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Market diversification opportunities for namibian fish and fish products

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Decision Support Model (DSM) used to identify realistic export opportunities using a subsequent filtering process. The filtering process includes four sequential filters; the first filter includes a political and commercial risk assessment as well as a macro economic analysis. The second filter consists of the detection of possible export opportunities by means of market size and both short- and long-term market growth. The third filter identifies realistic export opportunities utilising a market accessibility index, which includes the following parameters. The fourth and final stage of the filtering process involves the analysis of the identified export opportunities in terms of their ranking according to accessibility and performance. The DSM identified the top seven export opportunities; these include in descending order: The United States of America, Japan, China, Germany, Spain, Thailand and France.

Key words: Namibian fish, diversification, Decision Support Model (DSM).

INTRODUCTION

Namibia is regarded as an upper middle income country, with a GDP per capita of approximately US$ 5,293. Despite this status, the country is characterised by many social and economic challenges. Income inequality is high, estimated Gini coefficient of 0.59 but has been falling over the past 20 years (IMF, 2013). The level of poverty and the cost of living are high, and thus quality of life is not in unison with the macro indicators. The incidence of poverty is estimated at about 30% of the population, and it is estimated that about half the poor population is in severe poverty. The majority of the population is rural-based, but urban poverty is deeper than rural poverty. The human development index rate is

very low, at 0.61 (ranked 128th out of 186 countries), and unemployment averages about 30% of the labour force, and is worst among the youth. The economy relies on exports, mainly of primary products, to raise necessary foreign currency. Thus, apart from internal social and economic challenges, Namibia is largely an open economy, and it is therefore vulnerable to the vagaries of world economic fluctuations. This situation is further worsened by the heavy reliance on South Africa for basic vital import commodities (NSA, 2013).

As part of the initiatives to address the above challenges, the nation crafted national vision 2030 operating within five-year National Development Plans

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(NDP). And there are many other intervention initiatives. That includes Targeted Intervention Programme for Employment and Economic Growth (TIPEEG), which sought to promote labour intensive growth to promote 'star' industries for expansion and employment creation. The tourism and fisheries sectors were identified among the exhibiting significant growth potential (NSA, 2013).

The fisheries sector contributes about 3.5% to Real GDP, even though the contribution is small. However, it regarded as an important sector due to (i) it is the fourth-largest foreign currency earner (as of 2012); (ii) it is a biggest employer, especialy in the Erongo region; and (iii) it has potential to contribute to food security and income generation (NSA, 2013).

Namibia's coastline falls within the Benguela current system, a system that is rich in in pelagic (deep sea) and demersal fish, supported by plankton production driven by intense coastal upwelling. Such systems support a relatively low diversity of species, but are, at the same time, among the most productive habitats in the world. Because of the desert coastline, the Namibian coast has few urban settlements, unlike most other coastlines in the world, which tend to be very densely populated. The lack of dense settlements means that there is not much pollution in Namibia's marine waters, which could adversely affect the marine ecosystem (IMF, 2011).

This paper also argues that, to get maximum benefits from the fisheries sector, there is need for diversification and increased investment. Thus this will help to stimulate local economic development and employment. Diversification would also lower the sector's vulnerability to economic shocks that affect the export markets (like the recent financial crisis). Export development by means of market diversification creates trade through unlocking additional supply potential. The exploration and analysis of alternative markets will comprise of in-depth market analysis and supply strategies for the most lucrative export opportunities. This will allow the industry to make wise decisions, as the industry's profit potential is largely determined by how it positions itself in order to take advantage of opportunities and overcome potential threats.

METHODOLOGICAL AND DATA APPLICATIONS

In this study two methodological approaches were used that includes (i) The Decision Support Model (DSM), modelling realistic export opportunities and (ii) Bubble graph produced from trade statistics for international business development

The Decision Support Model (DSM): Modelling realistic export opportunities for Namibian fish products

The DSM was first developed by Cuyvers et al. (1995:173-186) in order to identify the product-country combinations with the highest export potential for a specific country. It was specifically designed to provide export promotion organisations with a more scientific way to determine the products and destination countries on which to focus

their scarce export promotion resources.

The DSM starts with all countries and products worldwide, then, through a screening process, identifies realistic export opportunities (REOs). The DSM consists of four consecutive filters that sequentially eliminate less realistic/interesting product-country combinations in an effort to categorise and prioritise REOs for the country for which it is applied. The filtering process is based on Walvoord's (1983) cited Chasomeris (2007) model of international market research, and is illustrated in Figure 1.

Filter 1 assesses the political and commercial risks of doing business with every possible importing country worldwide. It investigates macro-economic indicators to determine if the importing countries have adequate overall market size and growth potential. Filter 2 assesses the import demand for the various HS 6-digit products in the remaining countries by analysing the import size and growth. Filter 3 examines the accessibility of each market by assessing the degree of market concentration and the barriers to entry. After the third filter, a list of export opportunities (product-country combinations) with potential can be extracted. Finally, Filter 4 categorises these potential export opportunities based on the strength of the exporting country's relative market share (compared to that of the top six competitors) and the import size and growth in each of the identified markets. Each filter is discussed in detail following.

Filter 1: Identifying preliminary market opportunities

In this filter, countries that pose high political and/or commercial risks to the exporting country (filter 1.1) and do not show adequate economic size and growth (Filter 1.2) are eliminated. Starting with all possible trading partners (that is, the rest of the world).

Filter 1.1: Political and commercial risk assessment

Commercial risk: That include (i) economic and financial indicators (e.g. devaluation of the currency, real interest rates, GDP growth and inflation), (ii) indicators that reflect the country's payment experience; and (iii) indicators that characterise the institutional context in which local companies operate (e.g. corruption index, transition economy) (ONDD, 2014).

Political risk: Assessment of the country's economic and financial situation. (i) country's economic situation is evaluated using three sets of indicators, namely economic policy performance indicators (e.g. fiscal policy, monetary policy, external balance, structural reforms), growth potential indicators (e.g. income level, savings, investments), and external vulnerability indicators (e.g. export diversification and aid dependency); (ii) assessment of the political situation, which is based on a quantitative analysis of the political risks associated with doing business in the country, and (iii) payment experience analysis (ONDD, 2014).

Filter 1.2: Macro-economic size and growth

Countries that pass through Filter 1 have to pass another set of filtering criteria based on a country's size (measured by GDP and GDP per capita) and growth (GDP growth and GDP per capita growth values) (Cuyvers et al., 1995:178).

Filter 2: Identifying possible opportunities

Filter 2 assesses the import demand for the various HS 6-digit product categories in the remaining countries in order to identify product-country combinations (markets) with adequate import size and growth. Three criteria are used in this filter, namely short-term
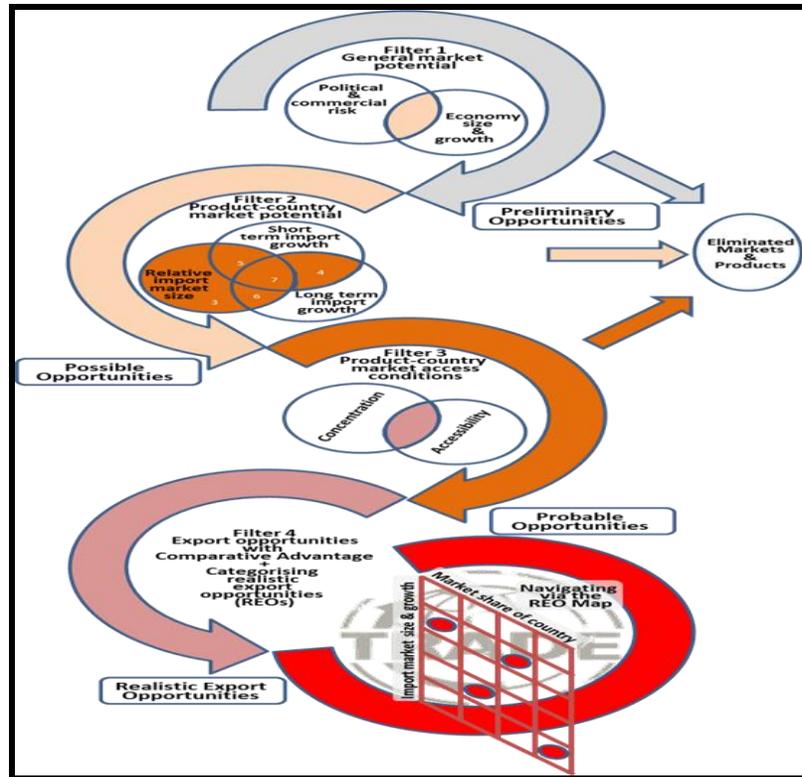
Figure 1. The DSM filtering process. Source: NWU representation constructed from Steenkamp (2011).

import growth, long-term import growth, and import market size (Cuyvers et al., 1995:185).

Filter 3: Identifying probable and realistic export opportunities

Cuyvers et al. (1995:180) note that selecting an export market on the basis of size and growth does not necessarily mean that entry into that market will be easy. For this reason, filter 3 takes into account trade restrictions to further screen the remaining possible export opportunities. Filter 3 considers two categories of barriers to trade, namely the degree of concentration (Filter 3.1) and trade restrictions (Filter 3.2) (Cuyvers, 2004:261).

Filter 3.1: Degree of import market concentration

A highly concentrated market is difficult to enter (Cuyvers et al., 1995:180). A highly concentrated import market is one where a few exporting countries hold a relatively large market share and therefore have a lot of knowledge about the market. It will be inefficient for national export promotion agencies with limited resources to focus on heavily concentrated markets for which the chances of successful exporting are relatively small.

Filter 3.2: Trade barriers

This filter incorporates information on the trade barriers the exporting country would face in international trade. These include tariffs, non-tariff barriers, trade costs, trade time, distance,

infrastructure and logistics.

Filter 4: Final analyses of opportunities

The last filter categorises and prioritises the realistic export opportunities identified in Filters 1 to 3. There is no market elimination, and for each market from Filter 3, the relative market share of the exporting country (country n) of product category j in country i

RESULTS AND DISCUSSION

Market diversification opportunities for Namibian fish and fish products: DSM

Table 1 summarises the realistic export opportunity by country and HS product code. It considers the market share and potential of importing countries (and total exporting capacity of more than USD500million for Namibia), the following countries listed below comes top:

1. The United States of America: It is a top market for frozen shrimps and prawns, whether or not in shell (HS30613); and also for frozen fish fillets (HS30420). It is also a potential market for fish fillets and other fish meat,

Table 1. Realistic export opportunities based on Market share and potential importing countries.

HS Code	Country	Country - ISO code	Total imports - 1000 USD	Potential export value - 1000 USD	Namibia - exports 2013 -1000 USD	Namibia - specialised in exporting the product?	Namibia - locally produced?
30613	USA	842	3876179	642591	0	No	No
30420	USA	842	2977078	479807	4182	Yes	Yes
30613	Japan	392	2111221	281847	0	No	No
30420	Japan	392	1838769	258075	0	Yes	Yes
30379	China	156	1523837	234310	0	Yes	Yes
30420	Germany	276	1514528	225261	11643	Yes	Yes
30613	Spain	724	1153935	157705	0	No	No
30410	USA	842	1135341	181933	0	Yes	Yes
30343	Thailand	764	970924	143446	0	No	Yes
30212	France	251	931317	154119	0	No	No
30420	France	251	884933	103885	9510	Yes	Yes
30490	Japan	392	771131	129451	0	Yes	Yes
30614	USA	842	754523	120289	0	Yes	Yes
30613	France	251	713571	75251	0	No	No
30749	Spain	724	679436	108253	9861	Yes	No
30269	Italy	381	679435	113109	0	Yes	Yes
30379	Japan	392	624438	90536	3	Yes	Yes
30420	Spain	724	620365	76209	87926	Yes	Yes
30344	Japan	392	603542	93306	0	No	Yes
30420	Netherlands	528	585051	80132	7963	Yes	Yes
30319	China	156	538004	86762	0	No	No
30410	France	251	526664	75275	0	Yes	Yes
30749	Italy	381	514917	73794	183	Yes	No

In the above table Namibia defined reatively small and potentail importing countries for more than USD500 milion included.

whether or not minced (excluding 30302 and HS30420). It is characterised by a large product market with long-term growth, and thus general market potential.

2. Japan: Top market for frozen shrimps and prawns, whether or not in shell (HS30613); and also for frozen fish fillets (HS30420). It falls under large product market with short- and long-term growth, thus it offers general market potential.

3. China: Constitutes a market for frozen fish not elsewhere specified (excluding fillets and other fish meat of 03.04/livers and roes: HS30379). It passes for general market potential and a large product market with long-term growth.

4. Germany: is a potential market for frozen fish fillets (HS30420). It is filtered as a growing market (short- and long-term), and therefore a product market to be considered.

5. Spain: Has a market for frozen shrimps and prawns, whether or not in shell (HS30613); it passed for a larger market with general market potential.

6. Thailand: is a potential market for frozen skipjack/stripe-bellied bonito (Euthynnus Katsuwonus pelamis) (HS30343).

7. France: Is a potential market for Pacific salmon/Atlantic salmon/Danube salmon (HS30212) and frozen fish fillets (HS30420).

However as indicated in the table, Namibia does not have specialisation in all exportable fish commodities (Column 8). There is need for more work and investment towards producing some of the fish products identified. Namibia has potential export capacity to increase exports of different fish products to the USA, Japan, China, Germany, Spain, France, Thailand, France and Italy.

Prospective diversification of fish export markets: Bubble graph

Further analysis of the export opportunities and prospective market diversification opportunities also tested using bubble graph from the International Trade Centre (ITC) (ITC, 2014) data base that is at product level. The bubble graphs below produced for potential export markets for products HS03 (fish, crustaceans, molluscs, aquatic invertebrates (representing all the general fish and fish products)) and HS0303 (frozen fish, whole). Namibia has comparative advantage in the latter, and it constitutes the largest proportion exported, in both
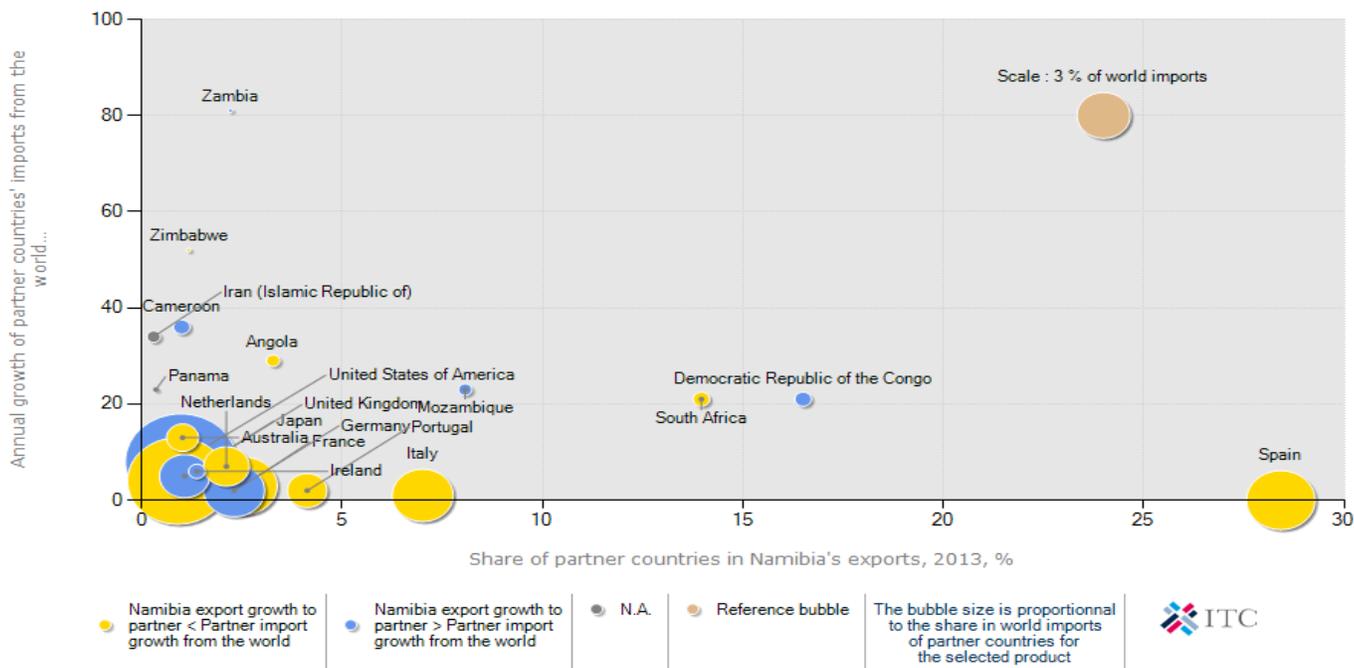
Figure 2. Bubble graph for export market diversification for product HS03 to the rest of the world. Source: Trade statistics for international business development (12/2014) (http://www.trademap.org).

volume and value.

Product HS03: Fish, crustaceans, molluscs and aquatic invertebrates

The bubble graph illustrates exports to certain main destinations for particular fish and fish products. This would provide the prospective of market growth and demand to the specific region.

The figure shows that the annual growth of partner countries' imports from the world are concentrated around 20%, with bigger bubbles for Japan and USA. Spain shows the largest portion share of Namibian exports (nearly 30%), followed by the DRC and South Africa respectively. However, Namibia's fish exports growth to Spain and to South Africa is less than the two countries' exports to the world.

Analysis of prospective exports to the African market alone shows four main destinations for Namibian fish and fish products – DRC, South Africa, Mozambique and Angola. The rest of the countries individually constitute less than 1% of market the share (Figure 2).

Among the top export markets, the growth of Namibian exports to the DRC and to Mozambique is larger than the growth of the growth of the two countries from the world (Figure 3). This means there is potential for enhancement of market share in these countries. However, the situation

is different when it comes to South Africa and Angola: Namibia's exports to the two countries lags behind world exports to the two. This indicates markets where there is competition, with Namibia being in a disadvantageous position.

The analysis of HS03 exports to Asia is shown in Figure 4. It shows that Namibia's exports to Asia are very low (at less than 1%), which may be indicative of the lower demand for the product HS03 in that region.

There could be several reasons for this: distance could be one, and that some fish harvested in the Atlantic has less fat than similar types harvested from the Indian Ocean. Many of the countries may also be able to produce their own fish, perhaps more cheaply.

Figure 5 shows the perspective export of product HS03 to the EU. Many of the countries fall within the zero to 5% growth band. Even within these, Namibia has better export potential in trade with Germany, the UK and Poland where the country already has exports growing faster than the three countries' imports from the world.

Namibia also has potential to increase exports to Italy, Ireland, Portugal, Sweden and France where its export growth has been lagging behind that of the rest of the world to the five countries. Spain is an outlier consuming nearly 30% of Namibia's output of product HS03. Like to the five EU countries above, Namibia has potential to increase exports to Spain, as attributed as the majority of the fish exporter companies are from Spain.
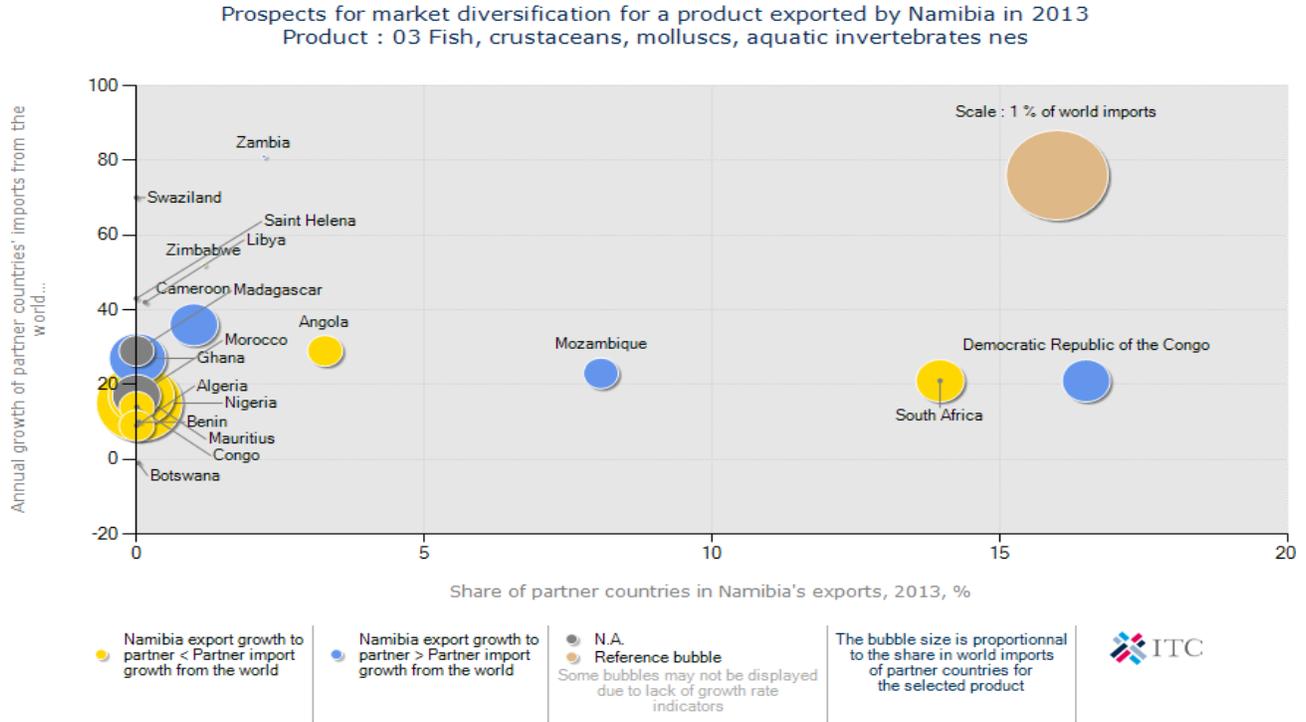
Figure 3. Bubble graph for export market diversification for product HS03 to Africa. Source: Trade statistics for international business development (2014) (http://www.trademap.org).
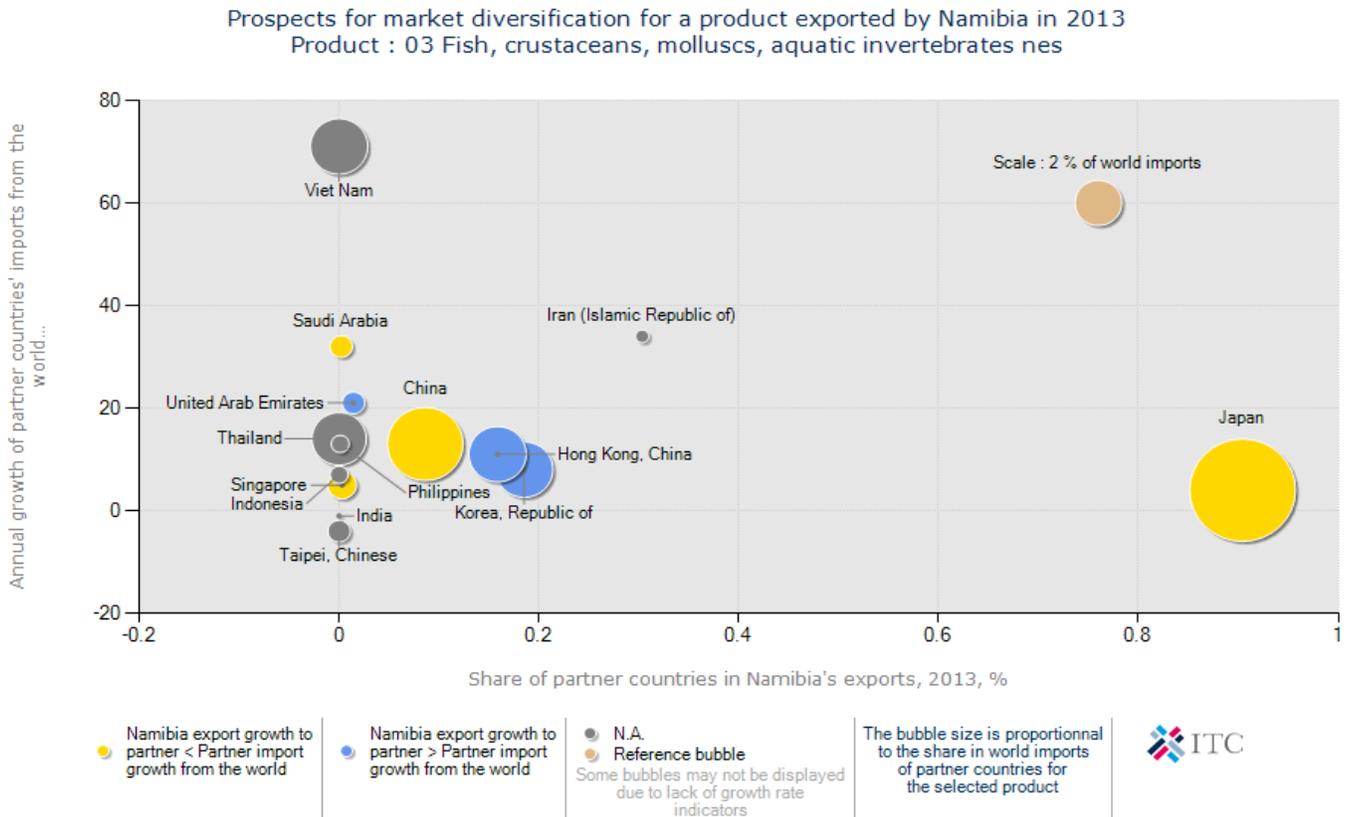

Figure 4. Bubble graph for export market diversification for product HS03 to Asia. Source: Trade statistics for international business development (2014) (http://www.trademap.org).
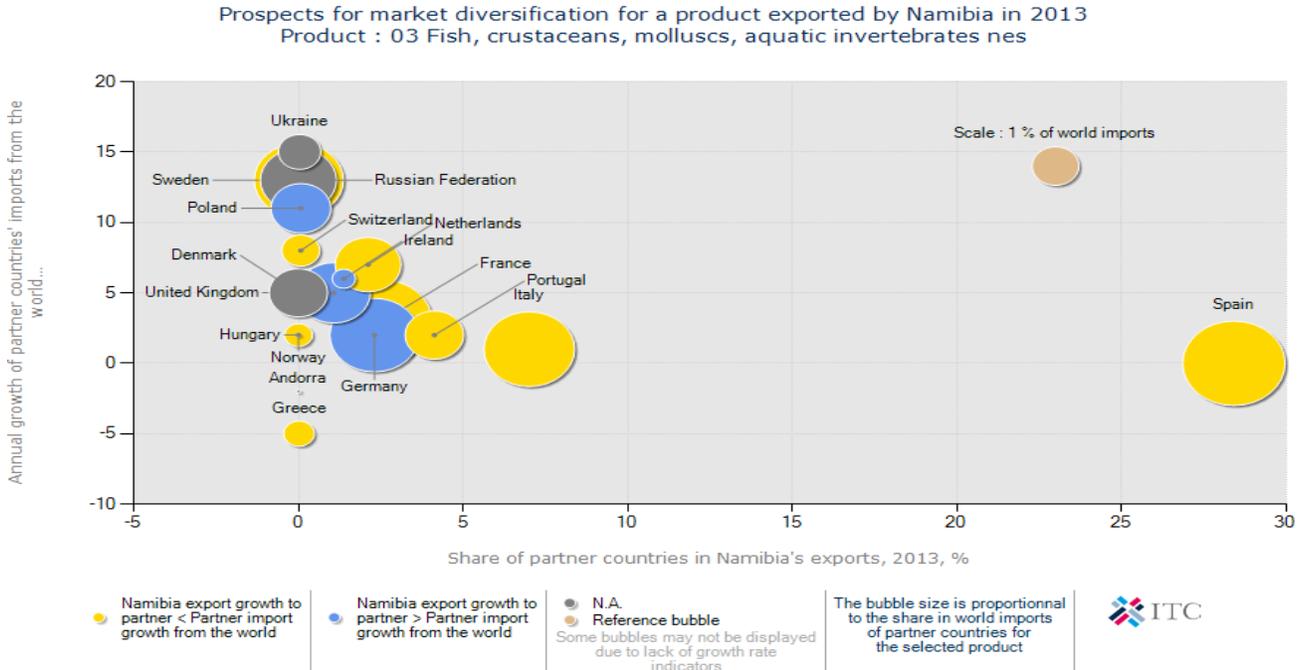
Figure 5. Bubble graph for export market diversification for product HS03 to the EU. Source: Trade statistics for international business development (2014) (http://www.trademap.org).
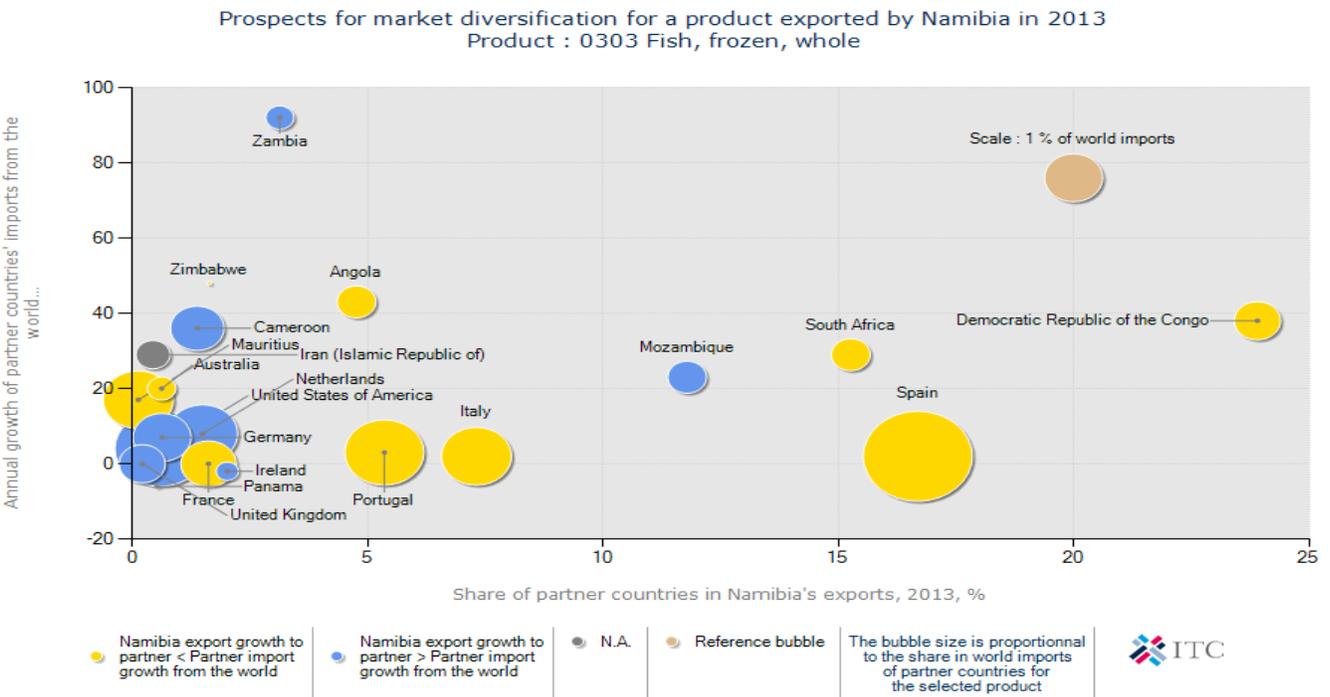

Figure 6. Bubble graph for export market diversification for product HS0303. Source: Trade statistics for international business development (2014) (http://www.trademap.org).

Product HS0303: Frozen fish (whole)

Taking the market diversification analysis to a more specific product, frozen fish, Figure 6 shows higher growth in Mozambique, South Africa, Spain and DRC compared to the other importing countries.
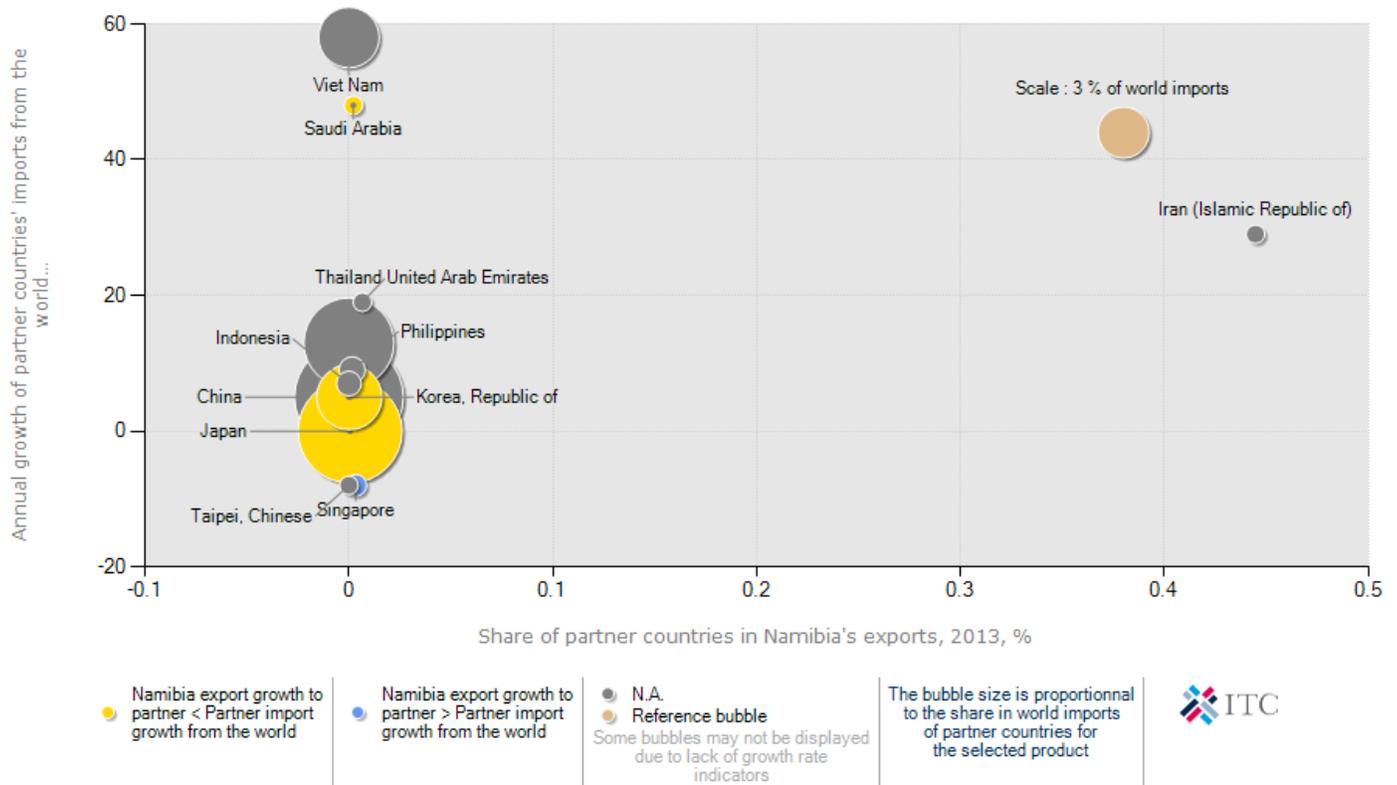
Figure 7. Bubble graph for export market diversification for product 0303 to Asia. Source: Trade statistics for international business development (2014) (http://www.trademap.org).

As for Asia (Figure 7), the only opportunities exist in Japan and China. Overall, fish trade with Asian countries is low. As for exports of frozen fish to the EU and to Africa, the same picture emerges as in the bubble graphs above. To the EU, Spain, Italy, Portugal and France remain growth potential markets because Namibia's exports growth to these countries is less than growth of imports from the rest of the world to the countries. The other markets, where export growth is larger from the rest of the world, may be important niches that exporters need to maintain. In Africa, the situation is different for the DRC: there is potential for growing the exports of frozen fish to that country, as is the case with South Africa and Angola. Cameroon appears as a high growth market where Namibian frozen fish has dominance.

Figure 8 presents an interesting perspective regarding worldwide growth of the consumer demand for fish, pegged at 7%. The very high demand for fish in Zambia is an outlier. Given the geographical proximity of Zambia to Namibia there is potential to exploit this market opportunity. In general, the diagram shows above average growth in consumer demand in several African countries.

In Europe, Spain remains the main market for

Namibian fish. Although Italy and France have been observed to be markets with growth potential, the figure above seems to indicate that they will be highly competitive given the low growth in demand for fish.

CONCLUSIONS AND IMPLICATIONS

Decision Support Model (DSM) used to identify realistic export opportunities using a subsequent filtering process. The filtering process was applied to 150 countries and included 32 fish and fish products classified according to the 6-digit Harmonised System nomenclature. The filtering process includes four sequential filters; the first filter includes a political and commercial risk assessment as well as a macro economic analysis. The second filter consists of the detection of possible export opportunities by means of market size and both short- and long-term market growth. The third filter identifies realistic export opportunities utilising a market accessibility index, which includes the following parameters: Market concentration for each product per importer; shipping time (including inland transport and handling, obtaining relevant documentation, customs clearance and inspection and
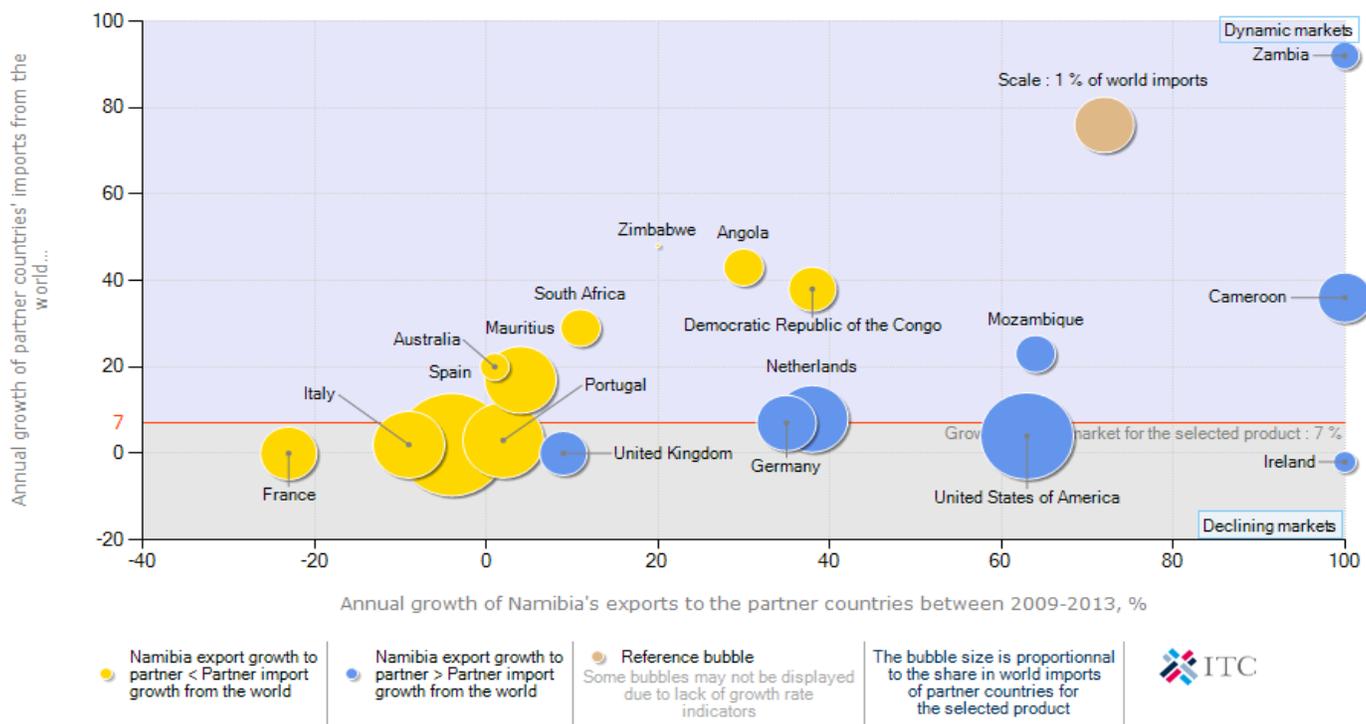
Figure 8. Bubble graph for global demand for Namibia's frozen fish. Source: Trade statistics for international business development (2014) (http://www.trademap.org).

port and terminal handling); market concentration in importing market, total transport time and cost (including international shipping, port handling, inland transport and obtaining documentation), average import tariff faced by Namibia, and a variable for Non-Tariff Trade Measures (NTM) for each for each product–country combination. The fourth and final stage of the filtering process involves the analysis of the identified export opportunities in terms of their ranking according to accessibility and performance. This approach identified the top seven export opportunities; these include in descending order: The United States of America, Japan, China, Germany, Spain, Thailand and France. When bubble graph applied with bigger bubbles for Japan and USA. Spain shows the largest portion share of Namibian exports (nearly 30%), followed by the DRC and South Africa respectively. In line with the above key finding, there is need to build local capacity through acquisition of vessels. Funding strategies have to be developed, without putting the burden on tax-payers (the state). Despite infrastructural problems, the African market has great potential for Namibian fish. The popularity of Namibian mackerel within SADC is an example, and remains to be fully exploited. This study provide general export opportunities is provided with regards to specific product opportunities, market performance, competition, market accessibility

and market structure, but not import requirements and regulations included. Therefore, as the product classification used in this study only allows for the identification of broad opportunities further in-depth research is needed on local consumer preferences for specific meat cuts and characteristics

Conflict of Interest

The authors have not declared any conflict of interest.

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