Republic of Namibia
Ministry of Fisheries and Marine Resources

Namibia's Marine Resources Policy

Towards Responsible Development and Management of the Marine Resources Sector

August 2004

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PREFACE

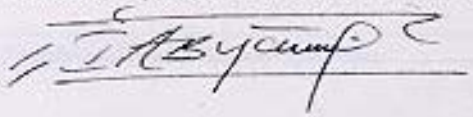
Namibia's marine fisheries sector has changed greatly in the years since Independence. The fish stocks we inherited in 1991 had been severely over-fished by foreign distant water fishing fleets. This sad situation was mainly a result of the almost complete absence of fisheries management in Namibia's waters. In addition, pre-Independence participation in the Marine Resources Sector by Namibians was the preserve of a privileged few! It was against this background that the Minister responsible for fisheries at that time, Honourable Helmut Angula, set forth to establish a policy framework for the sector. In December 1991 his visionary White Paper, *"Towards Responsible Development of the Fisheries Sector"* came into force. This document set out to achieve three main strategic and noble objectives namely: the rebuilding of Namibia's plundered fish stocks; the establishment of an effective fisheries monitoring, control and surveillance system; and the establishment of a viable national fishing and processing industries with maximum Namibianisation of jobs and empowerment of previously excluded people. The 1991 comprehensive Policy Framework gave rise to the Sea Fisheries Act (Act 29, 1992). This set out the elements of our management system, including the granting of fishing rights, setting total allowable catches based on research and granting of quotas to right holders. The 1991 White paper has helped create a business environment that has resulted in the establishment of a healthy and vibrant industry that pays a fair price for the privilege of utilising Namibia's Marine Resources.

Many things have changed on the local, regional and international front since we gained Independence in 1990, and took control of our Marine Resources Sector. In 2000, the Marine Resources Act, Act 27 of 2000, repealed the 1992 Sea Fisheries Act. This new Act was a necessary evolutionary step in our approach towards our marine resources sector. It reflects Namibia's increasing role as a developing coastal state. Since Independence we have signed a number of international fisheries conventions, agreements and arrangements. These include the 1982 UN Law of the Sea, 1995 UN Fish Stocks Agreement, and the 1993 FAO Compliance Agreement. Namibia has also joined International Fisheries bodies such as the International Commission for the Conservation of Atlantic Tunas, the Commission for the Conservation of Antarctic Marine Living Resources and the South-east Atlantic Fisheries Organisation. Namibia is also part of the Southern African Development Community (SADC) and has ratified the SADC Fisheries Protocol. These new obligations are addressed in the new Act, which incorporates international best practice for fisheries management and the key elements of the international fisheries management instruments to which Namibia is a party. The new Act also made provision for the management and conservation of non-fish marine resources such as Cape fur seals, guano and seaweed. Just as the legislation needed to be updated in light of changing circumstances, so too it was necessary to update the policy framework for the sector to ensure harmonisation with the Act.

The term Namibianisation is used several times in this document, and warrants a clear interpretation. Namibianisation means greater involvement, participation and benefits for Namibians from the Sector. This comes through share-ownership in fishing companies, employment at all levels, managerial control of fishing companies, involvement in processing and marketing, and so on. The benefits derived from the Fisheries and Marine Resources Sector should also touch the whole country in a tangible way. Namibianisation, simply put, is a means to peace, economic reconciliation, equity and increasing employment for Namibians, especially the previously disadvantaged.

Thus it is my pleasure to introduce this new policy statement for the marine resources sector. This document retains all of the key policy elements of the 1991 White Paper and addresses new concepts and considerations. But we must remember - our fish resources are finite! We must always ensure that the level of fishing is commensurate with the size of the stocks. By necessity, this means that the right to exploit our marine resources must be restricted to a level that the resources themselves can sustain to the benefit of all Namibians through levies and other forms of taxation. If properly managed our marine resources will continue to yield benefits in perpetuity.

DR ABRAHAM IYAMBO
MINISTER, WINDHOEK, AUGUST 2004



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1 OVERVIEW OF THE MARINE RESOURCES SECTOR

1.1 INTRODUCTION

Namibia's coastline stretches about 800 nautical miles (about 1 500 km). The sea off Namibia has an exceptionally high biological productivity. This is principally because of the up-welling of nutrients resulting from the Benguela Current.

The bulk of the total commercial fish biomass is made up of:

- Pilchard, anchovy, juvenile horse mackerel and minor species like round-herring and red-eye represent the pelagic inshore fauna.
- Adult horse mackerel is taken in the mid-water together with species such as snoek.
- Bottom dwelling or demersal species such as hake, monk, kingklip and sole are usually found close to the bottom. In the Benguela Current, there is a tendency for juveniles to frequent shallow water and to move into deeper water, as the fish grow larger. This is the case for example with hake, monk and horse mackerel.

All important commercial species, such as hake, monkfish, rock lobster, deep-sea red crab, pilchard, horse mackerel, orange roughy, large pelagics and seals are Total Allowable Catch (TAC) and quota managed fisheries. In addition, there are a number of less abundant fish and shellfish, for example snoek, kingklip, chub mackerel and linefish that are of economic importance. These are landed primarily as bycatch of other target species or species that are managed by effort control.

1.2 THE FISHERIES AND MARINE RESOURCES STOCKS

The first fishery that was developed in Lüderitz was the rock lobster fishery in 1925 while the snoek hand line fishery was the first to be developed in Walvis Bay. In the 1550s and 1960s, two new major industrial fisheries were established off the Namibian coastline; an inshore pelagic fishery for pilchard and anchovy exploited by a Namibian based purse-seine fleet, and an offshore trawl fishery for hake and horse mackerel mainly exploited by distant water fleets from a number of nations.

Responsibility for the management of resources and the regulating of the fisheries before Independence was the responsibility of the South African Administration in Windhoek for inshore fisheries, and the defunct International Commission for the Southeast Atlantic Fisheries (ICSEAF) for offshore fisheries.

Although ICSEAF's reference area also included the seas off Angola and South Africa, in later years its main activities focussed on the resources and fisheries off Namibia, which up to Independence was one of the few rich fishing areas for which an Exclusive Economic Zone had not yet been declared. This attracted many distant-water-fishing fleets.

Mean total annual catches prior to Independence between 1986 and 1988, according to ICSEAF statistics, was close to 1.3 million tonnes (hake 330 000 tonnes, horse mackerel 500 000 tonnes, pilchard and anchovy 230 000 tonnes and others about 230 000 tonnes). These catches derived mostly from Namibian fishing grounds, with the exception of some catches of horse mackerel and other species from southern Angolan waters, and small catches by South Africa in the south of the Orange River. The first hand landed value of the catches amounted to N$158 million in 1988.

Regulatory measures practised by ICSEAF included global TACs for horse mackerel, chub mackerel and snoek, allocated country TACs for the hake stocks, minimum trawl mesh size, inshore prohibition zone for trawling, and maximum percentage by-catch of hake in the horse mackerel catches. ICSEAF ceased functioning in 1990 following the declaration by Namibia of a 200 nautical miles Exclusive Economic Zone.

After Independence the horse mackerel TAC is partitioned between the mid-water and purse seine fisheries, which target the adult and juvenile components of the stock respectively. No trawling is allowed inside the 200-meter isobath.

1.2.1 Hake

The existence of significant offshore resources in the Benguela Current was demonstrated by surveys in late 1950s, and exploitation of these resources began in early 1960s by distant water trawlers. By 1965, the industry had already developed into a multinational fishery of half a million tonnes annually. This development coincided with a rapid increase in membe:s of modern stern-trawlers in the fleets of many countries, which resulted in increased fishing pressure, and subsequently reduced catch rates in the North Atlantic demersal Fisheries. The development of the fishery off the then South-West Africa was therefore result of the redeployment of excessive catching capacity. The overcapacity was further exacerbated by the declaration of the fishing zones in the mid-1970s.

Hakes were fished with a bottom trawl, which was standard in the fleets of many countries. A minimum of cod-end mesh size of 110 mm was set by ICSEAF regulations. In the late 1980s, the majority of foreign vessels fishing off Namibia were large than 1 000 gross registered tonnes long-range factory freezer trawlers, many equipped for further processing of the catch on board.

There was a rapid build-up of fishing effort on the hake stock from the mid-1960s to early 1970s. Catches increased to a peak of about 600 000 tonnes in 1972. High levels of exploitation continued until the end of the 1970s but catches and catch rates declined. Hake stocks had, in fact, become seriously over-exploited already by mid-1970s and remained in that state until 1990. ICSEAF introduced a cod-end mesh size increase to 110 mm in 1975 and a catch limitation from 1977. The effects these measures had were negligible since the actual catches exceeded the TACs by more than 100 000 tonnes for the period 1977-1980. Immediately after Independence the hake TAC was drastically reduced for two years (1990 and 1991) to allow the resource to recover. Since 1992 the TAC was slowly adjusted upwards and peaked at 210 000 tonnes in 2001.

1.2.2 Pilchard

After the rapid development of the pilchard fishery in the early 1950s, landings remained stable until the early 1960s due to a policy of strict regulation of both the landing quotas and the processing capacity. From 1959 onwards, however, the policy of regulation was abandoned. Quotas rapidly multiplied, and during the mid-1960s the fishery expanded greatly, culminating in a total catch of pilchard of 1.4 million tonnes in Namibian waters in 1968. Thereafter, up to 1972, catches fell drastically because of lower availability of fish but sporadic good recruitment sustaining the fisheries at this lower level until Independence.

The estimated total biomass of the pilchard stock declined from 6 million tonnes in 1967 to low levels before Independence. In the early 90's there were signs of some recovery. Thereafter, however, the stock declined reaching very low levels in 1996. This period was followed by fluctuations in the stock biomass with a recent 500 000 tonnes estimated. In 1997/98 there was a single pulse of good recruitment and the biomass increased to between 300 and 400 000 tonnes. The biomass again declined as recruitment was again poor, dropping to a low of between 30 000 and 40 000 tonnes in 2001. In 2002 a very good pulse of recruitment was detected. This resulted in the biomass increasing to above 500 000 tonnes. The different levels of recruitment success of pilchard that drives the trends in the biomass is the result of environmental fluctuations.

1.2.3 Horse mackerel

After the collapse of the pilchard fishery in the mid-70's the horse mackerel fishery showed significant growth. The TAC set for horse mackerel is divided between the mid-water and purse-seine industries. Over the past decade combined landings made by the purse-seine and mid-water trawl fleets contributed 59% of the total fish landed in Namibia. Mid-water horse mackerel catches make up the bulk of the horse mackerel landings since 1990.

Assessments indicate that there was a considerable increase in the abundance of horse mackerel during the sixties and seventies. Subsequently, the biomass fluctuated between 800 000 and 2 million metric tonnes. The fluctuation in the biomass is reflected in slight increases and decreases in the TAC's that were set. TAC's since Independence rose from just over 100 000 tonnes during 1990 and 1991 and then stabilised between 330 000 and 400 000 tonnes during the late 1990s and early 2000s.

1.2.4 Rock Lobster

Namibian rock lobster is found inshore, on rocky parts of the coast to the north and south of Lüderitz. The lobster population was severely over-exploited in the late 1960s, and a further decline in the mid-1970s is alleged to be the result of adverse environmental conditions. Over the period 1980-89 catches ranged between 1 100 tonnes and 2 900 tonnes with a mean of about 1 700 tonnes this represents only 20-25 percent of the 7 000-8 000 tonnes level of the 1960s.

Post independence Namibia has set seasonal quotas, at low levels, that allow for the recovery of the resource. Because of the worrying decline in the stock during the late 1980s the TAC was reduced to 100 tonnes in 1992. Since 1992 the biomass showed a consistent increase and the TAC could be increased slowly up to 2000. At this time the estimated biomass was about 3 000 tonnes and the TAC was set at 400 tonnes. TACs have not been increased since 2000.

1.2.5 Linefish

Kob and west coast steenbras are the most important component of the linefish fishery of Namibia and are caught by rock-and-surf anglers, ski-boat fishermen and commercial lineboats. The kob biomass is estimated to be about 7 100 tonnes. Based on this biomass level it is calculated that about 950 tonnes can be harvested sustainably per year. This amount is being harvested almost fully as a combined total of about 850 tonnes was landed by the commercial linefish boats, ski-boats and shore anglers during the 2001/2002 season.

The northwest coast steenbras stock biomass is estimated to be about 2 000 tonnes. It is estimated that about 280 tonnes per year can be harvested sustainably. As the combined landings for 2001/2002 of the commercial line fish vessels, skiboats and shore anglers is about 190 tonnes this resource could be harvested sustainably at these levels in future.

1.2.6 Monkfish

Up to 2000 the bottom trawl fishery targeting monkfish was managed by effort control. This was done by limiting the number, size and horsepower of the vessels. A significant part of the monk landings are taken as by-catch in the hake fisheries about 35% of the total landings. Since 2000 the management of the monk fishery is based on TAC's.

The monkfish resource is in a sound condition and the biomass level is calculated to be above the level where the productivity of the resource will be at its maximum. TAC's are set to attain maximum production levels. Calculations indicate that the TAC for monk should stabilise at about 12 000 tonnes per annum.

1.2.7 Orange Roughy and Other Deep Sea Resources

Orange roughy started off as an exploratory fishery in the mid-1990's with catches of about 6 300 tonnes by the end of 1995. In 1997 orange roughy became a quota managed fishery with an initial allocated TAC of 12 000 tonnes. The observed biomass has since decreased substantially and catch rates have dropped, with total landings for the 2002/2003 fishing season amounting to 2 200 tonnes. Currently orange roughy is managed on a quota management areas (QMA) basis, i.e. individual TAC's are set for each of the current four QMA's. The area of a QMA measures 50 nm by 50 nm around a calculated centre of aggregation, based on commercial and survey catch data collected prior to mid-1998. Since some QMA's had more than one centre of aggregation, the actual area of the relevant QMAs is bigger than 50 nm by 50 nm.

Alfonsino, cardinal fish, and three species of oreos are by-catch species in the orange roughy fishery. For alfonsino a separate TAC of 10 000 tonnes was set in 1997/98, with close to 1 000 tonnes being caught. Consequently it was decided not to allocate another alfonsino TAC for the 1998/99 fishing season, but to set a trigger level of 2 000 tonnes, upon the attainment of which the management and research of alfonsino be reviewed. Total landings of alfonsino for the 2002/03 fishing season amounted to approximately 46 tonnes. No TAC's have ever been set for either cardinal fish or any oreo species.

1.2.8 Deep-sea red crab

Deep-sea red crab has been exploited off the Namibian coast since 1973, with catches peaking at 10 000 tonnes in 1983 and falling to 7000-8000 tonnes during 1984-1986. Presently, this resource is being commercially exploited in a trap fishery by two vessels, with catches in recent years at about 2 000 tonnes. Since Independence the resource has reacted positively to the conservative TAC's that were set and the biomass show a slow but consistent increase.

1.2.9 Cape fur seal

The harvesting of cape fur seals off the coast of Namibian can be traced back to the 19th century when European and American sealers frequented the seal colonies. The fur seal population has been assessed through aerial censuses since 1972. The censuses have shown a steady increase of the Namibian pup production of between 4 -5% each year from 1972 up to a peak value in 1993. This was followed by a mass mortality event in 1994 and a drop in pup production in the following years. The December 1997 aerial census indicated that pup production of the 1998 cohort recovered to about 85% of the pre-1994 level. The main colonies are harvested based on individual quotas given as part of the TAC.

1.2.10 Other Resources

Various other species, such as kingklip, chub mackerel, dentex, jacopever and sharks are taken as by-catches to the commercial fisheries. The potential of some of these species to become targeted fisheries is being assessed by allocating exploratory fishing rights.

The anchovy fishery started in 1958 when small-meshed purse-seine nets were introduced. This short-lived fish has shown large natural fluctuations of yield and stock abundance. From the start of the fishery, annual catches varied between 83 000 and 3 55 000 tonnes until 1983. By the early 1980s, however, a general decline of adult stock biomass was recorded.

1.3 THE FISHING INDUSTRY

1.3.1 Shore Facilities and Processing Industries

With the declaration of the 200-nautical miles EEZ and the full control that Namibia obtained over its marine resources the development of a Namibian fishing and processing industry was made possible. Even when Walvis Bay was still under the jurisdiction of South Africa, arrangements were put in place to ensure that companies operating out of Walvis Bay were paying taxes in Windhoek and, by agreement with South Africa; Namibian inspectors controlled quotas.

Because of emphasis placed on the creation of employment, onshore processing particularly for wet fish including hake was promoted. Substantial developments have taken place with regard to the harbour facilities in Luderitz. The harbour has been dredged and deepened, thus providing better and expanded servicing facilities to the rock lobster, hake and large pelagic fishing industry. The Luderitz harbour can now take vessels with a maximum draught of about 12 m compared to 6 m in 1991.

The Namibian fish processing industry has undergone immense developments since 1991 when the industry had a total of 11 factories. Currently a total of 30 marine resource-processing plants operate in Namibia. The increase in shore processing capacity has kept pace with the productive capacity of

the resources. This sector processes a range of species including, hake, pelagic fish, seals and seaweed. The majority of the processing is done in Walvis Bay. Some plants are based in Luderitz and Henties Bay has a small seal-processing unit. Dried fish are produced in facilities situated in inland towns like Usakos to take advantage of the dry climate.

Namibia has pursued the option to process fish, especially on land. The ministry allocates a larger portion of the hake TAC as wet fish quota for onshore processing and a smaller portion for processing at sea. The economic and social effects of this allocation are being monitored on an ongoing basis.

Most catches are processed at sea to some extent. In other cases full processing is done on board and frozen hake fillets and other products are produced onboard. Industry prefers to process the fish at sea to ensure higher prices for their products while Government prefers onshore processing as a measure of improved job creation. In the wake of striking a balance between sea processing versus land processing, the split in allocation need to be carefully set to alleviate adverse consequences on the preference of both the industry and the Government.

1.3.2 Administrative Provisions

Prior to 1969, administration of the marine resources sector of Namibia was under the jurisdiction of the South West Africa Administration. In 1969 however, this function was taken over by South Africa. Nine years later in terms of Proclamation AG 5 of 1978, the function was again transferred back to the Windhoek administration.

The marketing of canned fish, fish meal and oil was channelled through a company, Atlantic Canned Fish Sales that was registered in Windhoek. All fishing vessels under licence from the Windhoek administration were registered in Lüderitz.

The Namibian Government maintained these arrangements in the first year after Independence. Under this system, in principle, fish caught in Namibian waters remain the property of the Namibian registered companies that rented facilities in Walvis Bay for processing, until the finished products were sold through the Namibian-registered marketing companies. Both companies and vessels registered in Namibia were taxed by Namibia, while only the value of processing was taxable in Walvis Bay. Partly as a result of these measures (but also because of good catches), revenue collected from the marine resources sector increased.

According to provisions implemented by the Administration in 1986, no commercial catching and/or processing of Namibian fish could take place without a concession from the authorities. Under this system a concession was granted for a period of seven years. A fishing vessel could be licensed to fish only through individuals or companies possessing a concession. In January 1991, the Government gave notice that all concessionaires and licence holders in the marine resources industry at that time had to reapply.

Shortly after Independence, the Government introduced legislation to proclaim a 200 nm Exclusive Economic Zone in accordance with the provisions of the United Nations Law of the Sea Convention. This gave Namibia sovereign rights over the natural resources within 200 nm off the coast.

1.3.3 Products and Markets

The marine resources industry produces a variety of products. Attempts are made to either maintain or improve the quality and product presentation to improve market access and profitability.

Exports of hake, monk and kingklip increased to Spain, Portugal and Italy while horse mackerel is exported to Southern African Development Community (SADC) countries and some West African countries e.g. Nigeria. South Africa, Japan and China are the main importers of Namibian fish meal and fish oil. Furthermore, crab, rock lobster and tuna are exported to Japan, while South Africa and the UK remain the main markets for small pelagic products. Orange roughy is exported mainly to the United States of America.

1.3.4 Promotion of Domestic Fish Consumption

National surveys have indicated that in 1994, per capita fish consumption was around 4 kg per annum. Continuous Government efforts increased the consumption of fish to between 8 and 12 Kg per capita by 1999. This figure represents only a small percentage of the total annual national fish production. Government continues its efforts to enhance food security for all Namibians.

1.4 ROLE OF MARINE RESOURCES IN THE NATIONAL ECONOMY

Contribution of income from marine resources to GDP has fluctuated over the years mainly due to the unpredictable nature of the marine environment but has shown an overall increase from N$288 million (4%) in 1991 to N$2 294 million (7.6%) in 2002.

The classification between fishing and processing has also been revised in 2000 to be in line with the System of National Accounts as issued by the United Nations. As a result fishing now includes fish processed on board while processing only include fish processed on shore which clearly had a substantial effect on the values in these two categories.

The value of fisheries production has also increased substantially since 1991 mainly due to an increase in the prices obtained in the export markets as well as value addition. Landed value has increased four times in value from N$520 million in 1991 to N$2 608 million in 2002. Final value has increased more than 4 times from N$644 million in 1991 to N$3 395 million in 2002. Since an estimated 97% of total fish production is exported, the value of exports closely follow the same trend as final value and has also increased substantially from N$631 million in 1991 to N$3 311 million in 2002. The marine fisheries sector is currently the second biggest earner of foreign exchange in Namibia after the mining sector.

1.5 VALUE OF EXPORTS

The EU imported 99 410 tonnes of fish and fish products worth N$1 576 million from Namibia, making us the fourth largest developing country supplier of fish to the EU in 2000 after Argentina, China and Thailand. Namibia was the largest developing country supplier of hake at 82 251 tonnes, worth N$1 134 million.

In regard to individual countries in 2000, Spain's total imports of hake were worth N$2 652 million, of which 40% came from Namibia Italy's total hake imports were worth N$536 million, of which 6% was Namibian fish; Germany's hake imports were worth N$277 million and 11% came from Namibia; the UK imported hake worth N$85 million of which 13% came from Namibia, and 34% of the total hake imports of the Netherlands worth N$126 million came from Namibia. Namibia also supplied 11% of the UK's sardine imports, the total of which was worth N$170 million.

Namibia expects these percentages of the total value of fish imports to increase further in years to come.

2 MARINE RESOURCE MANAGEMENT

2.1 APPROACH TO RESOURCE MANAGEMENT

The Government's primary task at Independence has been to rebuild Namibia's over-exploited and depleted resources to maximum sustainable levels, maintain the other stocks in a healthy condition and explore the possibilities of developing new fisheries. To this end, the Government has adopted an overall policy of developing a national fishery sector. For this purpose the Government reduced catches over a period of time. Controls in the form of annual TAC's, by-catch restrictions and introducing closed seasons and areas, amongst others are being enforced.

In the process of setting TAC's and allocating individual quotas, various stock assessment models are being tested with a view to refine them for future use. In addition, management plans for all the stocks are being developed which include biological reference points. TACs are set on biologically sustainable principles. However, the way the TACs are managed and allocations are made to right holders in different industries, (for example the splitting of the horse mackerel TAC between the mid-water trawlers and the purse-seine vessels) is done to ensure sustainable and diverse utilisation of the resources while enhancing fishery specific sectors and the national economy.

2.2 HAKE

Before Independence, the hake resource was managed by ICSEAF and the stock assessment was based on commercial data collected by various countries and on surveys done by Spain. Virtual Population Analysis (VPA) and surplus production model were implemented in assessing the stock. From 1990 to 1996 the hake TACs were recommended on the basis of swept area biomass surveys. The recommended TAC was based on taking about 20% of the fishable biomass. From 1997 to 2001 the TACs were recommended by means of an Interim Management Procedure (IMP). The IMP took into consideration the trend in abundance estimates from both surveys and commercial Catch Per Unit Effort (CPUE), in adjusting the previous year's TAC. The Ministry continues to refine its approach to setting TAC's for this fishery.

Other management measures applied to the hake fisheries are area and by-catch restrictions; mesh size regulations and the implementation of selectivity devices.

2.3 PILCHARD

Before Independence, the pilchard TAC was based on hydro acoustic survey biomass estimates done by South Africa. The survey biomass results were treated as absolute biomass estimates and about 18% of the fishable biomass was usually given as a TAC to be caught by Walvis Bay based purse-seine vessels. Now pilchard is managed by setting an annual TAC. The TAC is recommended based on the results of hydro-acoustic surveys and these surveys are conducted in collaboration with the industry. Pilchard surveys have been conducted regularly since 1990. Two surveys are currently done each year, usually in March and October. Both these surveys estimate the biomass of the fish older than one year, but the October survey in addition assesses the strength of the fish less than a year old.

Closed seasons and by-catch restrictions are implemented as additional management measures to control pilchard directed catches by the purse-seine fleet. To limit pilchard by-catches of the mid-water trawl fleet, generally a no trawl zone in waters shallower than 200 meter is enforced and limits on bycatch levels are set.

2.4 HORSE MACKEREL

Before Independence, the assessment of horse mackerel was based on Virtual Population Analysis (VPA) methodology, which was mainly done by scientists of the former Soviet Union. This method

was also used after Independence up to 2001. During the period that the VPA method was implemented the strategy was to keep the harvesting level at or below about 30 per cent of the fishable biomass.

Since 2002 an age-structured production model is used to assess the horse mackerel stock. The model integrates the commercial catch rates (CPUE) from the mid-water fleet, the survey biomass estimates and the catch at age of commercial landings. The annual TAC recommendation is based on the results of this model.

By-catch and minimum size restrictions, closed areas and minimum cod end mesh size are implemented as additional measures to manage the horse mackerel resource.

2.5 ROCK LOBSTER

The TAC is set according to the fishable biomass estimate from the De Lury model, and the CPUE and recruitment data. Before Independence, "tag and release" research formed the basis for estimating lobster numbers for the recommendation of a TAC.

Other management measures include effort restrictions (no more than 100 traps per vessel), closed areas and closed seasons, no females with eggs to be landed and a minimum legal size limit of 65 mm carapace length.

2.6 LINEFISH

This fishery has historically been regulated by effort control and no TAC is set. Angling is subject to a bag limit and a license and the commercial catches are controlled by limited access and effort.

2.7 MONK

Result from an age-structured production model is used to determine the annual TAC. This model is fitted initially to a standardised CPUE series and survey biomass estimates in two separate assessments. The model is then fit to both abundance indices simultaneously, with the assumption that the survey biomass and the General Linear Modelling (GLM) standardised CPUE series provide an index of abundance.

Restrictions on cod end mesh size as well as a general trawl ban in water shallower than 200 meter are in place as additional management measures.

2.8 ORANGE ROUGHY

An age structured production model, which uses three abundance indices: swept area biomass estimates, acoustic biomass estimates and standardised commercial CPUE indices are used to assess the orange roughy stock. Annual catch levels are recommended to ensure that the stock is not reduced to below 50% of what it was before fishing commenced. This is because, for a species with a slow reproduction rate the maximum yield from the stock is obtained when the stock level is reduced to about 50% of the marginal biomass.

The stock is managed by allowing right holders to fish the allocated quotas in quota management areas. The TAC is subdivided between these areas and the stock is therefore managed as if the different areas from which the fish are landed are constituting different isolated populations. Fish landed from outside these areas does not come off the TAC and right holders are therefore encouraged to do exploratory fishing outside QMA's.

2.9 DEEP SEA RED CRAB

Before Independence, during ICSEAF times this fishery was not managed, and after Independence up to 1995 the effort was limited to three vessels. From 1995 - 1999 a length-based cohort analysis have been used to assess the status of the crab resource of Namibia. During 2000 - 2002 a modified De Lury model has been introduced and the catch and effort data is used in the model to assess the biomass of the crab.

Deep sea crab stock is, in addition to setting a TAC and allocating quotas, managed by setting a minimum mesh size for the pots. As this is a stock shared with Angola joint research surveys are conducted to assess the biomass of the total stock.

2.10 CAPE FUR SEAL

The cape fur seal fishery on the Namibia coast goes back to the 19th century when European and American sealers hunted for seals for the fur and fat. Management of the population in Namibia started by the end of the 19th century when concession for hunting were granted and TACs were set from the mid-1970s. Various input data sets are generated, for example a pup count is done by photographing the colonies from the air, estimating early pup mortality and monitoring pup growth. These data sets are fed into a model to produce a recommended harvest level. A Seal Management Plan with a life span of three years was introduced in 1998.

A closed season is in effect to reduce disturbance of the Cape fur seals colonies. Harvesting of bulls and pups are allocated but no female quotas are given.

2.11 MULLETS

Mullets are being managed by effort control. A limited number of rights to harvest mullet in the harbour areas of Luderitz and Walvis Bay are awarded. Before Independence mullet fishing was not controlled.

2.12 OTHER RESOURCES

2.12.1 Anchovy

Anchovy used to be an important stock and landings from 1970 to 1980 ranked forth after pilchard, hake and horse mackerel. Anchovy has been managed as a non-quota species. Management measures include a closed season from September to January. Anchovy comes as a by-catch species for the purse-seine industry targeting pilchard and horse mackerel.

2.12.2 Sharks

A National Plan of Action (NPOA) for the management of sharks has been adopted in line with FAO requirements and guidelines. Such National Plans of Action must be developed by all fishing nations to guide the management of sharks on a global basis. This action should go a long way in preventing the demise of shark populations worldwide by curbing overexploitation and wastage of shark resources. The latter specifically with reference to putting a stop to 'finning', a practice whereby the fins of sharks are removed and the carcasses dumped back into the sea.

2.12.3 Sea birds

An NPOA for seabirds has been developed in draft form to be implemented. The NPOA makes provision for the management of oceanic as well as seabird species breeding on the offshore islands of Namibia. Special protection is given to seabird breeding colonies and management measures to limit the by-catch of seabirds in the long lining industry.

2.12.4 Kingklip, dentex, squids, rays and skates etc.

These species are landed as by-catch in fisheries targeting TAC species. The level of by-catch of theses species to TAC and quota-regulated species is kept in check by charging a levy on the by-catch of some of these species (e.g. kingklip) that are landed with the target species. Additionally closed areas and gear selectivity are implemented to keep by-catch levels of these species down. These levies are charged to discourage targeting of by-catch species and are set at rates that do not encourage targeting but also does not encourage operators to dump these species. In addition exploratory (experimental) opportunities are created to encourage investors to develop commercial targeted fisheries based on these species.

2.13 LARGE PELAGICS

Namibia joined the international fishing community in fishing for tuna, swordfish and pelagic sharks soon after Independence and as a result became a member of Interrational Commission for the Conservation of Atlantic Tunas (ICCAT) in 1999. Namibia is actively encouraging its tuna industry to create the capacity to be able to fish the quotas of tuna and swordfish allocated to Namibia by ICCAT.

2.14 MARINE ALGAE

Marine algae (seaweeds), in particular two species of kelp may be collected as beach casts from beaches. Limited conditional harvesting of kelp beds to provide feed material for farmed abalone is allowed.

2.15 GUANO

Guano is collected (scraped) on Ichaboe Island. The collection is controlled by a right awarded to a company and the operations are subject to conditions. A close monitoring of the scraping activities ensure that disturbance of the seabirds is kept to a minimum.

The guano is cleaned, processed and sold to the "organic food production" industry as a fertilizer.

2.16 PROTECTION OF THE MARINE ENVIRONMENT

The introduction by man of substances or energy into the marine environment, directly or indirectly, that results in deleterious effects to living resources and marine life; hazard to human health; hindrance to marine activities and impairment of quality for use of water need to be prevented, minimized and controlled.

Attention should be given to preventing direct disposal of untreated domestic and industrial waste, discharge hazardous and toxic-waste substances that are non-biodegradable and bio-accumulative. The main sources of these pollution include sewage and waste from land-based industries; dumping at sea; shipping through oil tanker cleaning procedures. Accidents, oil spills; and waste from vessels. Household sewage and biological waste material from fishing industries (although this is not considered to pose a serious threat to marine life). Dumping of soluble waste containing toxic elements that can result in the distribution of harmful micro-pollutants through the ecosystem. Spills of crude oil for example, contaminate the immediate surface layer, while lighter refined oils are more easily dissolved into deeper parts of the water column. In areas with offshore oil/gas prospecting or production. Deposits of waste construction materials on the sea bottom have seriously and lastingly hampered the conduct of fishing operations. Such activities therefore need to be closely monitored, minimized and prevented.

There are policies and legislation that are applicable to the protection of the marine environment from pollution. Namibia is a party to a number of international conventions, protocols and agreements such as Marine Policy (MARPOL 73/78) that deals with the prevention of marine pollution. However,

there will be a need for an appropriate comprehensive environmental policy to regulate and prohibit waste disposal, oil spills from shipping, including oil tanker cleaning, and, if relevant, oil prospecting/production procedures. There is also a need for co-ordination and co-operative arrangements to be established between the different Government departments (which are responsible for the environment and marine activities), coastal local authorities and port authorities in order effectively control and protect our marine environment.

3 DEVELOPMENT OF THE MARINE RESOURCES SECTOR

3.1 INTRODUCTION

Most of these development objectives would be best served by the development of an integrated fishery sector.

These objectives for developing this sector include: creation of employment and income, ensuring multiplier effects within the economy as a whole, optimising revenues from profits of the industry, earning foreign exchange through exports and, improve domestic food supplies, food security and self-sufficiency. The existing fleet and processing infrastructure must be maintained and appropriately developed.

The profile of processing will largely be determined by market expectations and demand. Due to the small local market the Namibian marine resources processing sector continue to be export oriented, and consequently will need to maintain its competitiveness, and responsiveness to economic, technical and market factors. The sector will continue to fully develop and to do value adding to products of known commercial resources (hake, pilchard, horse mackerel, monk, rock lobster, crab, orange roughy, large pelagic, linefish, seals, seaweed and guano). By allocating exploratory rights other potential resources can possibly be demonstrated to be commercially exploitable. Apart from the development of new resources which is deemed to be fairly limited, the real development potential for the marine resources industry lies in value adding to products, the development of new products and finding new markets for existing and new products.

There is considerable scope for further investment in support industries in particular, processing technology, packaging, distribution and marketing network. The private and public sector will continue to invest in human resources development so as to provide essential skills in support of further development of the sector. Walvis Bay and Luderitz will continue to be the two major centres for processing.

3.2 ROLE OF FOREIGN ENTERPRISES

Government will continue to encourage foreign participation in the exploitation, processing and marketing of marine resources. Such participation could include mutually beneficial joint venture formation, chartering of vessels and management contracts.

3.2.1 Joint Ventures

Joint-venture operations between foreign and Namibian participants generally present opportunities such as financing, capital investment and transfer of expertise and knowledge to the Namibian counterpart whilst it provide the foreign counterpart with access to the Namibian fish resource. The Ministry however encourages and insists active participation of the Namibian counterpart (s).

Government would encourage and promote active participation on the part of the local partner in all disciplines of fishing, processing, marketing and distribution as part of skills transfer. These could include participation in product sales and equipment and services purchasing.

3.2.2 Management Contracts and Chartering of Vessels

Government would support chartering of foreign vessels as a means to increase catching capacity of right holders over the short term to ensure that they fully harvest their quota.

3.3 STATE PARTICIPATION AND SUPPORT

Role of the State and the form it takes in promoting the development of the marine resources sector will to a large extent depend on the capacity and capability of the private sector, with or without

foreign participation and contributions, in fulfilling the stipulated development objectives of the sector. To further these objectives, the State would continue facilitating the establishment of support mechanisms to assist and encourage new Namibian entrants. It could also opt for limited direct participation in the operational parts of the sector.

3.3.1 State Participation

The Government will maintain its position of retaining low-key involvement in the operational parts of the sector. However, any company in which the State has a direct interest would be expected to compete with other companies on a normal commercial basis.

3.3.2 State Support Mechanisms

The Government will share information particularly for new entrants on, access to technical advice, access to finance through the Namibian Development Bank, advice on processing, distribution, markets and development of business relations.

3.4 RIGHTS BASED MANAGEMENT SYSTEMS

The Government shall maintain the current management system comprising of fishing rights, setting annual total allowable catches and allocation of quotas to right holders. The main objective of exploitation rights and quota system is to limit and control fishing for resource management purposes. In addition, the rights allocation system has also been used to promote Namibianisation of the sector, whereas the quota and research levies are designed to increase Government incomes from the exploitation of a national natural resource. The Government built into the fee structure a rebate system to provide incentives for Namibianisation, at both operational and ownership levels.

Government will constantly review the quota levy and rebate system and the various regulatory measures with a view to making them more effective and less complicated to implement, reducing unintended effects, and providing the participants in the sector with sufficient stability for their planning and investment activities.

3.4.1 Right to harvest Marine Resources and Allocation of Quotas

Under the new legislative framework, those companies that had fishing concessions before Independence were required to reapply for fishing rights. In terms of legislation, the Minister shall from time to time announce a period during which applications may be made for rights to harvest for commercial purposes any marine resources.

When considering applications, the Government takes into consideration the applicant's competence in fishing and operating the vessel, the extent to which Namibians are or will be involved, and investment in the sector as well as required development.

3.4.2 Exploratory Right to Harvest Marine Resources

Government will continue to issue exploratory rights with a view to develop new fisheries provided that the exploratory harvesting does not adversely impact quota-controlled species.

3.4.3 Processing Plants

The Government should introduce new measures to encourage further investment in land-based fish processing with a view to increase employment and overall earnings for Namibia. While increased Namibian participation in the processing industry will be encouraged, joint ventures will also be welcomed.

3.4.4 Levies

In the early seventies, a research fee was levied only on pilchard, anchovy, horse mackerel, kingklip, monk, sole and rock lobster. Since 1992, and with the introduction of new fishing rights in 1994, a

Marine Resources Fund levy is charged on all fish species for which harvesting rights are granted. These fund levies may be amended by the Minister with the view to making them more effective. Money from the Marine Resources Fund is utilised for the expenses of research, development and training related to marine resources. Management and administration of fund levies will be done in consultation with the Minister responsible for finance.

At Independence, a quota levy was charged in respect of hake and horse mackerel only. Levels of processing for rebates will be defined clearly by land processing, with the objective of stimulating employment in Namibia. This rebate is mainly relevant for hake and other wet fish, since for the small pelagic fish (pilchards and anchovies) there is no real alternative to land processing (canning and reduction). It may be more important in the future to stimulate whole freezing of horse mackerel, which produces a more valuable product, than reduction to fish meal and oil, regardless of whether this is land-based or not.

Levels of processing to be eligible for rebates will be defined clearly. The setting of quota levies involves two different decisions, the basic level of the quota levies, which may be adjusted annually; and the system of rebates and surcharges, which should be more permanent, though adjustments may be made from time to time. For the purposes of the rebate system, three categories of vessels are recognised, "Namibian vessel, Namibian-based vessel and foreign vessel". This system will not only make the exploiters apply for the quotas than they hope to actually catch, but also reduce the temptation to under-report catches.

The basic level of the quota levy will be established taking into account the value of the fish, but also factors regarding catch rates, cost structures, and the profitability of fishing operations. In most cases, the basic level will vary between 5 and 15 per cent of the first-hand value. In principle, all quota-regulated fish should be covered by a quota levy

4 LEGAL FRAMEWORK AND ITS IMPLEMENTATION

4.1 LEGAL FRAMEWORK

At Independence, the Government proclaimed a 200 nm zone EEZ, (Act No 3, 1990) in accordance with the provisions of the United Nations Convention on the Law of the Sea of 1982. In 1992, the Namibian Parliament enacted the Sea Fisheries Act, (Act No.29 of 1992). The Sea Fisheries Act was repealed by the Marine Resources Act, (Act No.27 of 2000). The Sea Fisheries Act was repealed as a result of some gaps observed and experienced, including, maturation and dynamics of the fishing industry over the implementation period. The Marine Resources Act retained all essential elements of the previous legislation including conservation of marine ecosystem and the responsible utilisation, conservation, protection and promotion of the Namibian marine resources on a sustainable basis. The objective of the Marine Resources Act is broadened and covers all marine biological resources, incorporates the Seabirds and Seals Protection Act, No.46 of 1973; includes Namibia's involvement and participation in international and regional fisheries activities and related matters, to ensure compatibility and consistency with the international obligations, while ensuring that Namibia's interest in relevant areas is adequately represented and protected.

Since Independence, the Namibian fisheries legislation provided basic guidelines on the following key issues:

Sustainable utilisation of Marine Resources: To outline procedures regarding the application for fishing rights and allocation of the fishing quotas. To set out the procedures and criteria for licensing of fishing vessels and control fishing efforts. Providing for Namibia to enter into fisheries agreement with a member country of the Southern African Development Community (SADC).

Management and Conservation Measures: To empower the Minister of Fisheries and Marine Resources to take the necessary management measures, including setting of Total Allowable Catches (TAC), limitation of effort, fishing-gear specifications, protect juvenile fish through management measures such as minimum allowable mesh size, grid selectivity device, minimum fish sizes to be landed, restrictions on by-catch, closure of areas and fishing seasons and, trans –boundary activities.

Compliance and Enforcement: To specify the powers of enforcement officers, honorary enforcement officers including stopping and boarding vessels, search and inspection, hot pursuit, seizure, and arrest. To provide for the establishment of the Fisheries Observers Agency to collect scientific data on board the fishing vessels, observe, record, and report on the fishing activities thereof.

Offences and Penalties: Set offences and specify the penalties for violations of the Marine legislation.

Regulatory powers: To empower the Minister to make regulations for the implementation of the Act.

4.2 MONITORING, CONTROL AND SURVEILLANCE

Since the declaration of EEZ Namibia has subsequently developed an effective Monitoring Control and Surveillance (MCS) system. To avoid pre Independence plundering of marine resources, the Ministry will regulate the marine sector through restricting fishing activity to those entitled, ensuring that fishing activity is conducted within legal and administrative guidelines and ensure that revenue from landings is correctly calculated.

Legislation alone cannot achieve the above objectives, without MCS resources. Initially the Namibian MCS system was based on the operation of fisheries Patrol vessels, aircrafts and vehicles. The presence of the sea surveillance fleet will deter illegal fishing activities by local and foreign fishing vessels.

The Government will monitor and control the 1,500 km coastline. All landing points will also be monitored and controlled. Fishing activities at sea will be monitored.

Namibia will supplement its MCS capabilities with the Fisheries Observer Agency to provide fisheries observer coverage on board each licensed fishing vessel. Observers will be present on vessels licensed to fish in the Namibian and international waters.

Namibia will introduce a national satellite –based Vessel Monitoring System (VMS). The VMS will provide benefits for fisheries management in the form of improved real time monitoring of vessel movement and activities. The system will further assist in curbing Illegal, Unreported and Unregulated (IUU) fishing activities within and outside the EEZ by Namibian flagged vessels. The introduction of the VMS will enable Namibia to comply with requirements by international fisheries management organisations to which Namibia is a contracting party.

5 GENERAL PRINCIPLES, OBJECTIVE AND STRATEGIES

5.1 PRINCIPLES

Namibia is committed to observing the principle of optimum sustainable yield in the exploitation of marine resources, in accordance with the Namibian Constitution. The Government is therefore obliged to promote and regulate responsible and sustainable development and management of all harvesting activities that target marine resources.

1. The Government is committed to responsible fisheries and will ensure that it conducts the planning, management and development of the marine fisheries sector in accordance with international best practice.
2. Government shall ensure that all flag-state obligations are complied with by vessels flying the Namibian flag, whether operating in Namibian waters, international waters or waters of other sovereign states.
3. Preferences will be given to Namibian citizens and to ventures that are beneficially controlled by Namibian citizens to benefit from the utilisation of Namibia's marine resources.
4. The Government shall consider gender issues fully and shall ensure an equitable involvement of women in the marine resources sector.
5. The precautionary approach to fisheries management shall be applied as appropriate.
6. There shall be broad participation of Namibians in the marine resources sector and access to resources shall be on an equitable basis.
7. The marine resources sector shall be self-sustaining and will not be supported through public sector subsidies.

5.2 OVERALL OBJECTIVE

The main objective for the marine resources sector is to utilise the country's fisheries resources on a sustainable basis and to develop responsible industries based on them in a way that ensures their lasting contribution to the country's economy and overall development objectives, as detailed in VISION 2030 and National Development Plans.

5.3 STRATEGIES

This objective shall be attained through four main strategies:

- Maintaining an appropriate legislative, institutional and administrative framework;
- Conservation and responsible management of marine resources;
- Support for domestic catching, processing and marketing; and
- Enhanced participation for Namibians in all aspects of the marine resources sector.

5.4 INTERNATIONAL FRAMEWORK

Namibia has signed up to a number of international fisheries conventions, agreements and arrangements, including the following:

- Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Fish Stocks and Highly Migratory Fish Stocks (more commonly known as the "UN Fish Stocks Agreement");
- FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (more commonly known as the "Compliance Agreement");
- International Commission for the Conservation of Atlantic Tunas (ICCAT);
- Convention on the Conservation of Antarctic Marine and Living Resources (CCAMLR);
- FAO Code of Conduct for Responsible Fisheries; and
- SADC Regional Protocol on Fisheries.

Texts of all conservation and management measures adopted under any international agreement to which Namibia is a party are published in the Government Gazette, and thus such measures are then deemed to have legal force as prescribed under the Marine Resources Act (Act no. 27 of 2000).

The implementation of this Policy for the Marine Resources Sector shall be guided by the relevant provisions of the regional and international instruments to which Namibia is a party.

6 STRATEGIES FOR THE MARINE RESOURCES SECTOR

6.1 LEGISLATIVE, INSTITUTIONAL AND ADMINISTRATIVE FRAMEWORK

6.1.1 Communication within the marine resources sector

- Establish effective channels of communication between all marine resource stakeholders.
- The primary consultative channel with the marine resources sector on policy matters relating to the management of the fisheries resources (setting of TAC's etc) will be through the Marine Resources Advisory Council as per Marine Resources Act, 2000.
- The primary consultative channel with the marine resources sector relating to resource use, industry development and economic issues will be through the Fishing Industry Associations.
- Encourage the further development and strengthening of Fishing Industry Associations so as to provide a greater range of services to their members.
- Encourage the establishment of working relationships and alliance between Fishing Industry Associations and the Namibia National Chamber of Commerce and Industry (NCCI).
- Facilitate regular dissemination of information on matters relevant to the marine resources sector through a dedicated newsletter and the Ministry's web site.
- Establish working groups comprising representatives from private sector fishing interests and Government bodies to facilitate cost effective collaboration in fisheries resource research and management.

6.1.2 Participation in inter-Governmental management organizations and arrangements

- Namibia will participate fully in the development of international customary law and will incorporate international best practice into its policy, legislative, management and administrative arrangements.
- The development of policy, legal and management measures shall be within the Namibian Constitution and take cognisance of *inter alia*, the Law of the Sea Convention, FAO Code of Conduct for Responsible Fisheries; the UN Fish Stocks Agreement and the FAO Compliance Agreement.
- The texts of all conservation and management measures adopted under any international agreement to which Namibia is a Party shall be gazetted in the National Gazette.
- Facilitate legal fishing activities by the Namibian fishing industry in international waters and the waters of other states through joint venture and other types of business arrangement.
- Enforce flag state responsibilities over all vessels flying the Namibian flag in respect to national fisheries legislation as well as management and conservation measures laid down in international plans of action, conventions and agreements for the conservation of marine resources to which Namibia is a party.
- Enforce port state responsibilities over all vessels visiting Namibian ports and implement measures to take legal action against vessels that engage in Illegal, Unreported and Unregulated fishing.
- Contribute to the development of responsible fisheries within the SADC Region under the guidance of the SADC Protocol on Fisheries.
- Support efforts to build domestic fishing and processing industries within the SADC Region and promote greater intra-regional trade in fish and fish products.

- Namibia will fully cooperate with regional fisheries management organization to which is a party to ensure that the stocks under the jurisdiction of such regional fisheries management organization are managed and harvested sustainable.

6.1.3 Government framework for the marine resources sector

- An appropriate framework shall be maintained so as to facilitate implementation of the objectives, aims and strategies outlined above for the marine resources sector.
- *Administration*: The Ministry of Fisheries and Marine Resources shall be responsible for protecting, monitoring, control and surveillance of all marine living resources within the 200 nm EEZ. The Ministry shall provide professional, responsive and customer-focussed services to the sector efficiently and effectively, providing best value for money.
- *Provision of legal framework*: The Government will provide the necessary legal framework for conserving, and exploiting marine resources, and for environmental protection.
- *Quality assurance*: High level of export orientation of the Namibian marine resources sector underlines the importance of quality assurance. In conjunction with other ministries, the Ministry of Fisheries and Marine Resources will assist to ensure proper supervision over fishing vessels, processing and handling facilities, as appropriate, to ensure that high standards are set and maintained.
- *Credit facilities*: The financing of the fishing industry remains the responsibility of the private sector through existing financial institutions. A policy of not providing financial assistance to the marine resources sector through subsidies and loan guarantees will be maintained by the ministry.
- *Fisheries statistics*: The Ministry of Fisheries and Marine Resources will collect data and information necessary for research, management and development and disseminate for administration purposes. The granting of rights of exploitation, quota allocation and licensing systems will include the requirement that statistics required by the Government will be furnished.
- *Research*: The Ministry of Fisheries and Marine Resources will undertake fisheries and environmental research with the objectives of providing advice and information on all matters pertaining to the potential of the various resources, their spatial and temporal distribution, their catchability, appropriateness of fishing gear and vessels, and facilitating a system for the collection of data and other information. Included in these tasks will be the building of capability for advising on and recommending total allowable catches for the various stocks, and other measures related to fishery regulations. These services will require the development of the necessary competence of scientific and technical staff as well as maintaining modern analytical and research equipment, including research vessels.
- *Cross-sectoral matters*: The Ministry of Fisheries and Marine Resources shall ensure that the policies and strategies applied for the marine resources sector are harmonised with and complement those applied to the inland fisheries resources sector and the aquaculture sector.

6.2 CONSERVATION AND RESPONSIBLE MANAGEMENT OF MARINE RESOURCES

6.2.1 Conservation of Stocks

- Maintain and/or rebuild the biomass of each marine resource to levels where they can each support long-term sustainable yields.
- Taking full account of the ecosystem approach to fisheries, develop and implement fishery management plans, and which will determine, *inter alia*, reference points, management strategies and research priorities for major commercial resources

- Develop and implement national plans of action in support of the various FAO international plans of action, relating to, *inter alia*, sea birds, IUU fishing, fishing capacity and sharks.
- Exercise sovereign rights of Namibia over the Exclusive Economic Zone.
- Continue to control fishing effort through the existing system of rights, total allowable catches, quotas, effort restrictions, spatial and temporal closures and other management measures.
- Allow stocks to be exploited on a sustainable basis applying the precautionary approach as appropriate, in general below that estimated to give maximum sustainable yields.
- Protect juvenile fish through management measures such as minimum allowable mesh sizes, minimum allowable fish sizes, closed areas and seasons and selectivity devices.
- Ensure the responsible development of recreational fishing and implement appropriate management measures to conserve and protect inshore species, in particular kabeljou, steenbrass, blacktail, galjoen and shark.
- Develop and implement an ecosystem-wide approach to fisheries management, including multi-stock management where research reveals stock interdependence, and including shared and straddling stocks.
- Implement management measures to protect marine fish stocks and fisheries from possible negative effects of other activities impacting on the sea or the seabed.
- Implement management measures to reduce incidental by-catch species in all fisheries.
- Maintain an appropriate management and administrative framework for the marine resources sector that is efficient, transparent and responsive to the sector's needs.
- Ensure a high level of compliance with fisheries management and control measures through a system of monitoring control and surveillance including satellite-based vessel monitoring systems.
- Implement measures to constrain marine pollution.

6.3 SUPPORT FOR DOMESTIC CATCHING, PROCESSING AND MARKETING

6.3.1 Development of national catching and processing capability

- Government will consolidate and further develop Namibia's efficient and competitive marine resources sector both nationally and internationally without the assistance of state subsidies.
- Ensure that catching capacity is kept below the potential of the stocks and, if required, utilise foreign fishing vessels through business arrangements with Namibian right holders.
- Incentives for shore-based processing shall be maintained through a system of preferential levies and rebates so as to maximise employment opportunities for Namibians.
- Implement measures to reduce adverse impacts between fishing gears.
- Ensure the responsible development of recreational fishing and implement appropriate management measures to conserve and protect inshore species, in particular kabeljou, steenbrass, blacktail, galjoen and shark.
- Encourage modernisation of the fishing, handling, processing and marketing in furthering Namibia's position as a respected fish-producing nation.
- Provide market information regarding prices, trends and consumer requirements.

- Recognise the specific needs and economic structure of the fishing industry in regard to setting rates for use of port facilities.
- Support and encourage the fishing industry in efforts to mitigate the effects of HIV/AIDS.
- Encourage and facilitate the fish-processing sector the same as any other value-added or manufacturing sector, in regards to income tax incentives.
- Embrace credible market-based strategies that are consistent with international trade rules that encourage responsible fisheries practices.

6.3.2 Integration of the marine resources sector into the national economy

- Encourage investment in fishing, processing and ancillary industries such as: boat building and repairs, fishing gear manufacture and repairs, fish handling and storage equipment, processing equipment, packaging materials and other inputs for the processing industries, as well as a distribution and marketing networks.
- Take full account of the regional development perspectives of Namibia's Regional Councils, as set forth in the National Develop Plan, when setting development goals and priorities for the Sector.
- Facilitate and promote greater horizontal and vertical integration of companies engaged in fisheries and the marine resources sector and the aquaculture sector.

6.3.3 Contribution to National Income

- Create conditions that will increase the contribution of the marine resources sector to national income by encouraging reinvestment within Namibia.
- Encourage value-added processing of fish.
- Further support the development of high value products for domestic, regional and international markets.
- Establish conditions to identify and promote the development of new Namibia-branded products, including the use of under-utilised species, and access new markets.
- Maintain and further enhance the high quality reputation of Namibian fish through wide adoption of quality assurance systems such as the Hazard Analysis Critical Control Point (HACCP) principles.

6.3.4 Enhanced food security

- Promote domestic fish consumption by encouraging the fishing and fish processing industries to increase the national supply of fish as a healthy food of high nutritional value.
- Seek to increase fish consumption through programmes that promote and supply fish.
- Support distribution and marketing networks in collaboration with the private sector.

6.3.5 Cooperation with Foreign Interests

- Cooperate with foreign interests on a mutually beneficial basis.
- Provide an enabling environment to encourage foreign interests to invest and bring in expertise to further develop the sector, principally through joint ventures.
- Monitor and assess the performance of joint ventures and other forms of cooperation with foreign partners and give priority to those that support the Namibianisation of the industry.

6.4 ENHANCED PARTICIPATION FOR NAMIBIANS

6.4.1 Namibianisation

- Promote employment and income generation opportunities for Namibians from fishing, fish processing and marketing, commensurate with sustainability of the marine resources.
- Encourage utilization of marine resources by Namibian vessels and properly trained and equipped crew, and the processing of the catch within Namibia.
- Allocate new fishing rights, when called for by the Minister, in accordance with those criteria and considerations laid down in the fisheries legislation.
- Encourage Namibianisation of the fishing and processing sectors, as well as support industries through a system of preferential levies and rebates.
- Require investors to provide for training, transfer of knowledge, and safety in the work place, as well as creating employment opportunities for Namibians to the fullest extent possible.
- Provide guidance to new entrants on accessing advice in regard to fishing, processing, and marketing.
- Encourage right holders to continue to be involved in value adding and marketing of marine resources.
- Constantly assess progress in Namibianisation of the sector through Namibian share-ownership in companies and capital assets, employment at all levels, managerial control of companies, and involvement in fishing, processing and marketing operations.
- Ensure socio-economic benefits accruing through marine resource utilisation are widely distributed to the people of Namibia through a system of levies and fees to the State by right holders.

6.4.2 Human resource development

- Help build national capacity necessary for the continued development of the marine resources sector through formal education and training of Namibians, both within Namibia and abroad.
- Facilitate on-the-job-training of Namibians on board fishing vessels and in fish processing plants.
- Promote, encourage and facilitate training in support of research, management, and development of the Sector, taking full account of both public and private sector human resource requirements.