MINISTRY OF INDUSTRIALISATION,
TRADE AND SME DEVELOPMENT

Growth Strategy for Namibia's Seafood Industry and Associated Value Chains

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FOREWORD

The Industry Growth Programme is part of the ongoing efforts to reinforce Namibia's economic growth, to reduce income inequality and to increase employment for its citizens. This Industry Growth Strategy forms part of the support to selected manufacturing industries envisaged by the Growth at Home strategy, which promotes Namibia's competitive advantages and opportunities. This is envisaged through the Special Industrialisation Programme whose aim is to provide targeted support for value chain analyses and feasibility studies.

It is through the implementation of this and other strategies that the Ministry of Industrialisation, Trade and SME Development, in close cooperation with other line ministries, will support local value addition, upgrading and economic diversification. The efforts will help to structurally transform Namibia's economy favouring the most productive and efficient economic activities, and local industries will be provided with improved market access at home and abroad.

The Industry Growth Programme is an important element of the war against poverty and a further step on Namibia's path towards becoming a highly competitive, industrialised nation with sustainable economic growth as depicted in Vision 2030. As such, this strategy's implementation through 2020 is geared towards strengthening forward and backward linkages within the Namibian economy as envisaged in the Harambee Prosperity Plan.

Seafood is a strategic industry that has, in agreement with the fourth National Development Plan, been selected for a more specific focus on its economic development. Key stakeholders from the business community and public administration who have a vested interest in the Namibian industry's prosperity for the benefit of all have engaged in extensive consultations and substantially contributed to this programme. They are now eager to implement interventions along the value chain effectively. Many of the suggestions and concerns raised by entrepreneurs and civil servants in extensive discussions have been distilled into this document. This interactive process has once more demonstrated that Namibians together can shape an enabling environment in which the manufacturing sector can thrive and the wellbeing of the Namibian people be advanced.

I am sure that the Industry Growth Strategies have the potential to remove challenges and accelerate economic development in the prioritised areas. The interventions planned for 2016 onwards will allow the targeted industries to prosper according to their inherent abilities. This strategy is a living document. As such, additional comments or remarks from stakeholders are welcome and can be addressed to the Ministry of Industrialisation, Trade and SME Development.

I am confident that, in the vein of the Harambee Prosperity Plan, all stakeholders involved will pull in the same direction in the upcoming implementation phase – as they have done in strategy building – for the advantage of a thriving Namibian economy that creates jobs, incomes and sustainable growth.

Hon. Immanuel Ngatjizeko
Minister of Industrialisation, Trade and SME Development

The Industry Growth Programme is an important element of the war against poverty and a further step on Namibia's path towards becoming a highly competitive, industrialised nation with sustainable economic growth as depicted in Vision 2030.

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ACRONYMS AND ABBREVIATIONS

BMZ	German Federal Ministry of Economic Cooperation and Development
CIQ	China Inspection and Quarantine Declaration
EU	European Union
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
H&G	Headed and gutted
H&G&T	Headed and gutted and tailed
HS	Harmonized Commodity Description and Coding System
IQF	Individually Quick Frozen
ISIC	International Standard Industrial Classification
ITC	International Trade Centre
IUMP	Industrial Upgrading and Modernisation Programme
MFMR	Ministry of Fisheries and Marine Resources
MITSMED	Ministry of Industrialisation, Trade and SME Development
MSC	Marine Stewardship Council
N/A	Not Available
NAD	Namibia Dollar
NAMFI	Namibian Maritime and Fisheries Institute
NAMPORT	Namibian Ports Authority
NDP4	Fourth National Development Plan
NFCPT	Namibia Fish Consumption Promotion Trust
NSA	Namibia Statistic Agency
NSI	Namibian Standards Institution
OECD	Organisation for Economic Co-operation and Development
PPD	Public Private Dialogue
R&D	Research and Development
RSW	Refrigerated Seawater
SMEs	Small, and Medium Enterprises
TAC	Total Allowable Catch
USD	United States Dollar

1. NAMIBIA'S SEAFOOD INDUSTRY AND ITS VALUE CHAIN

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1.1 Industry Definition

The International Standard Industrial Classification of All Economic Activities (ISIC) makes the following distinction between primary production and manufacturing activities related to fish and other marine resources:

On the level of primary production, fishing and aquaculture make up a proper division (03) within Section A (Agriculture, Forestry and Fishing). While this division includes both capture fishery and aquaculture, thus covering any use of resources from marine, brackish and freshwater environments "with the goal of capturing or gathering fish, crustaceans, molluscs and other marine organisms and products (e.g. aquatic plants, pearls, sponges, etc.)", it excludes both land-based and sea-based processing activities related to this broad range of resources. Within Division 03, a further distinction is made at the group level between fishing (031) and aquaculture (032) and at the class level between marine- and freshwater-based activities.

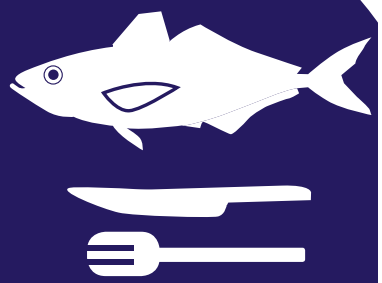
On the other hand, economic activities related to "Processing and preserving of fish, crustaceans and molluscs", regardless of whether the raw materials stem from fishing or aquaculture activities, make up Class 1030, which is part of Division 10 (Manufacture of food products) within the manufacturing section (Section C) of ISIC, Rev. 4. This class includes any kind of processing activities for the preparation and preservation of fish, crustaceans and molluscs such as freezing, deep freezing, drying, smoking, salting, immersing in brine, canning, etc., as well as the manufacturing of seafood products such as cooked fish, fish fillets and fishmeal (either for human consumption or animal feed). There are three important exceptions: Production activities related to oils and fats from marine resources are grouped under 1040: Manufacture of vegetable and animal oils and fats. Manufacturing prepared frozen and canned fish dishes falls under Class 1075: Manufacture of prepared meals and dishes; to be considered a dish, these foods must contain at least two distinct main ingredients other than seasoning, be ready made (i.e. prepared, seasoned and cooked) and be processed for preservation (frozen or canned). Finally, the manufacture of fish soups, extracts and juices of fish, crustaceans and molluscs, fall under Class 1079: Manufacture of other food products n.e.c. Whereas Class 1030 only contains activities related to processing marine resources, the other three classes also comprise production activities based on non-marine inputs.

This means that from a production point of view, basic and advanced processing activities related to marine resources typically fall under Class 1030, whereas advanced seafood manufacturing operations may fall under one of these other classes within Division 10: Manufacture of food products.

What makes the line between primary production and processing/manufacturing activities blurry in the ISIC nomenclature is the fact that basic processing activities carried out on vessels engaged both in fishing AND processing/preserving fish are considered part of Division 03, i.e. part of primary production, but when the same processing activities are carried out on sea on factory vessels engaged exclusively in processing and preserving fish (i.e. not in capturing), they are classified according to international standards under Manufacturing Class 1030.

Even when by international standards it is quite straightforward to delimit the boundaries of the industry, in Namibia, the lines between primary production and processing and manufacturing activities tend to be more blurred in official statistics. All processing activities at sea have historically been classified as the primary production activity, fishing, in the National Accounts, whereas onshore processing has historically been classified as fish processing, under manufacturing. After a rebasing of the National Accounts in 2013, fish processing on shore no longer features as a manufacturing line in the accounts, being the only direct measure of fishing and off-shore fish processing remaining under the primary sector. Onshore fish processing and seafood manufacturing have been bundled into "other food manufacturing", mak-

The most important change in trade patterns in recent years has been the rising share of developing countries in the fishery trade and the corresponding decline in the share of developed economies.



ing it increasingly difficult to measure the industry's performance independently.

Slightly differently from the production perspective, from a trade point of view, the basic criterion used in international statistics is the degree of processing. Whereas seafood products that have undergone no or only basic (onshore or offshore) processing are categorised within the Harmonised System (HS) under the two-digit code 03, at the four-digit level a further distinction is made between live fish (0301), fresh whole fish (0302), frozen whole fish (0303), fish fillets and pieces that are either fresh, chilled or frozen (0304), cured and smoked fish and fishmeal fit for human consumption (0305), crustaceans (0306), molluscs (0307) and other aquatic invertebrates (0308). Hence, when combining the production perspective (ISIC, Rev. 4) with the product and trade perspective (HS), at least everything categorised under HS codes 0303, 0304 and 0305 can be considered processed marine-resource products.

The majority of more elaborated seafood products are categorised within the HS system under the two-digit code 16. However, as this code also includes meat-based food preparations, analyses of the industry's export performance must be carried out on the four-digit level, which is sufficiently specific. For manufactured seafood products, the relevant HS codes are 1604 (prepared/preserved fish) and 1605 (prepared/preserved crustaceans and molluscs). Like in the classification of productive activities, extracts and juices (e.g. fish soup) fall under a different code (1603), as do fats, oils and their fractions from fish and marine mammals (1504).

To analyse trade flows of products stemming from marine-resource-industry processing and manufacturing activities, a combination of HS codes 0303–0305 for basic products and HS codes 1603–1605 for more advanced products will give good results in most cases.

By adhering to international standard classifications, the marine-resource-processing industry can be defined as a manufacturing industry largely identified with food-manufacturing Class 1030 (ISIC, Rev. 4) in terms of production activities and with HS codes 0303–0305 and 1603–1605 in terms of its most relevant intermediate and final products.

At the same time, the industry is an integral part of a broad range of industrial product value chains, with value addition taking place not only during processing and manufacturing but also in the primary production activities corresponding to the ISIC, Rev. 4 classes 0311 (Marine fishing) and 0321 (Marine aquaculture). Further value addition takes place at the subsequent value-chain segments: wholesale activities regarding the industry's products are classified under Class 4630 (Wholesale of food, beverages and tobacco), and final distribution and retail activities within the value chains are carried out by businesses that usually belong to classes 4711 (Retail sale in non-specialised stores) and 4721 (Retail sale of food in specialised stores), as well as businesses in Division 56 (Food and beverage service activities, including restaurants and catering services).

1.2 Global and Regional Industry Performance

Global fish and seafood production has grown steadily over the last 50 years. Global fish production alone in 2012 stood at 158 million tonnes, of which 86% was used for direct human consumption. The remaining 14% was destined mainly for the manufacture of fishmeal and fish oil.

Approximately 90% of world fish trade consists of processed fish products, while the remaining 10% is in unprocessed fish (i.e. live, fresh, chilled, whole; HS codes 0301 and 0302). Next to the accelerating rate of growth, perhaps the most important change in trade patterns in recent years has been the rising share of developing countries in the fishery trade and the corresponding decline in the share of developed economies. Currently, most processing and manufacturing activities are still performed in Europe, but owing to price pressures, these activities are increasingly being outsourced to marine-resource processors in developing countries. A number of emerging countries (Brazil, Mexico, Russia) have gained importance to the world's exporters. Developing economies, whose exports represented just 34% of world trade in 1982,

had seen their shares rise to 54% of the total fishery export value by 2012. In terms of overall value, the net fishery exports of developing countries have shown a continuing rising trend in recent decades, growing from USD 11.5 billion in 1992 to USD 35.1 billion in 2012. In the same year, their exports encompassed more than 60% of the quantity (live weight) of total fishery exports. For many developing nations, the fish trade is a significant source of foreign currency earnings, in addition to having an important role in income generation, employment, food security and nutrition.

Future growth in processed categories of fishery products will be substantially higher than growth in unprocessed and basically processed fishery products. However, it is important to note that whole frozen fish (HS code 0303) is not expected to grow. Frozen fish (excluding fillets and other fish meat) currently accounts for 59% of Namibia's export of fish and fishery products by value, which suggests that there is little growth opportunity left in this portion of the industry as it stands. This may also indicate that a shift towards more processed products, such as prepared or preserved fish (HS code 1604), may yield better long-term growth opportunities for the marine-resources-processing industry. Owing to the pressures of time and consumers' lack of familiarity with preparing fish, there is also an increasing demand for ready-to-eat and easy-to-cook white fish products such as microwavable products or fish fingers. Substantial growth is expected in sales of crustaceans and molluscs as well, due to the rapid expansion of aquaculture over the last 20 years.

Global capture production has not grown substantially for the last two decades, and yet growth in global demand for fish and other marine products has not slowed. This gap between supply and demand through wild capture has been supplemented through aquaculture production (see Figure 1). The last decade has seen aquaculture production exceed a 6% annual growth rate, making it the fastest-growing food industry in the world.

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World Capture Fisheries and Aquaculture Production

1950-2012

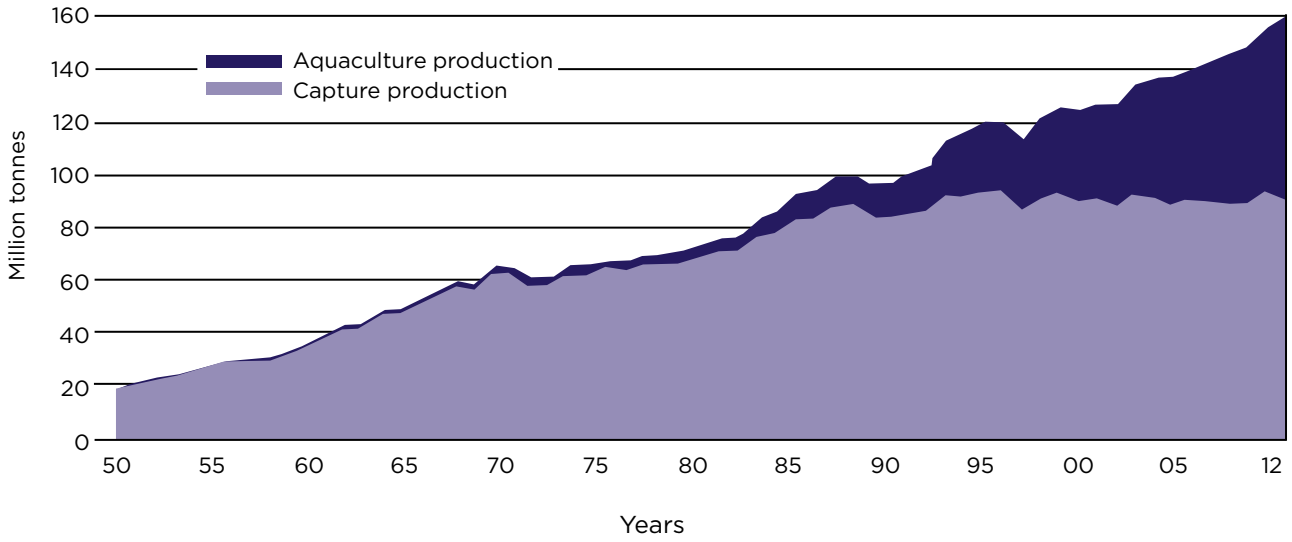


Figure 1: World capture fisheries and aquaculture production
Source: FAO, 2014

Regionally, aquaculture in sub-Saharan Africa is wholly underdeveloped, lagging behind the global trend. As demand for fish grows within this region, it too will have to offset the demand through aquaculture production. This increased demand for fish and fishery products is undeniable, as average global fish consumption per capita has risen from 9.9 kg in the 1960s to 19.2 kg in 2012.

These trends in international trade of marine products are reflected in Table 1, which gives an overview of the growth patterns of world exports for the different product categories within the marine-resource-processing and seafood-manufacturing industry, including trade of primary products with no or low degrees of processing. The overall export value of fresh unprocessed fish (HS code 0302) is considerably lower than the value of fish that has undergone basic processing (HS codes 0303–0305) or advanced processing and manufacturing (HS codes 1604 and 1605). In the specific case of Namibia, the lion's share of overall sector export earnings stems from basic industrial products (frozen whole fish and fish fillets and pieces), where Namibia currently ranks 18th on the list of top exporters worldwide. The country's world market shares and export ranking are considerably lower for the export of fresh whole fish (0.2%; rank 45) and for advanced seafood-manufacturing products (prepared/preserved fish products: 0.3%; rank 40; prepared/preserved crustaceans and molluscs products: rank 73).

Table 1: Export growth for different marine-resource products (World, Namibia, 2011 and 2014, in USD thousands)

HS Product Code and Denomination	Exported Value in 2011 (World)	Exported Value in 2014 (World)	Exported Value in 2014 (Namibia)	Exporter Ranking and World Market Share, Namibia (2014)
0302: Fish, fresh whole	14,763,903	18,257,229	44,322	Rank 45 0.2%
0303: Fish, frozen whole	21,718,318	23,607,658	413,196	Rank 18 1.8%
0304: Fish fillets and pieces, fresh, chilled or frozen	20,606,006	22,349,147	167,662	Rank 18 0.8%
0305: Fish, cured or smoked and fishmeal fit for human consumption	5,756,245	6,054,301	4,249	Rank 48 0.1%
1604: Prepared/preserved fish	14,400,098	16,630,639	43,375	Rank 40 0.3%
1605: Prepared/preserved crustaceans and molluscs	10,703,664	11,376,675	2,090	Rank 73 0%

Source: ITC calculations based on UN Comtrade statistics

Roughly 73% of total fishery imports, by value, were in developed countries (see Table 2). Imports by the European Union represented 36% of total world imports, but if intraregional trade among EU member states is excluded, its share of world imports declines to 23%. However, this still makes the EU the largest market for fish and fishery products in the world. Japan and the United States are the largest single importers of fish and fishery products, together accounting for 27% of the total world import of fish and fishery products (see Table 2).

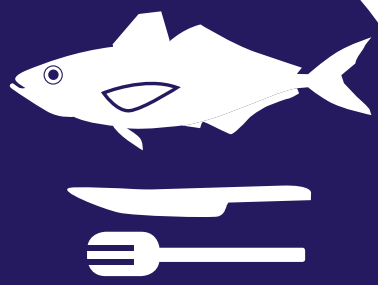
Table 2: Top 10 exporters and importers of fish and fishery products (2002–2012)

	2002 (US$ millions)	2012 (US$ millions)	APR (Percentage)
Exporters			
China	4 485	18 228	15.1
Norway	3 569	8 912	9.6
Thailand	3 698	8 079	8.1
Vietnam	2 037	6 278	11.9
United States of America	3 260	5 753	5.8
Chile	1 867	4 386	8.9
Canada	3 044	4 213	3.3
Denmark	2 872	4 139	3.7
Spain	1 889	3 927	7.6
Netherlands	1 803	3 874	7.9
Top Ten Subtotal	28 525	67 788	9.0
Rest Of World Total	29 776	61 319	7.5
World Total	58 301	129 107	8.3
Importers			
Japan	13 646	17 991	2.8
United States of America	10 634	17 561	5.1
China	2 198	7 441	13.0
Spain	3 853	6 428	5.3
France	3 207	6 064	6.6
Italy	2 906	5 562	6.7
Germany	2 429	5 305	8.2
United Kingdom	2 328	4 244	6.2
Republic of Korea	1 874	3 739	7.2
China, Hong Kong SAR	1 766	3 664	7.6
Top Ten Subtotal	44 830	77 998	5.7
Rest Of World Total	17 323	51 390	11.5
World Total	62 153	129 388	7.6

Source: FAO, 2014

NB: APR refers to the average annual percentages growth rate for 2002-2012

As Namibia is located in the central region of the Benguela Current system, with a coastline stretching about 1,500 km from the Orange River in the south of Namibia up to the Kunene River in the north, it has one of the most productive fishing grounds in the world.



1.3 Industry Background and Evolution in Namibia

The Namibian marine-resource-processing and seafood-manufacturing industry is based on the Namibian marine fishing industry. As Namibia is located in the central region of the Benguela Current system, with a coastline stretching about 1,500 km from the Orange River in the south of Namibia up to the Kunene River in the north, it has one of the most productive fishing grounds in the world. Given the country's location, the Benguela Current system, one of four eastern boundary upwelling systems in the world, directly influences productivity. South-easterly winds drive coastal upwelling, forming the system. The cold, nutrient-rich waters that upwell from around 200–300 meter depth fuel high rates of phytoplankton growth and sustain the productive Benguela ecosystem. As a result, Namibian waters are characterised by a considerable level of biological productivity. Thanks to these preconditions, Namibia ranks third largest in African capture-fishery nations, after Morocco and South Africa, according to the Ministry of Fisheries and Marine Resources (MFMR). With annual marine landings valued at approximately NAD 7.6 billion, Namibia places 34th worldwide. The bulk of Namibian fisheries are marine. In the past five years, marine landings have been about 550,000 metric tonnes, which accounts for 99.8% of total landings. Inland fisheries in the northern perennial rivers and floodplains only yield about 8,000 metric tonnes annually. Approximately 2,250 metric tonnes are currently produced through aquaculture, particularly mariculture, which is still in its infancy stage.

Established in 1991, the MFMR has played a critical role in Namibia's fishery sector. Since independence, it has focused on rebuilding fishery stocks, especially those that had suffered long periods of over-exploitation. Other focus areas were monitoring, control and surveillance measures within fishery operations. There is still significant emphasis on 'Namibianisation' of the fishery sector, particularly through issuing rights and allocating fishing quotas to previously disadvantaged and marginalised Namibians. Primary production is largely regulated by the Marine Resources Act (Act No. 27, 2000), which is a rights-based and scientific approach to fishery management. This approach has significantly reduced by-catch and illegal fishing in Namibia's waters. Namibia's Marine Resources Act has contributed to an ecologically and economically sustainable fishing industry, created jobs and fostered food security in Namibia.

While fishery production management has historically taken centre stage, marine-resource-processing/seafood manufacturing has generally been overlooked as a standalone industry. Until now, little emphasis has been placed on the processing industry, despite some mention of value addition in the Fisheries White Paper. This is primarily due to the fact that the marine-resource-processing and seafood-manufacturing industry has largely been viewed in conjunction with the fishery sector, with no clear line officially drawn between the two. Nonetheless, value addition has been a concern to Namibian policymakers since independence, and the government's first white paper set out objectives for value capture. In order to grow export earnings and to create employment, promoting value addition featured as a key objective in the paper, with an extensive focus on onshore processing.

However, a number of challenges have subsequently ensued, starting with the very concept of "value addition", given that buyers are often prepared to pay higher prices for fresh marine products than they are for processed products. Therefore, many players in the industry have argued that by processing certain species, value is actually destroyed rather than added. Therefore it should be pondered whether the trend to more marine-resource processing locally, most notably within the hake value chain would need revision.

The draft of the Namibia Fisheries Policy (2015) is the latest framework targeted towards fisheries. The policy will become an important framework update for the continued governance of the Namibian fishery sector. The new policy also touches on the marine resource processing

industry, with chapters dedicated to investment, marketing and value addition.

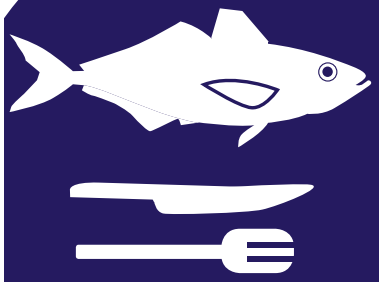
In 2013, the Growth at Home strategy, a Ministry of Industrialisation, Trade and SME Development (MITSMED) initiative approved by the cabinet, was launched to serve as a roadmap for industrial policy in line with the Fourth National Development Plan (NDP4) and Vision 2030. Marine-resource processing has been highlighted as a priority industry within the Growth at Home strategy. The key focal areas targeted for this industry in particular are greater industrial value addition to marine resources, product diversification to satisfy market demands, continued creation of jobs, broadening of Namibia's economic base and raising of government tax revenues. The growth strategy is required to focus exclusively on the marine-resources-processing industry, omitting any obvious fishery-sector area of focus. Based on its targeting within the Growth at Home strategy, this document will serve as the first attempt to address specific challenges regarding the processing and manufacturing segments of the most important value chains for Namibia's marine resources. For the thematic areas that overlap between the new fishery policy and this document, projects concerning industrial production and technology, marketing and distribution and support service delivery will be structured to include input from the MFMR to ensure that there are joint efforts between the two ministries rather than duplication.

1.4 Classification of Namibian Producers and Businesses

Many Namibian businesses operating in the industrial segment of the marine-resource product value chains are highly vertically integrated and own large portions of the value chain, from harvesting to processing and sometimes distribution.

Hake and other demersal fish are caught by net trawlers and longliners. However, few long-lining licences currently exist and no new licenses are currently being issued, due to the perceived negative impact of this form of fishing on the overall health of the resource (removal of key breeding animals). Therefore, hake is typically fished with freezer trawlers that allow basic processing on board directly after harvest; the basic products are packaged and frozen on board and can be offloaded on shore for direct distribution, repackaging or further onshore processing. Longliner vessels, on the other hand, specialise in landing fresh, so after basic processing at sea (gutting), the fish is chilled on ice for further onshore processing, mainly filleting and portioning of wet fish, followed by packaging and freezing or focus on the further processing of frozen fillets and blocks through glazing, portioning and packaging. The majority of Namibian hake is processed into skin-on and skin-off fillets or into portions or blocks for further manufacturing elsewhere (see Figure 2). There are currently some national seafood manufacturers developing frozen crumbed hake products and frozen hake fillets with marinades and sauces. A number of hake processors also process monkfish; basic processing is done on board, and some further processing may take place on shore before distribution.

The key focal areas targeted for this industry in particular are greater industrial value addition to marine resources, product diversification to satisfy market demands, continued creation of jobs, broadening of Namibia's economic base and raising of government tax revenues.



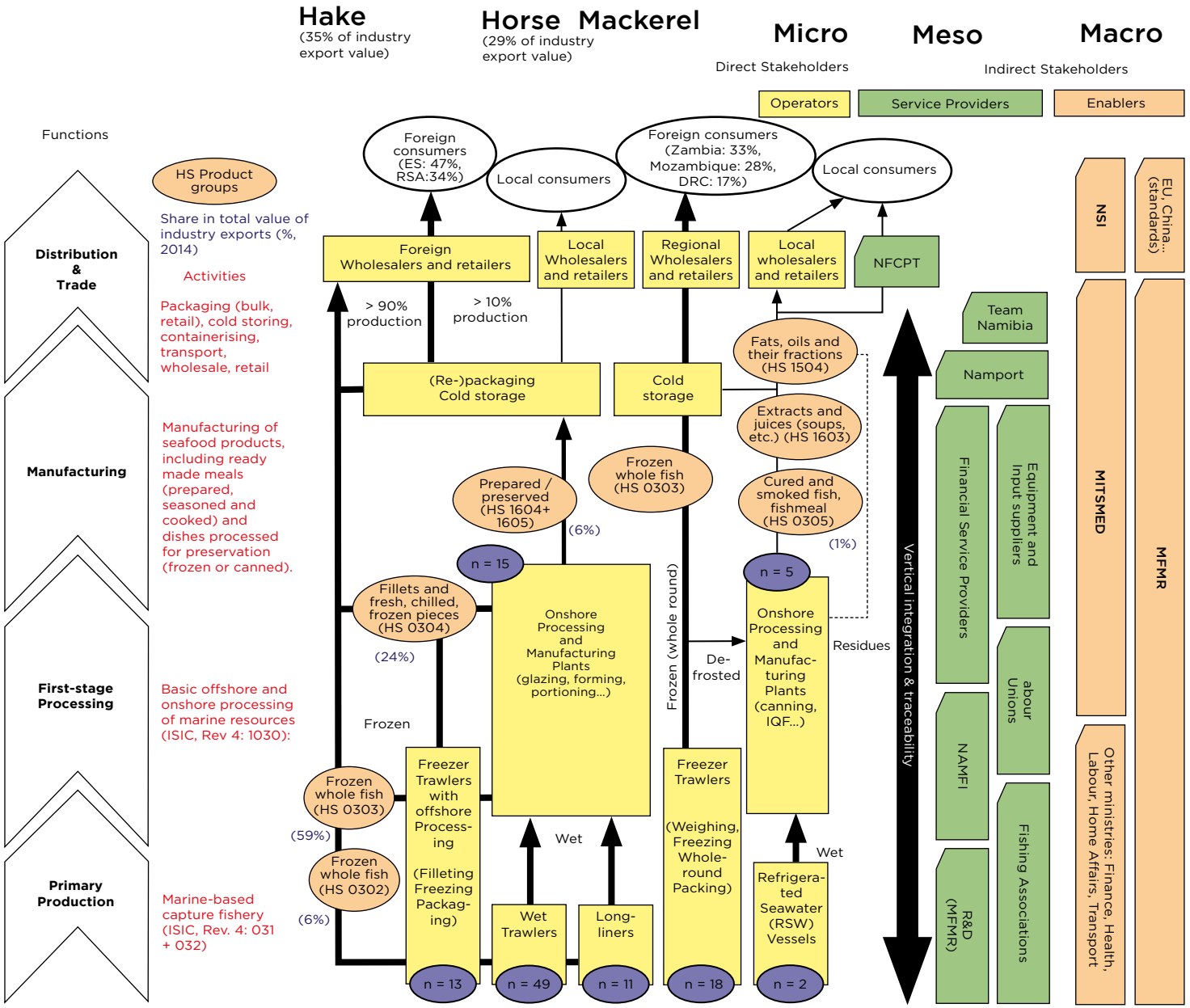


Figure 2: Value chain map seafood
Source: GIZ ProCOM, based on Impact-Namibia Economic Consulting

Whereas hake is the single most relevant catch in terms of value, horse mackerel is the single most important catch in terms of tonnage landed, second in value.

Midwater fish are typically caught by freezer trawlers, which use large nets to drag the fish up to the vessel. There, the fish are weighed, frozen and packaged into 5–20 kg whole-round horse mackerel.

Thus, unlike hake, horse mackerel is historically and currently to a very large extent caught in Namibian waters to be frozen whole at sea with very limited value addition through offshore processing.

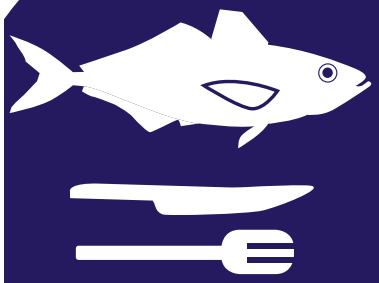
The frozen blocks are then landed and mostly distributed to market as they are. Some of the frozen blocks are further processed on shore by defrosting and canning for the domestic and regional markets. However, this second value chain is currently undergoing a technology shift at the primary-production level: a few refrigerated seawater (RSW) vessels have started catching horse mackerel and landing them fresh.

As with hake, this allows for more complex processing. The fresh horse mackerel can be sorted, graded, packaged and frozen on shore and distributed. Landing horse mackerel fresh is beneficial, as more diversification can take place, resulting in higher-quality products (see Figure 4). Certain horse mackerel processors are currently planning to switch from landing frozen to landing fresh, as they recognise these benefits.

Pilchard is also typically processed by horse mackerel processors, as it shares similar production requirements. The majority of pilchard is currently landed fresh and canned for the local and regional markets.

As for the processing of other marine resources: for crab, all processing occurs off shore on freezer trawlers; in contrast, rock lobster processing occurs exclusively on shore; currently there is only one seal processing facility, but another facility is being constructed.

Seals are processed into pelts and oils on shore and then exported to Turkey and China, respectively; shark is processed on shore after either being caught as by-catch or being targeted by longline vessels. Lastly, there are a number of line vessels targeting linefish species, of which the majority is chilled or frozen or is cured (salted or smoked), depending on the species.



1.5 Classification of Namibian Products

Table 3: Classification of Namibian marine resources and industry actors engaged in offshore and onshore processing and manufacturing activities

Marine resource	Offshore processing		Onshore processing	
	Number of vessels (types)	Product outputs	Number of onshore processing plants	Product outputs
Hake	13 (freezer trawlers), 49 (wet trawlers), 11 (longliners)	Fillets, medallions, cutlets (chilled whole round, for onshore processing)	15	Fillets, loins, portions, steaks, H&G, H/G/T, prime cuts, medallions, blocks, sausages
Horse mackerel	18 (freezer trawlers), 2 (wet trawlers)	Frozen (whole round), chilled whole round, for onshore processing	5	Canned, dried, soup, paste, smoked, IQF, fish oil, fishmeal
Monk	17 (freezer trawlers), 1 (wet trawler)	Tails	0	N/A
Crab	4 (freezer trawlers)	Claws, sections, flakes, meat	0	N/A
Pilchard	7 (purse seiners)	Chilled whole round, for onshore processing	2	Canned, cutlets, fish oil, fishmeal
Shortfin & mako shark	18 (longliners), 12 (pole & line) * includes other large pelagics	Chilled whole round, for onshore processing	1	Fins, trunks, fillets
Rock lobster	16 (trap/ring net)	Live for onshore process-ing	2	Tails,live lobster, whole cooked, raw frozen
Seal	0	N/A	1	Skins, dried meat, dried organs, oil, animal fodder, shoes, jackets, bags
Linefish	19 (line vessels)	Salted, frozen, (chilled whole round)	4	Salted, dried, frozen, smoked

Source: Compiled by Impact-Namibia Economic Consulting, based on data from MFMR

As evidenced in Table 3, industry actors produce a wide range of marine-resource and seafood products, most of which have undergone offshore and/or onshore processing to one degree or another.

In terms of product classification, it is therefore recommendable to apply two classification schemes nested together. The first is the standard taxonomic classification system, which is an input-based classification scheme based on the marine resource and groups the marine-resource products into taxonomically similar categories.

However, to provide further insight, a second classification system must be applied alongside the first. The second classification uses a process-based method whereby each product type is evaluated and classified by the number of irreversible processes the raw material has undergone before it is considered an end product. This can be used to categorise each end product into one of four tiers.

The first product tier, Tier 1, contains all the products that have undergone between one and three irreversible processes to reach their end-product stage. Examples of Tier 1 products are frozen whole-round horse mackerel (one irreversible process) and fresh, headed and gutted hake (two irreversible processes).

Tier 2 contains products that have undergone between four and six irreversible processes to reach their end-product stage. Examples of Tier 2 products are frozen, headed, gutted, tailed and skinned monkfish (five irreversible processes) and canned horse mackerel (six irreversible processes).

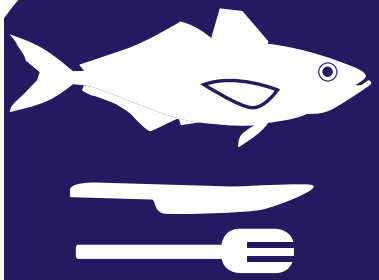
Tier 3 contains products that have undergone between seven and nine irreversible processes to reach their finalised product stage. Examples of Tier 3 products are frozen hake fillets, skin off (eight irreversible processes), and horse mackerel soup powder (seven irreversible processes).

The fourth and final tier, Tier 4, contains products that have taken 10 or more irreversible processing steps to reach finished-product status. Examples of Tier 4 products are frozen, crumbed hake fillets (11 irreversible processes) and canned hake portions, battered and fried (11 irreversible processes).

1.6 Local Industry Performance

Both marine fishing and off- and onshore fish processing have formed a keystone of Namibia's economy since independence, with the two industries together growing in value in real terms, from NAD 300 million of net-value addition at independence in 1990 to NAD 3.6 billion in 2014. The percentage of the country's GDP generated from the two industries grew to a strong 7.2% in 2003 but then declined to 2.4% by 2014, largely as a result of faster growth in other parts of the Namibian economy. Nevertheless, as a sector, fisheries and marine-resource processing/seafood manufacturing rank third in contribution to GDP after mining (13%) and tourism (3.9%) and therefore remain key players in Namibia's economy.

Both marine fishing and off- and onshore fish processing have formed a keystone of Namibia's economy since independence, with the two industries together growing in value in real terms, from NAD 300 million of net-value addition at independence in 1990 to NAD 3.6 billion in 2014.



Even with increasing local consumption, the industry remains largely export driven; Namibia exports over 90% of total unprocessed fish and manufactured fish products by value.

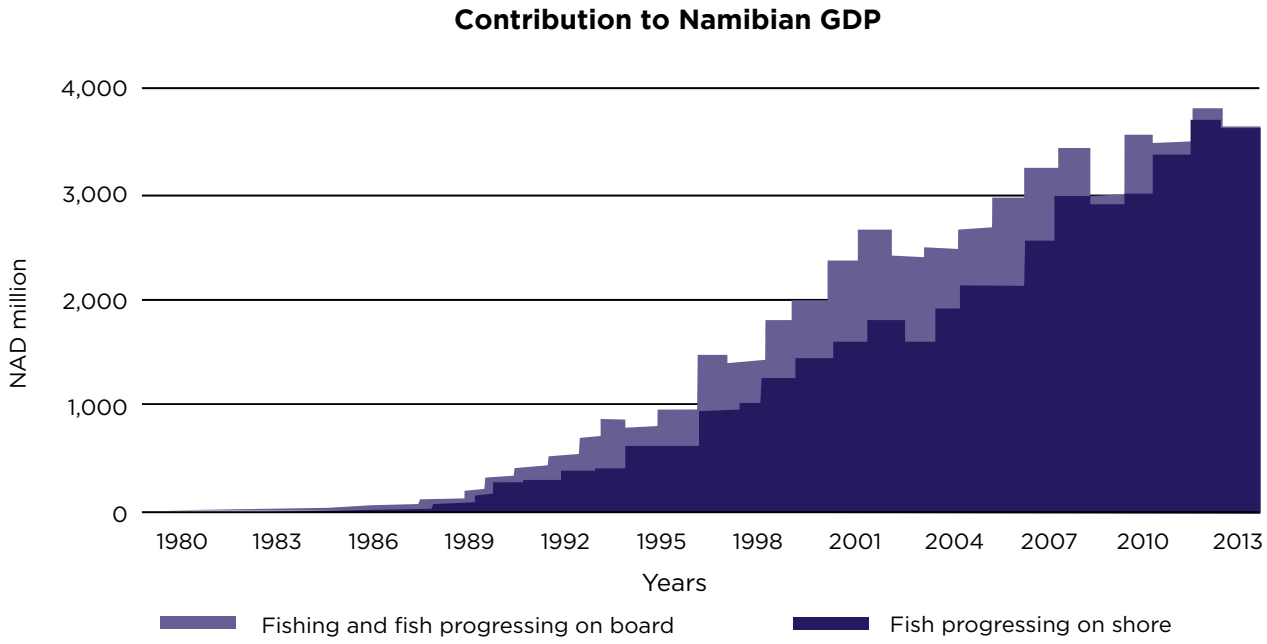


Figure 3: Contribution to gross domestic product by activity – constant prices – NAD million
Source: Namibia Statistics Agency

In the 2014 Namibia Labour Force Survey, the NSA estimated total direct employment in the fishing and fish-processing/seafood-manufacturing industries combined at 11,936 – with about 60% employed at sea (both in fishing and fish-processing activities) and 40% working on shore. Over the past decade, employment numbers have ranged between 11,000 and 13,000. However, in terms of contribution to overall employment, at 1.7% the sector's share in the total Namibian workforce is relatively modest compared to agriculture (27.8%) wholesale and retail (13.6%) or construction (8%).

Namibia's per capita fish consumption falls way behind the average world consumption of 19.2 kg (2012). Since independence, much progress has been made in making fresh fish and seafood products available throughout Namibia, both by the private sector involved in catching and marketing fish and by government-supported initiatives such as the Namibia Fish Consumption Promotion Trust (NFCPT), which promotes fish consumption in Namibia by making fish more accessible and affordable. These efforts have yielded positive results; Namibia's per capita fish consumption reached 12 kg in 2011. However, even with increasing local consumption, the industry remains largely export driven – Namibia exports over 90% of total unprocessed fish and manufactured fish products by value, a figure that has changed little over the last decade despite efforts to promote domestic consumption. Therefore, export markets will remain of utmost importance to the marine-resource-processing industry in the future, even if the domestic demand further increases substantially.

Over the past 25 years, unprocessed fish and processed fish products have contributed between 13% and 25% to Namibia's merchandise exports, averaging 12.7% over the last decade. The relative decline was due primarily to strong growth in other exports, particularly unprocessed minerals and mineral beneficiation exports. Nonetheless, unprocessed and processed marine-resource products still represent Namibia's second-biggest foreign currency earner after mining exports. Hence, the marine resource processing industry is undeniably important to Namibia's economy, because 90% of all sector exports (by value) relate directly to processed products from fish and other marine resources. In value, this represented over NAD 6.8 billion in 2014 alone, which is significant, given that the industry has been relatively overlooked and unformalised until now.

On the other hand, Namibia's export portfolio in this industry relies heavily on products that have undergone only basic processing, i.e. frozen fish and fish fillets (combined at 83% of the total export value; see Figure 4). From a risk-mitigation standpoint, Namibia is in a riskier position due to its relatively uniform export-product portfolio. This alone should be reason enough for the marine-resource-processing industry to strive for growth in categories such as cured, preserved or prepared fish (HS 0305 and 1604) instead of remaining so reliant on basic processed/frozen fish (HS 0303 and 0304). This is especially important as growth projections by utilisation category suggest that there will be almost no growth in frozen fish by 2030, while growth in prepared or preserved fish will reach almost 24% by 2030 (projections for OECD member states).

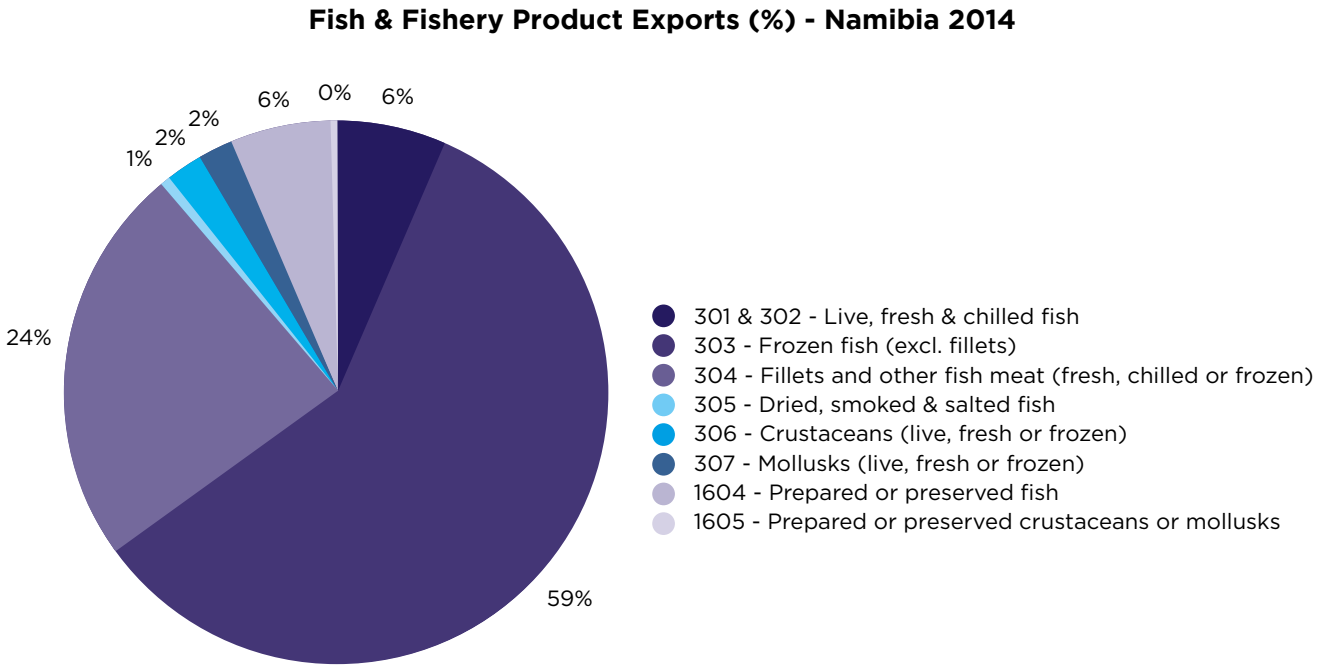
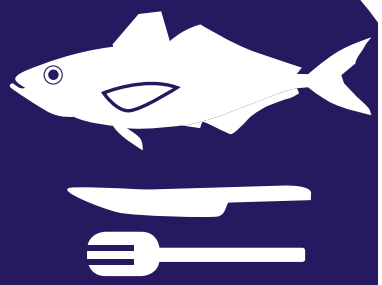


Figure 4: Composition of Namibia's marine resource export portfolio (%, 2014)
Source: Namibia Statistics Agency



Namibia's most economically important marine resources are hake and horse mackerel, both in value and in landed volumes. Processed and unprocessed hake accounted for at least 35% of the total industry exports in 2014. Hake is the highest export earner of Namibia's marine resources, and keeping in mind that over 90% of Namibia's fish-based and fishery-product-based exports are processed, it can be inferred that the large majority of hake is processed before export. However, as basic processing often occurs at sea on trawlers that also capture the fish, by international standards this type of processing is counted as part of primary production rather than as manufacturing.

The second-most valuable Namibian marine resource, horse mackerel, accounts for over 29% of the total export value for Namibian fish and fishery products. Other economically important marine resources include monkfish, pilchard, deep-sea red crab, rock lobster, shark, other white fish and Cape fur seal.

The majority of hake is exported to Spain (47%) and South Africa (34%), primarily frozen headed and gutted, frozen in fillet blocks or frozen as fillets. Horse mackerel, on the other hand, is mainly exported to Zambia (33%), Mozambique (28%) and the Democratic Republic of Congo (17%), primarily in whole-round frozen block form. Namibia's exports are substantial for the region and for certain international markets. Namibia was sub-Saharan Africa's largest exporter of fish for human consumption, with a market share of 33%, according to a 2007 study by WorldFish. Additionally, Namibia was the seventh-largest supplier of white fish into the EU in 2013 (excluding intraregional trade between EU members), according to Eurostat.

1.7 Global and Regional Demand for Products of the Industry

In recent decades, the complex patterns of globalisation have transformed the fish-processing industry, making it more heterogeneous and dynamic. Supermarket chains and large retailers have been more and more involved in setting requirements for the products they buy and influencing the growth of international distribution channels. Processing is becoming more intensive, geographically concentrated, vertically integrated and linked with global supply chains. Processors are becoming more integrated with producers to enhance the product mix, obtain better yields and respond to evolving quality and safety requirements in importing countries. The outsourcing of processing activities at the regional and world levels is significant, with a growing number of countries doing so, although its actual extent depends on species, product form and costs of labour and transportation.

The seafood market is very dynamic and is changing rapidly. It is becoming much more complex and stratified, with greater diversification among species and product forms. High-value species such as shrimp, prawns, salmon, tuna, groundfish, flatfish, seabass and seabream are highly traded, in particular in more prosperous markets. Low-value species such as small pelagics are also traded in large quantities, mainly exported to low-income consumers in developing countries. However, in recent years, emerging economies in developing countries have increasingly been importing species of higher value for their domestic consumption.

Along with the globalisation of fish and fishery-product trade, traceability concerns have also increased and become very important demand drivers. The need for traceability in the food supply chain is now widely recognised. When a potential food-safety problem is identified, traceability enables corrective action, such as a product recall to target the affected batch or lot rapidly and specifically, minimising trade disruptions and preventing such products from reaching consumers. Traceability is among the regulations in major seafood-importing regions and countries such as the European Union, the United States of America, and Japan. It is also required in order to demonstrate that fish has been caught legally from a sustainably managed fishery or produced in an approved aquaculture facility. This makes it an important component in many private eco-labelling schemes.

Global Trade Flows

Figure 5: Global trade flows related to seafood and marine-resource products
Source: Rabobank, 2015

2. IDENTIFIED OPPORTUNITIES FOR AND CONSTRAINTS TO INDUSTRY GROWTH

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In the following chapters, the emphasis will be on two value chains in particular: hake and horse mackerel products. Hake is Namibia's most valuable marine resource and is the country's largest source of export revenue of marine resources. Horse mackerel is the second-most valuable marine resource and the most abundant marine resource in Namibian waters. The two value chains have been selected as they represent 87% of the average annual landed catch by value (2010–2014), 82% of the average annual landed volume according to the MFMR and at least 64% of the total export value (unprocessed and processed products) from national trade statistics.

In addition to these two largest value chains, smaller marine-resource value chains have also been analysed where it was found that they could easily be connected either to the hake or horse mackerel value chains. Examples of this include monkfish products, which can be added to the hake value-chain analysis and proposed interventions, and pilchard products, which can be included in the horse mackerel analysis and recommendations for value-chain and industry upgrading.

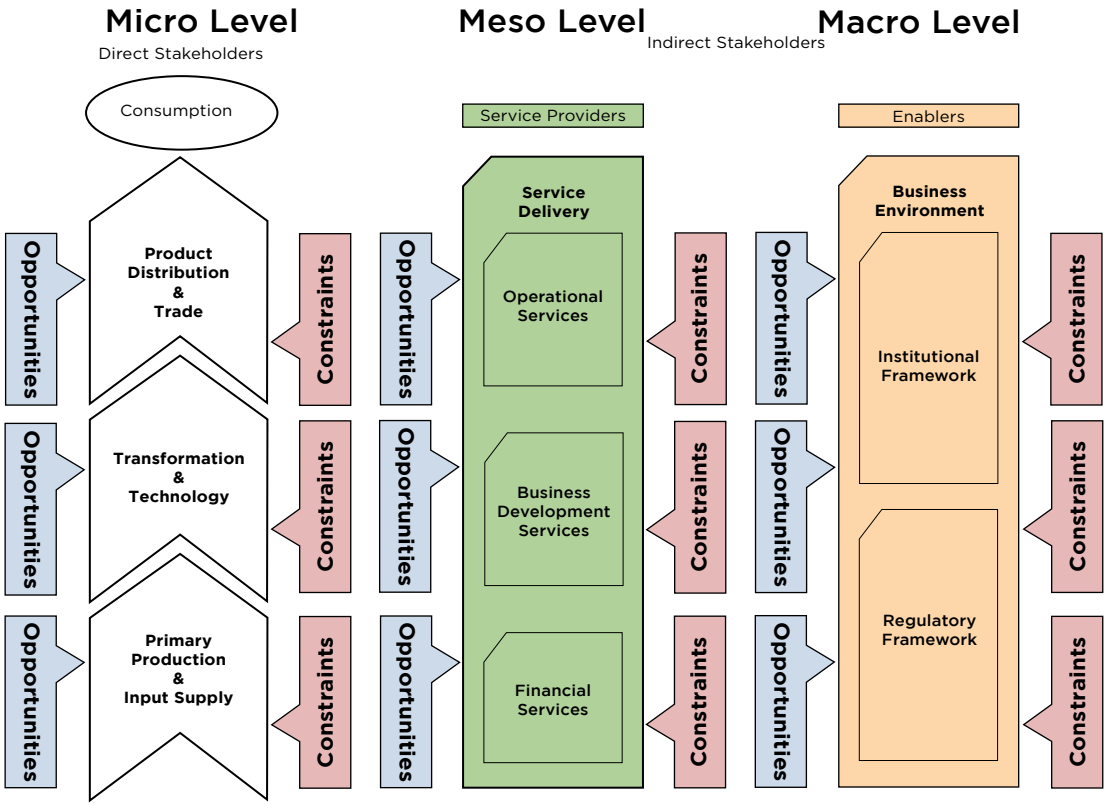
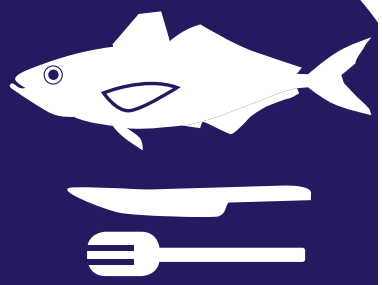


Figure 6: Analytical framework developed for detecting opportunities and constraints
Source: GIZ ProCOM

IDENTIFIED OPPORTUNITIES FOR AND CONSTRAINTS TO INDUSTRY GROWTH



2.1 Primary Production and Input Supply

Currently, the comparative advantages of the hake value chain are closely related to Namibia's natural resource endowment and its sustainable long-term management, ensuring that processors and manufacturers have continuous access to supply. The high overall quality of the Namibian hake species is already recognised by the world market. Hake is by far the most valuable single catch in Namibian waters, making this marine resource the largest single contributor to overall sector export revenues. In addition, Namibia's hake stocks are generally found relatively close to the ports from which the fleets operate, which ensures internationally competitive productivity and efficiency levels at the harvesting stage of this important value chain. Still, industry stakeholders feel that given the superior quality of Namibian hake, there are untapped opportunities for achieving higher prices and profit margins via additional marketing and product differentiation/branding efforts (see end markets and trade), and also through developing products to optimise input use (e.g. new products from offcuts and lower-quality fish).

As has been pointed out, hake and other demersal fish are caught by net trawlers and longliners. Generally speaking, longliner technology is more conducive to onshore processing and manufacturing activities but less conducive to sustainable management of this marine resource than freezer trawler technology is. The fact that no new licenses are currently being issued for longliner hake fishing due to its perceived negative impact on the overall health of the resource (removal of key breeding animals) can be interpreted as a short-term constraint but also as a long-term opportunity to the sustainable development of the hake-processing industry and this value chain at large. Similarly, the current practice of licensing "wet" and "frozen" quotas has similar short- and long-term impacts on land-based processing and onshore employment opportunities. Hake from the wet quota is generally processed further than the frozen-quota hake, with higher-priced products ultimately exported. However, some industry players argue that in processing hake beyond a certain point, value is actually destroyed rather than added. Nonetheless, most industry players acknowledge that continued government pressure for further processing of hake along with the above-mentioned licencing practices have contributed to the growth of the onshore processing and manufacturing segment of the hake value chain, though the impact on overall profit margins along the value chain is subject to debate.

A serious constraint to competitiveness in the hake value chain originates at the level of input sourcing but also affects processing and manufacturing, and that is the significant fluctuations in the total allowable catch (TAC) in recent years (by up to 50%), since the introduction of the TAC control system. This is partly due to the variations in the recorded hake biomass over the period, which may have been affected by climate change or other unknown factors but could also partly be attributed to the method of calculating the hake TAC, which has changed a number of times since control systems were put in place. Overall, the hake value chain is currently under consolidation, as quotas have been falling due to reductions in the TAC. It is this unpredictable and mostly declining nature of the TAC and corresponding quota allocation that might be reviewed with regard to the effects on the value chain. Since company effort (investment, employment, etc.) so far does not seem to be considered in quota allocation, the value-chain stakeholders are minimising efforts to gain access to quotas, and consequently the value chain is trapped in a minimum-effort paradigm in which it is counterintuitive for actors to reinvest large amounts. This is affecting technology and productivity levels, both for primary production and processing and manufacturing. It is also the main reason why the majority of the hake fleet in operation is more than 30 years old. This is causing large inefficiencies within the value chain and inhibiting growth; the investment climate is mostly unfavourable, and the

overall risk to international competitiveness is high, as industry stakeholders keep stalling any significant re-investment for as long as possible.

However, the newly drafted Fisheries Policy 2015, point 64, states, "The amount of quota (allocated) may vary depending on performance of right holders against predetermined criteria which shall include investment, employment, value addition and socioeconomic factors", which seems to indicate that the MFMR aims to take investment efforts into consideration in future quota allocations; consequently, there are opportunities for industry upgrading and growth.

Aside from the ambiguous effects of the current quota and license system, other constraints to value-chain growth that originate in the primary production segment include:

- The availability of a skilled labour force is limited; the local skill level is relatively low, and local capacity-building options are limited.
- Access to spare parts is poor, adding to operating expenses for the sector – this may be linked to the aging infrastructure.

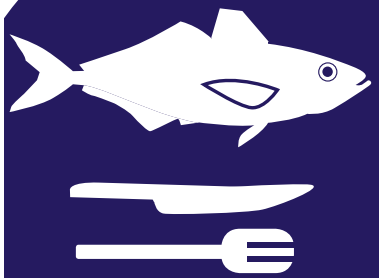
As with hake, the comparative advantages within the horse mackerel value chain are closely related to Namibia's natural resource endowment and sustainable long-term management. Unlike with hake, the horse mackerel TAC has been relatively stable in recent years (between 300,000 and 350,000 tonnes); however, the overall trend across the past 25 years has been a decline in TAC. The 1991 White Paper on Fisheries estimated that the long-term sustainable offtake of horse mackerel was between 400,000 and 450,000 tonnes, but the TAC since the early 1990s has declined, though it is still considerably higher than actual landings for most of the decade. During the last 10 years, the conservative approach adopted by the MFMR to managing the resource has proven effective; the resource has shown recovery in recent years, helping to keep the TAC stable. Rather than being driven by quality, the demand for horse mackerel and its recognition on the regional market are based its status as an affordable, healthy and highly nutritious staple food source for a large part of the global population, especially in Africa.

As has been outlined, despite a stable TAC, an ongoing constraint to growth in the onshore processing and manufacturing segment of the horse mackerel value chain is the use of freezer trawlers for capturing the fish, because the fish is then frozen whole at sea, with very limited processing taking place either at sea or on shore. However, the current technological shift towards refrigerated seawater (RSW) vessels and landing horse mackerel fresh is opening new business opportunities related to more complex onshore processing. While some industry actors question whether further onshore processing equals value addition in the case of hake, where the primary unprocessed product is of high market value, this is not the case with horse mackerel.

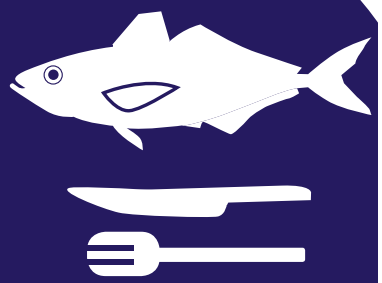
Wet landing horse mackerel is held to be beneficial not only to the marine-resource-processing industry but to the horse mackerel value chain at large, because real value-added processing and seafood manufacturing can take place on shore. Therefore, the switch from landing frozen to landing fresh is generally considered an important opportunity to upgrade and diversify the Namibian seafood processing and manufacturing industry. This doesn't imply that fresh horse mackerel can undergo only basic onshore processing, i.e. being sorted, graded, packaged and frozen onshore for local and regional distribution. However, certain horse mackerel processors are currently planning to switch from landing frozen to landing fresh, as they recognise the business opportunities related to more complex onshore processing.

Nonetheless, much like with the aging infrastructure of the hake processors, the horse mackerel value chain also faces a minimum-effort paradigm leading to inefficiencies at the primary production and processing/manufacturing levels.

The switch from landing frozen to landing fresh is generally considered an important opportunity to upgrade and diversify the Namibian seafood processing and manufacturing industry.



The main constraint can be summed up as a lack of product-development research.



A considerable constraint has been identified with regards to the highly perishable raw material. Horse mackerel, being a small and relatively oily fish, is very sensitive to spoilage, which can be a risk if the cold chain is not maintained correctly or if correct processing steps are not taken soon after harvest. The main constraint for horse mackerel in the post-harvesting stage of the value chain is the limited cold storage capacity at the Walvis Bay port. As the cold chain is imperative for the sector, this is a serious shortfall.

2.2 Transformation and Technology

The technologies within the hake value chain rely heavily on the maintenance of the cold chain from harvest to retail. A large portion of hake processing currently occurs off shore, such as H&G, filleting and freezing. Additional processing takes place on shore and revolves around glazing, forming and portioning. Currently, Namibian hake processors lack the capacity to produce battered and crumbed products, but some are in the process of developing frozen marinated hake products. As the processing taking place with hake is fairly simple, production capacities are typically high. However, many hake processors have large numbers of employees for some of the processing steps, which diminishes overall efficiency.

The horse mackerel value chain has historically depended on freezer trawlers with plate freezing capacity, ensuring that a majority of the processing takes place off shore. However, as mentioned in the previous chapter on input sourcing, there has been a fairly recent shift in the form of RSW vessels with the capability to land horse mackerel fresh for onshore processing. This reduces losses and improves quality in downstream processes and products, as outlined above. Additionally, the fresh landing allows the adoption of IQF technology. This permits a wider product range and differentiation of products and markets for more convenient frozen horse mackerel products.

Traditional production capacities are high, as the freezing trawlers can process and store large volumes of raw material and thus stay out at sea for long periods, after which the product is stable enough to be redistributed for retail or can be defrosted and further processed. Most of the raw material is still exported in whole-round form. However, with the shift towards landing fresh, production capabilities will have to be significantly improved to ensure that the fresh raw material is suitably processed in a timely manner to maintain high quality. This shift in production will lead to further onshore processing, such as the canning of horse mackerel as a substitute product for popular canned pilchard products. Hence, there are several opportunities in this dimension. There is scope for developing improved or new products from horse mackerel, such as fish paste/pâté, smoked horse mackerel or filleted horse mackerel.

There is a noticeable local demand for dried fish, and yet there are no commercial fish-dehydrating facilities for horse mackerel. Therefore, there is an opportunity to develop such a facility. It could potentially be community run, as dried fish may not be viable on a commercial scale.

This is closely correlated with the constraint analysis for the hake sub-sector, indicating that product development is an industry-wide concern. The main constraint can be summed up as a lack of product-development research. Very little industry-generated profit is currently being seeded back into product research and development (R&D), and very little independent research is being conducted within the two value chains on processing and manufacturing. Hence, opportunities for potential new product categories and improvements and innovations around existing products, which would otherwise be discovered through baseline R&D, are not being realised. While some entities are doing this research, it may be more in line with their current markets and therefore overlook the local and regional markets, or the R&D may lack efficacy for technical or capacity reasons.

There are several opportunities within the production and technology dimension in both the hake and the horse mackerel value chains. Currently, most waste materials and residues are processed into relatively low-value fishmeal and oil. Some residues are even discarded. Hence, there are opportunities within deep processing technologies to convert these wastes into much higher-value products. However, further research is required on the feasibility of this.

Processing in general is very energy intensive, and fish processing is no exception. Energy costs for the industry, whether for electricity or fuel, are prohibitively high. These factors drive up the costs of the final products, affecting profit margins and reducing industry competitiveness. However, numerous existing technologies are available for producers to save on energy, either through improved efficiency or alternative energy production. Therefore, there is an opportunity for research and feasibility studies to be conducted, to make the marine-resource-processing industry aware of such options.

In both value chains, there is an opportunity for research into new packaging technologies, particularly in the horse mackerel value chain regarding retort packaging, jarring or modified-atmosphere packaging for consumer products.

Lastly, due to the typically uncertain nature of raw material availability, especially in the hake sub-sector, it is generally difficult for the marine-resource-processing industry to justify high capital investments to acquire new equipment, machinery and technologies. Investment support structures may be key to encouraging the necessary industrial upgrading, as well as to the industry becoming more competitive on an international scale through new technology uptake. Without such support, much of the industry will continue to operate with aging infrastructure, decreasing efficiency throughout the value chains.

2.3 Product Distribution and Trade

The majority of the annual hake catch is exported to the Spanish market, where prices have remained stable and relatively high for a prolonged period. Spain is the largest importer of hake in Europe. While a small portion of Namibian hake is still exported whole, gutted and fresh by air directly to Spain, the majority is typically exported in IQF fillet form to Spanish wholesalers or directly to retailers. At the same time, prices for minimally processed hake products (Tiers 1 & 2) have not increased as much as those for more advanced processed products (Tiers 3 & 4).

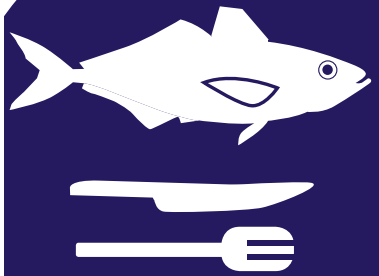
The Spanish market is always receptive to Namibian hake, as the fish is always in high demand there. However, South African hake is MSC (Marine Stewardship Council) certified, giving it a distinct advantage in the European market over Namibian hake, which is not certified for sustainability.

A smaller percentage of Namibian hake is exported to South Africa as frozen fillets or in headed and gutted form for retail or for further processing into portions or battered and crumbed products. Namibian hake is commonly retailed under large South African brands such as Sea Harvest and I&J.

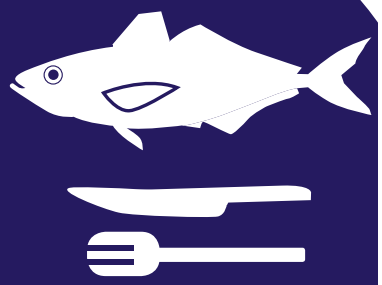
Other markets for Namibian hake are small, such as Germany, which imports only about 3% of the annual Namibian harvest through a German–Namibian joint venture, All-Fish. Markets in Northern Europe such as Germany have higher barriers to entry, as their retailers prefer recognisable sustainability guarantees and certifications such as the MSC eco-label. Therefore, if the products were marketed correctly, higher values could be realised compared to the other main market shareholders.

Hence, a current constraint to growth of the local hake value chain is the absence of joint branding or eco-labelling efforts, leaving the local hake processors to compete against each other as well as against inter-

There is an opportunity for research and feasibility studies to be conducted.



IDENTIFIED OPPORTUNITIES FOR AND CONSTRAINTS TO INDUSTRY GROWTH



national hake processors, even when the international products are usually considered inferior in quality. It follows that a national product differentiation and branding effort, inclusive of all Namibian hake processors, could potentially increase product recognition and thus lead to higher value perceptions within key markets. A Namibian hake brand (quality seal of approval) for hake processors to add to their own branding efforts could also help to unify Namibian hake and mitigate the risks of inferior hake harming the reputation and quality perception of Namibian hake. In addition, a sustainability certification scheme for Namibian hake products would enhance distribution into diversified and potentially higher-paying markets. The options are to either join a globally recognised sustainability standard, such as MSC, or develop Namibia's own local sustainability standard, as Iceland did through its Iceland Responsible Fisheries label. However, using an established sustainability certification such as MSC would probably be more beneficial in the short and medium term.

Horse mackerel is currently being marketed as one of the cheapest protein sources in African markets. The large majority of horse mackerel is being sold as frozen whole rounds in 5–20kg blocks to end consumers in Zambia, Mozambique, the Democratic Republic of Congo and South Africa. This ensures a high and continuous regional demand but also entails the constraint that these markets are very price sensitive. This price sensitivity has historically kept most processing, beyond simply freezing whole, to a bare minimum to ensure the highest profitability margins possible while keeping the product affordable for end consumers. As mentioned above, recent trends in RSW offshore storage and onshore processing are changing this status quo. Pressure from the government to add more value to this marine resource, as well as food security issues and the search for additional market opportunities, have encouraged some horse mackerel processors to migrate from primarily offshore processing towards landing fresh. This shift is changing the way horse mackerel products can be processed and marketed and will contribute to the diversification of horse mackerel products, markets and price points in the future. However, a major constraint to this shift towards onshore processing is the enormous capital investment required to change from freezer trawlers to RSW vessels, as well as to build new onshore processing facilities. The markets may change with the shift to landing horse mackerel fresh as higher-value products become possible.

The NFCPT (Namibia Fish Consumption Promotion Trust), governed by the MFMR, has the mandate and the infrastructure to deliver locally harvested horse mackerel to the rural areas of Namibia. It is suggested that the business model of the NFCPT could shift more towards cost recovery and selling at market-related prices so as not to inhibit private-sector involvement within the local horse mackerel distribution chain. An underdeveloped local distribution chain makes it difficult for Namibian processors to access the Namibian market. It is also noted that the MFMR intends to allocate 30% of issued quotas to local distribution. While this will be a major step in the right direction when the distribution networks are sufficiently developed, the industry isn't yet at that stage, and as such this move might be premature unless secondary options are considered. In addition, it is not always clear to the consumers whether they are purchasing Namibian horse mackerel, due to the common practice of retailers repackaging horse mackerel into smaller portions. The traceability is usually lost, as the original information is not always included on the new packages. Maintaining traceability is important from public health and consumer protection standpoints, because in the possible case of contamination or spoilage it is imperative to be able to identify the source of the danger as soon as possible. Therefore, it is recommended that local traceability is better enforced throughout the retail chain and that any repackaged products should include correct traceability information.

Despite the activities of the NFCPT, fresh and frozen horse mackerel seem to be scarce within the local market, both for consumers and local fish processors looking to add value. This boils down mostly to logistical constraints. Distribution-chain improvements may provide better access to horse mackerel, which would enhance food security and potentially encourage further value addition to horse mackerel products within the local market. A local consumer awareness drive could be conducted to educate local consumers on horse mackerel as a sustainable, local, healthy and affordable protein source. Activities could include school lunch programmes and print media campaigns for better awareness and more demand.
Another opportunity related to international trade with horse mackerel products could result from free trade agreements. At the moment, import and export duties within regional markets can be prohibitive for the trade of horse mackerel products. Therefore, a tripartite free trade area between Namibia and the major African horse mackerel markets could be negotiated to encourage more regional trade.

Along with the regional markets, China has been identified as a potential major market for Namibian horse mackerel products. However, China's imports are controlled through the China Inspection and Quarantine Declaration. Currently, Namibian horse mackerel is not recognised by the Chinese border authorities, severely limiting access to this market. It is therefore recommended that efforts be made to ensure that Namibian horse mackerel is formally recognised by the CIQ to allow for export of final products into China.

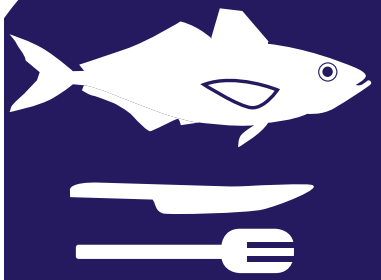
2.4 Service Delivery

The meso-level assessment was completed separately for each of the two major marine resource value chains. However, the identified opportunities and constraints were more or less identical. Many service providers are government agencies, such as the NSI, NAMFI and Namport, and private meso-level organisations, such as the fishing associations, do not seem to provide comprehensive services to their respective members in the fields of processing and manufacturing. In fact, the majority of the public and private service providers focus on fishery service provision, leaving room for more assistance to the marine-resource-processing industry.

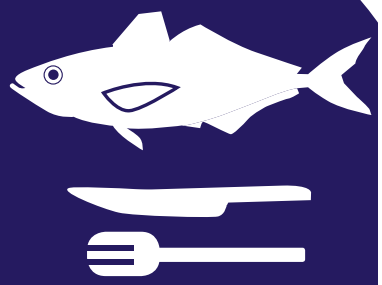
One opportunity is a result of the Namport expansion: the ongoing development of a new port in Walvis Bay may allow for the repurposing of the existing port to be better suited for the fishing and fish-processing industries. It is suggested that the new port will focus primarily on container ships, potentially leaving room for the old port to cater more for both the fisheries and the seafood industry.

Regarding capacity development, there are no local training courses offered for higher-level technical personnel within the industry. NAMFI, the sole provider of training for the fisheries sector, caters only for lower-skilled personnel. This forces the fishery sector to send their staff for training internationally, which is expensive. Instead, a training institute in Walvis Bay could be set up to provide accredited training courses locally for higher-skilled personnel.

The main constraint to support service delivery is limited access to finance. This is a broad constraint for both industries which, as already highlighted, require sizable capital investment at both the primary production and the processing and manufacturing levels. However, given the uncertainties surrounding raw materials, investments are counterintuitive not only to the industry but also to the financial-sector service providers. Currently, fishing entities cannot be guaranteed future raw material allocation, which keeps most financial providers at bay or results in higher risk charges for borrowers.



IDENTIFIED OPPORTUNITIES FOR AND CONSTRAINTS TO INDUSTRY GROWTH



2.5 Business Environment

For the macro-level assessment, industry stakeholders were engaged as a whole instead of in groups by value chain. Hence, like in the meso-level assessment, the below opportunities and constraints apply to the entire industry.

The marine-processing industry's environment makes it very challenging for potential newcomers to enter, as SMEs especially may not have the large capital reserves to buy in. However, there is potential for SMEs to engage in the industry and help to diversify it and potentially serve local markets with new products or improved local distribution networks. At the primary production level, a number of quota holders do not have the capacity to catch their allocated quotas and are forced to sell their quotas to others who have the necessary equipment and capacity. It was suggested that the quota holders without harvesting capacity should be empowered to procure their own equipment in order to harvest their own quotas and attain their own rights. This point links to the above-mentioned issues of access to finance and investment support.

Several constraints to the regulatory and institutional framework conditions were identified. Whether it be the annual biomass fluctuations leading to variable TACs or other external factors such as the quota allocation system, availability and volumes of marine-resource inputs for further processing and manufacturing are highly unpredictable from season to season.

From the perspective of individual entities, the problem lies in the high, inflexible overhead costs reliant on raw material supply, which can be unpredictable. Due to the raw material uncertainties and the typically large, rigid supply contracts, entities are reluctant to offer any raw material while the supply contracts remain open.

Comparing Walvis Bay and Lüderitz, the ease of doing business varies greatly between the two port locations. This is a deterrent for industry to establish or invest further in Lüderitz, where access, infrastructure and other costs were all generally more expensive than those of Walvis Bay. Fuel cost discrepancies between Walvis Bay and Lüderitz can be highlighted, as well as differences in certain harbour fees.

In general, stakeholders suggested that the fees and levies imposed on the sector are prohibitive, and there is little clarity for the stakeholders on where the fees and levies are spent. Additionally, it was highlighted that there is no regular review of such fees and levies, suggesting that some may not be relevant anymore. This indicates room for clarification in further discussions and potential opportunities for improvement.

Another perceived constraint is that the quota procurement process is not streamlined and that there are opportunities to improve and expedite the process.

On a broader level, ecologically damaging activities such as global warming, pollution and deep-sea mining may all have detrimental effects on fish stocks in the long term. Stakeholders believe the government could do more to mitigate these possible risks.

Lastly, industry stakeholders feel the need to improve their communication with the relevant ministries, as well as coordination within the industry itself. In addition, stakeholders see a potential to increase transparency in some of the ministerial processes, such as manufacturing status and its related incentives.

3. INDUSTRY GROWTH STRATEGY

3. INDUSTRY GROWTH STRATEGY

3.1 Vision of Industry Stakeholders

During stakeholder consultations, it became evident that along with an overall industry growth vision, it is also necessary to define a specific vision for each of the two major product value chains. Industry stakeholders strongly voted for this approach, as the two value chains are currently at different industry lifecycle stages and hence face not only common challenges but also stage-specific ones. Therefore, a growth vision was formulated for the marine-resource-processing industry at large that also outlines specific growth targets for the hake and horse mackerel value chains.

Industry growth vision:

"By 2020, the Namibian marine-resource-processing industry will have achieved qualitative growth and positioned itself nationally and internationally as a competitive supplier of high-quality seafood products.

Within this overall industry growth vision, horse-mackerel-processing companies will be supplying a wide range of new value-added seafood products to more price-sensitive market segments, while hake-processing companies will contribute to a significant increase in export earnings, mainly by supplying premium seafood products to the most discerning global markets."

3.2 Industry Growth Indicators and Targets

- Grow total gross value addition for selected Namibian seafood products by TBD%
  (Base 2016: TBD%; Target 2020: TBD%; Data source: NSA, MFMR)
- Grow (re-) investments by processors and manufacturers by TBD%
  (Base 2016: TBD%; Target 2020: TBD%; Data source: MFMR)
- Grow the share of dried, smoked and salted fish (HS 0305) and prepared or preserved fish (HS 1604) in overall exports from 7% to 15% by 2020
  (Base 2014: 7%; Target 2020: 15%; Data source: NSA)

3.3 Strategic Objectives, Indicators and Proposed Interventions

The stakeholders identified 3 core intervention areas as follows:

Intervention Area 1: Transformation and Technology	**Intervention Area 2:** Product Distribution and Trade	**Intervention Area 3:** Business Environment

Intervention Area 1: Transformation and Technology

Strategic Objective 1:

"Increase the production efficiency within the processing and manufacturing segment by facilitating industry-specific research and development and incentives for technological upgrading."

Indicators and Targets:

- Average % of cost reductions and efficiency gains for processors and manufacturers adopting new technologies in the fields of waste-residue processing and energy savings
  (Base 2016: 0; Target 2020: TBD%; Data source: MITSMED/MFMR)
- Number and total sales value of new products that have been supported by industry-wide product- and packaging-development efforts between 2016 and 2020
  (Base 2016: 0, NAD 0; Target 2020: TBD, NAD TBD; Data source: MITSMED/MFMR)
- Number of technological upgrading and product-innovation projects in the industry supported by new investment support schemes between 2016 and 2020 (Base 2016: 0; Target 2020: TBD; Data source: MFMR)
- Increase production volume of processed horse mackerel products by TBD% to TBD tonnes and production value by TBD% to NAD TBD
  (Base 2016: TBD tonnes, NAD TBD; Target 2020: TBD + Y tonnes, NAD TBD + Y; Data source: NSA, MFMR)
- Broaden range of processed horse mackerel products by TBD% p.a.
  (Base 2016: TBD; Target 2020: TBD; Data source: MFMR, NSA)
- Broaden range of processed hake products by TBD% p.a.
  (Base 2016: TBD; Target 2020: TBD; Data source: MFMR, NSA)

Proposed Interventions:

Support to research on techniques for enhancing production efficiency

Key activities:

- Conduct research into opportunities for deep processing waste residues and disseminate relevant findings to the industry
- Conduct research into and benchmark for existing cost-saving strategies and technologies for increasing energy efficiency and disseminate findings to the industry
- Conduct research into other potential industry-wide efficiency constraints and develop measures to mitigate these constraints

Support to identification of best practices for production efficiency in marine-resource processing

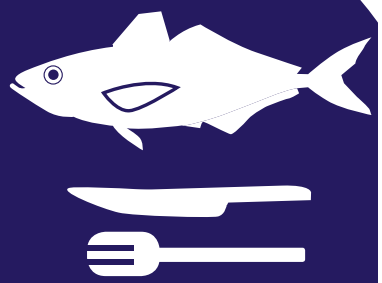
Key activities:

- Identify best practices and disseminate to the industry via a central and easily accessible portal (e.g. online presence)
- Provide further training to processors on implementing best practices as needed
- Encourage additional knowledge exchange within the industry
- Disseminate information about procedures for obtaining equipment, e.g. via IUMP

Support to identification and use of new packaging technologies for horse mackerel products

Key activities:

- Identify existing packaging technologies suitable for processed horse mackerel products (e.g. retort, jar, modified atmosphere packaging) and disseminate information to the industry
- Provide support with implementation of new packaging technologies (e.g. training, support via IUMP)



Develop feasibility studies, facilitate technical research and provide investment support

Key activities:

- Assess current state of the industry and processing, evaluate opportunities for expansion through benchmarking with international efforts and draft a report
- Facilitate applied research and feasibility studies and link local and international researchers to instigate research collaborations
- Offer start-up support for new operations (e.g. equipment, technical support) and upgrade support for existing operations

Investigate training opportunities for higher-skilled personnel in Walvis Bay in the area of processing and manufacturing

Key activities:

- Appoint a consultant to conduct research into existing training institutions
- Provide recommendations on ways to incorporate training courses for higher-skilled personnel into existing structures or to establish a new training institute
- Implement these recommendations

Intervention Area 2: Product Distribution and Trade

Strategic Objective 2:

"Enable marine-resource processors to maximise value generation through opening up new markets, improving current market sales prices and improving traceability in the local distribution chain."

Indicators and Targets:

- Increase share of hake products marketed under a sustainability scheme from 0% in 2016 to 25% by 2020
  (Base 2016: 0%; Target 2020: 25%; Data source: MFMR, Namibian Hake Association)
- Increase average price (ex-processor) of selected processed hake products via international marketing campaigns and sustainability schemes
  (Base 2016: TBD; Target 2020: TBD; Data source: MFMR, Namibian Hake Association)
- Increase value of domestic sales of processed horse mackerel products via marketing campaigns and improvements in the local distribution chain and product traceability
  (Base 2016: TBD; Target 2020: TBD; Data source: MFMR, NSA)

Proposed Interventions:

Support to Marine Stewardship Council (MSC) certification for hake

Key activities:

- Liaise closely with processors, manufacturers and the MFMR regarding MSC requirements and provide support as needed during the certification process

Support to strategic sub-sector marketing and branding campaigns

Key activities:

- Identify industry needs for sub-sector-specific marketing and branding campaigns and develop relevant strategies
- Facilitate the launch of the sub-sector marketing and branding strategies in collaboration with industry stakeholders
- Identify the local marketing shortfalls for processed fish products
- Develop an information-dissemination and awareness campaign to encourage consumption of local processed fish products
- Facilitate the launch of the local campaigns

Support to development and implementation of a local traceability system

Key activities:

- Identify key issues within local distribution chains and local traceability enforcement
- Identify which responsibilities and issues fall under which specific stakeholders and address these stakeholders
- Support the stakeholders in solving these issues and monitor improvements

Investigate opportunities for access to new markets for horse mackerel

Key activities:

- Identify options for free trade agreements with the major markets for Namibian horse mackerel
- Lobby and negotiate for free trade agreements as applicable
- Identify options to export horse mackerel to China
- Lobby and negotiate for recognition of Namibian horse mackerel within the China Inspection and Quarantine Declarations

Intervention Area 3: Business Environment

Strategic Objective 3:

"Create an enabling environment for the sustainable growth of Namibia's seafood-manufacturing industry by formalising the industry and improving public support to infrastructure, investment and innovation."

Indicators and Targets:

- Effectively address X (TBD) regulatory and policy-related constraints via public–private dialogues (PPD) and negotiations by 2020
  (Base 2016: 0; Target 2020: TBD; Data source: MITSMED, MFMR)
- Increase the share of Namibian onshore seafood processing and manufacturing companies affiliated with/organised in a specific industry association / committee
  (Base 2016: 0; Target 2020: TBD; Data source: MITSMED, MFMR)
- Achieve a yearly increase in net investment in the seafood processing and manufacturing industry between 2016 and 2020
  (Base 2016: 0; Target 2020: TBD; Data source: MITSMED, MFMR)
- Streamline support schemes according to the specific needs and demands of processors and manufacturers
  (Base 2016: 0; Target 2020: TBD; Data source: MITSMED, MFMR)

Proposed Interventions:

Amendment of national statistics and publications to suit international standard definitions of the industry

Key activities:
- Disaggregate data collection with key stakeholders as needed
- Amend national statistics and publications with regards to use of international standard definitions
- Continuously monitor and evaluate data

Facilitation of PPDs and other industry-specific coordination and negotiation structures

Key activities:
- Identify key industry-specific regulatory and policy-related issues in cooperation with industry stakeholders
- Set up suitable forums (PPDs or other negotiation structures) and encourage participation and communication
- Support stakeholders to use these structures as needs arise

Facilitate the setup of an operational marine-resource-processing association or committee

Key activities:
- Review existing associations for adequate representation of fish processors and manufacturers and determine the need for a new association or committee
- Develop a business plan to ensure the new association/committee is self-sustainable and self-sufficient
- Facilitate stakeholder buy-in using the business plan via stakeholder meetings
- Facilitate the implementation of the association/committee through staffing, operating space and initial capital, e.g. for an online portal

Review existing investment support opportunities, reform existing instruments and design new instruments as needed

Key activities:
- Map existing investment support opportunities and incentives
- Review current incentive measures and investment opportunities
- Develop and introduce additional support and incentive measures as needed
- Disseminate investment directory and support industry stakeholders as needed

Investigation and development of processing and manufacturing usage of old Namport port area in Walvis Bay

Key activities:
- Establish a committee to liaise with Namport
- Lobby for use of the old port area for processing and manufacturing
- Draft amendments for the old port for future use by processors and manufacturers

Support to negotiations with Namibia Fish Consumption Promotion Trust (NFCPT)

Key activities:
- Establish a committee to liaise with NFCPT and MFMR
- Lobby for mandate amendment as well as infrastructure setup to minimise market distortion regarding horse mackerel
- Identify potential areas of cooperation between NFCPT and horse mackerel stakeholders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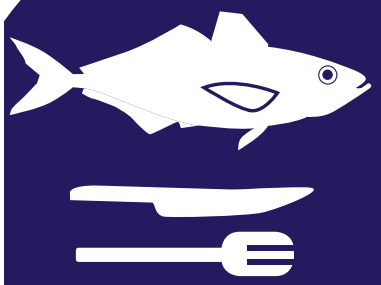

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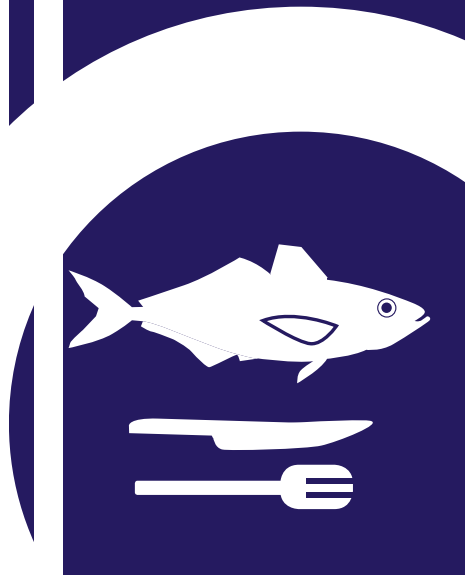

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