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Background and introduction

Food insecurity remains a challenge in Sub-Saharan Africa, with a quarter of the world population that is food insecure being located in the region (FAO, 2015a; FAO, 2015b; FAO, IFAD & WFP, 2015). In South Africa 26% of the population was classified as being food insecure (Shisana et al., 2013). Maize is the main staple food in Sub-Saharan Africa, including South Africa. In normal years, South Africa is self sufficient in white maize. But three successive years of insufficient rain and drought resulted in maize shortage in 2015-16, thereby threatening the availability and affordability of food (Greenberg et al, 2017). The shortage of maize and the increase in price particularly affects poor households, which spend 33-39% of food expenditure on staples. Thus food\(^1\) and nutrition\(^2\) security is at the top of South African government’s agenda (Thow et al, 2017) and is seen as a constitutional right (section 27 of the constitution).

While efforts are being put towards increased production through various initiatives such as increased participation in agriculture by black and small-holder farmers (Greenberg et al, 2017), new technologies (fast maturing and drought resistant crop varieties) and substitutes, trade and investment are increasingly seen as a way of overcoming shortfalls in local production and price variability (Greenberg et al, 2017; Thow et al, 2017). This paper uses fish as a lens for looking at the dynamics of (formal and informal) trade and investment and how these influence and impact on food and nutrition security using South Africa and the Southern Africa Development Community (SADC) as the area of focus.

Fisheries are an important sector in Africa. Total fish production for Africa in 2010 was estimated at 9.4 million tonnes (comprised of 4.9 million tonnes from marine waters, 2.7 million tonnes from inland waters bodies and about 1.4 million tonnes from aquaculture) (FAO & NPCA, 2014). An estimated 12.3 million people were employed in capture fisheries and aquaculture sectors in 2010 in Africa. Of this total, about 50% were fishers, 42% were traders and processors and 8% were fish farmers (FAO & NPCA, 2014; AUC-NEPAD, 2014). Fish was one of the most important animal protein sources in Africa contributing an average of over 33% of the animal protein (World Fish Centre, 2009). Fish represented an important agriculture export commodity for Africa, contributing 19% of total agricultural export volumes and 5% of the total value (AUC-NEPAD, 2014). Fish is a rich source of easily digestible high-quality proteins containing all essential amino acids. In addition, fish provides essential fats (for example long-chain omega-3 fatty acids) not found elsewhere, vitamins (D, A and B) and minerals (including calcium, iodine, zinc, iron and selenium), particularly when eaten whole. Fish is usually high in unsaturated fats and thus provides health benefits especially protection against cardiovascular diseases (FAO, 2016). Fish also aids foetal and infant development of the

\(^{1}\) Food security refers to affordable access to adequate nutritious healthy food for everyone in the population. For most developing countries, this is in relation to staple food.

\(^{2}\) Nutrition refers to the food value (content) of what consumers eat across food types (e.g. carbohydrates, protein, vegetables, fruit, fats, etc.) for a balanced diet.
brain and nervous system. Even when taken in small quantities, which is the case in many low-income food-deficit countries (LIFDCs) and least-developed countries, fish can have a significant positive nutritional impact on plant-based diets. With all its valuable nutritional properties, fish can play an important role in correcting unbalanced diets and in countering obesity (FAO, 2016; HLPE, 2014), which is one of the growing problems in South Africa (Greenberg et al, 2017; Thow et al, 2017).

Although annual per capita fish consumption increased steadily in developed and developing countries (from 5.2 kg in 1961 to 18.8 kg in 2013), it is still considerably lower in LIFDCs (from 3.5 to 7.6 kg in the same period) (FAO, 2016). Per capita fish consumption for Africa in 2010 was 9.1kg, which was less than half of the global average (18.8kg) (AUC-NEPAD, 2014). While there have been efforts to increase production and access of staple cereals, the so called ‘calorie fundamentalism’ (Thow, 2016; Headey et al., 2012), limited attention has been given to improving the availability and access to fish and fish based products despite the recognition that fish is a rich source of micro-nutrients to the more than 400 million people who depend on fish as a vital source of nutrition in Africa (AUC-NEPAD, 2014; World Fish Center, 2009).

With most global capture fisheries at maximum (sustainable) production levels or even in decline and aquaculture in most African countries not providing a growth area to bridge the growing gap between demand and supply (FAO, 2016), trade is increasingly seen as an avenue for meeting shortfalls in fish supply. The reality is that a country cannot produce all the food that it needs on its own (be food sovereign) – thus the need to import what it cannot produce locally. In effect, trade in fish and fish products among African countries is becoming increasingly recognised as being important for the continent’s food and nutrition security (AUC-NEPAD, 2014; Tall, 2015; World Fish Center, 2013). Improved international trade in fish and fishery products could also play a major role in terms of creating employment, generating income, economic growth and development, as well as towards food and nutrition security.

Global trade in fish and fishery products has expanded considerably in recent decades, fuelled by growing fishery production (in particular aquaculture), growing population and also driven by high demand (FAO, 2016; International Trade Centre (ITC), 2015). Fish and fishery products represent one of the most-traded commodities in the world food sector, with about 78% of seafood products estimated to be exchanged internationally (FAO, 2016). In 2015, world seafood exports totalled US $101 billion while imports were US $97 billion. SADC countries exported US $2.8 billion and imported US $1 billion worth of seafood in 2015 (ITC, 2015) (see figure 1 below), which represented tiny proportion of the global exports and imports.
Africa’s regional economic communities (RECs) and the African Union’s New Partnership for Africa’s Development (NEPAD) Agency have prioritized the strengthening of regional (Africa) trade, given that intra-regional trade among African countries is only about 10% (AUC-NEPAD, 2014). In this context, fish and fish products have been identified as key commodities for intra-Africa trade investment and policy support (AUC-NEPAD, 2014; World Fish Center, 2013). Fisheries has also been included in NEPADs Comprehensive Africa Agriculture Development Programme (CAADP)’s aim of achieving a 6% annual growth in Africa’s agricultural GDP (FAO & NPCA, 2014; AUC-NEPAD, 2014). The 2005 SADC Protocol on Free Trade led to the establishment of a Free Trade Area in 20083 (http://www.sadc.int/about-sadc/integration-milestones/free-trade-area) as part the organisation’s agenda for regional integration and eradication of poverty. This establishment of the Free Trade Area resulted in signing of free trade agreements among member states that reduced tariffs on 85% of intra-regional imports (http://www.sadc.int/themes/economic-development/trade/trade-liberalisation), leading to increased trade among member states after 2008 (Sandrey, 2013; Greenberg, 2016). Even then, intra-regional fish trade largely remains low due to institutional and phytosanitary barriers. In addition, intra-regional fish trade is poorly documented as a result of informal channels that are preferred in order to evade the barriers that exist in the formal channels (Tall, 2015; WWF & Traffic, 2014; World Fish Center, 2013).

3 Angola, the Democratic Republic of Congo (DRC) and Seychelles never signed up for the Protocol and remain outside the agreement (Sandrey, 2013).
Aims and objectives

The objective of the study was to interrogate the functioning of formal and informal cross-border fish trade and markets, and how investment in such activities influence the quality, availability and affordability of fish in South Africa and its SADC trading partners. Specifically, the aims of the study were to:

- Look at how the South African and SADC fish trade and investment dynamics influence and impact on food and nutrition security in South Africa and its trading partners; analyse who the actors are and their agendas; and industry dynamics that characterise formal and informal fish trade, in order to;
- Recommend feasible policy and regulatory frameworks (in fish trade, investment, health standards) that could improve food security, livelihoods and the nutritional quality of the food supply both domestically (in South Africa) and regionally (SADC).

Overall, the study aimed to contribute towards development of coherent and appropriate policies, regulations and standards, at national and regional levels, for promoting intra-regional fish trade, which could enhance the activities of small and medium-scale enterprises, and women engaged in international fish trade. Such recommendations could also contribute towards Africa Union’s ‘Africa Conference of Ministers of Fisheries and Aquaculture’ (AU CAMFA) process and support to countries in the development of National Fisheries Investment Plans towards achieving the aimed (FAO & NPCA, 2014) 6% annual agricultural GDP growth. In addition, the study contributes to the SADC Food and Nutrition Security Strategy 2015-2025 (SADC 2014) whose Strategic Objective 1 aims “to promote availability of food through improved production, productivity and competitiveness”, with fisheries and aquaculture targeted as core nutritious food products.

Based on these aims and objectives, the study findings were framed and analysed under the following themes:

- What are the drivers of fish imports and exports?
- What influences and facilitates the availability and affordability of fish?
- What influences foreign investment in South Africa’s and SADC fishing sectors?
- What distribution channels and networks are used for fish and fishery products?
- How do product standards and labelling influence fish trade?
- The discussion centred around the implications of all the above on food and nutrition security in South Africa and the SADC

The findings of the study were that; The import and export of fish in South Africa is driven by import substitution of exported high value species (e.g. export of prime South African Hake and import of lower value hake for the local market) and also in order to meet local and new growing regional demand as a result of shortfalls in local production (for example the import of raw frozen pilchard for canning). Exports were also driven by excess available produce of local and Namibian fish for which there is regional demand (for example horse mackerel). The growing imports of tilapia into the region were as a result a fish that was popular with consumers in most SADC countries and is in high
demand, but whose local and regional production was either declining or stagnant in the various SADC countries while it is being farmed and shipped into the region at production costs that still make it cheaper than regionally produced tilapia from both capture and aquaculture fisheries. The reduction or removal of tariffs through regional agreements was also promoting increased intra-regional trade. Another driver were the special tastes and preferences that freshwater fish from other SADC countries imported into South Africa fulfilled for the migrant community. Although unit cost of such fish was much higher than local marine fish, the market for such fish was thriving.

All exporters and importers, whether large companies or small-scale traders were involved in such activities on the basis of making profits and retain-on-investments. While large volumes of fish by small-scale traders could be passing through informal channels to evade the time-consuming bureaucratic border processes, the fact that such trade is thriving points to the evidence that it is profitable. Regional agreements and harmonisation of standards and labelling could act to help deepen intra-regional trade.

In effect, imports and exports provide for exchange of food between SADC states that is promoting increase availability and in most instances affordability of fish, thereby contributing towards food and nutrition security, even though this could be at the cost of promoting national self-sufficiency and food sovereignty.

**Methods**

This study was based on results of semi-structured interviews conducted in Cape Town, Pretoria and Johannesburg (over a period of about two weeks at the end of August and beginning of September in 2016) with some representatives of: the private sector in the food industry; government ministries and departments concerned with food and nutrition security and investment; private consultants working in the food industry (for the private sector, government and international organisations); interest group associations/organisations (some for private sector only and others grouping both the private sector and government); and academics and researchers working in the food industry. In total, fourteen interview sessions were conducted with 24 people. The interview schedules were based on policy analysis frameworks (Reich and Balarajan, 2012; Shiffman and Smith, 2007; Bennett and Howlett, 1992) and the OECD policy coherence framework (OECD, 2016), and engaged about: influential actors; policy processes; policy priorities; policy context; framing of nutrition; and opportunities to improve coherence (Thow et al, 2017).

A second source of information were eight semi-structured interviews conducted by Hara and Chimatiro with officials from AU organisations and RECs, and with fish retailers and traders specialising in importation and retailing of fish and other food products, in Cape Town and Pretoria Commercial Business Districts (between June and November 2016). The shops specialise in the retail of food and food products for migrants from other African countries living in South Africa. The interviews were undertaken as part of World Fish Center’s European Union funded ‘Improving Food Security and Reducing Poverty through Intra-regional Fish Trade in Sub-Saharan Africa’ project.
The rest of this paper gives the findings and discussion of these under seven headings: Drivers of imports and exports; Trade agreements, tariffs and protectionism; Incentivisation of local production; Economies of scale – facilitating availability and affordability of food; Investment in African countries; Distribution channels and networks; Product standards and labelling; and Implications for food security. The last section provides some conclusions and recommendations.

**Drivers of imports and exports**

Of the 312,753 tonnes of seafood consumed by South Africans in 2010, over 50% was imported (WWF & Traffic, 2014). In particular the country imported 156,684.65 tonnes of seafood valued at R2.6 billion. At the same time South Africa exported 128,999.38 tonnes of seafood valued at R3.6 billion (ibid). This trade by South Africa relates to fish trade globally, not with SADC and Africa only.

In the past imports into South Africa tended to be mainly for top end niche products, but in the last 3-4 years there has been increased imports of minimal value added fish and fish products. For example, much of the hake consumed in South Africa between 2000 and 2010 was imported, with more than 95% of this coming from Namibia (WWF & Traffic, 2014). This is primarily because most of South African Hake is sold to European Union at a premier price, in effect requiring import of hake to meet local demand. Similarly 62% of prawns consumed in South Africa in 2010 originated from India in order to meet shortfalls in local production (WWF & Traffic, 2014). Increase in low value products is mainly because importers are finding it cheaper and viable to bring in imports to meet the shortfall in local production (for example pilchards in the last few years) and in other instances to meet new markets/demand (for example Chinese tilapia aimed largely at African migrants living in South Africa). In case of the former, import substitution is vital given that the local pilchard catches had declined dramatically in recent years due to what are thought to be environmental factors (van der Lingen, 2011). Given that 70% of consumed seafood in South Africa is pilchard (WWF & Traffic, 2014) and also that two thirds of the South African canned pilchards is exported to other African countries (Hutchings et al., 2014), import substitution of raw pilchard by local canning companies has been absolutely necessary to meet both national and regional demand.

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4 Similarly, over 95% of local (South African) squid is exported to Europe (Hara, 2009). Thus most of the squid that is consumed in South Africa is imported.

5 Pilchards are also referred to as sardines. Which term is used depends on region of the world/country (for example in the UK sardine refers to a young pilchard). In South Africa, pilchards (not sardines) are VAT exempt, which means that it does matter what name producers use in order to qualify for this exemption. Department of Agriculture, Forestry and Fisheries (DAFF). [interview, executive company, 30/08/16, Cape Town)
Import substitution – Pilchard

About 140,000 tonnes of pilchards is canned annually in South Africa to meet local and regional demand. In the last five years, the TAC for pilchards has declined to less the 70,000 (68,000 tons in 2015) from a high of about 350,000 tonnes about ten years ago. Thus the rest of the raw material for canning (about 50%) had to be procured globally. The major sources had been Morocco (largest single source), Namibia, Mauritania, Mexico, the USA, Canada and Japan. The pilchard canning industry believes that there are marginal differences in taste of pilchards from different countries, so much so that consumers don’t notice any difference. Thus import of raw (frozen) pilchard from other regions of the world for canning in South Africa does not affect acceptability of the canned product. (Interview food company executive, 30/08/16, Cape Town)

The growing importation of Chinese frozen tilapia into the SADC (and Africa in general) at prices that wild and farmed tilapia in probably all SADC and African countries cannot compete with (http://www.fao.org/in-action/globefish/market-reports/resource-detail/en/c/336939/; http://www.businessdailyafrica.com/Tilapia-imports-amount-to-sabotage/539546-3281754) points to the phenomenal growth in aquaculture production in China and Asia at much lower production costs while the development of aquaculture in Sub-Saharan Africa continues to struggle. However, there are signs that local tilapia markets in China are flooded, depressing farm gate prices below production cost; and leading to the suspicion that exports to African are being subsidised in order to stabilise local prices (Albert Altena (fish farmer, Kenya), 2016. pers. Comm).

At the same time, there have been increasing volumes of processed fish products of different varieties and species from various African countries being imported into South Africa targeting migrants living in the country (Interviews with specialist retail shop owners, 15/06/16, Pretoria; 24/07/16, Cape Town; Jimu, unpublished). These come in all forms, including fresh, frozen, sun-dried, smoke-dried and salted-dried, and canned. The growing volumes of fresh frozen farmed tilapia from China being imported into the SADC, including South Africa, are also mainly aimed at African migrants as most South Africans do not prefer whole tilapia for a number of reasons, including viewing it as being too bony.

Thus food and nutrition security could ultimately be met through a mix of local production and trade, for example the import of raw pilchards for canning and then re-export of value-added canned fish to other SADC and African countries. Trade can also help to get prices right in situations where having only local production is not possible or

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6 Some of the underlying factors for poor and slow growth and development of aquaculture in Africa have been identified as being: unsuitable environmental and biophysical conditions; shortage of seed supplies; low levels of knowledge and skills; negative attitudes and behavior towards aquaculture; weak organization and governance; poor participatory approach; and unclear terms of agreement for business partnerships between communities and external players (Ateweberhan et al., 2013)
efficient. For example the impact of imported frozen Chinese tilapia on prices of tilapia in the SADC and African countries could be having a positive impact of the price of tilapia for consumers, even though this could be at the cost of promoting self-sufficiency and food sovereignty. Therefore, trade has been credited for the declining food prices that benefit industrial workers and urban low-income consumers by helping them to access less expensive imported goods (WTO 2014).

**Trade agreements, tariffs and protectionism**

One of the drivers of increased trade within the SADC region are the regional agreements on tariff reductions or removals, for example under the Southern Africa Customs Union (SACU) and the SADC protocol on Free Trade. In this context, it is cheaper and easier for South African companies to export to countries within SACU and Member States (MS) that are signatories of the SADC protocol on Free Trade as a result of non-tariffs or reduced tariffs. Equally it should be easier for other SACU and SADC Free Trade Area MS to export to South Africa. Tariff reductions or removals could be at a cost to local consumers and detrimental to food and nutrition security if the exports result in reduction of affordable fish and fish products. At the same time, exports by South African companies to most African countries are facing pressures of high tariffs, some of them through unilateral national decisions. For example Zimbabwe, banned import of basic commodities in June 2016 as part of measures to protect the local industry, and reduce its growing import bill and trade deficit. In such cases, consumers could be disadvantaged as a result of lack of possible cheaper imported food. In order to evade tariffs or benefit from other countries tariff agreements, some South Africa companies are moving production to would be importing countries or producing export products in other countries to take advantage of duty free access (for example, to Namibia for exports to the UK under the Lomé Convention). While banning imports could be a possible measure to protect local manufacturing, encouraging imports of raw materials for local manufacturing should also be an option. De Silva and Bjorndal (2015) reported positive contribution of external sources on UK fisheries, both in local seafood manufacturing and resource conservation measures.

The International Trade Administration Commission (ITAC) within South Africa’s Department of Trade and Industry (DTI), is responsible for tariff measures on specific products as part of anti-dumping measures, retaliatory actions (for example in the case of Zimbabwe’s 2016 ban on import of basic commodities, South Africa threatened to retaliate against the ban (http://www.financialgazette.co.zw/import-restrictions-sa)), protection of infant industries (for example increase of tariffs on mussel imports in order to protect the South Africa’s young mussel farming industry – Hara et al., unpublished).

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7 In June 2016, the government of Zimbabwe banned the import of basic commodities under ‘Statutory Instrument 64 of 2016’ as part of measures to reduce its trade deficit and growing import bill. The list of banned items included food items such as baked beans, potato crisps, cereals, bottled water, mayonnaise, salad cream, peanut butter, jams, maize, canned fruits and vegetables, pizza base, yoghurts, flavoured milks, dairy juice blends, ice-creams, cultured milk, cheese, etc. Government indicated in September 2016 that is was considering adding more items to the list (http://www.myzimbabwe.co.zw/news/7686-goverment-to-add-more-products-to-import-ban-list.html)
etc. Before instituting such a measure, the ITAC usually consults with the whole value chain to agree on the measures, their possible impact and the best approach for implementing such measures (interview with DTI official, 07/09/16, Pretoria). On the other hand, the DTI sees tariffs as an instrument for improving efficiency in local production rather than for merely protecting inefficient local industries that might actually be having a negative impact on consumers (for example, it might not make sense currently to ban Chinese tilapia imports since local production (and imports from SADC) cannot meet the growing demand).

All in all, contexts whereby MSs unilaterally introduce tariff and protectionist barriers call into question whether trade agreements such as the SADC Protocol on Free Trade and the resultant FTA can be strictly enforced among MS or they are taken as being voluntary by individual MS. In addition, consideration needs to be given to the impact of such protectionist measure on the food and nutrition security of local consumers by MSs instituting such unilateral measures.

**Incentivisation of local production**

After independence in 1990, Namibia’s fishing rights were structured in such a way that the quota fee was lower for the fishing companies that employed Namibians on the fishing vessels and even lower for those that landed and processed the fish in Namibia and therefore created employment. The South African pilchard canning sector has strategies and practices whereby they either can fish locally or outsource canning to overseas canners, depending on prevailing production costs.

**Benefits of local processing and importation on job creation and meeting increased demand**

*Until three years ago, most South African canners used to out-source pilchard canning to Thailand and China. Tin plate for the can contributes 40% of canned fish cost and cans in SA were 30% more expensive than in other countries. In addition, labour and energy were more expensive. But due to weakening of the Rand, savings on these through out-sourcing of canning declined, and it had become cheaper to can locally. In any case, the local canning factories have spare capacity built in to cater for the fluctuations in the TAC. Thus bringing canning back to South Africa had not been a problem for the local caning factories. Thus whereas pilchard fishing and processing based on local production used to be seasonal, the import of raw product for local canning has made it possible to run canning factories throughout the year, thereby increasing job security for the factory workers (now factories only close for about one month a year for maintenance). (Interview, food company executive, 30/08/17, Cape Town)*

On the global scale, developing countries are experiencing pressure from the more powerful countries, which use much more sophisticated techniques to influence negotiations and manipulate outcomes in the WTO when it comes to protecting domestic...
food production and processing industries (Thow et al, 2017). Interviewees felt that South Africa and SADC needed to take a harder stance on agriculture in negotiations and not let it be secondary or a negotiating tool, given the importance of the sector to food and nutrition security. For example although South Africa cannot argue that poultry is an infant industry, what should be argued is that it is a sensitive sector for the country’s food and nutrition security (Greenberg et al, 2017). SADC and Africa might need to take a stance on the growing importation of tilapia on the basis that the imports are limiting the development and growth of domestic and regional tilapia farming industries.

Incentivising domestic and local production and processing is essential to building local capacity for self-sufficiency and food sovereignty. It can also reduce the vulnerability to economic and political manipulation by exporting countries. The pros and cons of such measures need to be seriously taken into cognisance though as to how these promote or inhibit food security, in particular for the vulnerable poor consumers.

**Economies of scale – facilitating availability and affordability of food**

A few large conglomerates dominate the food-manufacturing environment in South Africa, including fishing and fish processing. This structural dynamic is a historical legacy based on favourable industrial policy and funding incentives under apartheid through the Industrial Development Corporation (IDC) (Mondi and Bardien, unpublished). For example, the establishment of a South African owned industrial fishing sector in the 1940s and 1950s was facilitated by government through soft loans and grant investments in a few fishing companies (van Sirtett, 2003; Nielsen and Hara, 2006).

**Dominance in the pilchard canning sector**

As a fish product, South African canned pilchard has experienced significant growth and market penetration (pilchard contributes 70% of all sea food consumed by South Africans, at the same two thirds of South Africa’s canned pilchard is exported, mainly to other African countries) since establishment of the canning industry. When the canning industry started in South Africa in the 1950s, the entire canned product was being exported to the Philippines as there was no market for pilchards in South Africa, until trials were successfully undertaken by Federal Marine to establish pilchard as a consumer product in South Africa. The sector is dominated by a few large share-based companies. One of these is now the largest fishing company in Africa, the largest pilchard canning company in the world and among the top ten fishing companies in the world. The company has a market capitalization of around R1 billion and employs 5,000 people (a fifth of the total employment in South Africa’s commercial fishing industry).

The biggest pilchard brand is ‘Lucky Star’, with an 80% market share of South Africa’s canned pilchards market. The dominance of Lucky Star is such that it is the fifth top brand (out of all consumer brands, not just fish) in South Africa.
Post 1994, one of South African government’s key objectives has been transformation of the economy (Department of Planning, Monitoring and Evaluation (DPME), 2016), mainly through Black Economic Empowerment (BEE). In the fishing sector, this has meant offering fishing rights to blacks who had been formerly marginalised under apartheid and inclusion of blacks in ownership of the existing fishing companies (Nielsen and Hara, 2006; Isaacs and Hara, 2008). Interviewees from some of the large food companies argued that by trying to break up or taking fishing rights away from these oligopolies, government grossly underestimated the contribution of these big companies to food and nutrition security. For them, it appeared that regulators tended to think that ‘small is better (or beautiful)’. They argued that if government broke-up the large companies this would decrease their functionality and capability to deliver affordable food (including through the tricky logistics involved with importing large quantities of staples and raw pilchards as the case is currently), which only the large companies can ably do based on ‘economies of scale’.

**Need for economies of scale**

*The fish canning industry argues that pilchards are a ‘marginal business’ (based on high volume, low profit margins), thus small-scale operators would not survive in this kind of industry – where you need economies of scale to bring onto the market a marginally priced product (including through the importation of the raw pilchard for canning as the case is currently). Also it has been argued that one cannot run a cannery alone, you need to integrate this with other products and business activities. (Interview, food company executive, 30/08/17, Cape Town)*

**Investment in African countries**

The question about price and affordability of food also relates to whether it would be cheaper for local consumers if external food companies invested and established crop and fisheries based agricultural industries in the local economies. For example two of South Africa’s three large sugar companies have established operations in Malawi, Zambia, Tanzania and Mozambique (Greenberg et al, 2017). Irvin and Johnson (the largest hake company in South Africa) has a Zimbabwe-based kapenta fishing company and a bream (*Oreochromis niloticus*) cage farming company (Lake Harvest) on Lake Kariba, and a number of South African fishing companies have fishing rights in Namibian Fisheries. Most of big food companies are share-based. The key concern for investors is ‘return on investment’ and the potential for growth of their investments (interviews, food company executives, 30/08/16, Cape Town; 05/09/16, Johannesburg). In this context, a company’s contribution to food and nutrition security, both locally and regionally, are secondary concerns for investors. Some of the interviewees from the private sector expressed the view that food security and nutrition were (or should be) by-products of economic growth (Thow et al, 2017). The question is therefore whether the food industry can reconcile health and nutrition needs of consumers with profit motives.
According to interviewees, the main obstacles that South African companies experienced regarding foreign investment, especially in other African countries, related to a number of issues. Key among these were; (i) protection of investment (for example, Zimbabwe passed the Indigenization and Economic Empowerment Act in 2007 that requires all externally-owned companies to cede at least 51% of shares to black Zimbabweans, which it had been pushing hard to implement in the last two years); (ii) repatriation of investment revenue and profits (an interviewee gave an example of a very lucrative market for horse mackerel in Angola, which was operationally very difficult to continue with due to problems of shortage of foreign exchange and also laws governing repatriation of revenue and profits); (iii) the need for a good business partner in the other country; and (iv) the need for an efficient route to market. These challenges are similar to those cited by Meacham et al. (2012), who noted that the five most significant African challenges were; underdeveloped infrastructure, disorganized and fragmented retail landscape, lack of reliable market research, unclear and ever-changing government regulations, and a severely limited talent pipeline.

Mackerel import and export

Another product with a large export market from South Africa and Namibia to other SADC and African countries is frozen horse mackerel. Part of South Africa’s export volume of horse mackerel are imports from Namibia, which are processed and then re-exported. The key export markets are the Democratic Republic of Congo (DRC), Angola and Cameroon. Namibia and Angola consumers require larger size horse mackerel and pay a premium for the larger sized fish. The smaller mackerel is sold within South Africa and the other SADC countries. (Interview food company executive, 30/08/16, Cape Town)

Interviewees pointed out that it would make it easier to expand into other SADC and African countries if there were clear, agreed and enforceable fiscal regulations and processes, which is usually not the case. Thus one interviewee belonging to a large listed company stated that: ‘given that his was a listed company with impeccable corporate governance principles, his company was not interested in moving or establishing subsidiary operations in countries with unclear or questionable investment policies and protocols. It would be best to wait until good regional practices had been developed and implemented before investing outside the country’.

Unstable currencies in most African countries was also mentioned as one of the main risk factors about going into these markets. Another key problem that had been stated was that in most of Africa, the formal retail sector is less than 5% compared to South Africa where supermarkets dominate the retail scene including increasingly in rural areas. Corporations therefore have to penetrate the informal distribution channels and markets to make products viable. Other interviewees mentioned the growing problem of competition with counterfeit products due to poor border controls and internally, poor enforcement of standards and labelling. The issue of counterfeit products can be seen in the growing labels of pilchards in countries in the SADC region that do not have pilchard
fisheries nor canning companies (for example, Mapeto packed for a company in Malawi, Royal Ocean packed for a company in Zimbabwe, etc.), and pilchard and mackerel labels imported from Pakistan, Singapore, Morocco, Japan, etc. into South Africa and SADC countries.

**Distribution channels and networks**

South Africa and Sub-Saharan Africa have unique structures and networks for food distribution and markets. Key to distribution are the informal channels and networks. It is estimated that less than 45% of food products go through formal retail outlets in South Africa (interview, food company executives, 02/09/16, Cape Town) while in most African countries, the formal retail sector is not bigger than 5%. This relates the argument that in most African countries, the informal economy contributes an estimated average of 43% to the GDP (Afrika and Ajumbo, 2012).

Most of the cross border trade in Africa is undertaken by the informal sector (Afrika and Ajumbo, 2012). Although there is no agreed definition of Informal Cross Border Trade (ICBT), this generally refers to “trade in processed or non-processed merchandise which may be legal imports or exports on one side of the border and illicit on the other side and vice-versa, on account of not having been subjected to statutory border formalities such as customs clearance” (Afrika and Ajumbo, 2012: 1). ICBT involves bypassing border posts, concealment of goods, under-reporting, false classification, under-invoicing and other similar illicit activities. In addition to seeking to evade taxes or fees imposed by governments, traders may also try to avoid administrative formalities in areas such as health, import of agricultural products, security and immigration, which are perceived as costly, complex and time consuming (Njiwa, 2013). Through such activities, it is estimated that a large proportion of trade in Africa goes through the informal channels and networks, with over 70% of the informal cross-border traders in the SADC region being women (Afrika and Ajumbo, 2012; Njiwa, 2013). As a result, there is lack of clarity in terms of the size of this sector and the volume of food commodities that pass through the ICBT (Lesser and Moisé-Leema, 2009).

Large volumes of the fish is transported into South Africa using passenger buses as part of passenger accompanied goods. Some of the fish comes into the country on trucks coming to collect goods at the Durban and Cape Town ports while some from West Africa comes through container ships to Cape Town, Richards Bay and Durban ports (Interviews with specialist retails shop owners, 15/06/16, Pretoria; 24/07/16, Cape Town; Jimu, unpublished). According to the interviewees, large volumes of the fish that are sold in the specialised food shops catering for migrants in South Africa’s CBDs get across the borders into South Africa unrecorded, therefore through such ICBT channels and networks, mainly to evade the time-consuming regulatory and phytosanitary processes. According to Jimu (unpublished), the recent ban on imports of basic commodities by Zimbabwe has resulted in establishment of informal and unofficial border crossing points for both imports and exports between Zimbabwe and its neighbours.
Traders that import processed fish into South Africa also pointed out that one of the problems at the borders was that the South African customs declaration form does not have the product codes for most of the specific species and types/forms of fish products that are increasingly being imported into the country as these were not import items when the forms was designed. This was stated as one of the main reasons some of these products are not recorded or are recorded under the wrong codes.

As a marketing strategy, producers can either choose a channel and try to dominate the selected channel or they can serve all possible and available channels. Most producers chose the latter strategy, so that when they go into the export markets they serve all the channels (both formal and informal), in particular given the size and importance of the informal sector in African economies. As a result of this strategy, the market penetration of canned pilchards is only second to Coca Cola (company executive, 30/08/16, Cape Town). In other African countries where the formal sector is even smaller, supermarket expansion (for example Shoprite and Pick and Pay) into the rest of Africa is a new route into these new markets. In the main though, brand presence in such countries remains mainly through cross-border informal trade and retail distribution through the informal retail sector.

In South Africa, there are different tiers of the informal retail space ranging from Spazarettes, tuck shops/house shops; subsistence/SA owned; and migrant-owned. These informal outlets thrive on the basis of availability and convenience (Greenberg, 2016). The informal channels require a diverse range of product sizes, which usually involves re-packaging (and usually increase in unit price of the product). There are also observed formalized shopping patterns in these informal retail channels. For example, consumer demand shifts over the month – around the date when people get social grants or wages, consumers buy bigger packs of food, but as the money runs out they shift from large size packages to small packets. In some instances households even get food on credit, to be paid when they get the grants or wages. In most African countries, most food is sold in open air markets. Fish is usually not even packaged. It is either sold as single individually priced fish (for big species) or in mounds (for small fish) without weighing. Similarly, most of fish products in specialised shops for African food in South Africa’s CBDs are sold unpacked by piece, with only small species such as kapenta and usipa (sardines) sold in packets of R10, R20, R50, etc.

Despite the dominance of the informal channels and markets, there is a growing trend to formalization of retail and retailing strategies in South Africa. For example, retailers club together so that they can demand more from wholesalers such as Cash and Carry, through establishment of a ‘key account’ and ‘aggregate purchasing’ (ibid). This formalization is particularly a common practice among migrant-owned retailers who dominate this sector (according to interviewees, up to 70% of informal retailing in SA is owned by Bangladesh, Pakistan, Somali, Chinese immigrants – Eastern Cape – Bangladeshi and Chinese; Cape Town and Johannesburg – Somali, Chinese). The question is whether such formalisation results in improved delivery price and quality of food for consumers.
Product standards and labelling

South Africa is one of the countries in the world with very high product standard specifications. These are based on the Codex Alimentarius International Food Standards system. Established by FAO and WHO in 1963 for setting global standards on food, the system aims to protect consumers especially regarding food safety and harmonise food standards and contents (additives, labelling, etc.). The nutrient reference values under the system are a particular requirement for globally traded food. Codex Alimentarius also provides basis for developing regional food standards.

The main challenge for South African producers trying to penetrate the Sub-Saharan African markets is meeting requirements for South African Bureau of Standards (SABS)/National Regulator for Compulsory Specifications (NRCS) standards that compete with lower quality local products or products from other countries imported into these countries that are produced cheaper (interview with company executive, 02/09/16, Johannesburg). The question that most South African companies have therefore to deal with is whether they should be producing products with different specifications for other markets/countries in order to compete on these markets. The problem of producing products with different specifications for different markets/countries is the possibility and risk of ‘round tripping’ (interview with company executive, 02/09/16, Johannesburg). There could also be need to do thorough market research and possibly product development for the new markets if developing products with different specifications was the route chosen, which can be costly. In addition, new markets provide unique challenges for additional branding and marketing. For example, one of the South African food companies discovered that generally there is lack of a canned food eating culture in East Africa (after exporting to that potential market) despite the growing trends globally towards convenience food such as canned food (Interview with company executive, 02/09/16, Johannesburg).

Branding and standards

* Pilchards are generally branded and marketed as good heath food (have lots of omega 3, good fats, high protein, no carbohydrates). Some of the imported processed fish is salted-dried as a preservation process. The question is whether products that infringe local (South African) regulations should be banned or should have special dispensation like kosher meat has. At the moment it appears as if border control officials are simply taking a blind eye on allowing the import of such products into the country.

Labelling is a particular challenge especially with import and exports. Some of the main issues around labelling are language (e.g. requirements for French & Portuguese in French and Portuguese speaking African countries), and different standards and requirements. Thus South African companies try to create new appropriate labels for new markets, they at the same time try to maintain the standard labels as much as possible in

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8 Lower standard goods meant for a specific market ending up back on the South African market.
order to avoid duplication. But since South Africa remains the main market for most companies, they prefer to develop standard labels in the main official South African languages on food labels rather than too many other languages. The challenge with differentiated labels is in managing stock flows (how many of which label/for which country/for local or export).

**Branding and labelling**

*In some instances, the same product can have different names targeting specific consumer groups. For example, during apartheid, pilchards were branded and marketed based on the three main racial groups: ‘Glenrick’ for whites, ‘Saldanha’ for coloureds and ‘Lucky Star’ for African blacks* (interview with company executive, 28/08/16, Cape Town). *Thus although all were made from the same product, on the same production line and in the same factory, the tins would be branded and labelled differently depending on the target market they were going to.*

It was stated that the SADC has been slow in the harmonization of food standards and labelling of food products. At the moment what is happening is that South African supermarkets and fast food chains are cropping up everywhere in the SADC and Africa, taking with them South Africa standards since most do not run separate product lines for South Africa and other countries. Thus South African regulations and standards are effectively being exported and imposed on other countries - whether good or bad.

Port Health (Department of Health (DoH)) is responsible for enforcing standards and regulating entry of food with potential to cause food borne illnesses at the country’s ports of entry. The Department of Customs has the responsibility for profiling what food needs to be detained for health inspection, what food is prohibited and restricted goods. The DoH communicates and advises the Department of Customs on the food tariff headings of concern that should be detained for Port Health to check. This doesn’t mean that everything is checked; rather only a sample is detained and evaluated. It was further stated that in recent years, some of the laboratories at the borders for checking the samples had not been operational making it pointless to detain products of questionable quality or standards. The Department of Customs is also supposed to enforce compliance with labelling. It was stated the Department of Home Affairs was in the process of creating a Border Management Agency (comprised of the Department of Customs, Immigration Department, Police and Department of Agriculture), which will be an integrated agency working at all borders around regulation and control of food imports (Interviews with DAFF official, 06/09/16; and DoH official, 09/09/16, Pretoria). Establishment of this agency was aimed at overcoming the observed problems of an enforcement system that had grown increasingly dysfunctional in recent years.

Municipalities are supposed to set and have specific food standards and levels of hygiene for the food premises (retail shops, restaurants, etc.), equipment and food handling. Thus all food retailers and processors are required to have an annually renewable certificate that gives them permission to process and sell food in a given CBD, having met the
required minimum acceptable standards. In addition, municipalities are supposed to have inspectors who should routinely conduct impromptu spot checks and inspections of food premises in their CBDs. Some municipalities in South Africa have programmes for training street food vendors (in Pretoria, some of the imported fish is sold by vendors in open stalls on the street pavements) on food handling and hygiene (Interview with DoH official, 09/09/16, Pretoria). This started as part of a government initiative under President Mbeki, which promoted and recognized the ‘second’ (informal) economy as an important sector of the economy. The specialised migrant food shops in CBDs are also required to have such certificates from municipalities. The observed lack of open unpackaged display of fish whereby buyers touch and choose fish on their own without hand hygiene (gloves), the unhygienic conditions in which some of the shops usually are calls into question whether the standards that these shops should be operating under are clearly stipulated in legislation and whether these standards are being enforced.

**Implications for Food and Nutrition Security**

What are the implications for food and nutrition security for: import substitution; imports to meet local shortfalls/availability; trade agreements around tariff reductions; protectionists measures for local production/industry; national/local production compared to imports or foreign outsourcing; monopolies and economies of scale; foreign investment; types and forms of food distribution; and standards and labelling?

Import substitution meant to bring in cheaper products while exporting the more valuable local products as is being practiced with regard to hake and squid is beneficial to South African consumers on the assumption that this makes available a cheaper product. Similarly, the import of pilchards (the most popular fish among South Africa consumers) to meet shortfalls from national production has positive benefits for food and nutrition security, especially among the low income who consume large amounts of pilchard (Isaacs, 2016; WWF, 2014). In addition, this also has positive benefits for Africa regional consumers where two thirds of the pilchard processed by South African canners is exported. Imported tilapia, which usually sells at prices below locally produced freshwater and/or aquaculture tilapia species, is beneficial to consumers both in terms of increased availability of a popular fish whose production has been declining and also affordability of the product. While self-sufficiency in food and food sovereignty are usually preferred and policy priorities by most nations, especially developing ones such as those in sub-Saharan Africa, import substitution of cheaper products and imports to meet national/local shortfalls in production are acceptable options where natural factors leave a state or region no other feasible option for meeting and ensuring food and nutrition security.

The SADC protocol on Free Trade resulted in tariff reductions for most products traded among member states that signed the protocol. This can only benefit consumers in terms of price reduction in goods and also increased flow of food among MS in the SADC region and in effect having positive benefits for food security. Such agreements are also likely to result in easier and quicker border processes, as there will be less incentive for informal practices. The fact that states can still introduce bans and restrictions unilaterally
like Zimbabwe did brings about concerns as to how enforceable such protocols and agreements really are and what measures could be put in place in order to ensure that all states abide by the protocols and agreements.

Regional measures should include harmonisation of standards and phytosanitary issues. The fact that a lot of people that conduct cross-border trade are small scale-traders and women also calls for possibilities of introducing flexible exemptions for this category of traders from some of measures, regulations and restrictions. These are likely to have positive benefits for food security and livelihoods of the small-scale producers and small-scale traders and many others in these food value chains.

While national food producers and processors (especially small-scale) ought to be nurtured and protected from unfair completion (for example dumping and cheap imports) in order to promote food self-sufficiency and sovereignty, this has to be tempered with ensuring that this does not result in inefficient production sectors and industries that would in the end work against food availability and affordability, and thus food and nutrition security. Thus the selection of which sectors to protect, how to protect these and for how long should be carefully analysed, implemented and monitored. As soon as such measures are not necessary or no longer beneficial for the nation and consumers, these should be suspended, rescinded or removed. For example, it makes sense to protect South Africa’s young mussel farming industry from cheap imports from Asia and while it does not make sense to introduce such measures for tilapia as South Africa does have tilapia from its capture fisheries nor does the country have a tilapia aquaculture industry. How long the current measures protecting the mussel industry should stay in place needs to be balance against whether such measures continue to be beneficial both to the country and consumers. Whether South Africa should introduce restrictions on imports of tilapia should depend on whether and when this comes necessary, for example if the country goes into tilapia farming.

The issue of whether to produce locally or process to add value locally are a business policy issues that sometimes are beyond government. For industry, such decisions are based on whether local production is more beneficial than importing. Similarly decisions about whether to add value locally or export a product in its raw form will depend on whether this would result in increase in benefit and profits. It also depends on what form consumers want the product. Thus most of the hake and squid that is exported to Europe mostly goes as frozen whole while a certain percentage was being exported fresh for the Spanish market. In South Africa, almost all pilchard for human consumption is canned. Thus the pilchard is imported whole by South African canners and until recently, most of the canning was outsourced to Asia where the material, energy and labour were cheaper. Concerning fish products being imported into South Africa targeting migrants, decisions are mainly based on the mode of transport that is used, and also need to preserve the project as long as possible. Thus dried and smoke dried products are best for transportation using buses, Lorries and container good ships. Also this is the form that most of this fish is consumed even in the originating countries. In the end, the decisions about whether locally produced or imported, whether to add value or not, whether to outsource processing and what product forms to produce are both consumer factor and
business decisions that in the end have to be reconciled to meet the needs of both investors, business entities and consumers. Whether these are undertaken by large or small business entities and whether through subsidiary foreign based sister companies are all business decisions that are based on what would work best and as part of expansion or contraction of activities both for investor and consumer benefits.

Informal distribution channels and retail outlets appear to work best in most of Africa including South Africa. Even with growing penetration of supermarkets into rural towns and trading centres in South Africa, the majority of people in rural areas and townships still heavily rely on spaza shops. What needs to be done is introducing measures about how best to support these and have flexible regulations in terms of standards for handling human consumer food in terms of storage, preservation and display and other factors. In the end these are the channels and outlets that ensure that food reaches most people in acceptable state and form. Thus even standards and labelling for both local and imported food should be based on flexible regulations that promote improved and efficient delivery of human food.

Conclusions and recommendations

International trade (import and exports) is driven by shortfalls in local production or availability of the type and quality of food demanded by consumers. This study has revealed that large volumes of imported pilchards are becoming an important source of raw material for canning industry. This is creating jobs in South Africa as well as supplying other SADC states with valuable food. Another factor is the price competitiveness of locally produced food compared to imports. This also relates to situations whereby it might be more profitable for producers and investors to export locally produced products to more lucrative export markets and then import cheaper products for the local market. Examples here are the locally produced hake and squid which are exported and in return cheaper imports are brought in, helping the country to generate foreign exchange at the same time providing fish at affordable prices. This strategy could be useful for other SADC states; for example, Mozambique could consider exporting the premium prawns and import cheaper species that can be used to feed low-income urban and rural consumers.

Investing in production infrastructure in local markets (including resource rights such as in fishing rights) is the route that some commercial food producers see as the most efficient way for the route to market. This can also be driven by local regulations that incentivise investment in local processing and penalise imports in specific products in order to expand domestic production capability and create employment. Export of products using ready established production capacity in the exporting country is usually the preferred route though. Such decisions are also influenced by the difficulties of establishing a presence in another country, prevailing economic conditions and dynamics and the fiscal regulations of the potential country for which investment is destined. Most food producers thus prefer the export route, which might be both formal and informal, to meet the demand of consumers in new external markets. While a lot of the fish exports from South Africa are formal, it is also clear that informal exports are rife. Therefore, it is
important for government to put in place policies that will help formalise informal activities.

Informal international fish trade is as a result of the structure of the economies in most countries which largely depend on small traders rather than large formal multi-chain (super) markets. For this reason, informal trade is likely to remain the main and key way for undertaking economic transactions for the foreseeable future. Informal trade, including cross-border, helps move and deliver food on most people’s plates and therefore greatly contributes towards food and nutrition security. In the SADC region (and elsewhere in Africa) women form an important component of cross-border trade especially the informal. Given the role that women play in ensuring that their families and households have food, trade-based livelihoods are important in contributing to household food security. Improving how women and small-scale traders transact economically both nationally and through cross-border trade, without diminishing their effectiveness, ought therefore to be an important agenda in global and regional trade agreements. One way could be exempting small-scale traders from most of the import/export regulatory requirements and introducing flexible processes and controls, apart from those concerning food safety and phytosanitary issues.

Structural and institutional weaknesses and inefficiencies at most South African and also other SADC member states borders result in traders having low confidence in the use of formal border systems, thereby encouraging and reinforcing use of informal systems and channels. This represents loss of revenue that should be collected from import duties and excise (though exemptions based on type and volume thresholds of exports/imports could also improve declaration and reporting), the lack of documentation and recording of the volumes of imports and export, and what form all such products are. Another area in need of urgent attention and resolution are agreed regional standards and quality of food for import and export and the harmonisation of these, even though this is a difficult aspect of regional and multi-lateral trade agreements given the consumer traditional and cultural differences and habits that food represents. Improving border structures and institutions and developing common principles for minimum quality and standards through shared understanding and agreements, without penalising cross-border trade, could greatly increase confidence in use of formal border systems and institutions by traders.
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