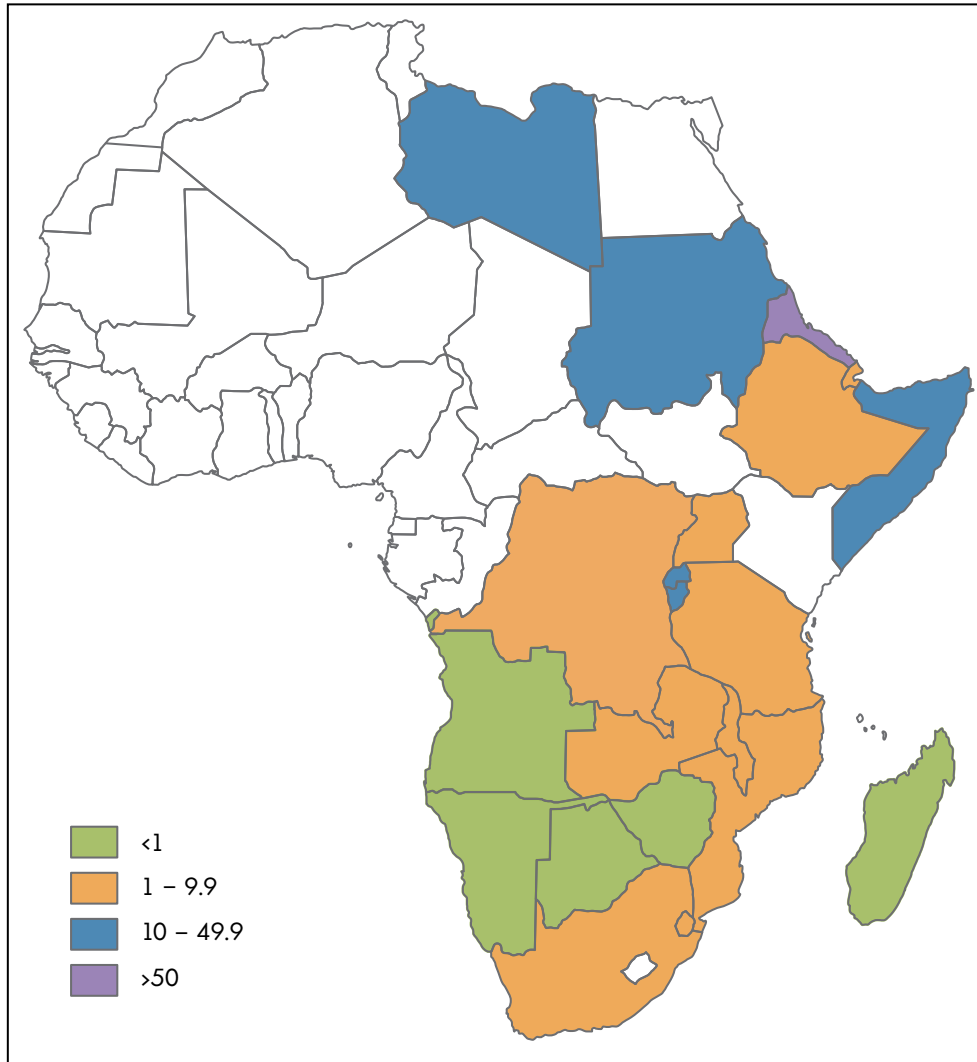
Nevertheless, Egypt trades intensively with its immediate neighbours, Libya and Sudan, and with nearby Eritrea.¹⁶ Table 1 and Figure 2 show that Egypt's trade intensity declines sharply south of the equator (except for its trade with Burundi and Uganda), even though it mostly remains above what world average values would suggest. This data implies that Egypt is likely to benefit from easing tariff and non-tariff barriers in the TFTA because it will be able to realise a presently idle trade potential this way. In other words, the indexes of Egypt's trade complementarity and trade intensity highlight that there is something that keeps Egypt from trading intensively with East and Southern Africa, although its exports match the imports of many countries from these parts of the TFTA.

Table 1: Egypt's regional trade complementarity and trade intensity

Country	Trade complementarity	Trade intensity
Angola	57.15	0.66
Botswana	43.28	0.01
Burundi	58.53	27.08
Comoros	55.36	0.62
Djibouti	58.33	8.37
DRC	69.45	3.75
Eritrea	56.27	77.07
Ethiopia	66.66	6.05
Kenya	68.49	10.77
Lesotho	42.46	insufficient data
Libya	62.70	32.35
Madagascar	59.18	0.30
Malawi	61.59	2.77
Mauritius	76.49	3.92
Mozambique	74.54	1.17
Namibia	53.61	0.19
Rwanda	58.03	12.59
Seychelles	56.26	0.99
Somalia	51.70	16.14
South Africa	66.20	2.83
Sudan ¹⁷	58.68	43.73
Swaziland	50.19	2.61
Tanzania	72.10	2.58
Uganda	70.62	5.09
Zambia	57.59	1.62
Zimbabwe	62.40	0.97

Note: Table 1 lists all potential member states of the TFTA. Data is for 2010.

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 2: Egypt's regional trade intensity, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Ethiopia's regional trade complementarity and trade intensity

Ethiopia's position in terms of its regional trade complementarity and regional trade intensity is different from the three other countries analysed here. The arithmetic mean of Ethiopia's trade complementarity with the potential TFTA members is very low, at 25.60. Somalia is the only country in the potential TFTA whose imports structurally match more than 50% of Ethiopia's exports. The range of Ethiopia's regional trade complementarity is 48.49 percentage points. The low trade complementarity with all other regional countries indicates that Ethiopian policymakers should not pursue the TFTA to boost the exports of their country.

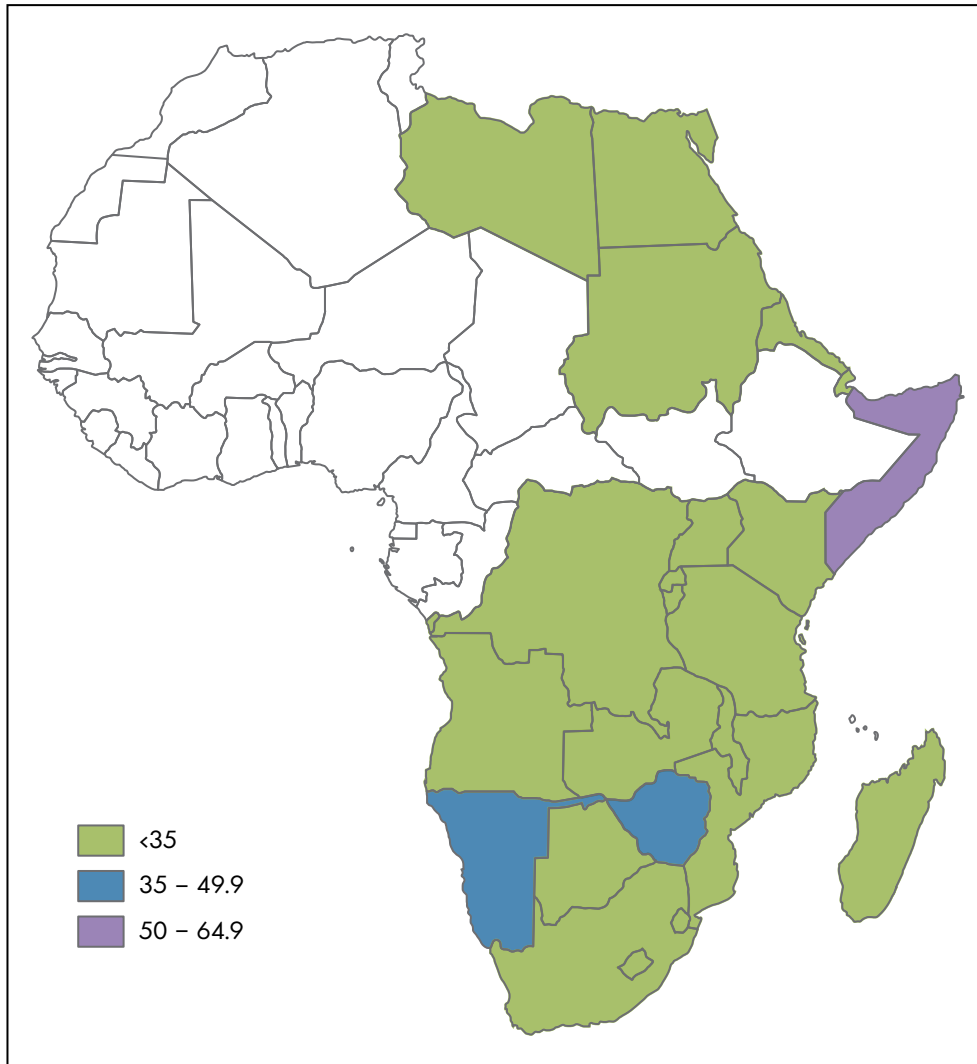
This assessment is reinforced by the trade intensity index: Ethiopia trades much less with all the regional countries than one would expect on the basis of world average values. Uganda and Zimbabwe are exceptions to this, but Ethiopia's trade intensity with those countries does not come anywhere near the regional trade intensity that Egypt, Kenya and South Africa have. Ethiopia's regional trade in absolute terms is often so low that its trade intensity becomes practically nil.

Table 2: Ethiopia's regional trade complementarity and trade intensity

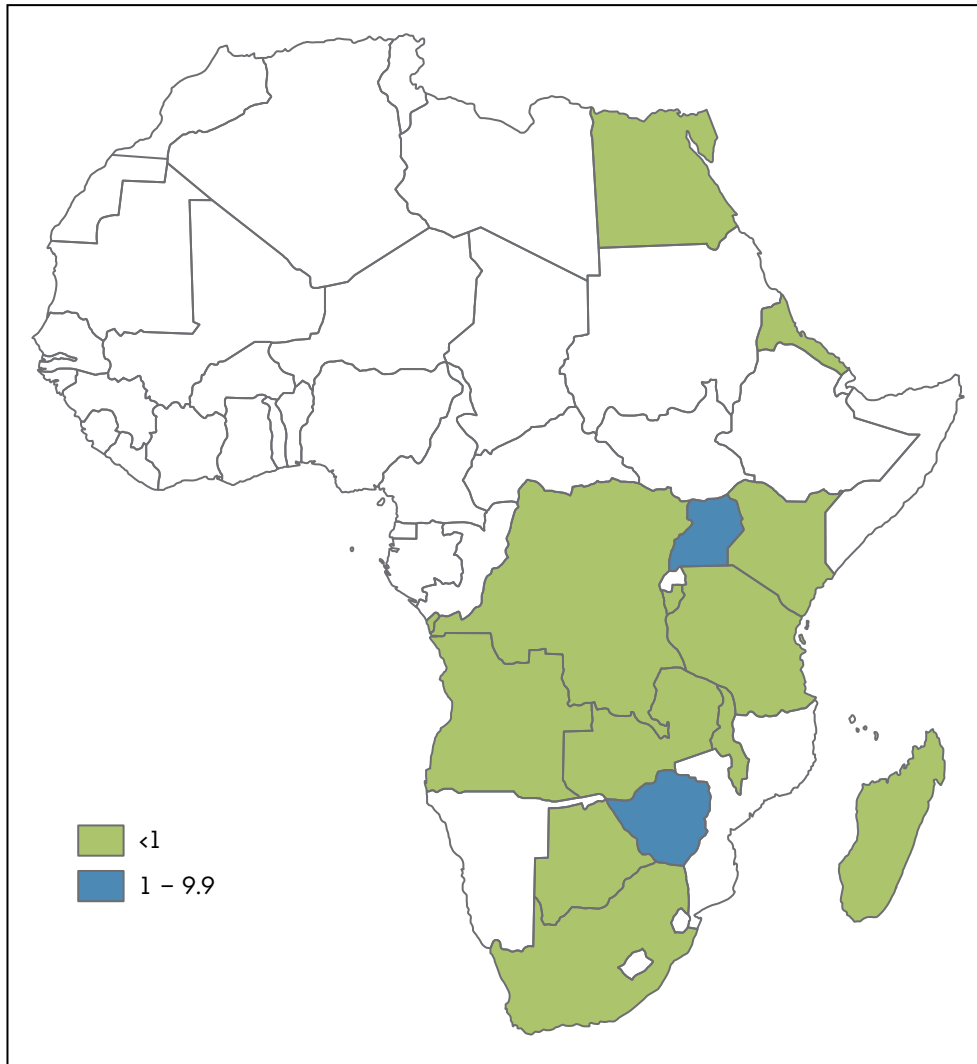
Country	Trade complementarity	Trade intensity
Angola	23.67	0.00
Botswana	13.75	0.21
Burundi	21.97	0.07
Comoros	45.96	0.00
Djibouti	21.73	0.00
DRC	31.53	0.00
Egypt	33.31	0.00
Eritrea	34.97	0.00
Kenya	18.75	0.73
Lesotho	12.54	insufficient data
Libya	24.17	insufficient data
Madagascar	22.79	0.21
Malawi	18.37	0.20
Mauritius	29.45	0.19
Mozambique	25.08	insufficient data
Namibia	44.00	insufficient data
Rwanda	29.16	insufficient data
Seychelles	36.05	insufficient data
Somalia	61.03	insufficient data
South Africa	17.83	0.77
Sudan	31.16	insufficient data
Swaziland	22.22	insufficient data
Tanzania	16.94	0.10
Uganda	18.40	2.14
Zambia	28.40	0.17
Zimbabwe	36.85	1.22

Note: Data is for 2010.

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 3: Ethiopia's regional trade complementarity, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 4: Ethiopia's regional trade intensity, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Kenya's regional trade complementarity and trade intensity

The arithmetic mean of Kenya's trade complementarity with the potential TFTA members is 50.37. In other words, about half of the imports of the regional countries match Kenya's exports. This means that the TFTA is attractive to Kenya, albeit less so than it is to Egypt. The range in Kenya's regional trade complementarity is 41.22 percentage points, indicating that some potential TFTA members would be interesting trading partners for Kenya, whereas others would not.

The data moreover suggests that, in general, Kenya does not trade much with non-EAC countries compared to world average values. Egypt, however, is an exception. Kenya's trade intensity with Botswana, Mozambique, Zambia and Zimbabwe is only slightly higher than

one would expect based on world average values. Bringing together trade complementarity and trade intensity, it would be reasonable to conclude that Kenya may benefit from easing regional tariff and non-tariff barriers through the TFTA. However, Burundi, Tanzania and Uganda have a very high trade intensity with Kenya. Kenyan policymakers should therefore be concerned that easing access to the EAC market and resulting South African competition may cause problems for the foreign trade of their country.

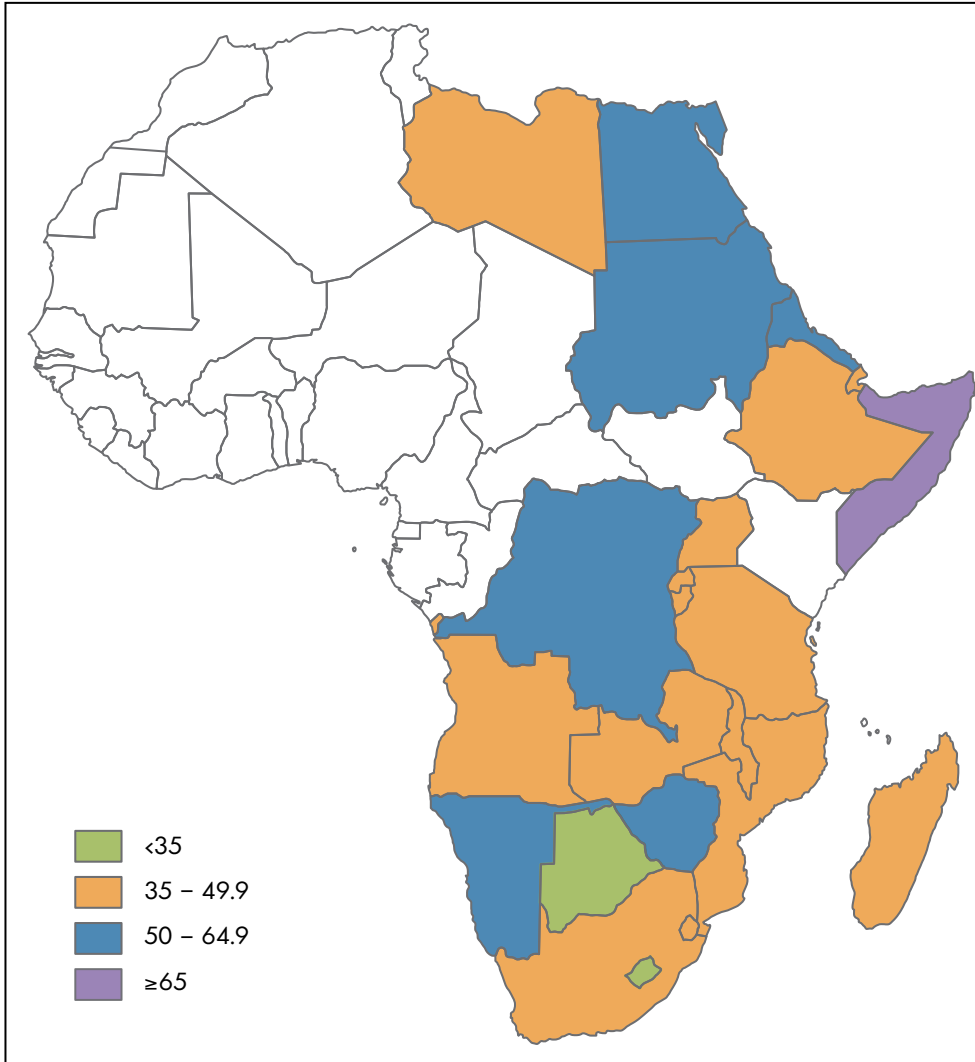
Table 3: Kenya's regional trade complementarity and trade intensity

Country	Trade complementarity	Trade intensity
Angola	49.69	insufficient data
Botswana	32.43	1.92
Burundi	44.46	308.88
Comoros	68.06	insufficient data
Djibouti	45.46	insufficient data
DRC	56.42	insufficient data
Egypt	54.74	14.79
Eritrea	56.96	0.03
Ethiopia	40.28	0.06
Lesotho	31.18	insufficient data
Libya	48.09	0.03
Madagascar	47.41	0.20
Malawi	45.90	0.68
Mauritius	55.52	0.65
Mozambique	49.49	2.16
Namibia	58.79	insufficient data
Rwanda	49.41	insufficient data
Seychelles	56.57	insufficient data
Somalia	72.40	0.01
South Africa	42.69	insufficient data
Sudan	52.80	0.07
Swaziland	42.82	insufficient data
Tanzania	37.70	139.32
Uganda	42.18	444.23
Zambia	48.97	1.90
Zimbabwe	64.20	4.76

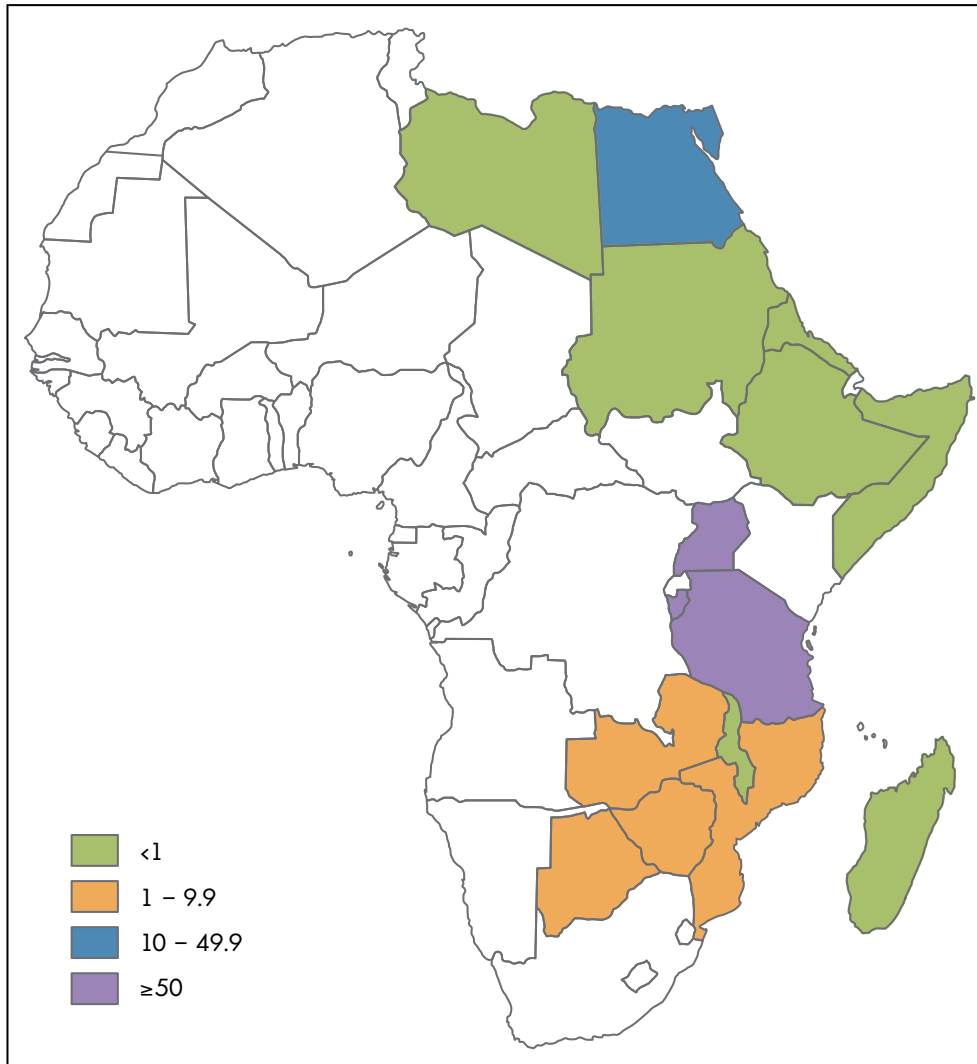
Note: Data is for 2010.

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 5: Kenya's regional trade complementarity, 2010



Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 6: Kenya's regional trade intensity, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

South Africa's regional trade complementarity and trade intensity

The arithmetic mean of South Africa's trade complementarity with the non-SADC countries that may join the TFTA is 62.08, which means that almost two-thirds of their imports match South Africa's exports. The data therefore shows that there is great potential for South Africa to trade regionally. This potential does not feature any significant regional disparities – the entire TFTA is an interesting market for South Africa. This is also confirmed by the small range of 25.58 percentage points (with Swaziland as minimum and Zimbabwe as maximum on the trade complementarity index).

The trade intensity index reveals that South Africa trades more with most of the regional countries than one would expect based on world average values. In particular, the

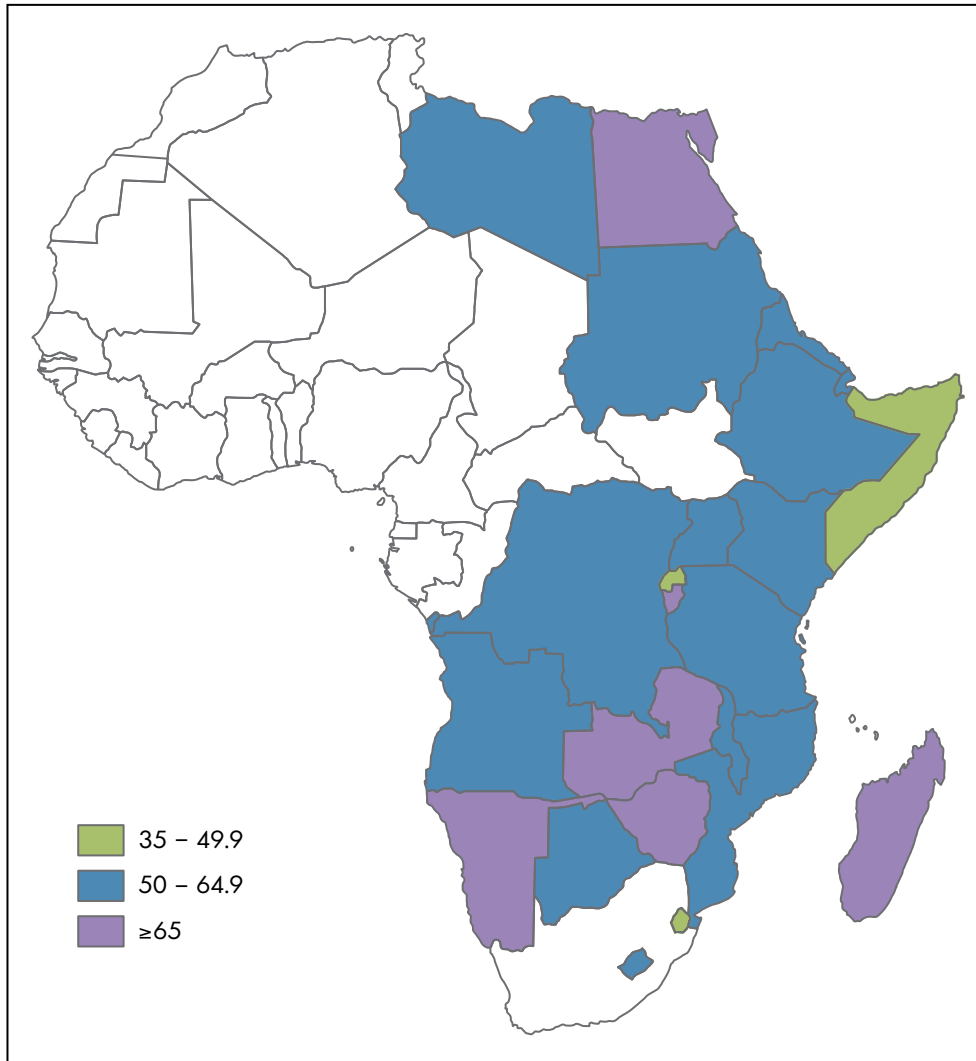
DRC, Malawi, Mozambique, Zambia and Zimbabwe trade intensively with South Africa. This is not surprising given these countries' proximity to South Africa, which makes transporting goods easier, and their membership of SADC. Despite the tariff and non-tariff barriers, the EAC countries, particularly Kenya, also trade intensively with South Africa, although not at the trade intensity values of the SADC members. Libya is the only country that has a trade intensity with South Africa below 1 (i.e. below global average values).

Table 4: South Africa's regional trade complementarity and trade intensity

Country	Trade complementarity	Trade intensity
Angola	57.50	8.57
Botswana	60.49	insufficient data
Burundi	66.33	5.17
Comoros	53.54	11.05
Djibouti	58.06	1.38
DRC	60.23	53.07
Egypt	68.49	insufficient data
Eritrea	51.59	12.83
Ethiopia	55.01	1.17
Kenya	55.78	21.27
Lesotho	60.19	insufficient data
Libya	60.13	0.26
Madagascar	66.44	15.81
Malawi	57.62	52.16
Mauritius	60.26	24.17
Mozambique	58.14	70.26
Namibia	69.65	insufficient data
Rwanda	48.74	6.66
Seychelles	56.52	17.32
Somalia	49.48	2.92
Sudan	54.28	1.65
Swaziland	45.32	insufficient data
Tanzania	53.52	16.53
Uganda	57.57	9.20
Zambia	67.74	59.08
Zimbabwe	70.09	87.43

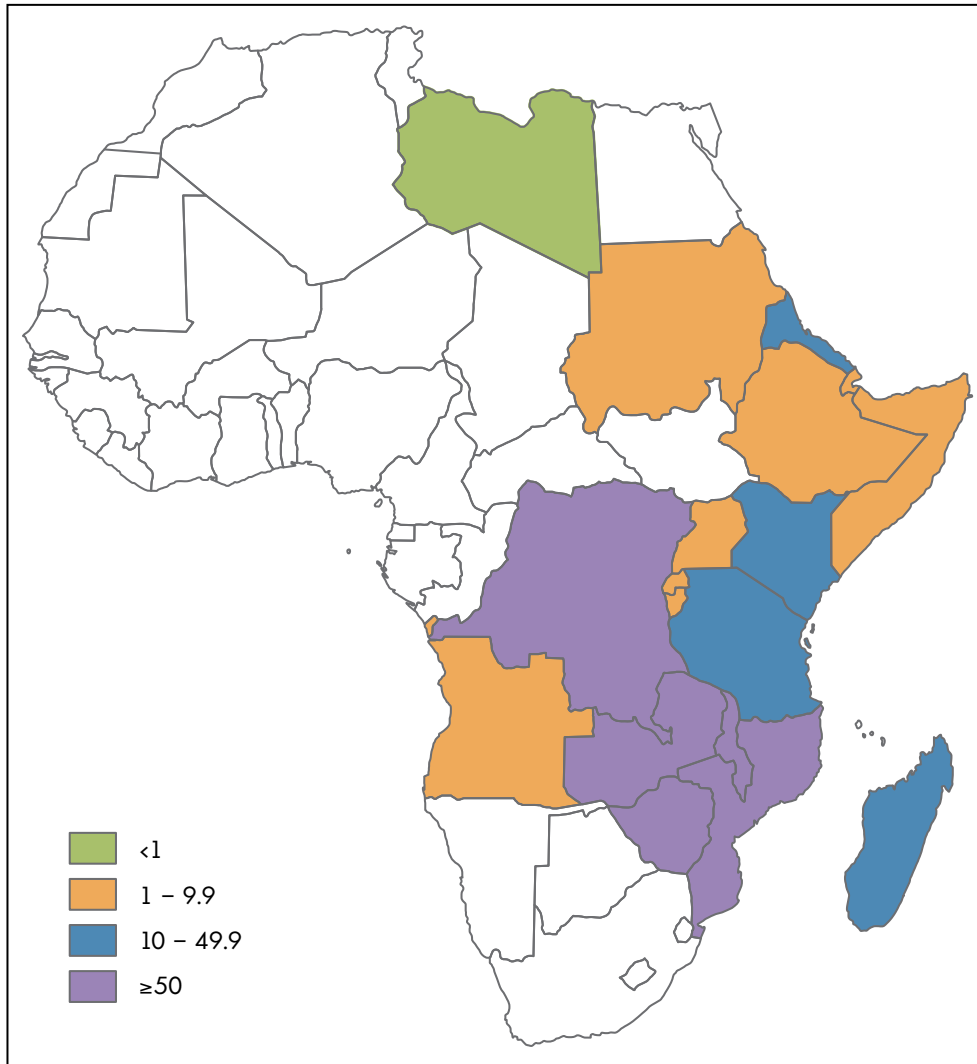
Note: Data is for 2010.

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 7: South Africa's regional trade complementarity, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Based on the data used here, it is difficult to speculate whether South Africa's regional trade intensity with the countries that may join the TFTA will increase considerably if the TFTA becomes reality. Strictly speaking, the data only suggests that South African–Libyan trade will experience a boost through the TFTA. This is because South African–Libyan trade complementarity is high but their trade intensity remains below what one would expect based on world average values.

Figure 8: South Africa's regional trade intensity, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Regional export similarity with South Africa

If one compares South Africa's exports to the potential TFTA member markets with those of the three secondary powers, it is evident that there is great variation among the four countries (see Table 5 and Figures 9, 10 and 11). Aggregate values for the entire TFTA suggest that there is a very high overlap in the regional exports of Egypt and South Africa (65.42%), and of Kenya and South Africa (71.04%). However, at the level of individual countries as markets, the export similarity tends to decline because there is much diversity in the regional exports of Egypt, Kenya and South Africa. Nevertheless, competition remains likely and can be expected to increase if integration within the TFTA eases market access.

Table 5: South Africa's export similarity with Egypt, Ethiopia and Kenya

Target market	South Africa and Egypt	South Africa and Ethiopia	South Africa and Kenya
Angola	48.32	insufficient data	insufficient data
Botswana	insufficient data	insufficient data	insufficient data
Burundi	26.56	26.65	51.31
Comoros	38.25	insufficient data	insufficient data
Djibouti	28.79	insufficient data	insufficient data
DRC	66.03	22.99	69.52
Egypt	–	4.94	12.43
Eritrea	19.68	insufficient data	insufficient data
Ethiopia	51.07	–	52.35
Kenya	53.21	28.25	–
Lesotho	insufficient data	insufficient data	insufficient data
Libya	58.44	insufficient data	insufficient data
Madagascar	20.81	29.12	54.78
Malawi	56.17	49.47	53.23
Mauritius	46.94	28.29	24.55
Mozambique	45.27	insufficient data	59.00
Rwanda	35.75	insufficient data	insufficient data
Seychelles	21.54	insufficient data	insufficient data
Somalia	44.37	insufficient data	insufficient data
Sudan	45.75	insufficient data	insufficient data
Swaziland	insufficient data	insufficient data	insufficient data
Tanzania	92.33	41.81	73.34
Uganda	77.73	14.90	72.40
Zambia	68.88	67.67	62.13
Zimbabwe	30.22	31.69	32.87

Note: Data is for 2010.

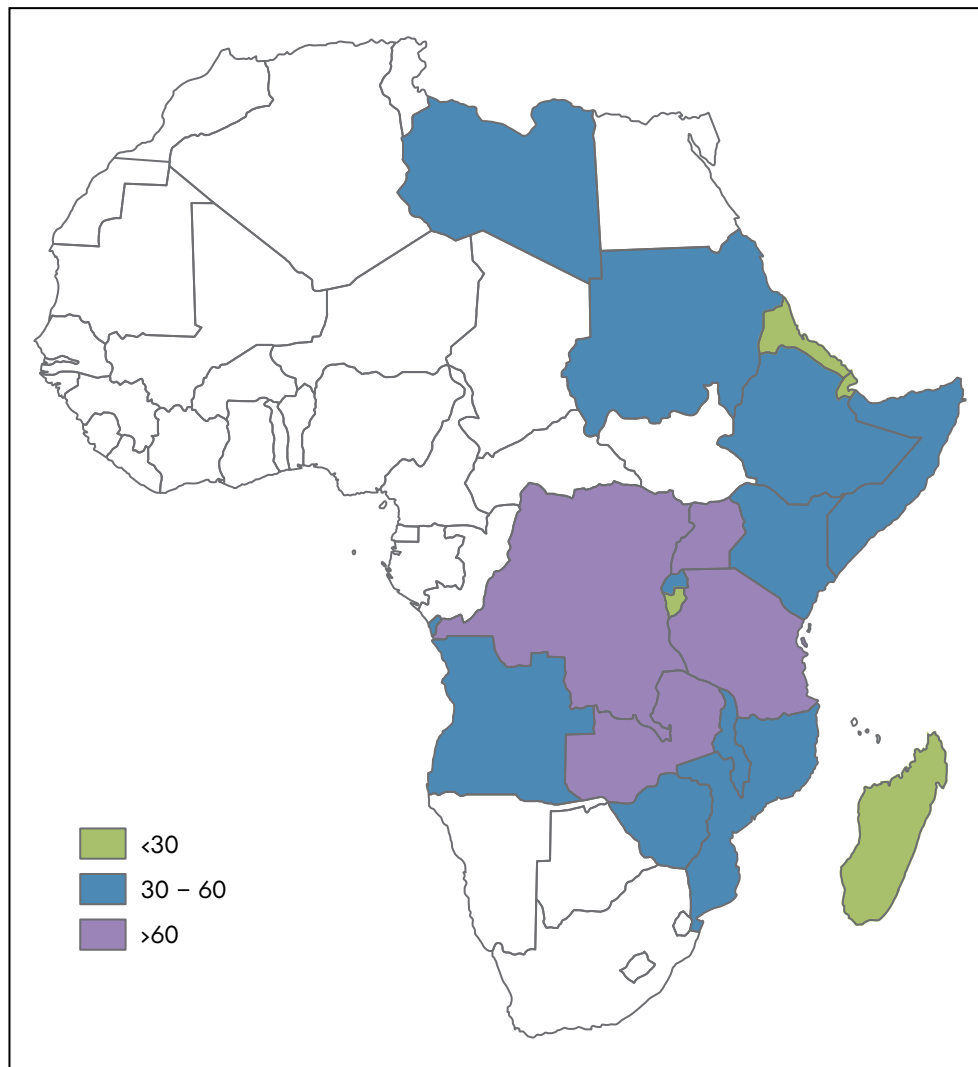
Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

South African competition would affect Egypt most in its traditional backyard markets – Libya and Sudan – and in Ethiopia and Kenya, two countries that are attractive to Egypt because of their high trade complementarity. Roughly half of the goods that Egyptian firms currently export to these markets are also sold there by South African companies. Three of the other five countries that feature a high level of trade complementarity with Egypt are marked by an outstandingly high Egyptian–South African export similarity:

the DRC, Tanzania and Uganda. The DRC and Tanzania are members of SADC. The TFTA will make access for Egyptian firms to those markets easier, whereas South African enterprises already benefit from free trade with them. Several countries that currently trade very intensively with Egypt – Burundi, Djibouti, Eritrea, Rwanda and Somalia – are characterised by a rather low Egyptian–South African export similarity.

Kenya is likely to face problematic competition from South Africa in the EAC. About 73% of the goods that Kenya exports to Tanzania and Uganda are affected by South African competition. In Burundi this applies to roughly half of Kenya's exports. Yet four of the regional countries that trade more with Kenya than world average values suggest are members of SADC: Botswana, Mozambique, Zambia and Zimbabwe. The TFTA therefore can only strengthen Kenya's competitive position there.

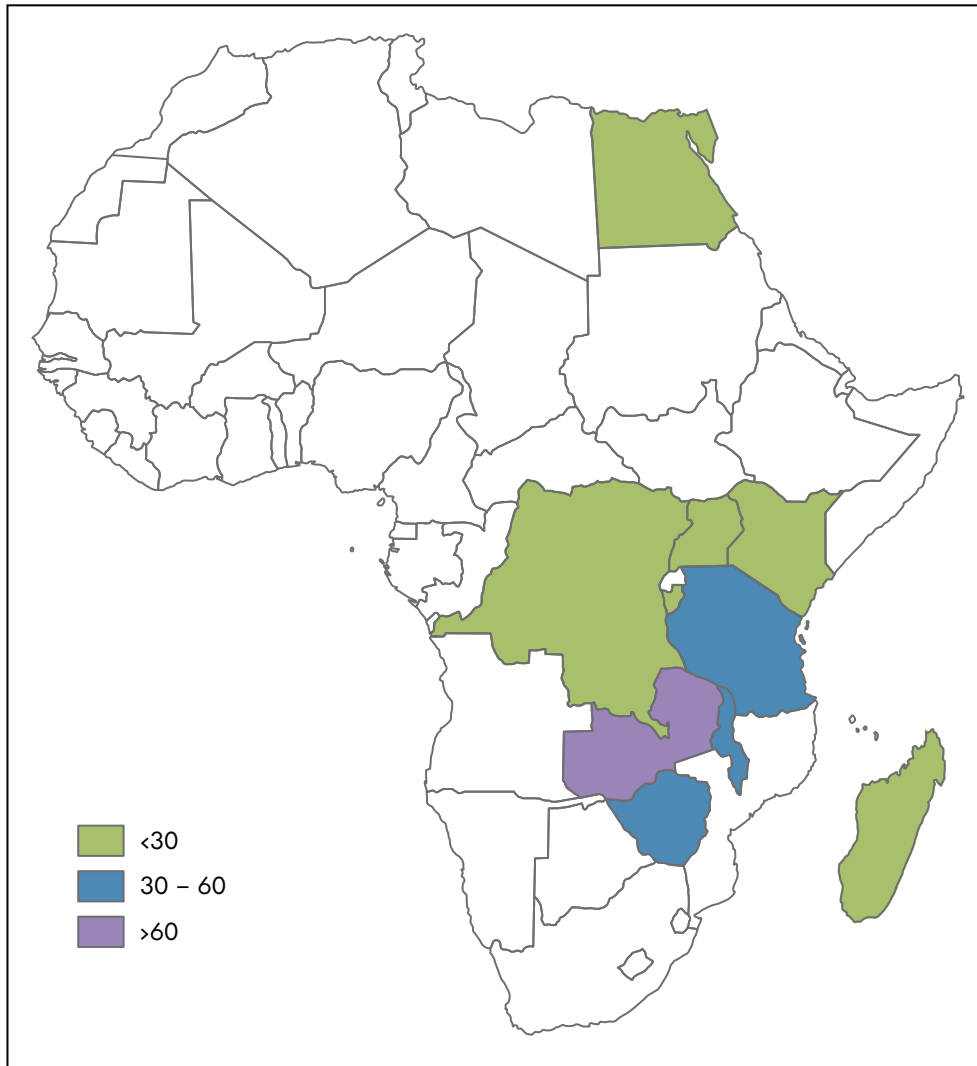
Figure 9: Export similarity of South Africa and Egypt, 2010



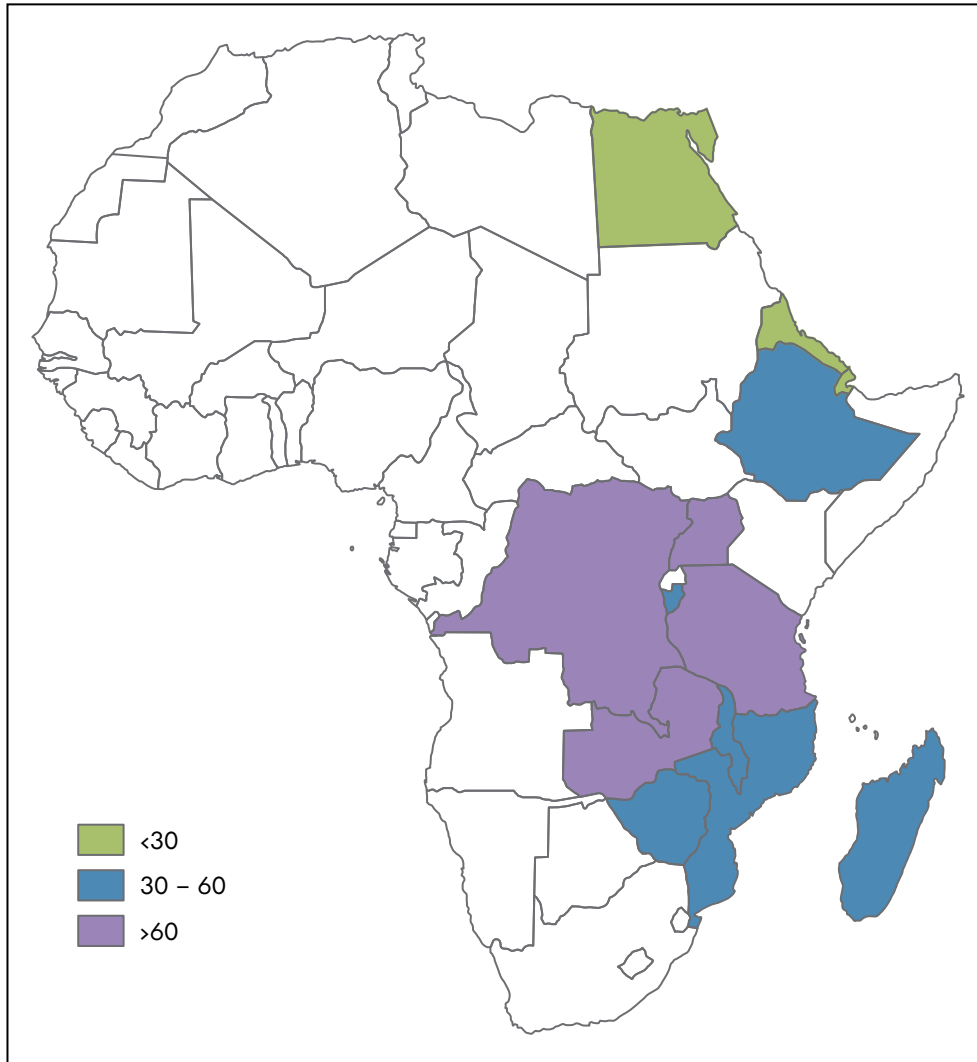
Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

As for Ethiopia, this analysis shows that export similarity with South Africa is low, except in the Zambian market. It is often negligible, as in the cases of Kenya and Uganda, which possess a certain relevance for Ethiopia's foreign trade. If Ethiopia were to increase its exports to the region, it would not have to fear South African competition. As stated above, however, Ethiopia's regional trade intensity and its regional trade complementarity are so low that such considerations hardly matter.

Figure 10: Export similarity of South Africa and Ethiopia, 2010



Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

Figure 11: Export similarity of South Africa and Kenya, 2010

Source: Authors' calculations based on data from the Center for International Development, *Atlas of Economic Complexity*, 2014, <http://www.atlas.cid.harvard.edu>

SOUTH AFRICA AND KENYA'S EXPECTATIONS OF THE TFTA

African governments' statements that indicate their expectations of the TFTA are not common. At the EAC Geneva forum in July 2012, Kenyan delegates argued that the TFTA would make the region more attractive to investment, and hence stimulate industrialisation and value addition of the country's exported goods.¹⁸ South African think tanks have voiced similar hopes: the TFTA may facilitate investment by liberalising legislation, increasing the transparency of laws and regulations, providing dispute-settlement mechanisms to investors, and encouraging joint ventures and strategic alliances in what would be an integrated, larger and more attractive market.¹⁹

To understand how the governments of South Africa and Kenya – the two big players that will probably make the first moves towards continental free trade – approach the TFTA, one needs to capture the way decision makers think about the free-trade area. The authors have chosen to represent the way South African and Kenyan decision makers structure their objectives, challenges and opportunities concerning the continental free-trade area in the form of cognitive maps. In political science, cognitive maps originate from an edited volume on political elites by Axelrod.²⁰ The cognitive maps that the contributors to that book drafted consist of boxes and arrows. The boxes represent concepts in the mind of a politician; the arrows stand for the logical interlinking of the concepts. This way, Axelrod and his colleagues studied the logic behind policies and examined whether they were rational, in the sense that the logical connections presumed by the decision maker were, from an objective perspective, accurate.

More recently, Wolff has used interviews to capture how representatives of social movements interpret conditions at a starting point and link them to organisational patterns and strategies that they think enable them to realise their goals. The cognitive maps that Wolff produces also show the interplay of problems, strategies and desired solutions with contextual factors derived from what Wolff's interviewees told him. This model allows Wolff to explain and predict the behaviour of his interviewees – that is, their preference for strategy A over strategy B.²¹

In the following sections the authors have developed cognitive maps that illustrate South Africa and Kenya's commitment to the TFTA. The information is based on government publications, and interviews with three government officials and six representatives of non-governmental business organisations. The interviews were conducted by email and phone in December 2013 and January 2014. The authors refer to their interviewees in a semi-anonymous way, indicating the interviewees' institutional affiliations but neither their exact positions nor their names. Information obtained from the South African and Kenyan press is also included.

Kenyan expectations of the TFTA

Kenya's aforementioned strategy paper, Vision 2030, sets the target of replacing imported consumer goods with domestically manufactured goods. Import restrictions are rejected as a means to achieving this goal. By attracting strategic investors, the Kenyan economy is to move away from exporting raw materials to producing manufactured and semi-manufactured goods, including value addition for re-export. According to Vision 2030, investment is to be boosted by the creation of a 'vibrant and globally competitive financial sector'. The paper also states that domestic companies will be supported, so that they can become 'the provider[s] of choice for basic manufactured goods in eastern and central Africa'.²² In other words, Vision 2030 concentrates on industrialisation as the central goal for Kenya's economic policy. The Kenyan government appears to focus on a narrower region than the TFTA – a region that better reflects Kenya's present trade intensity, as shown above by Figure 6.

According to the interviewees from Kenya, there is a clear connection between foreign investment and regional integration. An official from TradeMark East Africa told the authors that the enlarged regional market and resulting economies of scale hold

considerable potential for the economic growth that Kenya seeks. The Kenyan government is pushing the TFTA for this reason, the interviewee suggested.

An expert from the Nairobi-based Institute of Economic Affairs argued that Kenyan enterprises will benefit directly from a larger regional market. Foreign investment will also increase because investors will be attracted by the large TFTA market and the possibility of creating regionally integrated commodity chains. The authors' understanding of her comments is that foreign investors who are interested in regional commodity chains count as the strategic investors identified by Vision 2030. The regional commodity chains that they are expected to set up will boost industrialisation in Kenya. The official from TradeMark East Africa also suggested that regional economic integration will increase the global competitiveness of industrial products produced in the TFTA by facilitating regional commodity chains.

Hence, for Kenya, trade facilitation is of prime importance. Tariff barriers and insufficient transport infrastructure are the two main aspects here, according to the interviewee from TradeMark East Africa. She mentioned further non-tariff barriers: certification, labelling of products and standards. These matters have already been identified as urgent by the EAC, she added. The expert from the Institute of Economic Affairs referred to the upgrading of transport infrastructure in general and 'integrated regional transport infrastructure' in particular when discussing the outstanding benefits the TFTA would have for Kenya. She added that, in addition to inadequate transport infrastructure, other significant non-tariff barriers are customs laws and procedures, and rules of origin, and these should be addressed in the context of the TFTA. She based her assessment on the challenges experienced in COMESA. She agreed with the interviewee from TradeMark East Africa that agriculture, manufacturing and the telecommunications sector will probably see increased foreign investment if the TFTA becomes reality – as will the mining sector. Both interviewees expect Kenyan manufacturers – textile companies, for example – to benefit from the enlarged regional market for their exports.

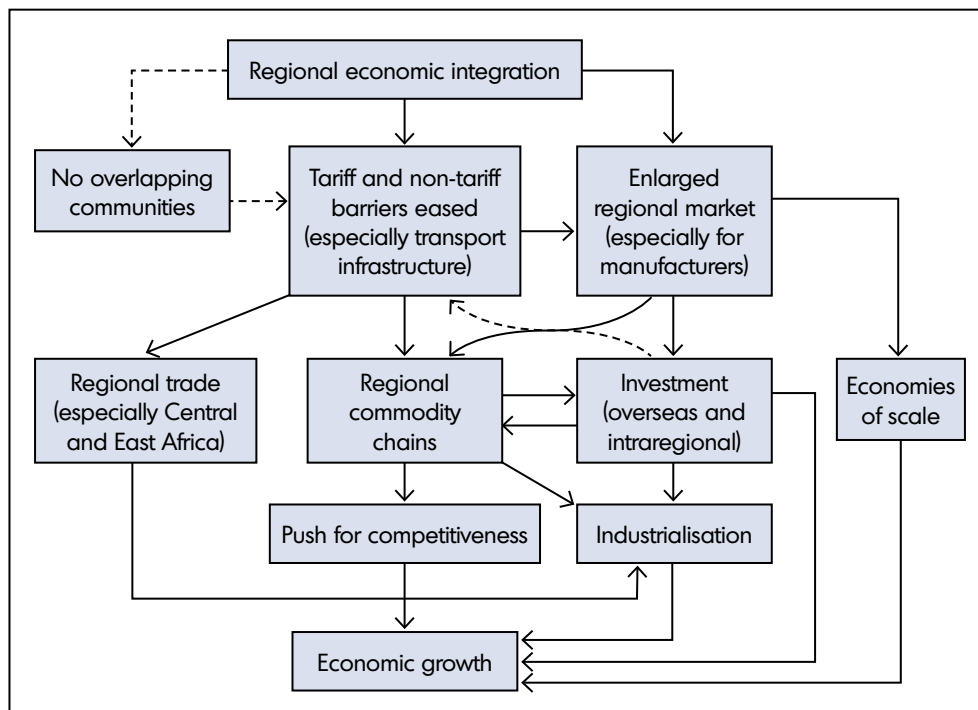
Four experts from the Kenyan Association of Manufacturers told the authors that the TFTA would overcome the problem of overlapping membership in various regional economic organisations. Common rules of origin will become feasible this way. Product standards have to be harmonised in the TFTA context. These measures against non-tariff barriers are, according to the interviewees, essential to facilitate regional trade and regional commodity chains. They reasoned that Kenya is interested in rules of origin that promote value addition in the regional countries and 'minimum restrictions on trade', which implies that at least the manufacturing sector associates regional economic integration with regional commodity chains. The interviewees also indicated the free movement of businesspeople and joint infrastructure projects as further means of encouraging industrialisation through intraregional investment, trade and commodity chains.

The relevance of regional commodity chains was underscored by the interviewees, who stated that mineral-rich countries that may join the TFTA, including Angola, Egypt, Libya and South Africa, are lucrative for Kenyan investment. Easier access to mineral resources boosts industrialisation and hence economic growth in Kenya. The experts from the Kenyan Association of Manufacturers moreover reasoned that tariff liberalisation is from a developmental perspective most urgent for intermediary industries because of the added value that these industries generate – a conviction that puts further emphasis on the importance of commodity chains in the region and beyond.

On the subject of transport, the interviewees associated the TFTA with cost reduction – resulting not only from the construction and rehabilitation of railway lines, roads and harbours, but also from one-stop border posts, which should ideally operate with an electronic and regionally harmonised system of clearing goods. They spoke favourably of public–private partnerships as a way of generating funding for infrastructure projects, and expect foreign investment in transregional rail and road corridors, as well as transmission lines for electricity, to be triggered by the TFTA. In general, the interviewees argued that investment in infrastructure would result in economic growth by boosting the industrialisation of hubs, first of all Mombasa and Nairobi, and by benefiting agricultural and mineral-resource industries in peripheral locations. According to the interviewees, the basic reason for these economic dynamics would be increased competitiveness.

Figure 12 represents the interviewees’ thoughts in the form of a cognitive map. As the cognitive map shows, the main effects they expect of the TFTA would be a reduction in tariff and non-tariff barriers, especially inadequate transport infrastructure, and the creation of a larger market. Both these effects are seen as triggers of regional commodity chains, which will lead to increased foreign investment and industrialisation in Kenya. The former is also a direct result of the enlarged market. The enlarged market will furthermore lead to economies of scale. Economies of scale, industrialisation and a push for competitiveness – the latter results from regional commodity chains – in turn lead to economic growth, which is the ultimate aim of the TFTA in Kenyan policy planning.

Figure 12: Cognitive map showing how Kenyan decision makers view the TFTA



Sources: Authors’ draft based on interviews with experts from the Institute of Economic Affairs (Nairobi), the Kenyan Association of Manufacturers and TradeMark East Africa; Government of the Republic of Kenya, *Kenya Vision 2030: The Popular Version*. Nairobi: Government of the Republic of Kenya, 2007

The bold arrows in Figure 12 represent the major branches of the causal path just explained. They appear to be the main drivers of Kenya's policy on the TFTA. The dotted line arrows represent causal connections voiced in the interviews that appear to be less relevant. Minor concepts mentioned above are not part of Figure 12 because they would hamper the identification of key causal connections.

South African expectations of the TFTA

In the New Growth Path, South Africa's Economic Development Department declares that 'Africa's importance has ... grown in recent years, as a source of resources and a potential market with one billion consumers'.²³ The document points out that the continent has one of the highest economic growth rates worldwide and states that 'South Africa's trade policy should become more focussed, identifying opportunities for exports in external markets and using trade agreements and facilitation to achieve these'. The paper affirms the efforts to create the TFTA, presenting it as a path towards African development and as a tool for realising 'mutually beneficial opportunities for trade ... mindful of regional differences in resources and development'.²⁴

As one of the authors of this paper has explained elsewhere, the SADC region is marked by striking complementarity in resources for agricultural and industrial production.²⁵ Furthermore, South Africa is economically relatively advanced and therefore capable of large-scale and technologically sophisticated industrial production. Economically less advanced countries could provide primary-sector inputs to production and cheap labour for technologically less sophisticated manufacturing. Primary-sector inputs would benefit from cross-border mobility in the TFTA, enabling these inputs to be processed where they are needed. To benefit from reduced labour costs, production would have to move to the TFTA countries with low-cost labour because the TFTA does not envisage the free movement of labour. Taken together, regional complementarity in resources and national development are an expression of a regional market that allows for diversified regional production linkages and trade through regional commodity chains.

The New Growth Plan identifies four economic domains that are of interest to South Africa: agricultural commodity chains, including horticulture for South African-owned retail chains; electricity, in particular hydro and other renewables; beneficiation of minerals; and integrated manufacturing supply chains.²⁶ A plausible interpretation of the New Growth Plan is that the TFTA will allow South Africa to take a role at the upper end of commodity chains in these four domains. Its fellow TFTA member countries will assume positions at the lower end, meaning that they will provide raw materials and engage in basic manufacturing, selling semi-manufactured goods to South African partners. To facilitate these regional commodity chains, the Economic Development Department aims to prioritise the upgrading of regional infrastructure for transport, electricity and water.²⁷ Adequate transport infrastructure is a necessary condition for most regional commodity chains that may be created in the TFTA because it will have to handle the transportation of large volumes of goods, including foodstuff, mining products, aluminium and steel. One of the South African experts interviewed for this paper described transport infrastructure as 'the most pressing need ... the most severe limitation to underpin all economic activity' in the TFTA region.

The interviews furthermore confirm that the South African government ascribes considerable economic potential to Africa and hence supports the TFTA. Two dti officials

argued that the TFTA would increase South Africa's market access from the current 15 SADC countries (of which three are not part of the common trade protocol) to 26 countries, comprising a total of 600 million people. The key projects that they expect to be realised in the context of the TFTA involve infrastructure, most importantly transport infrastructure, and industrial development. They pointed out that the integration process will trigger foreign investment, especially in transregional transport corridors that are already pursued or envisaged by the potential TFTA members (discussed in more detail later in the paper).

A third official of the dti linked regional economic integration in general, and the TFTA in particular, with economic growth. Economic growth is, as he said, the path towards poverty reduction. Like his colleagues, he highlighted the size of the TFTA market as an important factor in this endeavour. The TFTA 'could launch a sizeable part of the continent onto a new developmental trajectory' by attracting foreign investment and boosting more diversified regional trade – simply because of its size. He added that the TFTA is meant to serve as the basis for an Africa-wide free-trade area with an even larger market.

The same interviewee also argued that South Africa plays a pivotal role in 'developmental regionalism', which he defined as a strategy focused on industrial production structures. To him this means that the regional states have to co-ordinate transregional transport infrastructure projects and their industrial-development policies at a multilateral level. Such policy co-ordination aims at building and diversifying industrial production and, as a consequence, the regional market becomes broader and regional trade is boosted. These developments lead to economic growth, and economic growth reduces poverty. In an article published in *Business Report*, Davies voices the same ideas.²⁸ The minister considers the TFTA to be about 'developmental integration', meaning that market integration is combined with sectoral policy co-ordination and cross-border infrastructure development aimed at strengthening regional commodity chains by facilitating trade and reducing the costs of doing business.

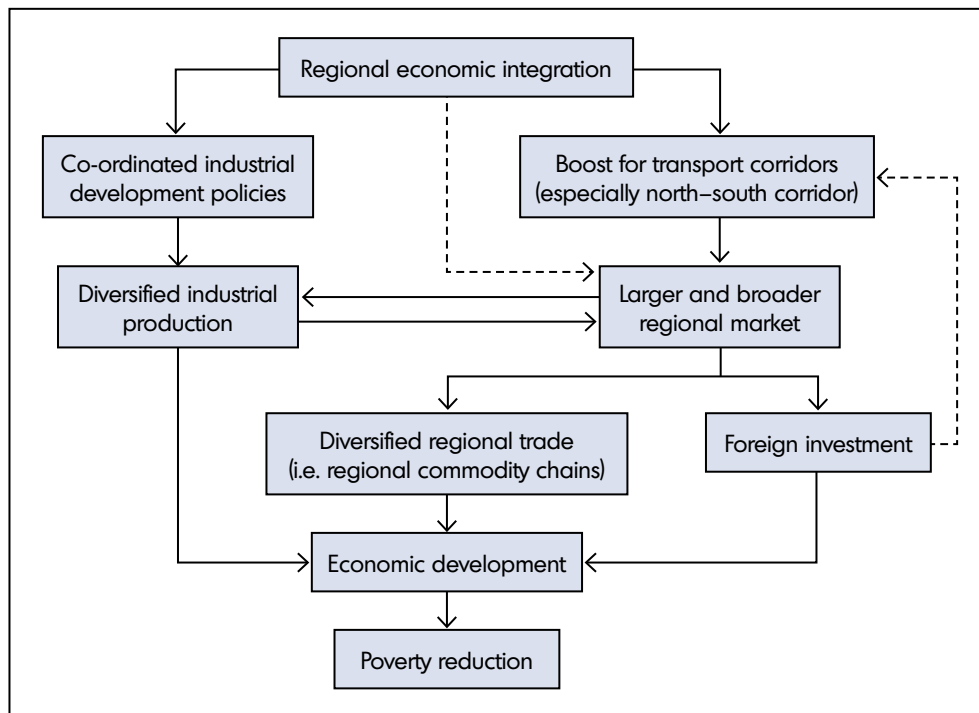
Going into detail on transport infrastructure, one of the interviewees from the dti underscored the relevance of upgrading border posts, ports and railway lines along the north–south corridor, the main transport axis of the SADC region. This links South Africa's ports of Durban and Richards Bay via Johannesburg and Harare to the copper belt on the Congolese–Zambian border and includes the Tanzania–Zambia (TANZAM) Highway and the Tanzania–Zambia Railway (TAZARA) from Zambia to the port of Dar es Salaam.

The interviewee also argued that regulatory barriers to regional trade, including tariffs, are much less relevant to economic policy in a developing-country context than transport infrastructure and industrial production systems. Similarly, former deputy president Kgalema Motlanthe reasons that transport infrastructure, including border crossings, and industrial diversification are the main challenges to be addressed in the context of the TFTA. Motlanthe points out that the high cost of intra-African transport makes it cheaper for many countries to import goods from overseas, which could be produced locally. He acknowledges that the potential of regional trade is also limited because the potential TFTA members are not sufficiently diversified in terms of their economic output,²⁹ which implies that the upgrades to transport infrastructure must be combined with co-ordinated policies aimed at diversified industrial production, which tallies with the concept of developmental regionalism.

The third dti interviewee also mentioned that there is growing interest in Africa among external players. He was no doubt referring to the EU (and its renewed commitment to trade with Africa), China, India and perhaps other emerging economies, such as Brazil, Thailand and Turkey. According to him, the TFTA will ‘ensure that South Africa trades on equal terms to these external players’. It is plausible therefore to infer from the third dti interviewee that easy market access through the TFTA would strengthen the position of South African firms in relation to competitors from overseas.

Figure 13 brings together the ideas and their interconnections from the aforementioned policy papers and interviews. It shows how regional economic integration through the TFTA, as a policy strategy, will lead to poverty reduction, which is the South African government’s most important economic policy goal. The TFTA and poverty reduction are connected by a causal path that consists of two branches. The first branch starts with co-ordinated industrial-development policies that lead to diversified industrial production and, consequently, to economic development. The second branch begins with the upgrading of transregional transport corridors. This measure accounts for a larger and broader regional market (the result of diversified industrial production). A larger and broader regional market reinforces the diversification of industrial production, as it broadens demand – an argument not explicitly mentioned in the interviews or in the policy papers that the authors have analysed. These sources rather stress that a larger and broader market will lead to diversified regional trade and foreign investment. Both factors lead to economic development and hence to poverty reduction.

Figure 13: Cognitive map showing how South African decision makers view the TFTA



Sources: Authors’ draft based on interviews with experts from the dti; South Africa, Economic Development Department, *The New Growth Path: Framework*. Pretoria: Economic Development Department, 2011

Figure 13 uses bold arrows for the main branches of the causal path. These appear to be South Africa's principal motivating factors for the TFTA. The two dotted line arrows represent causal connections voiced in the interviews that appear to be less relevant. Minor concepts mentioned above are not part of Figure 13 because they would hamper the identification of key causal connections. What Figure 13 does not show is that the two branches are dependent on each another: co-ordinated industrial-development policies will not lead to diversification in industrial production if transport infrastructure remains inadequate. Likewise, sufficiently upgraded transport infrastructure will not lead to diversification in industrial production if this goal is not supported by industrial-development policies.

TRANSREGIONAL INFRASTRUCTURE IN THE CONTEXT OF THE TFTA

Transport infrastructure

In addition to setting up industrial production capacities that allow for regional trade, the most pressing need that the Kenyan and South African interviewees identified is better transport infrastructure.

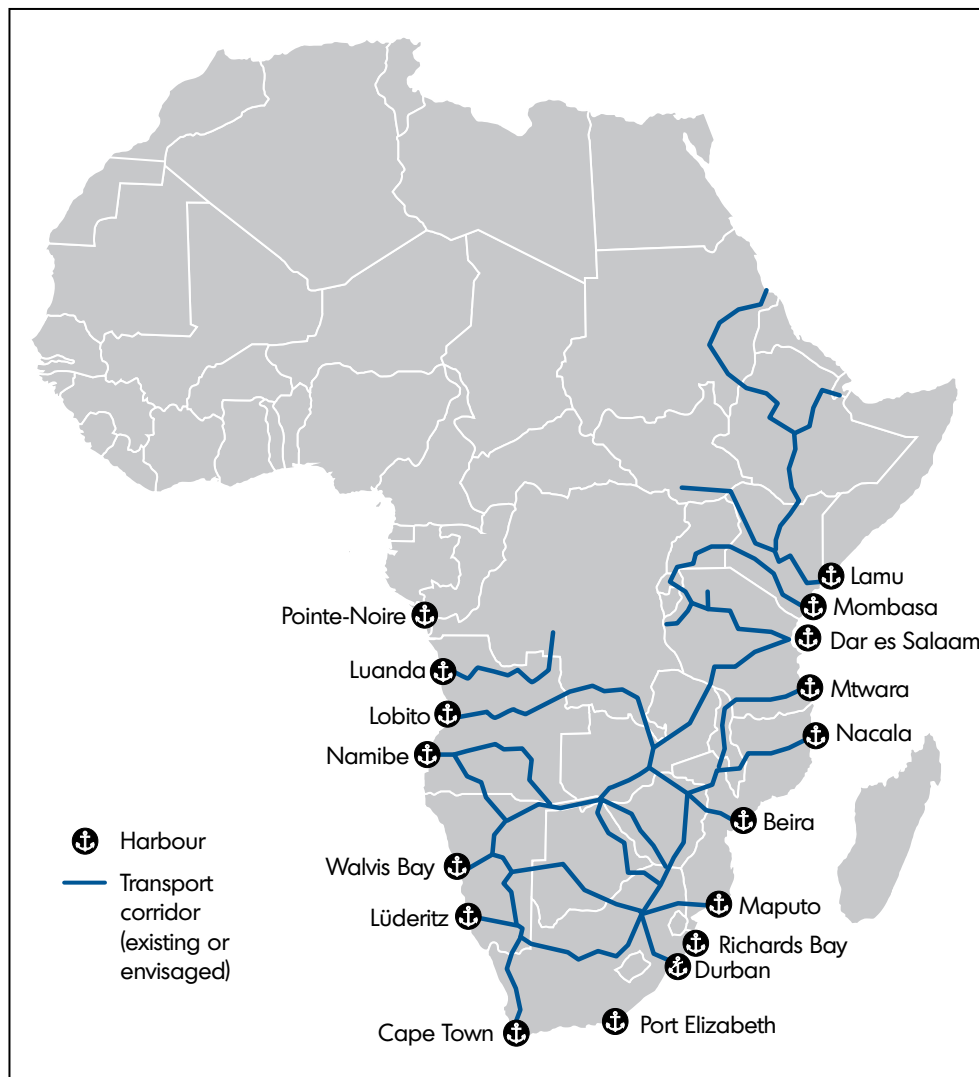
The rail and road corridors that connect the landlocked mining areas in Central, East and Southern Africa to the Atlantic and Indian oceans are congested, as are most of the harbours in the potential TFTA region. Whereas South Africa's ports are large enough to enable the region to plug into global commodity chains, those in the other regional countries mostly fail to reach such capacity. And the ports outside South Africa are not well linked to other ports in the TFTA and beyond. The Liner Shipping Connectivity Index, which measures how well the ports of a country are connected internationally on a scale from 0 to 100, reveals that Egypt and South Africa are far ahead of the other potential TFTA members in terms of the connectivity of their ports. Djibouti and Mauritius – two countries that seek to position themselves as gateways – have fairly good connectivity values; the remaining countries have very low rankings on this scale (see Table 6).

Rail logistics in the TFTA suffers from the legacy of colonialism because the colonial powers built railway lines with different gauges: the Ethiopian–Djiboutian,³⁰ Kenyan–Ugandan and Tanzanian railway tracks have a 1m gauge, whereas those of Southern Africa are 1.067 m. Interlinking East and Southern Africa by rail in an efficient way is therefore almost impossible. Road logistics is also problematic. As Figure 14 shows, some parts of the TFTA are hardly interconnected, in particular the interior of the DRC, the Great Lakes region and South Sudan. Only the north–south corridor from Durban and Richards Bay via Johannesburg to the Congolese–Zambian border region, and the adjoining TANZAM links East and Southern Africa. The Coast2Coast Corridor, in the south of the TFTA, provides a well-maintained connection from Maputo, on the Indian Ocean, via Johannesburg to Walvis Bay on the Atlantic coast.

Adverse weather and geomorphological conditions – including heavy rainfall and steep escarpments – further complicate land transport, with roads that are often not tarred. The Congolese rainforest is a barrier to reliable transport infrastructure: the railway

tracks from Kolwezi, in the southern DRC, to the border with Angola, for instance, are overgrown with vegetation.³¹ Given that there are few other transport corridors, problems at a single section can block an entire corridor. Examples are the frequent mudslides on the route from the Copperbelt to Dar es Salaam, and the recent outbreak of armed conflict in Mozambique between the ruling Frelimo party (Frente de Libertação de Moçambique – Mozambican Liberation Front) and the opposition, Renamo (Resistência Nacional Moçambicana – Mozambican National Resistance), in Sofala Province, which is on the Harare to Beira corridor.

Figure 14: Transport corridors and main harbours in the TFTA



Source: Authors' own compilation

It is not surprising that the cost of land transport is enormous in the TFTA. For example, transporting a standard 20-foot container from Durban – the region's largest non-bulk

port – to Lusaka by rail or road costs between \$5,000 and \$8,000. By comparison, shipping the same container from Japan to Durban costs only \$1,500. These costs are not only due to poor transport infrastructure – they also result from border stops. Along the north–south corridor, border stops slow down transport by four to five days at the Tanzanian–Zambian and Congolese–Zambian borders. Waiting time at the main border crossings of Zambia to Zimbabwe, Zimbabwe to South Africa and Botswana to South Africa is one to five days. Delays at the border of Zambia to Botswana hold up transport for two to five days.³² The typical charge for a stationary truck is \$200 to \$400 a day, meaning that a five-day border delay costs \$1,000 to \$2,000.³³ At least the Zambian–Zimbabwean border crossing has seen some improvements lately.

Most potential TFTA member states also provide a poor environment for logistics. The Logistics Performance Index of the World Bank, which ranks countries on a scale from 1 to 5, suggests that South Africa's logistics environment is on par with countries such as Portugal, Thailand and Turkey. The other TFTA countries, however, perform worse (see Table 6). They possess some of the least sophisticated logistics environments by global comparison. Egypt and Rwanda come relatively close to South Africa on this ranking. Yet Egypt is separated from the rest of the TFTA by the Sahara, and there are violent conflicts in South Sudan and Sudan. Rwanda, being a small landlocked country, is insignificant as a transport hub. Together with bureaucratic hurdles, transport issues are, according to experts from TradeMark Southern Africa, the main reason for the lack of growth in non-extractive sectors in the TFTA countries.³⁴

Table 6: Logistics Performance Index and Liner Shipping Connectivity Index of the potential TFTA members

Potential TFTA member states	Logistics Performance Index	Liner Shipping Connectivity Index
Angola	2.54	13.8
Botswana	2.49	–
Burundi	2.57	–
Comoros	2.40	5.2
Djibouti	2.15	20.3
DRC	1.88	4.0
Egypt	2.97	57.5
Eritrea	2.08	4.0
Ethiopia	2.59	–
Kenya	2.81	11.4
Lesotho	2.37	–
Libya	2.50	7.3
Madagascar	2.38	11.9
Malawi	2.81	–
Mauritius	2.51	24.7

Potential TFTA member states	Logistics Performance Index	Liner Shipping Connectivity Index
Mozambique	2.23	10.2
Rwanda	2.76	–
Seychelles	no data	8.1
Somalia	1.77	4.2
South Africa	3.43	43.0
South Sudan	no data	–
Sudan	2.16	no data
Swaziland	no data	–
Tanzania	2.33	11.1
Uganda	no data	–
Zambia	2.46	–
Zimbabwe	2.34	–

Note: Data is for 2013 and 2014.

Sources: World Bank, Logistics Performance Index, 2014, <http://lpi.worldbank.org/international/global?sort=asc&order=Country#datatable>; World Bank, Liner Shipping Connectivity Index, 2014, <http://data.worldbank.org/indicator/IS.SHP.GCNW.XQ>

The first steps towards alleviating the transregional transport problems have been undertaken by the potential TFTA members. A programme has been set up for monitoring, reporting and removing non-tariff barriers.³⁵ One-stop border posts, whereby two adjacent countries jointly conduct cross-border clearance procedures, can reduce border dwell times by as much as 40% to 50%.³⁶ Botswana and Namibia have for years successfully operated a one-stop border post on the route from Windhoek via Gobabis to Gaborone, which takes 20 minutes for lorries to pass. The South African–Mozambican border post at Lebombo–Ressano Garcia, on the road corridor from Johannesburg to Maputo, is equally efficient, but it appears to have a positive effect only in southern Mozambique. South African companies that provide supplies to oil companies in central Mozambique prefer to fly in their equipment because of unpredictable delays at the Zimbabwean–Mozambican border post.³⁷

Common axle load limits, which are necessary to prevent road damage, have also been agreed for the TFTA, but they remain to be applied. Carriers' licences are mutually recognised, which will, theoretically, permit a vehicle with a licence valid for one country in the TFTA to operate in all countries. This system is not operational yet either. Experts also call for harmonising customs procedures and legislation – for example, on re-exportation of goods – to make processing of documentation quicker.³⁸

In an interview with TradeMark Southern Africa, Amos Marawa, head of the TFTA preparation and implementation unit, said that co-operation in the TFTA is mostly about co-ordinating the efforts by individual states to upgrade their transport infrastructure.³⁹ These efforts go beyond the administrative and legislative harmonisation mentioned above.

By building new transport corridors and upgrading existing ones, TFTA co-operation would tie in with the Programme for Infrastructure Development in Africa (PIDA), which is run by the African Development Bank. PIDA's objective is to develop a vision and strategic framework for continental infrastructure, encompassing energy, transport and communication. The programme will cost about \$360 billion over the period 2011 to 2040, with significant investments required by 2020.⁴⁰ Given that this sort of investment is beyond the capacities of African states and international donors, PIDA seeks to promote public-private partnerships for the delivery of various infrastructure projects.

Among PIDA's various projects, the Southern Africa Hub Port and Rail Programme would play a central role. This programme aims at developing a master plan for regional port capacity for the SADC countries, and \$2.27 billion is to be spent to implement it. The programme will co-ordinate short-term port expansion plans for Beira, Durban, Luanda, Maputo, Nacala and Walvis Bay. Its objective is to create sufficient port capacity for the SADC countries to enable them to increase their trade, both intraregionally and overseas.

As for land transport, the north-south corridor has seen considerable upgrades in the last few years. In 2009 the presidents of Zambia and Zimbabwe signed a memorandum of understanding on a one-stop border post at Chirundu, which now has a fast line that allows at least some trucks to be cleared in not more than five hours. Vehicles arriving overnight or early in the morning are usually cleared within the same or the following day.⁴¹ Despite the developments, however, international organisations point out that more progress has not materialised because of bureaucratic obstacles and problems applying technologically sophisticated procedures at borders.⁴² As noted, the north-south corridor links with TANZAM and TAZARA; it may also be linked to the Great Lakes region, Nairobi and even Addis Ababa.

Investors and international donors also recognise the need to think across borders when upgrading transport infrastructure. The Eurasian Natural Resources Corporation, a mining company, seeks to build a railway line from Mozambique's coal-rich Tete Province to link it to the port of Nacala. That line would cross Malawian territory – and it may considerably reduce the transport costs incurred by Malawi's exports, which are currently among the highest in the world. The other two overseas mining giants that are active in Tete – Australian company Rio Tinto and Vale from Brazil – are upgrading harbours and railway lines in Mozambique. What remains to be seen is how far transport infrastructure built to export coal can be used for other purposes. It is doubtful that private companies that have paid for upgrading port facilities, railway lines and roads will let anyone else use the infrastructure free of charge.⁴³

Based on a notorious minerals-for-infrastructure deal, Chinese banks are providing credits for 3 000 km of railways and 7 000 km of roads, which Chinese construction companies will build in the DRC to connect the mineral-rich province of Katanga to Kinshasa and the country's main port at Matadi. China's commitment to upgrading TAZARA and the port facilities in Dar es Salaam also serves the purpose of exporting minerals from Katanga. The Chinese have already repaired the Benguela railway line from Angola's port of Lobito to the border with the DRC. However, frequent criticism of the quality of transport infrastructure built by Chinese companies calls into question the sustainability of these projects.⁴⁴

Further north, Kenya is upgrading its transport infrastructure – also with help from China. Transport corridors starting at the harbours of Lamu and Mombasa will not only better connect Kenya to global markets, but also serve as gateways for the Great Lakes region and South Sudan too – provided that Kenya's security situation does not deteriorate.

Energy infrastructure

The second main component of the TFTA's co-operative strategy on infrastructure is energy. Although the economic giant of the bloc, South Africa, suffers from a shortage of electricity, some countries in the region have tremendous potential for energy generation – mostly in the form of hydropower, but also from coal, oil and gas reserves.⁴⁵ Yet the domestic markets of most potential TFTA members are too small to justify major investments in power stations and transmission lines. Considerable power-generation potential will therefore remain untapped unless the regional countries co-operate and jointly form a larger market. Experts from PIDA argue that energy integration following a scenario they consider realistic would save \$860 billion for the entire African continent over the period 2014 to 2040. Such a scenario, however, requires an annual investment in electricity interconnections of \$5.4 billion and another \$1.3 billion for oil and gas pipelines.⁴⁶ In the TFTA, PIDA focuses on hydropower generation and high-voltage transmission lines – with the DRC, Ethiopia, and to a lesser extent Mozambique being the main providers, as shown by Figure 15.

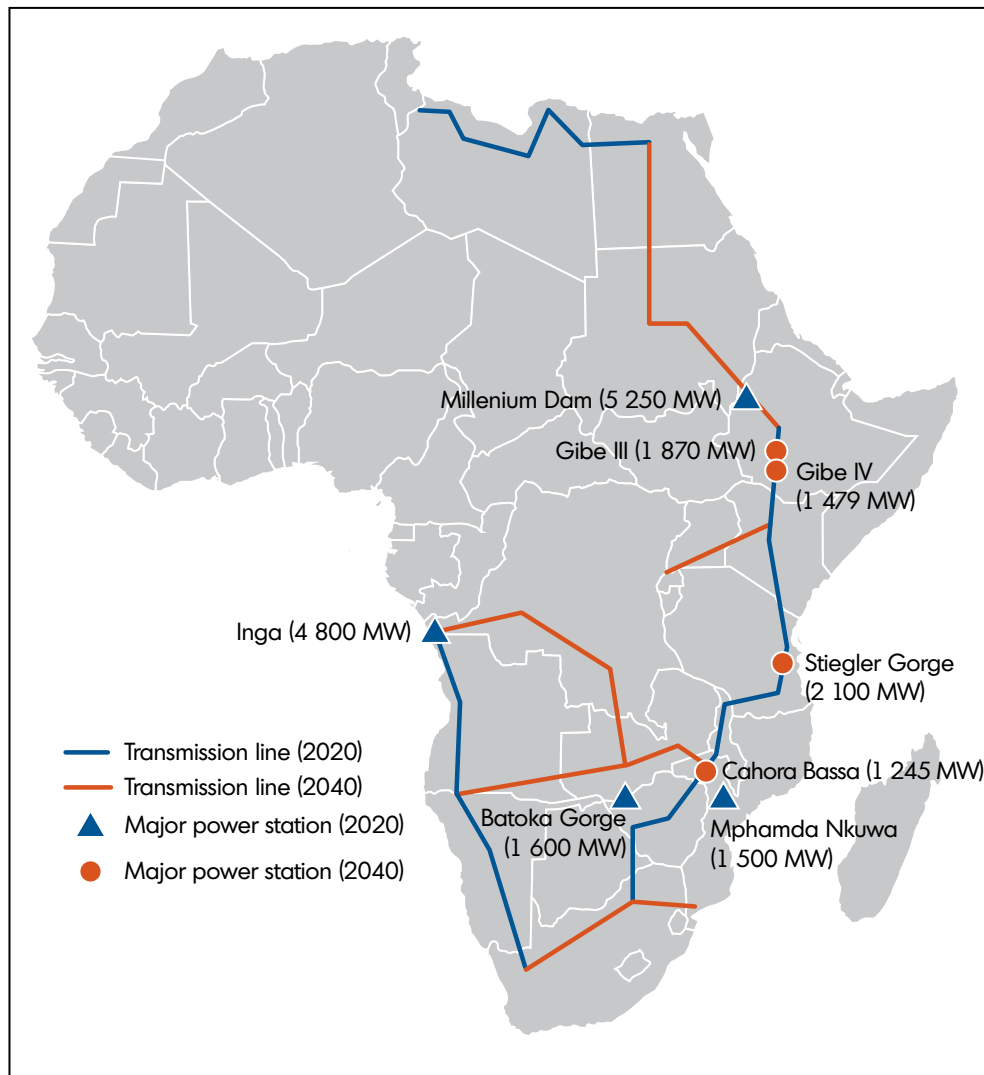
Apart from South Africa, Mozambique is the only net exporter of electricity in Southern Africa. An extension of the Cahora Bassa Power Station, which will generate a further 1 245 megawatts (MW), in addition to the already available 2 025MW, and a new power station at the Mphanda Nkuwa hydroelectric dam on the Lower Zambezi, which is to generate 1 500MW are envisaged for 2015 and 2017, respectively. Cahora Bassa first started providing electricity to South Africa in the mid-1970s. Electricity exports were then interrupted by the civil war but resumed in the 1990s. Mozambique also became a major exporter of natural gas in 2004, when Sasol began to exploit the Pande and Temane gas fields. Reserves in these two fields are estimated to be about 105 billion m³. Their output is mostly exported to chemical plants and the Secunda Power Station in South Africa, causing the share of gas in South Africa's primary energy supply to jump from 1.5% to 4% in 2004.⁴⁷

More recently, the Anadarko Petroleum Corporation from the US and ENI from Italy made large offshore discoveries in Mozambique's Cabo Delgado Province, in the Rovuma Basin. The most optimistic estimate of recoverable resources in the area is slightly more than 4 trillion m³, making Mozambique second only to Nigeria in terms of gas reserves in sub-Saharan Africa.⁴⁸ These resources may become a game changer for South Africa's energy policy. Considering the failure to get new coal-fired power stations quickly online, the almost prohibitive costs of building new nuclear power stations and the relatively high price of generating electricity from renewable sources,⁴⁹ importing gas from Mozambique appears a sound way to deal with South Africa's energy shortage.

Whereas Mozambique's energy partnership with South Africa is a bilateral issue, the DRC and Ethiopia depend on multilateral co-operation to realise their plans to become major electricity exporters. With the addition of three medium-sized hydropower plants, Ethiopia's installed capacity tripled from 2005 to 2010. Up to 27 more dams, together

totalling almost 25 000MW in output, are projected to become operational by 2027 (see Table 7). The Grand Ethiopian Renaissance Dam (GERD), which is forecast to generate 6 000MW, is to be completed within the next two years. Currently, Ethiopia exports small quantities of electricity to Djibouti and Sudan. A major transmission line to Kenya is to be built by 2017. Other large consumers in the TFTA of Ethiopia's power – most importantly, Egypt and South Africa – are also envisaged but there are no concrete plans on how to facilitate such exports from a technical point of view.⁵⁰

Figure 15: PIDA's vision for energy infrastructure in the TFTA



Source: Authors' own draft, based on PIDA, *The PIDA Energy Vision*, 2012, <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/PIDA%20brief%20Energy.pdf>, pp. 6–7

Table 7: Ethiopia's current and envisaged power stations of at least 100 MW

Name	Type	Year of commissioning	Capacity in MW
Fincha'a	Hydropower	1973	134
Melka Wakena	Hydropower	1988	153
Gilgel Gibe I	Hydropower	2004	192
Tekeze	Hydropower	2009	300
Tana Beles	Hydropower	2010	460
Gilgel Gibe II	Hydropower	2010	420
Ashegoda	Wind power	2014	120
Helele Werabesa	Hydropower	2015	422
Chemoga Yeda	Hydropower	2015	278
Genale Dawa III	Hydropower	2015	256
Gilgel Gibe III	Hydropower	2017	1 870
GERD	Hydropower	2017	5 250
Debre Birhan	Wind power	Under construction	100
Corbetti	Geothermal	Under development	1 000
Aysha	Wind power	Under development	300
Assela	Wind power	Under development	100
Adama II	Wind power	Under development	153
Mandaya	Hydropower	Under study	2 000
Beko Abo	Hydropower	Under study	1 700
Karadobi	Hydropower	Under study	1 600
Gilgel Gibe IV	Hydropower	Under study	1 472
Baro	Hydropower	Under study	896
Border	Hydropower	Under study	800

Source: Cuesta-Fernández I, 'Mammoth dams, lean neighbours: Assessing the bid to turn Ethiopia into East Africa's powerhouse', in Scholvin S (ed.), *A New Scramble for Africa?: The Rush for Energy Resources Southwards of the Sahara*. Farnham: Ashgate, 2015, p. 97

The DRC is at a more advanced stage on the path towards large-scale electricity exports. Compared with Ethiopia, however, its potential exports rely strongly on one giant power station, although numerous medium-scale plants are being built or envisaged.⁵¹ The Inga 3 Power Station, yet to be built, will provide 2 500MW to South Africa, according to a bilateral agreement signed in 2013. This agreement also allows the two countries to explore different options for partnering further on trade in electricity, in particular on the Grand Inga project. Taking an optimistic view, this could be interpreted as a prospect for much larger electricity sales from Inga to South Africa. The Grand Inga project might eventually generate 44 000MW, slightly more than the amount of electricity currently used in the whole of South Africa, and Congolese policy documents highlight that more

electricity can be exported than the aforementioned 2 500MW. They do not, however, specify how much electricity is to be exported and how these exports are to be facilitated (for example, by building new transmission lines).⁵²

In her analysis of the potential of the DRC as an exporter of electricity, Maupin points out that a day-ahead market and a short-term market allow for trading surplus electricity that is not already committed elsewhere under contracts in the Southern African Power Pool (SAPP).⁵³ In the case of a power plant or transmission line unexpectedly going out of service, these mechanisms are able to offset that shortfall – within the limits imposed by low reserve margins and low cross-border transmission capacities. The TFTA would provide a framework to raise the co-operation achieved in the SAPP to a geographically much larger scale, adding to the SAPP's day-ahead and short-term markets the members of the Eastern African Power Pool, which includes Ethiopia.⁵⁴ As with its potential role in upgrading transport infrastructure, the TFTA would also be a suitable forum for administrative and legislative harmonisation in the energy sector, as well as for the co-ordination of the construction of new power stations and transmission lines.

Yet there are numerous obstacles ahead, both for the DRC and Ethiopia. High-voltage, direct-current electricity transmission suffers from transmission losses of about 3.5% per 1 000km. The air distance between the Inga Power Station and Cape Town is about 3 200km; the GERD is almost 4 500km away from Johannesburg. The physio-geographical obstacles to transmission lines on these routes are numerous. What is more, building and maintaining power stations as large as the GERD or Grand Inga require much expertise. Representatives of the DRC's National Electricity Company (Société Nationale d'Electricité – SNEL), interviewed by Maupin, insist that a special authority for the expansion of Inga be created. They argue that a long-term project with a generation target of 44 000MW is beyond their capacity to handle. In general, it appears that the Congolese institutions in charge of the energy sector currently operate in inefficient ways. For example, SNEL's managing committee was dissolved by President Joseph Kabila in 2011 as a result of its poor performance and corruption scandals.⁵⁵

International experts have often criticised the Ethiopian authorities for overestimating the generation capacities of the country's envisaged power stations. Financial challenges may soon become insurmountable for Ethiopia's electrification scheme. Combined efforts in the domains of power generation, transmission and distribution will compel Ethiopia to mobilise \$3.4 billion each year for the next decade – an amount that represents more than 10% of the country's GDP.⁵⁶ It is doubtful that Ethiopia will be able to acquire sufficient funding to pay back loans and meet the costs of the construction works that are still to come. Organisations such as the International Monetary Fund and the World Bank are warning that severe side effects will ensue from an overambitious electrification scheme – an unsustainable debt profile that will cause heightened inflation and the crowding out of private sector financing.⁵⁷

Potential buyers of Congolese and Ethiopian electricity are sceptical too. Officials from Eskom, interviewed by Scholvin, argue that their company is interested in regional co-operation in principle, but wants to see it deliver results.⁵⁸ Eskom's priorities have shifted towards efficiency since South Africa's 2008 energy crisis. Before 2008 regional co-operation on energy was an end in itself. Today, regional co-operation at best complements South Africa's own domestic capacity-building plan because of the various obstacles and insecurities that are entailed. These are the unreliability of hydropower

imports (this form of power generation depends on climatic conditions that are favourable to the production of hydroelectric power), the different languages and different legal systems in some neighbouring countries, which complicate multilateral negotiations and compound concerns surrounding the commitment of the regional countries to expanding their energy sectors.⁵⁹ Against this background, it is not surprising that the Integrated Resource Plan – South Africa’s central policy document on energy – envisages imported hydropower to contribute only 6% to the generation capacities that South Africa seeks to get online by 2030.⁶⁰

CONCLUSION

This paper shows that there is a sound case for regional economic integration in the form of the TFTA, an envisaged new free-trade area. The three major players in the project – Egypt, Kenya and South Africa – have a considerable trade complementarity with the possible TFTA members. This means that the exports of Egypt, Kenya and South Africa match with the imports of the regional countries, creating a theoretical possibility for intraregional trade (regardless of any tariff and non-tariff barriers). The de facto regional trade of Egypt, Kenya and South Africa is also high but concentrated in subregions in the TFTA: the EAC trades much more with Kenya than global average values suggest. Egypt reaches a high trade intensity with the potential TFTA members north of the equator. Its trade is still considerable with countries in the Great Lakes region but declines further south. South Africa trades intensively with its fellow SADC members and the EAC, in particular Kenya. Its trade intensity declines north of the equator but still remains above what global average values suggest there.

This analysis therefore suggests that Egypt, Kenya and South Africa can gain a lot from the TFTA because it would ease tariff and non-tariff barriers that currently hamper trade beyond the present subregional economic communities. The regional trade complementarity of Ethiopia is much lower, suggesting that access to regional markets is not an important driver of Ethiopia’s commitment to the TFTA. This interpretation is corroborated by Ethiopia’s low regional trade intensity.

However, it is reasonable to expect that Egypt, Ethiopia and Kenya – which can be considered secondary powers within the TFTA – will block regional economic integration if it is likely to boost South African competition in markets that matter much to them. The exports of Egypt and Kenya to the potential TFTA members overlap partly with those of South Africa – the region’s primary power. Export similarity with South Africa is high for Egypt and Kenya’s respective economic backyards: Libya, Sudan and the EAC. Yet it remains below the regional average for most potential TFTA members that are marked by an above-average trade intensity and/or trade complementarity with Egypt and Kenya. Egyptian and Kenyan enterprises will also gain easier access to SADC markets, whose imports partly match Egyptian and Kenyan exports. Such considerations are hardly relevant for Ethiopia, given its predominantly overseas trade orientation.

Using information from expert interviews they conducted, the authors have also shown that the potential for regional trade is a relevant motivating factor for Kenya and South Africa. South African decision makers from the dti see the TFTA in the context of poverty reduction through industrialisation and economic growth. Transregional transport

infrastructure and the co-ordination of industrial-development policies are essential for what the dti labels developmental regionalism. Kenyan business advisers emphasise the relevance of transport infrastructure projects in the context of the TFTA. Like the dti interviewees, the Kenyans see regional economic integration as a means of increasing foreign investment in strategic sectors. The TFTA is expected to generate regional commodity chains in which Kenya and South Africa will take an upper hand, producing manufactured goods in supply chains that link them to providers of raw materials and semi-manufactured inputs in the regional periphery.

When it comes to realising the TFTA, there are two important areas that need to be addressed: infrastructure for energy and transport. The latter is essential for regional commodity chains and the economic development that they are expected to trigger. The TFTA countries have already begun to harmonise administrative procedures and legislation. One-stop border posts, common axle load limits and mutually recognised carrier's licences are on their way. Road and railway corridors across the region connecting the landlocked countries to ports are being upgraded, especially the north–south corridor and railway lines in central Mozambique. The Southern Africa Hub Port and Rail Programme will co-ordinate short-term port expansion plans for Beira, Durban, Luanda, Maputo, Nacala and Walvis Bay. Its success, however, as well as the progress made on transport corridors in Angola, the DRC, Kenya and Tanzania, remains to be seen.

Significantly expanding co-operation on energy is a long-term objective. The DRC, Ethiopia and Mozambique will be the most likely exporters of electricity in large volumes. Yet the numerous pitfalls ahead call into question whether the impressive electrification schemes planned by the DRC and Ethiopia can be carried out successfully. South Africa, the region's potentially largest buyer of electricity, prefers to rely on domestic power stations because of language barriers, the multiplicity of actors and different legal systems involved in regional co-operation, as well as the doubtful capacities of states such as the DRC to realise massive energy build-up programmes. Ethiopia's oversized energy build-up programme may even trigger severe economic side effects – heightened inflation and the crowding out of private financing due to an unsustainable public-debt profile.

If one were to take an optimistic view, such obstacles could be overcome by co-operation within the TFTA. From a pessimistic perspective, the challenges that the DRC and Ethiopia face in exporting electricity – and the remaining uncertainties involved in numerous transport-infrastructure projects – indicate that economic integration in sub-Saharan Africa does not run short of visions but sometimes lacks feasible ways to realise these visions.

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