OUR MISSION

To responsibly manage living aquatic resources to continuously ensure a conducive environment for the fishing and Aquaculture sector to prosper

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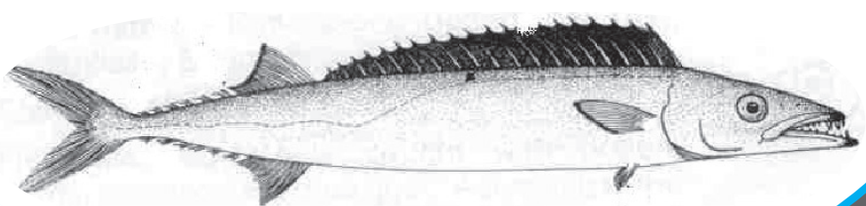

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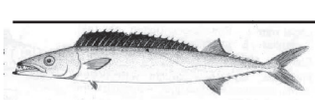
List of Abbreviations used in the document.

ANN	Aquaculture in Northern Namibia
ASPM	Age Structured Production Model
BCLME	Benguela Current Large Marine Ecosystem Programme
BENEFIT	Benguela Environment Fisheries Interaction and Training Programme
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CFC	Common Fund Commodities
COFI	Fish Trade Committee On Fisheries
CPUE	Catch Per Unit Effort
CSIR	Council for Scientific and Industrial Research (South Africa)
EEZ	Exclusive Economic Zone
FAO	Food and Agricultural Organisation
FIIU	Fish Marketing and Utilisation Services
FIOC	Fisheries Observers and Inspector Course
FOA	Fisheries Observer Agency
GDP	Gross Domestic Product
GEF	Global Environmental Fund
HAB	Harmful Algal Bloom
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICT	Information and Communication Technology
INFOPECHE	Intergovernmental Organisation for Fishery Information and Co-operation Services for Fishery Products in Africa
IUU	Illegal, Unreported and Unregulated
KIFI	Kamutjonga Inland Fisheries Institute
Km	Kilometre
MCS	Monitoring, Control and Surveillance
MSY	Maximum Sustainable Yield
MFMR	Ministry of Fisheries and Marine Resources
N$	Namibian dollar
n. mile	Nautical mile
NAMFI	Namibian Maritime and Fisheries Institute
NATMIRC	National Marine Information and Research Centre
NDP3	National Development Plan3
NLO`s	National Liaison Officer`s
NPC	National Planning Commission
OIE	World Organisation of Animal Health
PV	Patrol Vessel
QMA	Quota Management Area
RV	Research Vessel
SADC	Southern African Community
SEAFO	South East Atlantic Fisheries Organisation
SST	Sea Surface Temperature
TAC	Total Allowable Catch
TWG7	Thematic Working Group7
VMS	Vessel Monitoring System
WHO	World Health Organisation
WTO	World Trade Organisation
WWF	World Wildlife Foundation



FOREWORD

The year 2008 was very unique because of the launch of NDP3 and re-commitment to Vision 2030 by His Excellency President Hifikepunye Pohamba. NDP3 sets a pace to contribute to the largely objective of the Namibian Vision. I am proud to have witnessed the launch of NDP3 and the active participation of my Ministry in the diligent planning process. My Ministry falls under Thematic Working Group7 (TWG7), a productive sectoral group, which is expected to play a considerable contribution to the economic growth of our country. That pleases me to say that my Ministry has realised through the re-alignment of the Ministry Strategic Plan set for the next five years and ready for implementation.

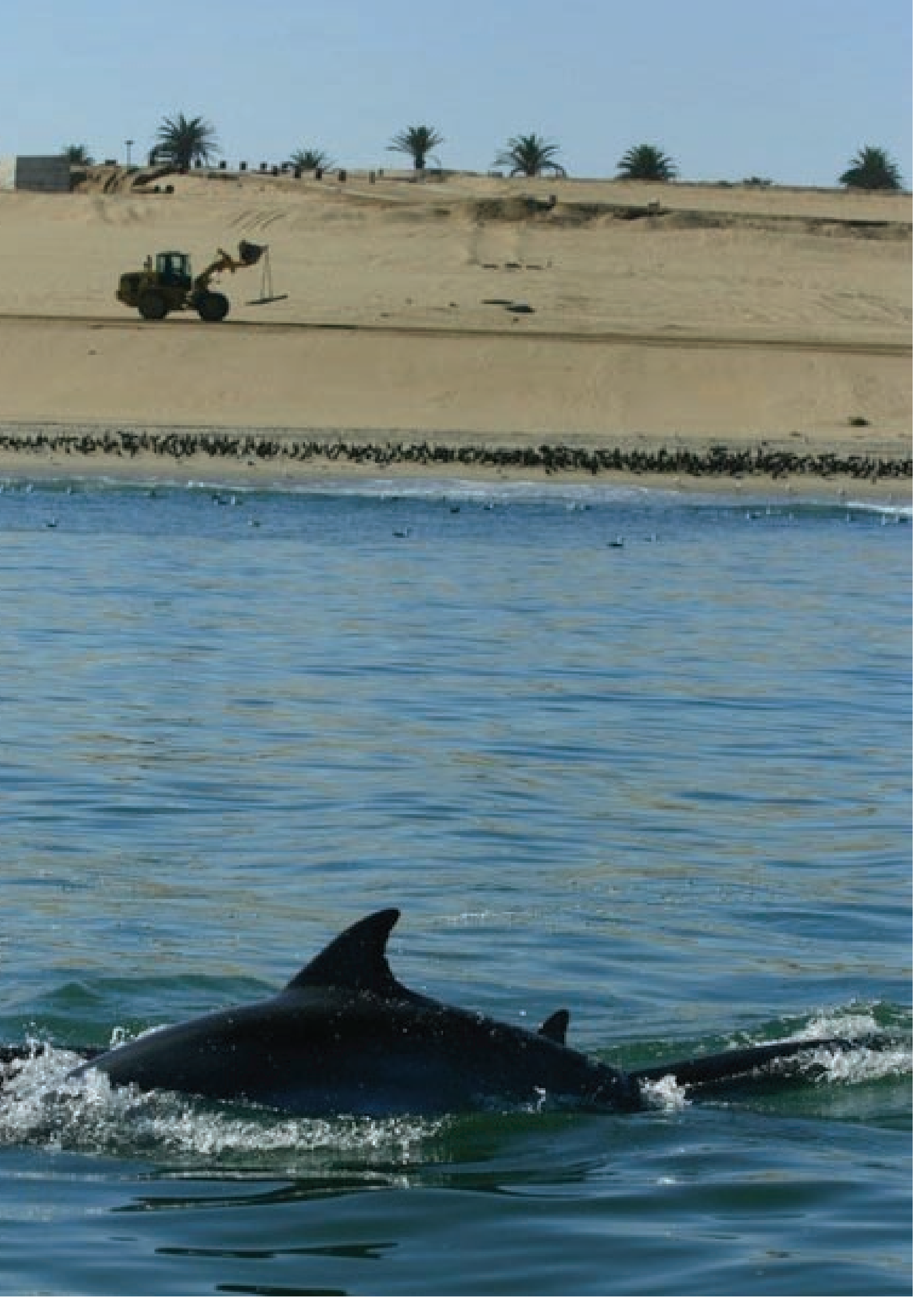
I should also appreciate the blessing of Mother Nature during 2008, because the fisheries sector was hallowed with good environmental phenomena at sea, as a result, the sector performed well. Furthermore, the drop in the high fuel prices, exchange rates, better catch rates and improvement in fish size contributed good performance of the industry.

During the reporting year, the Ministry was faced with challenges of patrol vessels that were deployed to guard fishing vessels that committed illicit activities in our waters; however, the consequence of that profited the Government in millions of dollars. Therefore, I salute men and women who combated such crimes in our waters.

Aquaculture continued to expand, especially in development of capital projects, in some parts of Namibia. During the reporting year the Ministry constructed the first fish feed plant in Namibia at Onavivi and would like to recognize the assistance received from the Spanish Government. In the same vein a number of fish farmers have increased from 67 in 2007 to 99 in 2008. Also the distribution of fingerlings to farmers has increased from 80,294 in 2007 to 125,722 in 2008.

The inauguration of KIFI, by His Excellency President Hifikepunye Pohamba, in 2008 resulted in the first training for small scale farmers, on fish production, processing and quality control that has borne fruits.
Allow me to highlight some key conventions that took place during 2008 namely; the SADC Fisheries Ministers' Conference on IUU Fishing and the International Fisheries and Aquaculture Conference. In addition, Namibia continues to honour our commitment to actively participate in the International Fisheries Management Organisations like ICCAT, CCAMLR, FAO, COFI, SEAFO, SADC, BCC and other trade negotiations forums.
Finally, I would like to sincerely thank the staff members of the Ministry for their tireless commitment to daily work performance. Also like to extend my word of thanks to the fishing industry, as well as other stakeholders for their good cooperation and understanding in continuing to make fisheries sector a thriving business.

BERNHARD ESAU MP
MINISTER



1 THE MINISTRY OF FISHERIES AND MARINE RESOURCES

The Ministry of Fisheries and Marine Resources is responsible for the management and development of fisheries and aquaculture.

1.1 OBJECTIVES

The overall objectives of the Ministry are derived from the Mission Statement. Our objectives are to:

- Promote and regulate the responsible and sustainable utilisation of living marine and freshwater resources and aquaculture within the context of environmental sustainability.
- Create a conducive environment in which the fishing and fish processing industries can prosper and derive optimal income from marine resources.
- Further Namibia's interests within the international fishing sector.
- Provide professional, responsive and customer-focused services.
- Deliver services efficiently and effectively by providing best value for money.
- Continuously invest in human resource development so as to enhance Namibia's capacity to manage fisheries and marine resources.
- Develop and ensure participation of Namibians in domestic fishing and fish processing, and for them to play an effective role in regional and international fisheries affairs.

1.2 ORGANISATIONAL STRUCTURE

The Office of the Permanent Secretary provides executive management to the Ministry with the assistance from the four directorates namely:

- The Directorate of Resources Management, responsible for scientific research and advice,
- The Directorate of Operations, responsible for monitoring, control and surveillances activities.
- The Directorate of Policy, Planning and Economics, responsible for planning activities, formulating fisheries policies, legislation and provide advise thereof, collect revenue from the fishing industry, undertake research and advise on the socio-economic issues, and
- The Directorate of Aquaculture, responsible for the administration and promotion of aquaculture development. A General Services Division provides administration and support services. The section below describes the activities of the different directorates.

DIRECTORATE OF OPERATIONS

- Regulation of fishing activities within the Namibian EEZ.
- Monitoring, control and surveillance through the deployment of fisheries patrol vessels, cars for coastal inspection and fisheries patrol aircrafts.
- Deployment of inspectors at the processing plants, harbours and mid-water and inland water bodies.
- Fisheries legislation enforcement.

DIRECTORATE OF RESOURCE MANAGEMENT

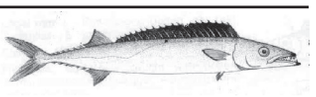
- Provides advice on the state of commercially important marine fish stocks and recommendations on their appropriate yields;
- Advises on appropriate management measures in relation to species and fish size limitations, closed seasons, closed areas and limitations on the types and effectiveness of fishing gears.

DIRECTORATE OF POLICY, PLANNING AND ECONOMICS

- Co-ordinates the formulation, implementation as well as monitoring and evaluation of fisheries policies and legislation.
- Carries out continuous policy and economic research analyses.
- Management of information and technology service of the Ministry
- Administration of fishing rights and quotas
- Issuing of fishing licenses and data collection
- Collection of levies and fees
- Analysis and publication of fisheries statistics.
- Co-ordinates overall planning in the Ministry.

DIRECTORATE OF AQUACULTURE

- Ensure the responsible and sustainable development of aquaculture, to achieve food security and environmental sustainability.
- Facilitate an efficient, coordinated administrative and institutional framework for aquaculture.
- Ensure that the genetic diversity and integrity of the aquatic ecosystem is maintained.
- Promote responsible aquaculture production practices.



- Research on fresh water fish resources in the interior of Namibia and provides advice on the conservation and management of those resources.

1.3 STRATEGIC PLAN

The Strategic Plan is formulated with the purpose of directing the Ministry's activities, to prioritise and achieve the objectives. This was cascaded into annual Management Plans at the directorate's levels and the plans have been implemented.

Figure 1: Participants at a consultative meeting in Rundu under KRA6 as part of NDP3 initiatives.

1.4 FINANCE

The operations of the Ministry are financed through the Operational Budget and the Development Budget respectively. The operational budget for 2008/2009 was N$137,365 million of which the breakdown is indicated in Table 1.

Table 1: Operational Budget for 2008/2009 (million)

Programmes	N$`000
Office of the Minister	2,972
Administration	17,798
Resource Management	23,844
Operations	59,508
Aquaculture	19,980
Policy, Planning & Economics	13,263
Total	**137,365**

Source: MFMR, 2008

The development budget for 2008/2009 was **N$39, 046** million. Seventeen capital projects were identified for funding support under this budget, as shown in Table 2 below.

Table 2: Development Budget for 2008/09

Project	(N$,000)	Regions
Kamutjonga Inland Fisheries Institute	7,417	Kavango
Traditional Fishing Development/Renovation and Extension of Building	500	Erongo
Aquaculture Development Project at Olushandja Dan/Onavivi	1,000	Omusati
Aquaculture Development in Kavango	1,334	Kavango
Aquaculture Development in Caprivi	1,334	Caprivi
Renovation of MFMR Head Office Windhoek	1,500	Khomas
Renovation of Hostels, Premises, Offices and Classrooms	1,000	Erongo
Upgrading of Ongwediva Hatchery and Construction of New Offices	1,350	Oshana
Upgrading of Hardap Facilities/Ponds	650	Hardap
Construction of New Research Vessel	7,631	Erongo
Extension and Renovation of Swakopmund (NATMIRC)	1,000	Erongo
Construction of MFMR Regional Office in Caprivi	2,000	Caprivi
Construction of MFMR Regional Office in Kavango	2.000	Kavango
Leonardville Fish Farming Project	1,000	Omaheke
Upgrading of the Offshore Islands Infrastructure	1,000	Karas
Upgrading of Keetmanshoop Fonteintjie Fish Farm Community Project	75	Karas
Upgrading of Onavivi Inland Aquaculture Centre (IAC)	8,255	Omusati
Total	**39,046**	

Source: MFMR, 2008

In addition to the budget provided by Government, the Ministry has received technical and financial assistance from development partners. The main areas of donor support are indicated in Table 3.

Table 3: Donor Assistance in 2008

Donor	Type of Assistance provided
Spanish Regional Government of the Xunta de Galicia	• Financial assistance: Fish plant (Omahenene/Onavivi) • ANN project • Cooperation between Namibian and Spanish Scientists to conduct research
Government of Cuba	• Technical assistance (aquaculture development projects).
Commonwealth	• Aquaculure advisor to the Minister

Source: MFMR, 2008

2 FISHERIES RESEARCH

2.1 STATE OF THE MARINE ENVIRONMENT

The Ministry of Fisheries and Marine Resources has conducted nine Environmental-monitoring surveys in 2008 to gather information on important oceanographic parameters and processes such as sea temperature, salinity, dissolved oxygen, hydrogen sulphide, nutrients, chlorophyll-a, phyto- and zooplankton, upwelling and frontal movements. Resources surveys such as the hake, Pilchard and horse mackerel biomass surveys were also used as platforms to collect oceanographic data. Additionally, remotely sensed data of wind speed and direction, air temperature, sea surface temperature and chlorophyll were obtained from various other sources such as satellites and weather stations. Regular updates of the state of the marine environment were compiled with this information and distributed to management on a monthly basis.

Sea surface temperature: Figure 2 represents the monthly Sea Surface Temperature (SST) anomalies over the Namibian and southern Angolan shelf during the last quarter of 2008. Temperatures ranged from slight negative to positive along the northern and southern Angolan coastline from September to November and quite a strong positive anomaly (0.5 to -2.0 °C above average) off northern Namibia and most of the Angolan coast in December. However, much of the Namibian coastal regions, except off northern Namibia in September and December, experienced average to below average SST. December/January marks the starting period of the non-upwelling season off northern Namibia and sea surface temperatures would start to increase until April/ May when upwelling conditions would return.

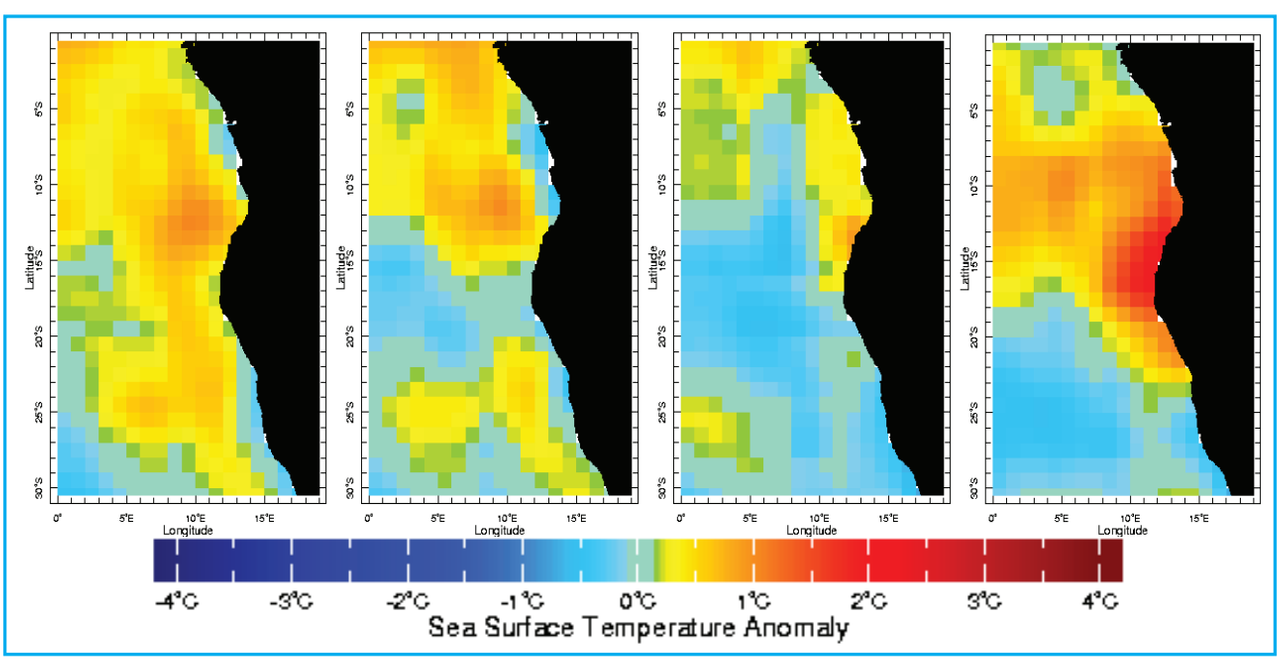
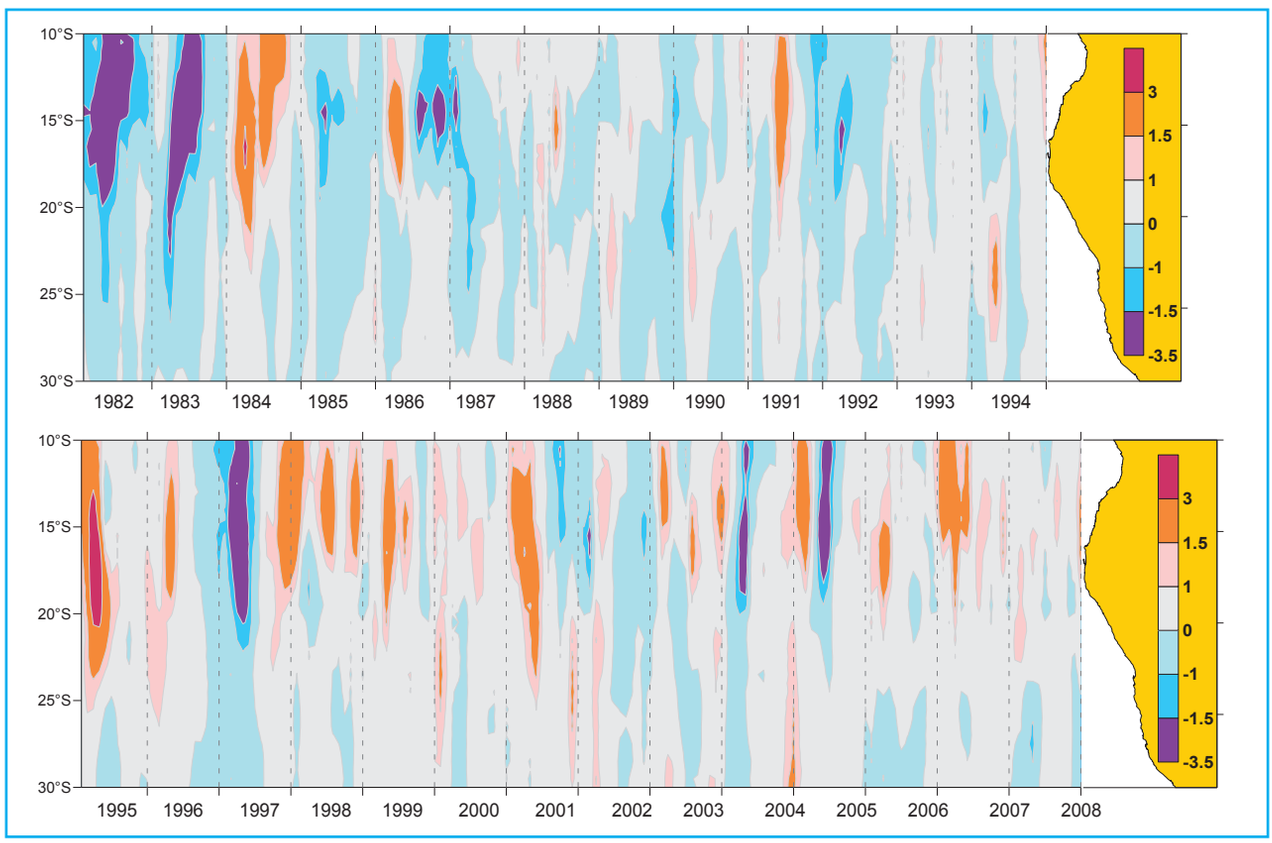


Figure 2: Monthly SST anomalies off central Namibia between September and December 2008

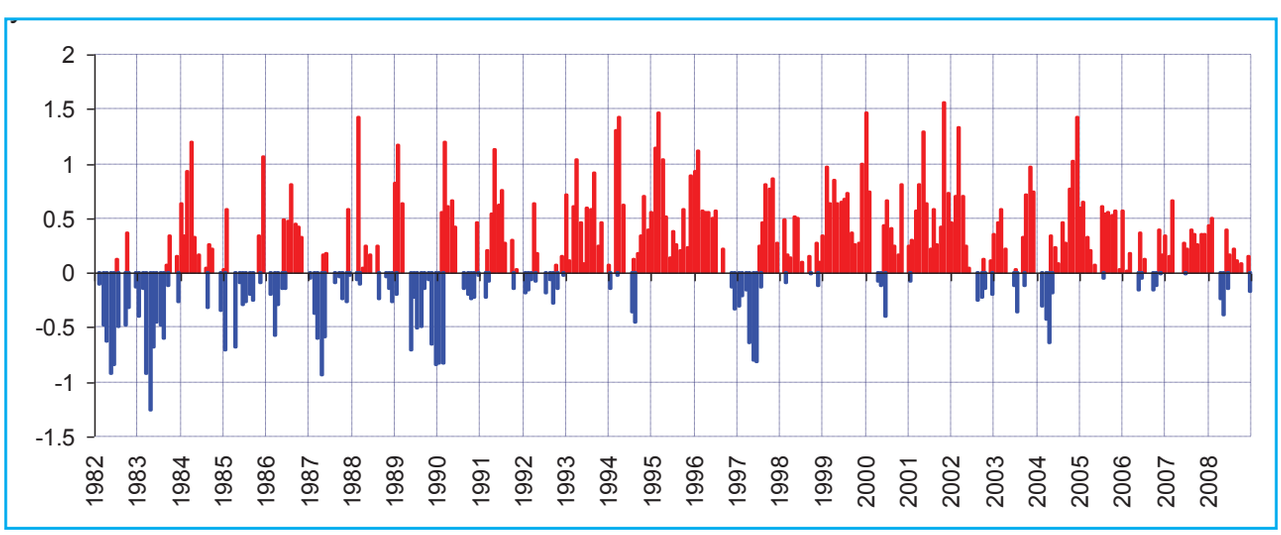
Figure 3 represents SST anomalies along the Angolan and Namibian coastline over the past 26 years and gives us both a special and long-term perspective of temperature trends in our region. Although we have not experienced any major warming event during the past year it is also evident from the graph that the last



significant cool anomaly occurred in 2004. SST conditions during the past year were consistently above the long-term average (except in the far south), although only slightly (between 0.2-1.5°C above average).

Figure 3: Monthly SST anomalies along the southern Angolan and Namibian coastline since January 1982.

Figure 4 represents monthly SST anomalies over the entire Namibian shelf as a time series. The positive



temperature anomaly trend that started in the early nineties is still continuing although the magnitude of it has decreased and has been around 0.5°C over the past three years.

Figure 4: Monthly SST anomalies for the Namibian shelf region (17-30S) since January 1982

Wind: Wind induced coastal upwelling is the most important oceanographic process along the Namibian coast as it stimulates primary production in the sunlit zones through the enrichment of the surface water with nutrients. The Diaz Point (Lüderitz) time series of wind speed and direction is used to create a coastal upwelling index for the southern Namibian coast. Figure 5 illustrates the monthly wind-stress anomaly at Lüderitz, which is the main upwelling centre in the Benguela system. It is clear from the graph that upwelling has been below average since the 1999/2000 seasons and that the downward trend since 1992/3 fits well with the temperature trend shown in Figure 3.

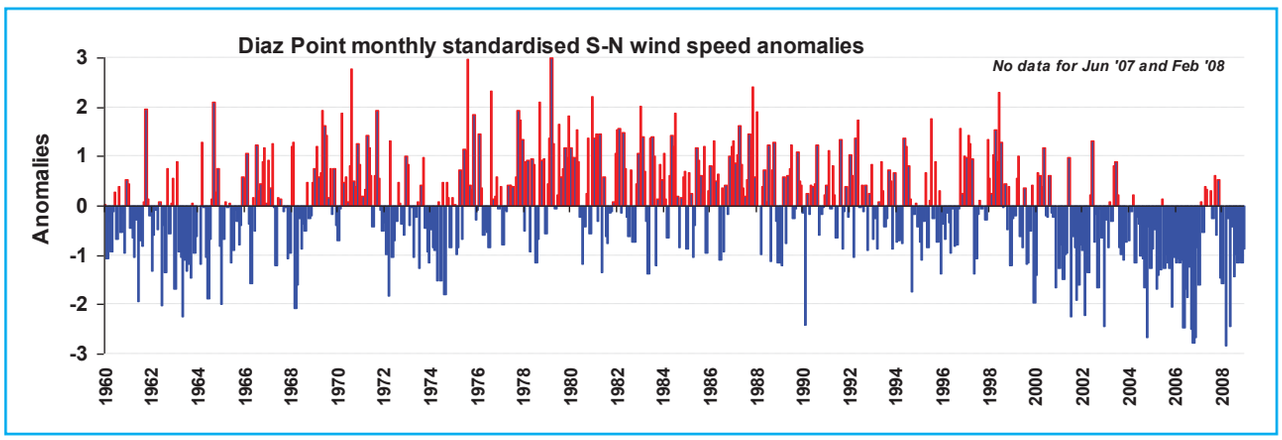


Figure 5: Monthly alongshore wind anomalies recorded at Diaz Point, Lüderitz – red indicates stronger than average southerly winds and blue indicates below average winds. These southerly winds are directly responsible for upwelling along this part of the coast.

Oxygen: Dissolved oxygen is one of the key environmental variables influencing the habitat suitability in biologically productive systems such as the northern Benguela. Species that are not adapted to hypoxic (<2.0 ml/l) and even anoxic (0.0ml/l) conditions would be constrained both vertically and horizontally by oxygen poor water. However, fish species occurring in coastal upwelling regions, such as the Benguela system, have adapted either physiologically or behaviourally to survive in these extreme conditions. The low oxygen index in Figure 6 illustrates both seasonal and inter-annual variability. Larger volumes of oxygen poor water usually appear during summer/autumn due to local oxygen consumption. In winter/spring the bottom oxygen conditions improve as a result of upwelling that transports oxygen richer water onto the shelf area. Oxygen conditions over the Namibian shelf have been favourable between 2006 and 2008, the only period where levels dropped significantly below the long-term average (blue dashed line) was in autumn 2007. The central Namibian shelf was covered in a layer of low oxygen water at the beginning of December as seen from the drop in the oxygen index values to 89% and 47% for the % central shelf water >0.5ml/l and >2.5ml/l respectively. This was to be expected due to the increased mineralization during the spring/summer primary production peak as well as due to the seasonal summer pole-ward advection of the tropical hypoxic waters off Angola.

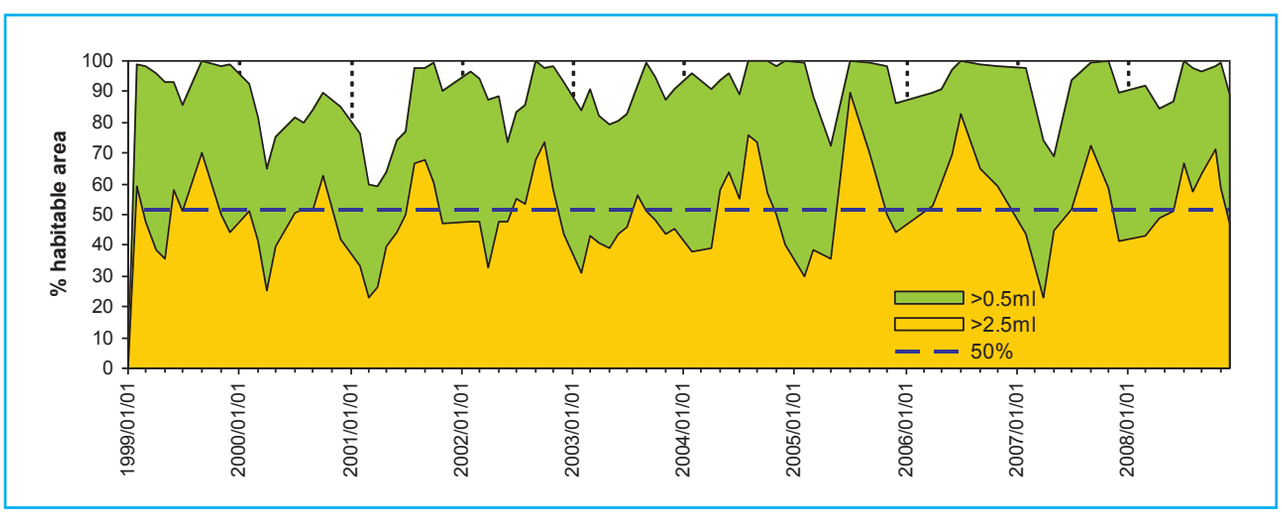


Figure 6: Percentage habitable area of water with dissolved oxygen content ≥2.5ml/l (yellow) and ≥0.5ml/l (green) on the central Namibian shelf (up to 50nm). The value ≥2.5ml/l is the lowest threshold for successful survival of pilchard eggs and larvae. The dashed line indicates the level of the historical mean for the 2.5ml/l oxygen level

Phytoplankton: Figure 7 shows a monthly chlorophyll-a (top panel) and chlorophyll-a (lower panel) anomaly index, representing these parameters in a 60km band along the southern Angolan and Namibian coastlines. Time is represented on the Y-axis (vertical) and latitude on the X-axis (bottom), 10S in off central Angola and 30S just south of the Namibian southern border. The highest chlorophyll-concentrations are usually found off central Namibia, which is located downstream of the strong Lüderitz upwelling cell. The strong upwelling areas such as Luderitz are usually characterised by low phytoplankton production (yellow areas top panel)

due to high water turbulence – that is also true for the far northern Namibian and southern Angolan shelf areas where intrusions of nutrient poor Angolan water is responsible for the low production. This usually occurs from December to March. The central and northern Namibian shelf areas experienced very high chlorophyll-a levels (above average) during much of 2008 as shown both on the chl-a and chl-a anomaly chart (dotted ellipse). The white data gaps in 2008 represents periods where the satellite experienced problems.

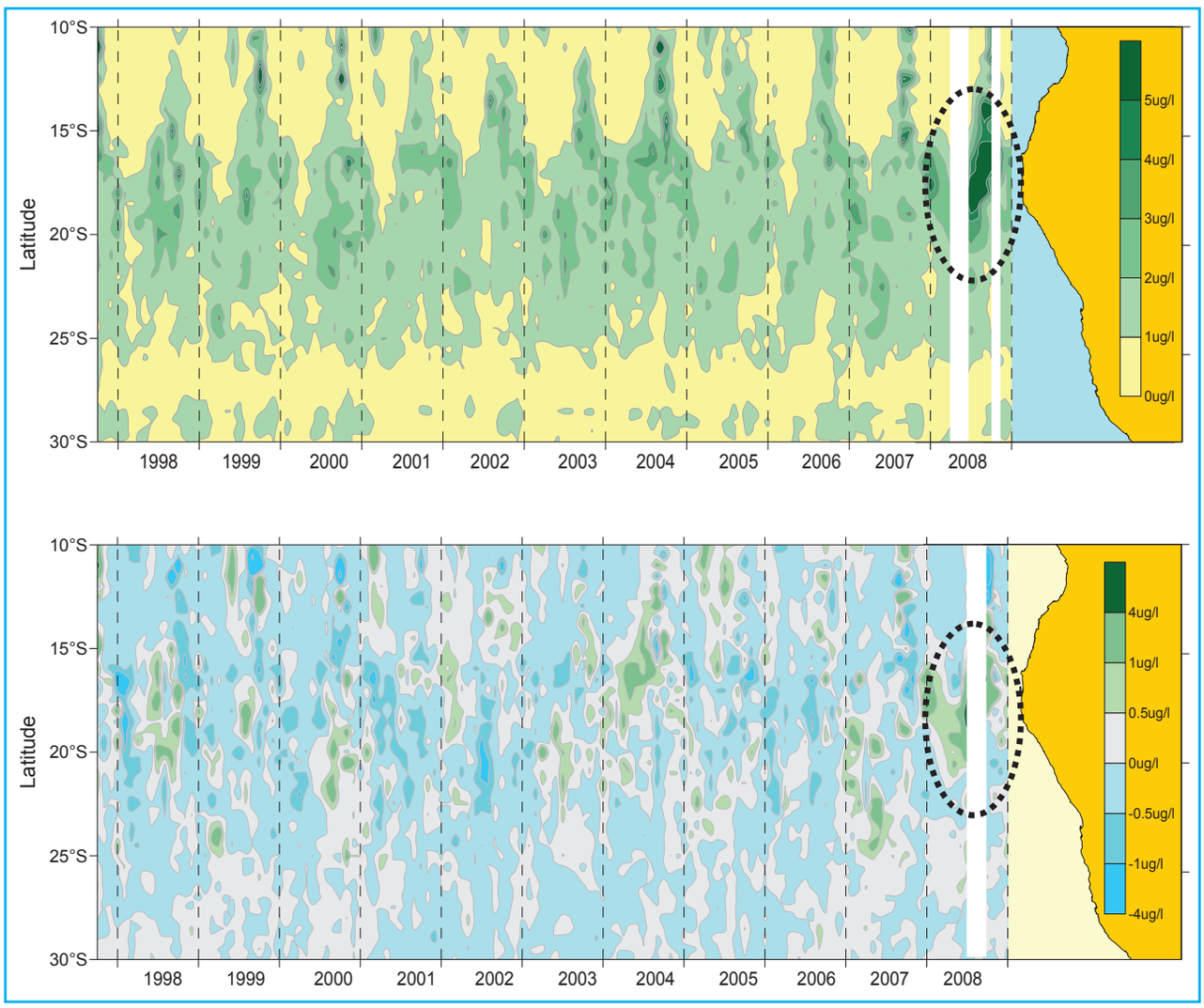


Figure 7: Time series of chlorophyll-a concentration (top panel) and the anomaly thereof (lower panel) along the southern Angolan and Namibian coastlines since September 1997

Figure 8 represents chlorophyll-a and sea surface temperature values recorded at the Swakopmund jetty during the past year. It is very striking from this series that as soon as SST values increase the chlorophyll-a concentrations follow. SST usually increases during calm weather conditions as stratification of the water column takes place – this favours algal or phytoplankton growth in the presence of high nutrient concentrations, which is usually the case in upwelling systems. The 2008 season will be remembered for the rock lobster mortalities that occurred between Walvis Bay and Swakopmund in late February and early March. These walk-outs were all associated with severe “red tides” and subsequent hypoxia. The aquaculture industry in the Walvis Bay harbour was also affected by these events.

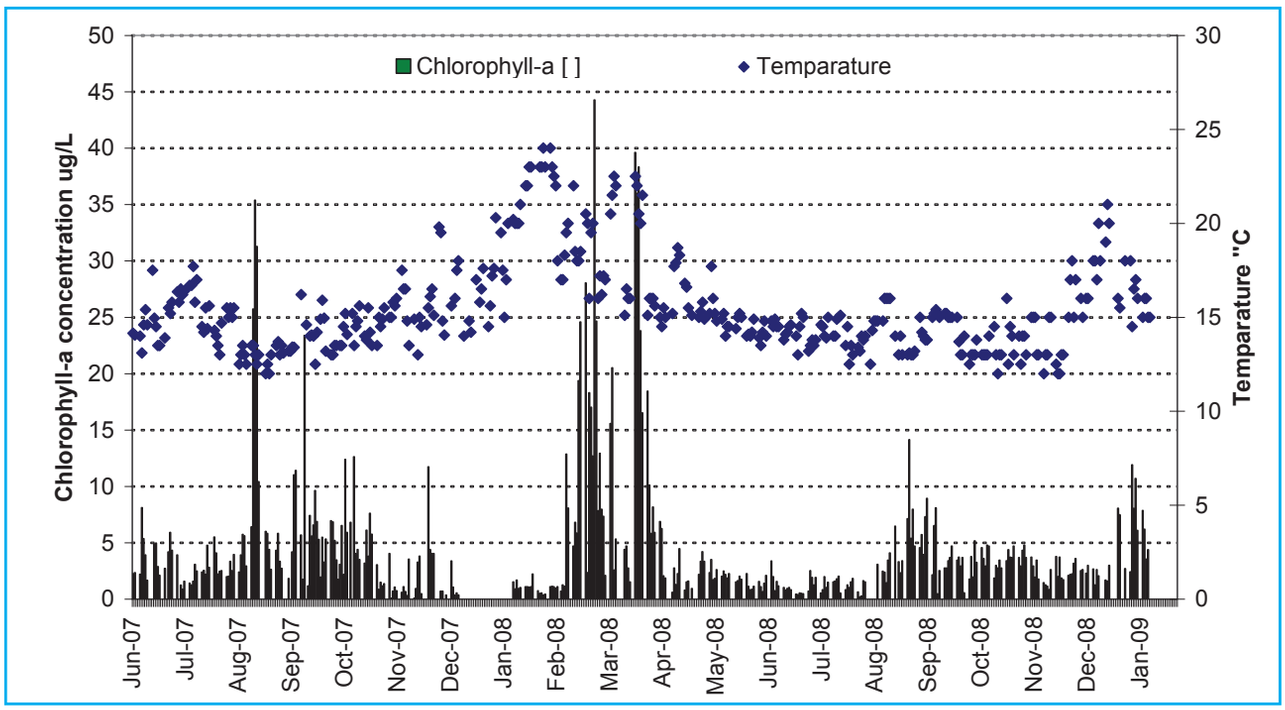
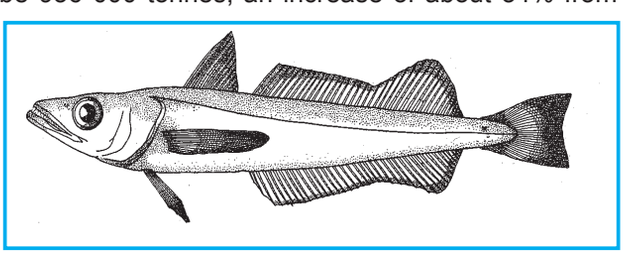


Figure 8: Daily jetty measurements of chlorophyll-a concentration and temperature at the Swakopmund jetty.

2.2 STATE OF THE MARINE RESOURCES

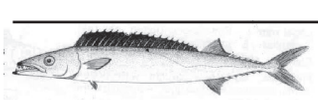
HAKE

The January/February 2008 swept-area biomass survey showed the total relative abundance estimates to be 936 000 tonnes, an increase of about 34% from the previous year of 701 000 tonnes. This increase in abundance was a result of a huge increase in the biomass of the fishable stock (hake larger than 35 cm) that increased by about 186%. This increase in turn could have resulted from the two very strong recruitments of 2002 and 2004 year classes, or perhaps as a result of newly introduced management measures for the hake stocks. The age structured production model (ASPM) estimated the stock to be way below the maximum sustainable yield (MSY) and can therefore not sustain annual catches of 160 000 tonnes or higher.

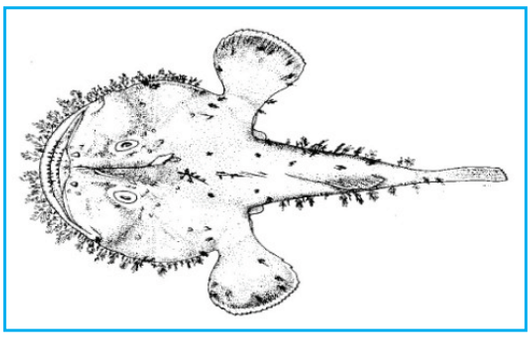


The 2008 recruitment potential estimate was also not strong, and the long-time series catch rates have been very low (around 600 kg/hr) since 2002, much lower than in the early 1990. However the 2008 year has seen an improvement in the CPUE for both trawlers and long-liners.

Additional conservation measures which were introduced on 1st of May 2006 are still in force for the hake trawling sector. These measures included a first ever closed season during the month of October each year, in order to protect the breeding stock and allow spawning to take place without disturbance.



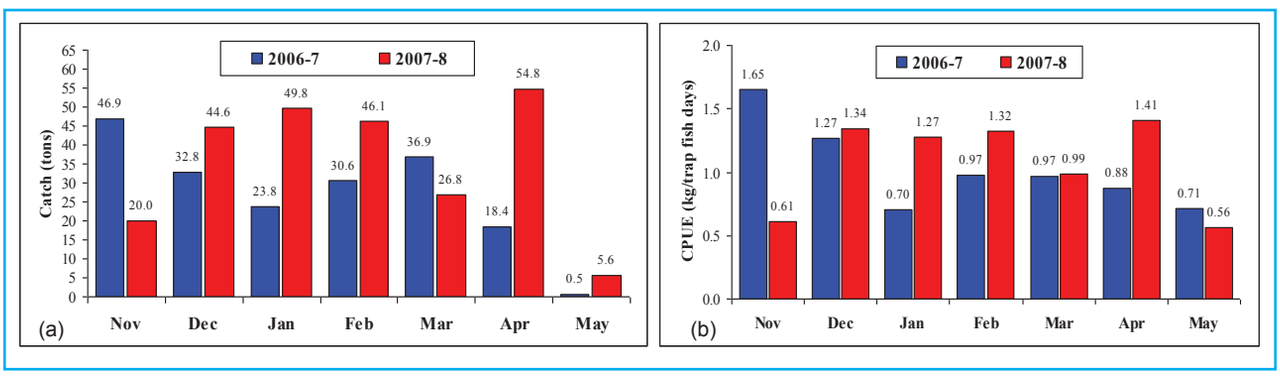
MONK



The November 2008 swept-area biomass survey estimates showed the relative abundance of monkfish stock to be 18 000 tonnes which is an increase of about 20% from the previous year. As length at 50% maturity is estimated to be around 30 cm about 59% of the estimated biomass in 2008 was immature fish (fish between 10 and 30 cm). This fish class recorded a 9% decrease while the class of fish smaller than 10 cm recorded a 1.5% decrease when compared to the previous survey. The decrease in biomass of fish in the two fish class is worrisome as they indicate poor recruitments. Despite the low biomass estimates in 2008, the CPUE has increased while the catch at length data indicates a healthy stock. Although there is slight increase in the recent biomass survey estimate, it is still very low and does not significantly differ from that of the previous year.

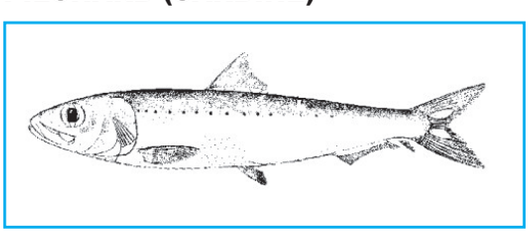
ROCK LOBSTER

During the 2007-8 commercial fishing season the Rock Lobster Industry managed to fill 76.8% (264t) of the season's 350t TAC. This 30.7% improvement in fishing performance, from that of the 2006-7 season, was primarily due to the higher monthly catch rate (Fig. 9a) of 2007-8 (an average of 44 kg/month) over that of the 2006-7 season (which averaged at 21.5 kg/month). The overall good performance by the industry is also evident in the seasonal Catch-per-unit-effort (CPUE: Fig. 9b) which increased from 1.06 kg/trap (of the previous season) to 1.34 kg/trap for the 2007-8 season.



Statistics obtained from observer data revealed that with the exception of Saddle Hill, females generally made up the majority (>50%) of the catches sampled during the 2007-8 fishing season. For the catches sampled on the northern fishing grounds the male and female modal size class ranged between 54 and 64 mm while on the central and southern grounds lobsters with carapace lengths of 60 mm dominated the samples – which, in both cases, are below the legal size limit. A very small proportion of the hauled catch consisted of legal sized lobsters. At all the fishing grounds sampled the male legal-sized lobsters generally made up <25%, and the females <10%, of the overall number of lobsters handled by the fishermen. This means that, on average, 88.6% of the lobsters that were hauled on-deck and sorted by the fishermen were thrown back into the ocean – which is a considerable amount (approx. 2 051 tonnes based on the 2007-8 statistics).

PILCHARD (SARDINE)



In 2008 two pilchard-directed surveys were conducted. There was some biomass increase from around 106 000 tonnes in March to 135 000 tonnes in October. This increase is mainly due to growth of the individual fish. The 2007/2008 recruitment-season was extremely poor. The stock currently consists of only one strong cohort. The stock assessment model also confirms the critical state of the stock and gives a bleak prognosis for end 2009 and for 2010 due to the lack of recruitment (Figure 10).

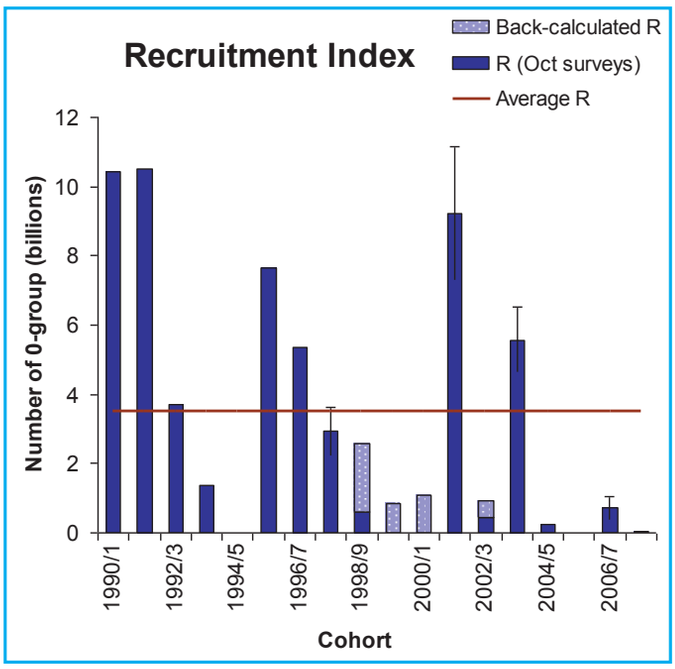


Figure 10: Recruitment index as estimated by October surveys

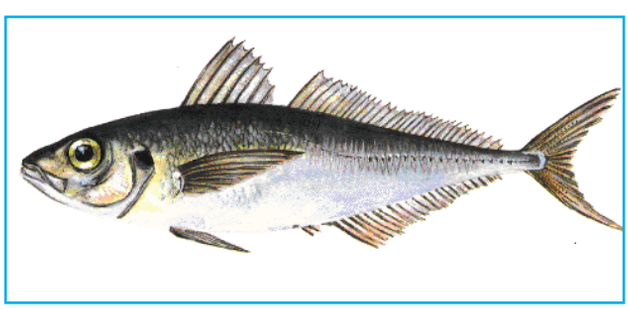
The pale bars indicate back-calculated values from the following March/April surveys and the red line represents the average since 1990/01. Error bars are shown where available.

This year there was again a high amount of pilchard by-catch in the purse seining for industrial fish. The change in timing of the TAC announcement from March to November shall hopefully solve this problem in future. About 24 000 tonnes of pilchard were caught in 2008, while the TAC was 15 000 tonnes.

The catch distribution showed some catches in the northern horse mackerel grounds before the TAC was issued. Thereafter pilchard was caught offshore around Walvis Bay and inshore around Sandwich Harbour and Conception Bay. The catches had a single modal length of 22 cm.

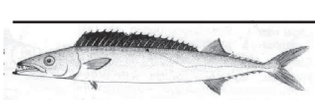
10

HORSE MACKEREL



Since the 2008 acoustic biomass survey did not take place, the horse mackerel stock statistics for 2008 are based only on commercial catch data from both the Mid-water and the purse seine fisheries. The annual average midwater catch-per-unit effort (CPUE) has increased in 2008 to 12.2 tonnes/hour from an average of 8.9 tonnes/hour recorded in 2007. This may indicate an improvement in the general state of the horse mackerel stock, but CPUE is more an index of the shoaling behaviour of the fish than an index of abundance.

A total allowable catch (TAC) of 230 000 tonnes was allocated for the 2008 fishing season. The midwater fleet landed about 176 996 tonnes and the Purse seine fleet landed approximately 10 000 tonnes. The mean length of fish landed by the mid-water fleet was 21.7 cm total length, increasing with 1 cm from 20.7 cm total length recorded during the 2007 fishing season. The total catch for 2008 was 186,996 tonnes for the two fisheries targeting horse mackerel.



LARGE PELAGICS

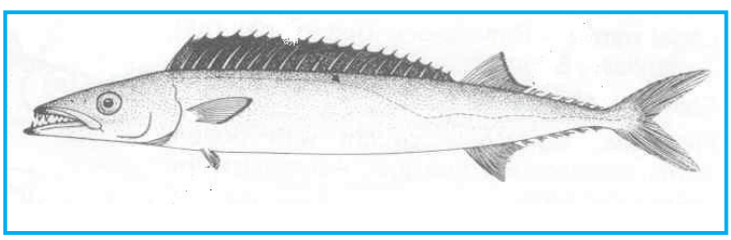
The three most important tuna and tuna like species caught in Namibian waters are albacore tuna, big-eye tuna and swordfish. Since 2001 the industry also started targeting blue and shortfin mako sharks.

Albacore is usually the most commonly caught, but in 2008 the catch was only 330 tons, just more than a third of the 1195 tons landed in 2007. Similarly, for bigeye tuna only 63 tons were caught in 2008 which is less than half of the 151 tons landed in 2007. Swordfish catches have increased slightly from 1 037 tons in 2007 to 1 164 tons in 2008. This is the highest landings of swordfish recorded since the fishery commenced.

In 2008 the shark fishery's catch for blues was 3 066 tons compared to the 3 700 tons harvested in 2008. Short-fin mako catches declined significantly from 1001 tons in 2007 to only 600 tons for 2008.

LINEFISH SECTOR

Snoek



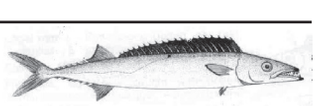
As snoek is a highly migratory species, no annual TAC is given out to lineboats to catch snoek. They only harvest what is annually available to them. However, kob catches (by this fishery) was almost zero over the last 6 years and therefore right holders target only snoek. With the conversion of the traditional wooden lineboats, using ice for preserving the catch, to freezer lineboats (2001) they can now produce high-value fresh/frozen snoek instead of low-value vlekked & salted snoek as in the past. Snoek is also caught relatively close to Walvis Bay and the new fresh/frozen products make it a much more profitable species to target.

As kob catches has dwindled to almost zero over the last 5 years catches of snoek had shown exactly the opposite trend, from 500 tons caught in 2001 to an average high of ± 1500 tons maintained over the past five fishing seasons, except for only 800 tons caught in 2006. For 2008 a record total of 2679 tons of snoek were caught and 24 tons of kob (up to April, as from then the lineboats may not target kob).

Silver Kob:

Historically, silver kob was the most important component of the line-fish fishery off Namibia and was caught by recreational shore anglers and ski-boats, and commercially by line-boats and some ski-boats. However, since 2001 the line-boat industry switched to freezer line-boats mostly with which they could deliver a better frozen product. For the last 6 years the amount of kob caught declined sharply to zero tons in 2007 and 24 tons in 2008. Since April 2008 the lineboat industry may not target kob but only snoek. Total anglers catches for 2008 was approximately 56 296 kob (average 2.5kg) which relates to about 140 tons which shows a 19% decrease from the 2007 catches.

For the last five years, significant "kob runs" occurred in the Sandwich and Meob Bay spawning grounds which indicates good recruitment. These annual events did not happen between 2002 and 2004.



West Coast Steenbras:

Two distinct West Coast steenbras populations occur in Namibian waters namely a closed and separate population at Meob Bay situated in a closed area and is therefore unavailable to recreational anglers. Recreational anglers exploit only the northern population, occurring in the open angling area.

In 2008 recreational anglers caught about 7 125 West Coast steenbras which relates to approximately 207 tons, a decrease of 67.7% from 2007. In order to protect the smaller-sized males as well as the larger-sized females, management regulations are 1) a daily bag limit of 10 fish per angler, 2) a minimum size limit of 40cm, and 3) the daily bag limit allows an angler to retain only two West Coast steenbras larger than 65cm.(list them all accordingly)

CAPE FUR SEAL

During the 2008 harvesting season the seal industry managed to fill 50.1% and 75.5% of the allocated 85 000 pup and 6 000 bull TAC, respectively. Maternal body condition and pup growth rate are correlated positively with prey abundance. If food is abundant, mothers make shorter foraging trips and feed their young more often. Therefore, when food abundance is high, seal mothers can produce more milk for their offspring. Pup growth and birth weight are both used as indicators for food availability to the females during lactation and pregnancy. The average birth weight for the 2008 cohort was 6.2 kg and 6.07 kg for Cape Cross and Wolf/Atlas Bay, respectively. Above average birth weights were prevalent at Wolf/Atlas Bay and Cape Cross for the 2008 cohort.

These weights indicate that prey availability was very good for females during the gestation period of the 2008 cohort. Pup growth monitoring studies during 2008 indicated an average winter pup growth of 21.5 g-day at Wolf/Atlas Bay. From only three years of available data, Cape Cross illustrated a very high pup growth rate of 58.3 g-day, this indicates that prey availability was very good during the lactation period of the female at the Cape Cross area. Pup growth variability between and within years, at Wolf/Atlas Bay and Cape Cross, are attributed to spatial and temporal variability in prey availability. The post-weaning survival index gives an indication of the percentage of pups, weighed at weaning, that are above the critical average weaning weight. This index for 2008 was 99 % and 95 % for Cape Cross and Wolf/Atlas Bay, respectively. A high probability of pup survival after weaning is thus expected.

3 MONITORING, CONTROL AND SURVEILLANCE (MCS)

3.1 SEA SURVEILLANCE

In contrast to the previous years, the patrol vessels undertook fewer voyages. The two vessels mostly guarded Mid-Water trawlers which the Namibian State seized in October 2008. For instance, P/V "Nathaniel Maxuilili" only carried out two patrol missions of the EEZ. The vessel made 18 observations and conducted 25 inspections. She also participated in the Lüdertz Rock Lobster festival in April 2008. On her part, P/V "Anna Kakurukaze Mungunda" undertook one patrol mission of the EEZ. She made 38 observations on fishing vessels during the voyage.

Inspectors onboard the patrol vessels issued five summons for which fishing vessel operators paid N$2 100, 00.

Patrol Vessel	Days at Sea	Distance	Number of Inspection	Number of Observation
Nathanael Maxwilili	107 days	3159 NM	25	18
Anna Kakurukaze Mungunda	128 days	1494 NM	-	38
Total	**235 days**	**4653 NM**	**25**	**56**

3.2 AIR SURVEILLANCE

Air surveillance activities are mainly launched from Arandis Airport in Erongo region. However, to enhance effectiveness and efficiency, southern air patrols are often launched from Luderitz with far northern overnight patrols from Mowe bay.

Figure 11: The Sea Eagle II ready to take off from Möwe Bay

Table 5: The table below shows the air surveillance activities by *Sea Eagle II during* 2008

Fix Wing Plane	Patrol Missions	Distance Covered	Flying Hours	Fuel Consumption	Observation
Sea Eagle II	51	35 113 NM	191 HRS	54 346 Litters	648

3.3 COASTAL PATROL AND INLAND INSPECTIONS

- Walvis Bay MCS Office undertook 1793 missions, covering a distance of about 481 485 km. A number of 58 roadblocks were jointly attended with the Namibian Police, Immigration Officers and Traffic Officers during 2008.
- Inspectors issued 1191 summons during the operation. Offenders paid N$ 215 970.00 on 886 summons. N$72 840.00 on 305 cases remained outstanding.
- Inspectors also opened 13 case dockets at Henties Bay and Walvis Bay police stations. Six cases were remanded to 2009. The Prosecutor withdrew three case dockets, while four cases were paid for in the amount of N$10 000.00.
- Lüderitz MCS Office undertook 598 coastal patrol missions, covering 39 992km. Areas covered include Agate Beach, Diaz point, Halifax, island, Angra point, Grossebuchk, Hottentots bay and Boggenfels. Some 34 roadblocks were jointly set up with the Namibian Police, Immigration Officers and Traffic Officers during the Easter, Christmas and New Year festive seasons.
- Inspectors recorded 46 cases of non-compliance during these operations. Offenders paid N$10 950, 00 while N$ 1 800, 00 remains outstanding. Inspectors have also issued three warnings on minor cases.

3.4 MONITORING OF FACTORIES AND PORTS

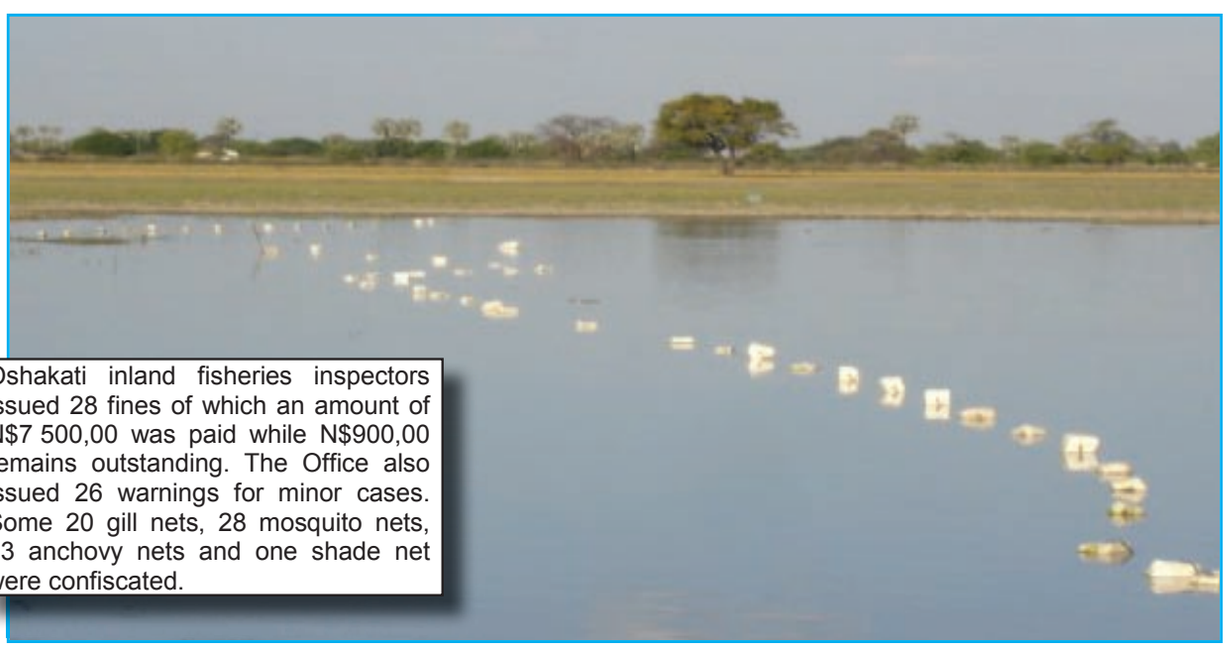
The monitoring of fishing related activities is continuously performed at the ports and processing plants. The Ministry recorded 83 cases of non-compliance of which 74 were reported from Lüderitz while 9 from Walvis Bay. Offenders at the ports and processing plants paid N$34 800, 00.

3.5 COOPERATION WITH LINE INSTITUTIONS

The Fisheries Observer Agency (FOA) supplements the MCS activities of the Ministry. FOA places observers onboard the fishing vessels to observe, record and report non-compliance with the fisheries legislation. In 2008, the Agency reported 63 cases to the Ministry. Walvis Bay Office recorded 48 cases while 15 were reported in Lüderitz. The Ministry issued 54 summons for which N$16 500.00. Also, the inspectors opened case dockets on two serious cases were opened.

3.6 MONITORING OF INLAND FISHING ACTIVITIES

- The monitoring of inland fishing activities is conducted from MCS Offices in Oshakati, Rundu, Katima Mulilo and Lüderitz. Oshakati Office undertook 152 missions, covering 34 646 km.



Oshakati inland fisheries inspectors issued 28 fines of which an amount of N$7 500,00 was paid while N$900,00 remains outstanding. The Office also issued 26 warnings for minor cases. Some 20 gill nets, 28 mosquito nets, 13 anchovy nets and one shade net were confiscated.

Figure 12: New fishing methods are being developed for inland fishery. Figure12, is an example of recently developed logline fishing method at Oukwa wa Nanyanga in Outapi –Constituency, Omusati Region.

- Rundu Office undertook 212 missions, covering a distance of 47 872 km on land, and 1 315 km on the rivers. The office issued 42 fines of which N$9 150.00 was paid while N$4 200.00 remains outstanding. Inland inspectors have also issued 34 warnings for minor cases. Some 54 gill nets, 12 shade nets, 76 mosquito nets and 15 kg of tilapia were confiscated during the operations.

Figure 13:
Directorate of Operation's Senior Officials inspecting a blockage put across one tributary of Kavango River.

- Katima Mulilo Office undertook 227 missions, covering a distance of 36 334 km on land, and 3 179 km on the rivers. The office issued 71 fines of which an amount of N$8 300.00 was paid while N$8 950.00 remains outstanding. Some 17 warning were issued for minor cases. Inspectors confiscated 37 gill nets, 2 fishing rods and 10 dragnets during the operations.

- Lüderitz MCS Office undertook 11 inland fishery missions, covering Karas and Hardap Regions. Further, Lüderitz inspectors participated in four joint-cross border operations with their South Africans counterparts. Nine fines to the amount of N$1 950 were issued to fishers found harvesting fish with gill nets in Karas and Hardap Regions. One offender was caught red-handed with 54 fish while fishing with 2 nets in the Orange River.

4 THE ECONOMICS PERFORMANCE OF THE FISHING SECTOR

During the year 2008, the economic climate in the Marine Fisheries Sector was dominated by significant investments both onshore and offshore. A large number of companies sought to improve their catch and production levels by modernising their operations. This was evident by the fact that there was an unprecedented amount of fleet renewals and construction of improvements to onshore infrastructure witnessed especially in the demersal fisheries. This is to enhance the already excellent quality of Namibia's fish and fish products. The sector is highly dominated by twelve commercial quota species of which seven are important to the Namibian economy.

4.1 NUMBER AND DURATION OF FISHING RIGHTS

The total number and duration of existing fishing rights in 2008 was 155. The duration of the fishing rights vary from seven to twenty years respectively. And, this is reflected in all fisheries as indicated below in table6. The fishing rights are widely held by Namibians. Since the introduction of twenty years terms of fishing rights, no person or company qualified for the fishing term. Orange Roughty fishing rights holders are not in operation due to a three year moratorium in place. Evaluation of all seven and ten year rights that was due to expire in early 2008 was reviewed during 2005.

Table 6: Number and Duration of Existing Fishing Rights, 2008

FISHERY	DURATION OF RIGHTS				TOTAL
	SEVEN-YEAR	TEN-YEAR	FIFTEEN-YEAR	TWENTY YEAR[1]	
Hake	1	13	24	0	38
Monk	0	4	5	0	9
Horse Mackerel	0	7	5	0	12
Large Pelagic	0	3	16	0	19
Red Crab	0	2	1	0	3
Rock Lobster	0	1	20	0	21
Line Fish	1	1	9	0	11
Orange Roughy	0	3	0	0	3
Pilchard	2	8	12	0	22
Mullets	0	0	13	0	13
Seals	0	1	2	0	3
Guano	0	0	1	0	1
Total	**4**	**43**	**108**	**0**	**155**

Source: MFMR, 2008

4.2 VESSEL LICENCES

A total of 292 vessels were licensed for commercial purposes in the Namibian EEZ during 2008, as compared to 277 vessels that were licensed in 2007. This represents an increase of 15 vessels in 2008 when compared to an increase of 8 vessels during 2007. The slight increase was due to large pelagic fishery that is involved more in chartered vessels. Furthermore, a slight increase was noted in the Demersal trawlers during the reporting year. It was also observed that some fishing fleets had adapted themselves to new conditions dictated by low TAC.

Table 7: Number of Licensed Vessels by fishery, 2004 – 2008

FISHERY	2004	2005	2006	2007	2008
Small pelagic	16	17	16	9	11
Demersal Trawlers	125	121	78	87	91
Long-liners	17	28	39	30	18
Mid-water	24	15	10	13	10
Deepwater	5	4	4	2	0
Large pelagic	73	52	65	67	88
Line-fish	16	16	15	15	15
Crab	2	2	2	2	3
Rock lobster	34	28	18	32	31
Monk	22	25	22	20	25
TOTAL	**334**	**308**	**269**	**277**	**292**

Source: MFMR, 2008

4.3 TOTAL ALLOWABLE CATCHES

The setting of Total Allowable Catches is one of the main management tools to enhance the conservation and sustainable use of Namibian fish stocks. TACs are set for most commercial species in Namibia. Table 8 shows the TACs as set per fishery from2004-2008. For the past three years the TAC of all species remained constant except for horse mackerel in 2008.

Table 8: Total Allowable Catches, 2004-2008, tons

YEAR	PILCHARD	HAKE	HORSE MACKEREL	RED CRAB	ROCK LOBSTER	ORANGE ROUGHY	MONK
2004	25 000	195 000	350 000	2 200	420	2 600	12 000
2005	25 000	180 000	350 000	2 300	420	2 050	11 500
2006	25 000	130 000	360 000	2 400	420	1 100	9 500
2007	15 000	130 000	360 000	2 500	350	900	9 500
2008	15 000	130 000	230 000	2 500	350	900	9 500

Source: MFMR, 2008

Namibia is a member of ICCAT and is granted quotas in various Tuna and Tuna like species (see table 9). The allocation started with swordfish quota to Namibia in 2002 for the period 2003 - 2006 at 890 tons in 2003 and gradually increased to 1,140 tones by 2006. Available landings information indicates that the 2006 swordfish quota for Namibia (1,140 tonnes) was over-caught by no less than 440 tonnes.

Table 9 indicate the swordfish quotas for Namibia during the past five years according to the sharing arrangement. This is the second time that Namibia has been allocated a quota for swordfish. Namibia's allocation is the fourth largest allocation among a group of 19 countries and the highest among the 7 African States participating in this fishery. This is an important precedent and advantageous position to maintain and strengthen at ICCAT fora.

Year	2004	2005	2006	2007	2008
Swordfish[2]	1009	1070	1140	1,400	1,400
Albacore TAC[3]	27 500	27 500	27 500	27 500	27 500

Source: ICCAT

Amongst the ICCAT managed species, southern albacore is the most important resource for Namibia, in 2008 a roll over was recommended to continue until the next stock assessment has been completed. Namibia is allowed to catch up to 2 100 tonnes of big-eye tuna per year through a sharing arrangement

4.4 LANDINGS

The total catch for the period 2008 amounts to 335 883 metric tons as compared to the previous corresponding period in which 367,897 metric tons was landed. This reflects a decrease of 9%, which is evident in all fisheries except Rock Lobster. This landing excludes seals culling, which is reflected in the table below.

Table 10: Landing[4]s of Quota Species: 2004-2008

Species	2004	2005	2006	2007	2008
Pilchard	28,605	25,128	2,314	23,522	18,755
Hake	186,305	173,902	135,771	125,534	117,286
Horse Mackerel	310,405	327,700	309,980	201,660	186,996
Monk	8,961	10,466	9,816	8,932	7,270
Crab	2,400	2,408	2,228	3,245	2,100
Rock Lobster	214	248	285	153	195
Orange Roughy	1,778	300	545	255	0
Tuna	3,581	3,654	2,903	4,596	3,281
Total (MT)	**542,249**	**543,806**	**463,842**	**367,897**	**335,883**
Seals (Numbers	**59,407**	**64,167**	**83,045**	**34,728**	**47,603**

Source: MFMR 2008

The decline in some fisheries such as hake production can be attributed to right holder's compliance with conservation and management measures.

Migration of adult fish to the closed areas especially in the hake long line and bottom trawl could also be an attribute to the decline. This is evident especially during August month in which only a few tons of hake were landed.

As for the Horse Mackerel, there was a huge reduction in the TAC during 2008 and yet some right holders could not land their quotas fully.

It's also important to note that 30 000 metric tons from the horse mackerel TAC is normally allocated to small pelagic for the purposes of fish meal and oil production. Orange Roughy on the other hand remains in moratorium.

The table below indicates the landing of by-catches and other species.

Table11: Landings of By-catches[5] and non-quota species 2004-2008

Species	2004	2005	2006	2007	2008
Kingklip[6]	7,067	5,567	4,493	4,366	3,424
Others	31,997	18,834	39,891	40,408	12,973
Total (MT)	39,064	24,401	44,384	44,774	16,397

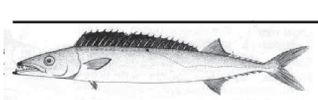
Source: MFMR 2008

Total Landings for By-catch and other species has dramatically reduced by 63% during the 2008 period as compared to the corresponding period. This implies that a few by-catch species were caught during the reporting period.

4.5 CATCH VALUE

Table 12 illustrates the three different value indicators for fish and fish products from 2004 to 2008. The first indicator is the landed value of the catch. This is the value of the fish in the form it is landed (i.e.) at ex vessel prices. Landed value reduced by 8.6% between the 2007 and 2008 from N$ 3,772 million to N$ 3,446 million respectively. The decline in the landed value can be attributed to the low landings recorded in 2008 although they are preliminary and might change as final landings become available.

The second indicator is final value which is the value of fishery products in their final form at export (ex factory) prices. As it is shown in table 11 final value is higher than landed value. The difference is accredited to value



addition by onshore fish processing. During 2007, final value was N$ 4,863 million which reduced by 3.6% to N$ 4,668 million in 2008.

The final indicator is export value. This indicator gives the Namibian dollar parity of foreign currency earnings brought into Namibia due to the sale of fish and fishery products. Namibia's fishing industry remains the country's second biggest export earner of foreign currency after mining. Export value reduced by 4% between 2007 and 2008 from N$ 4,711 million to N$ 4,529 million respectively. Whilst, the development of total export of goods illustrate a decline ever since 2004 to 2008. There was a huge decline in 2008 as indicated in the table 12 below.

Table 12: Value of Fish and Fish products 2004-2008 (N$ millions)

	2004	2005	2006	2007	2008[7]
Landed Value	2,531	3,130	3,146	3,772	3,446
Final Value	3,427	3,789	3,985	4,843	4,668
Export Value	3,350	3,697	3,883	4,711	4,529
% of total export of goods	24,3%	22,8%	19%	17.3%	**13%**

Source: MFMR & NPC, 2008

In addition to the low landings, the high costs of fishing had a negative effect on the fishing companies as they had to dig deeper into their pockets. The price of fuel hit a record level of U$140 per barrel in June 2008 from a 2007 average of U$72.32 per barrel. Despite the low landings reported, the favourable exchange rate against the US$ and the € during 2008, Namibia earn foreign gains from its fish and fish products. In 2008, prices have shown an improvement although reductions were picked in some fisheries i.e. a reduction was observed in tuna pole and long line prices.

4.6 EXPORT MARKETS

About 90% of Namibia's fish and fish products are exported in various forms to international markets in the European Union (EU), United States of America (USA), the Far East as well as African markets.

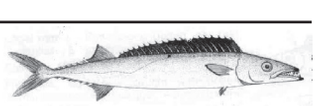
Hake is the most valuable commercial specie in Namibia, and largely dependent on the EU market. Spain provides the biggest market for Namibian hake. During 2007, 71% of Namibian hake and hake products were exported to Spanish market, this dropped to 61% during 2008. The reason is two-fold: the effect of the global economic crisis on the Spanish economy and the attempt by many Namibian right holders to diversify their markets and slowly move away from a large dependency on the Spanish market.

Namibia increased its exports of hake products to South Africa from 13% in 2007 to 16% in 2008. Other notable markets for Namibian hake products are Germany, Portugal, Netherlands and Australia. Hake exports to these markets increase from 16% in 2007 to 18% in 2008. Other non-European markets for Namibian hake are Australia, Malaysia and USA. Recently, the hake market has also come under pressure from the emergence of the Pangasius from Vietnam which under the current economic situation, is seen as a cheaper 'white fish' alternative. Hake is mainly exported in the form of frozen fillets (skin on and skinless); and in other various product forms such as headed and gutted (H&G); baby hake, cutlets, tails, minced, blocks, sausages, glazed hake steaks, pin bone in and pin bone out; wings, roes and prime quality (PQ) fresh chilled products.

The bulk of other commercial fisheries such as monk are also exported to the European markets like Spain, Italy, France, Germany, Netherlands and Portugal. Spain and Italy are the main markets for Namibian monk fish. During 2007, Italy and Spain imported 44% and 53% of Namibian monk respectively. However, in 2008, Spain's imports of Namibian monk decreased to 22% due to the impact of the economic crisis in Spain whereas Italy's increased to 64%. Another reason for the reduction in exports to Spain was the influx of cheaper monk fish from China which is sold at prices far below that of the Namibian monk. Monk has always been a high value product, which has recently been cancelled off many stock items.

The main products of monk are tails, skinless and skin on, and individually wrapped portions (IWP). A small amount is processed into frozen boneless fillets and de-boned tails monk cheeks.

Rock lobster and crab dominate the Asian markets, more specifically, Japan. About 95% of Namibian rock lobster is exported to Japan. In recent years, some Namibian Rock Lobster has also been exported to markets in Spain and the USA. Rock Lobster is exported mainly as whole cooked frozen or as frozen tails. The majority of raw tails are exported to the USA market. The Lobsters are graded in sizes from 20 to72 cm and packed into 10 kg boxes. Lobsters falling in the size range from 52-70 cm fetch the best prices on the market. Namibia



managed to negotiate for the highest prices in 2008. The weighted average prices of rock lobster increased by a whopping 112% from N$130 000/mt in 2007 to N$275 000/mt in 2008 the highest ever.

Horse mackerel is mainly exported to the African markets, namely to the Democratic Republic of Congo, South Africa, Angola, Congo Brazzaville, Cameroon, Mozambique and other SADC countries. Namibia horse mackerel rapidly sells in African markets because of its affordability due to its low fat content and relatively small sizes. Approximately 150 000 metric tones are exported every year. Horse mackerel is exported frozen whole, fresh or chilled whole, frozen fillets, mince/flakes. Some horse mackerel is reduced into fish meal, with fish oil as a by-product. The horse mackerel sector is not engage in significant value addition, however the companies are constantly searching for opportunities to value add. Efforts have been made by some companies to fillet and canned the fish. Average fish oil price is another that saw a massive increase of 189% from N$3700/mt in 2007 to N$10 708/mt in 2008.

Due to higher costs involved, strict measures of buyers' specifications, and tariff structures in most African markets which make processed fish very expensive, the products were faced with tough challenges making it uneconomically viable and stiff to enter markets.

Pilchard in the form of canned products is exported to SA and UK, while fishmeal and fish oil are mainly exported to SA.

Tuna and other Large Pelagic are exported to USA, Japan and Spain. The sector mainly catches and process sharks, tuna and swordfish. The basic product is H&G and fish tail which are exported in a frozen state. Swordfish frozen at sea is generally sold in boneless skin-on fillet form as well as loins. The common value added products from swordfish and Tunas are steaks packed in vacuum pouches or individually quick (IQ) frozen. Blue and Mako sharks are primarily processed into skinless trunks and further processed into steaks and cubes (see Figure 14 below). Albacore is exported fresh.

Figure 14: Blue shark skinless cubes in 5kg box

Figure 15: Albacore tuna skinless boneless vacuum packed loins.

The large pelagic fishery's landed value was about N$1 498 728 in 2007 compared to N$1 306 766 is 2008 Value addition in this sector is still in its infancy stage however, the companies are exploring opportunities. Seals are exported to Norway, Canada, Turkey, China, Middle and Far East. The main products sold to these markets are seal skins, oil and genitals, whilst seal carcass meal is sold locally. Bull skin on average cost N$40 in 2007 compared to N$50 in 2008. Seal oil cost N$1.50/l in 2007 and increased to N$2.50/l in 2008. The average price of seal carcass meal increased from N$2 400/mt to N$2 900/mt in 2007 and 2008 respectively. Genitals stand at a value of N$500/kg since 2006.

Orange Roughy was not exported in 2008 due to a moratorium declared for the next three years.

4.7 CONTRIBUTION TO GROSS DOMESTIC PRODUCT (GDP)

The level of output in the fishing sector can be assessed by looking at its contribution to GDP. Over the past several years, the fishery sector has positioned itself as one of the major contributors to GDP. The sector's contribution to GDP is essentially the gross income earned, wages and salaries, gross profits and indirect revenues from fish production. It does not, include the value of intermediary inputs and it is therefore much less than the value of production.

Table 13 below shows estimates of the contribution of the fishing sector to GDP at current prices, from processing on shore and fishing and fish processing onboard. The revised figures were estimated using rebased prices of 2004 from the previously used base year of 1995. The sector contributed 4.9% in 2007, from the 4.8% contributed in 2006, representing a 0.1% increase.

Table 13: Fisheries contribution to GDP, 2004-2008, at current prices (N$ Million)

GDP Contribution	2004	2005	2006	2007	2008[8]
Fishing and fish processing on board	1,545	1,932	1,948	2,218	2,116
Processing on shore	763	477	657	818	1,066
Total	**2,308**	**2,409**	**2,605**	**3,036**	**3,182**
% of GDP	5.5	5.2	4.8	4.9	4.7

Source: NPC, 2008

4.8 REVENUE GENERATED

The decrease of quota fees and fund levy as shown in table14 below, shows an overall decrease by 64% from N$ 129 509 in 2007 to N$82, 243 in 2008. The decrease in quota fees is attributed to the outstanding quota fees and levies mainly in the hake fisheries. However, stern measures are in place to collect and settle all outstanding fees owed by the fishing industry.

Table 14: State Revenue - 2004-2008 (N$ millions)

Fees	2004	2005	2006	2007	2008
Quota Fees	84,629	81,363	68,299	107,218	59,255
Marine Resource Fund Levy	17,663	17,358	12,446	12,561	12,075
By-catch Fees	16,294	7,699	11,199	9,639	10,837
License Fees[9]	110	111	93	91	85
Total Revenue	**120,292**	**106,531**	**92,037**	**129,509**	**82,253**

Recreational fishing in Namibia is steadily playing an important role through job creation and income earnings. Table 15 shows fishing permits issues during 2008 and generated a total of N$ N$ 931 154.00 from recreational fishing permits.

Table 15: Fishing permits issued and revenue generated: 2008

Monthly Permits issued	No of permits Per month	Amount Paid N$	No of permits Per year	Amount Paid N$	Total Permits Issued	Total Amount N$
January	4 415	N$ 61 810.00	183	N$ 30, 744.00	4 598	N$ 92 554.00
February	4 197	N$ 58 758.00	134	N$ 22, 512.00	4 331	N$ 81 270.00
March	7 520	N$105 280.00	157	N$ 26, 376.00	7 677	N$131 656.00
April	3 902	N$ 54 628.00	74	N$12 , 432.00	3 976	N$ 67 060.00
May	3 154	N$ 44 156.00	113	N$ 18, 984.00	3 267	N$ 63 140.00

5 THE AQUACULTURE SECTOR

5.1 AN OVERVIEW OF THE AQUACULTURE SECTOR

During 2008 the Government established small, medium and large fish farms in 8 of the 13 regions (table 2). Government continued to make substantial investment in the aquaculture sector, with current investment standing at approximately N$62 million, since the inception of the Directorate of Aquaculture in 2004. Developments such as the Kamutjonga Inland Fisheries Institute in the Kavango Region, the Onavivi Fish Feed plant in the Omusati Region; the Ongwediva Inland Aquaculture centre in the Oshana Region and the Fonteintjie Fish Farming Project at Keetmanshoop are indicators of the sectors progress to date.

Mariculture activities along the coast at Walvis Bay, Luderitz and Swakopmund remained promising, with nine farms currently operating, despite challenges from environmental anomalies that affected the shellfish industry during 2008.

5.2 AQUACULTURE REGIONAL OFFICES

During 2008, a new office was established at Keetmanshoop in the Karas Region, bringing the total number of regional offices to seven. Plans were developed to establish regional offices at Leonardville in the Omaheke Region.

5.3 AQUACULTURE SPECIES BEING CULTURED

Oysters (Crassostrea gigas) and abalone (Haliotis midae) remain the primary mariculture species being cultivated along Namibia's coast, whereas tilapia (Oreochromis andersonii) and African sharptooth catfish (Clarias gariepinus) remain the primary freshwater species being cultured throughout the country (Figure 16).

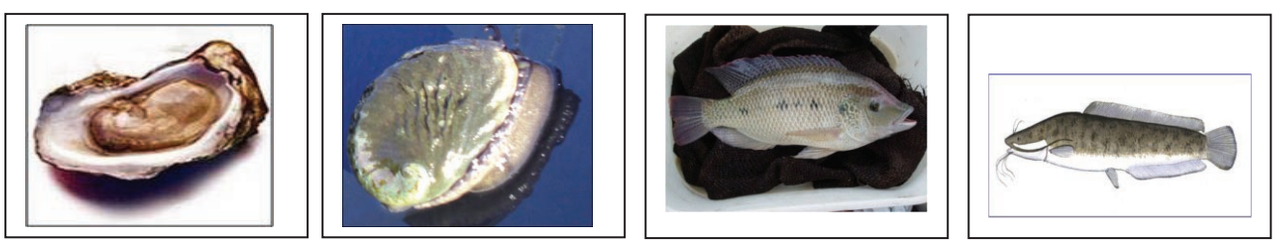


Figure 16 Oyster (left) and abalone (second) are the primary mariculture species; and three spot tilapia (third) and catfish (fourth) are the primary freshwater aquaculture species currently being farmed in Namibia.

5.4 EMPLOYMENT IN THE AQUACULTURE SECTOR

During 2008, the aquaculture sector employed a total of 683 Namibians, with 217 in the mariculture sector and 466 in the freshwater aquaculture sector respectively.

5.5 MARICULTURE

Oyster Industry

The Shellfish mariculture industry was heavily challenged by naturally-occurring climate extremes during 2008. The inshore environment experienced both hydrogen sulphide events and dense inshore blooms of micro algae (harmful algal blooms HABs, also known as "red tides") which affected the growing areas for oysters in the Walvis Bay area. These natural bloom dynamics created conditions of extreme hypoxia (lack of oxygen) in the water, resulting in severe losses of oysters to the mariculture farmers. The conditions did not affect the farmed shellfish only, but also caused heavy mortalities of the endemic shore animals, including rock lobster, octopus, fish and mussels. Despite being heavily hit by this disaster, which left the farmers with little or no stock to carry them through the year, most farmers resumed activities by putting new spat into the water in the winter months.

In June 2008, oysters showed a high incidence of positive testing for DSP (diahrretic shellfish poisoning – a condition caused by a variety of lipophillic biotoxins found in microalgae) which hindered sales. The year 2008 marked the first year of consistent DSP problems and may have to do with a changing marine environment.

A small non-commercial oyster spat producing facility for the European flay oyster (Ostrea edulis) has been operating at Richwater Oyster Company (Swakopmund) for many years and continues to provide that farm with oyster spat – thereby avoiding the present international high disease risk for that species.

Abalone Industry

The abalone industry in Lüderitz has expanded with the addition of a hatchery and cannery (Fig 17). By spawning broodstock of the species endemic to the Benguela region (Haliotus midae) at Lüderitz, the risk and expense of bringing in young animals from South Africa is reduced. Likewise the rearing of local oyster spat (Crassostrea gigas) has been successfully developed by Beira Aquaculture in Walvis Bay (Fig 18). Extensive research and development by this pioneering company has led to the present successful commercial operation.

Construction of spat-production tanks and nurseries for both oysters and abalone were begun in Lüderitz (by Lüderitz Lobster Mariculture).

Figure 17: The Luderitz abalone hatchery and cannery

Figure 18: Beria Aquaculture's facilities at Walvis Bay

5.6 COLLABORATIVE RESEARCH

Collaboration with the UNAM Henties Bay facility at SANUMARC continued, with shared cross-cutting research. These included the transfer of expertise from the Ministry to UNAM regarding the sulphide tolerance experiments; and information from UNAM to industry regarding abalone feeding. At the monthly Aquaculture Association Meetings held in Walvis Bay, a healthy stream of information exchange between industry, the Ministry, and the mariculture activities at SANUMARC takes place.

Figure 19: Shellfish monitored under the Shellfish Sanitation Programme (left) the MFMR skiboat "Noctiluca" used to carry out routine water quality monitoring; and "Noctiluca" skipper Jan Gei-Khaub.

The Ministry's skiboat "Noctiluca" continues to be used for routine water quality monitoring in the Walvis Bay area, as part of the national Shellfish Sanitation programme (Fig 17 & 18). Similar shore-based monitoring of the growing areas in Lüderitz and Swakopmund as well as daily monitoring from the jetties at both Swakopmund and Lüderitz, is carried out by aquaculture staff (Fig19).

The monitoring programmes have been running since 2005 and provide a valuable record of the inshore environmental conditions - critical to aquaculture activities. All staff have been trained in sampling, laboratory analyses and data compilation (Figures 20).

5.7 REGULATORY ANALYTICAL LABORATORY

In 2008 the national regulatory analytical laboratories for the testing of shellfish (biotoxins and microbiology) were opened by the National Standards Institute NSI in Walvis Bay. Although these laboratories are functional, the regulatory biotoxin testing remains with the CSIR laboratories in Cape Town until the necessary validation and inter-laboratory calibrations have been carried out. The opening of the NSI laboratories marks a critical step forward in attaining certification of Namibian shellfish for international markets.

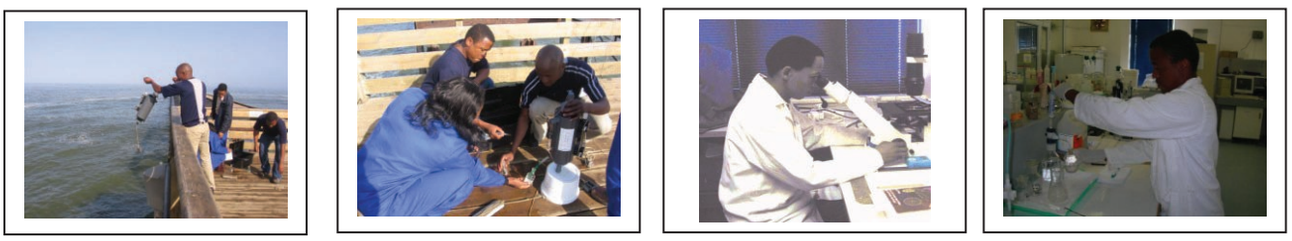


Figure 20: The Mariculture team carrying out daily sampling from the jetty; Jetty sample processing; Examination of phytoplankton species and oxygen analyses in the laboratory.

5.8 FRESH WATER AQUACULTURE

5.9 ONAVIVI /OMAHENENE INLAND AQUACULTURE CENTER, OMUSATI REGION

The Onavivi / Omahenene Inland Aquaculture Center in the Omusati Region provides has four primary functions. These include (1) Training in Aquaculture (2) Fish Breeding (3) Fingerling production, and () Fish production to market size. The Onavivi / Omahenene IAC provides aquaculture information and services to the Kunene, Ohangwena, Omusati, Oshana and Oshikoto Regions [also known as the North Western Regions] of Namibia.

During 2007, a total of 80 294 fingerlings were distributed to 49 farmers in the North Western Regions of Namibia. From these distributed fingerlings, a total of 1,4 tons of fish was harvested from 44 of the 49 farmers.

5.10 ONAVIVI FISH FEED PLANT, OMUSATI REGION

Construction of the first fish feed plant in Namibia commenced in June 2008 (Fig 21) under the Namibia-Spanish “Aquaculture in Northern Namibia” (ANN) Project, is expected to be complete in February 2009. Once complete, the plant will supply fish feed to the entire country and possibilities for export of excess fish feed to neighbouring countries remains promising. The fish feed mill utilises local products (such as Namibia’s excellent quality fishmeal) for formulation of feed and experimental trials completed between October – December 2008 indicated sufficient animal protein levels, which is a good indicator for fish growth.

Figure 21: Machinery being fitted inside the Onavivi fish feed plant

5.11 OSHAKATI EXTENSION OFFICE, OSHANA REGION

The Oshakati extension office provides extension services to Oshana, Kunene, Ohangwena, Omusati and Oshikoto Regions [the North Western Regions] of Namibia. Staff from the Oshakati office continued providing extension services to the North Western Regions, and site inspections conducted in the Kunene Region have identified the Kunene as having excellent potential for fish culture due to the availability of underground water primarily from springs.

5.12 ONGWEDIVA REGIONAL OFFICE, OSHANA REGION

The Ministry of Fisheries is currently constructing a regional office at Ongwediva in the Oshana Region. Construction of this regional office commenced in June 2008, and is expected to be complete by March 2009.

Figure 22: Ongwediva Regional Office under construction

5.13 EPALELA FISH FARM, OMUSATI REGION

Epalela Fish Farm is a grow out facility in the Omusati Region. The primary goal of this centre is to ensure that market size fish is produced all year round. Specific objectives are (1) to fatten or grow out fingerlings to market size and (2) to sell market size fish to the general public in the North Western Regions.

The total production capacity of the farm is 47 tons, which includes 40 tonnes for tilapia and 7 tonnes for catfish. During 2008, a total of 32.14 tons of tilapia with a value of N$ 321 000,00 was produced and marketed at Epalela Fish Farm.

5.14 HARDAP INLAND AQUACULTURE CENTER, HARDAP REGION

In the Hardap Region, the Ministry has developed Hardap Inland Aquaculture Center. The centre has 4 primary objectives which are (1) Fish breeding (2) Fingerling production (3) Production of market size fish and (4) Extension services. This facility extends aquaculture extension services to the Omaheke, Hardap, Karas and Khomas Regions [also known as the Southern Regions].

Fig 23: The Hardap IAC facilities in the Hardap Region

5.15 KAMUTJONGA INLAND FISHERIES INSTITUTE, KAVANGO REGION

Kamutjonga Inland Fisheries Institute (KIFI) was inaugurated on the 28th October 2008 by His Excellency, Hifikepunye Pohamba. KIFI, which is located in along the Kavango River in the Kavango Region has four primary objectives which are (1) Fish breeding (2) Fingerling production (2) Research and Training and (4) to be an Data & Information centre for aquaculture. KIFI serves the Kavango, Caprivi and Otjozondjupa Regions [also known as the North Eastern Regions]. The Rundu and Katima Mulilo Regional offices which provide extension services to fish farmers in the Kavango and Caprivi Regions are administered from KIFI.

5.16 SMALL SCALE FISH FARMERS

One of the functions of the Directorate of Aquaculture is to provide extension services to small scale fish farmers in all 13 regions of Namibia. Small scale fish farms are characterised by subsistence farmers who stock existing dams on their farm with fish. Small scale fish farmers may have a small pond or dam on their plot or farm, where small scale fish farming activities can take place. General ongoing extension services provided to fish farmers during 2008 include:-

i. Fish farmer identification,
ii. Site identification,
iii. Site selection,
iv. Fish farm inspections,
v. Fingerling distribution,
vi. Fish farmer monitoring
vii. Fish farmer training and
viii. Fish harvesting.

Table 17 provides a comparative overview of the Freshwater Aquaculture Sector during 2007 and 2008. During 2008, 147 site inspections were conducted. This shows an increase of 53 more site inspections when compared to 2007. Of the 147 sites identified, 146 farmers received fingerlings. A total of 158 902 fingerlings were distributed, this shows an upward trend from the 95 094 fingerlings which were distributed during

Table 17: A comparative overview of the Freshwater Aquaculture Sector during 2007 and 2008.

REGION	NUMBER OF SITES IDENTIFIED & INSPECTED		NUMBER OF FISH FARMERS REGISTERED / MONITORED		NUMBER OF FISH FARMERS WHO RECEIVED FINGERLINGS		NUMBER OF FINGERLINGS DISTRIBUTED		NUMBER OF FISH FARMS HARVESTED		TOTAL NUMBER OF FISH HARVESTED		FISH HARVESTED (KG)		VALUE OF FISH HARVESTED (N$)	
YEAR	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
KUNENE	5	5	0	1	1	1	0	3300	1	1	0	0	1	1	0	0
OHANGWENA	16	11	23	22	16	19	4950	25320	11	6	6750	1340	450.75	117.85	72942	173175
OMUSATI	27	28	63	23	22	24	20347	28338	19	18	11537	9801	3157.474	838.71	47362.11	12441.65
OSHANA	7	5	16	7	1	7	3313	6413	1	2	3345	923	111.57	18.22	1674.55	273.3
OSHIKOTO	11	30	43	36	2	39	11330	62131	6	14	11703	3783	1443	188.23	21645	2748.3
OMUSHEETUTEPA	1	0	2	0	1	1	1100	1	1	1	0	0	1	1	0	0
KHOMAS	1	2	1	2	1	1	600	1600	1	1	0	300	1	118	0	1630
OMAHEKE	4	10	4	13	12	14	1300	1500	1	7	0	1300	1	285	0	3075
HARDAP	4	9	1	11	11	11	1400	2480	1	2	0	1980	1	484.5	0	6072
KARAS	4	10	2	3	4	5	1600	3280	1	1	0	630	1	162.9	0	2448.3
OKONGO	0	2	0	2	1	1	10000	1	1	1	0	0	1	1	0	0
KAVANGO	3	6	4	9	1	1	0	1	2	2	11340	16500	3253	578	48795	85500
CAPRIVI	5	9	12	15	6	12	0	24000	2	2	7400	19500	2000	438	30000	65700
TOTAL	84	167	188	146	91	148	95884	159862	48	47	53 231	56429	11 445.12	12 187.5	154 476.9	181 696.5

6 HUMAN RESOURCE DEVELOPMENT

The Ministry place much emphasis on the development of human resources in Namibia. This entails training of the Ministry's staff as well as training of fish farming communities for integration into the aquaculture mainstream.

6.1 TRAINING LEADING TO ACADEMIC DEGREES

During the year under review, eleven bursaries were awarded for full time and part time qualifying studies. Six staff members completed their degree and diploma by end of 2008.
Furthermore, three staff members were granted special study leave with full remuneration in order to further their studies in the fields deemed relevant to the Ministry's activities through private funding.

6.2 NAMIBIAN MARITIME AND FISHERIES INSTITUTE (NAMFI)

Namibian Maritime and Fisheries Institute (NAMFI) continue to play an important role in the training of Namibians for the fishing industry. The nine-month Fisheries Inspector and Observer Certificate (FIOC) Training Programme for fisheries inspectors and observers has significantly contributed to the improvement of knowledge and performance of fisheries inspectors and observers.
In 2008, four Fisheries Inspectors and twenty one Observers graduated with the FIOC certificate.

6.3 SOFT SKILLS TRAINING

The Ministry does not only focus on professional training but also make provision for soft skills development to enhance the daily routine performance of the staff members. Eighty nine (89) staff members were trained on soft skills during the year under review in the areas of Basic Safety, Leadership skills, Customer Care & Record Management, Skippers, Financial Management, Computer skills, Secretarial and Protocol skills etc.
The Training Office has, besides the outsourced training services, conducted Induction and supervisory training at the Head Office, Swakopmund and Luderitz from which more than 120 staff members has benefited.

7 REGIONAL AND INTERNATIONAL FISHERIES RELATIONS

7.1 FISHERIES AND AQUACULTURE INTERNATIONAL CONFERENCE - NAMIBIA

Over 350 delegates from Namibia, South Africa, Angola, Norway, Spain, Iceland attended the fisheries and aquaculture international conference from 24-26 September 2008. The conference was successfully held in Swakopmund. The conference attracted local and international experts in different fields of marine and aquaculture fisheries management. The Conference afforded the Ministry a unique opportunity to take stock of what had happened since the establishment of the Ministry of Fisheries and Marine Resources in 1991. Similarly, the conference assisted MFMR to review the policy and legal framework it operates. The Ministry is now busy looking into the outcome of the Conference before it could consult all the stakeholders on the best ways to implement the Conference recommendations.

7.2 SOUTH EAST ATLANTIC FISHERIES ORGANISATION (SEAFO)

Namibia hosted the 5th annual meeting of SEAFO on 6-9 October 2008, in Windhoek. The meeting was attended by representatives from five Contracting Parties (Angola, EU, Namibia, Norway, and South Africa). In attendance were also representatives from three observers namely: Japan, FAO and WWF. The SEAFO Commission approved the recommendations by its Scientific Committee and set a precautionary total allowable catch (TAC) in the Convention Area for the first time for orange roughy and alfonsino fish species. The TAC for orange roughy was set at 100 metric tons and for alfonsino at 200 metric tons for the 2009 fishing season. These actions were necessitated by inadequate catch levels of these resources in the SEAFO Convention Area.

The Commission maintained the TACs for deep sea crab at 200 tons in SEAFO Sub-Division B - and 200 tons in the remainder of the Convention Area. The Commission further set the TAC for Patagonian tooth-fish at 260 tons for the entire Convention Area during the 2009 fishing season.

7.3 INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS (ICCAT)

ICCAT is the organization mandated with the conservation and management of tunas and tuna-like species in the Atlantic Ocean and adjacent seas. Namibia as a member of ICCAT, attended the 16th Special Meeting of ICCAT held in Marrakesh, Morocco, in November 2008.

Amongst the ICCAT managed species, southern albacore is the most important resource for Namibia, a roll over provisions was recommended to continue until the next stock assessment has been completed.

The sharing arrangement for swordfish has to go on until 2009 also awaiting for the next assessment to be completed, Namibia will thus continue with the quota of 1 400 tonnes as has been in 2007. Namibia is allowed to catch up to 2 100 tonnes of big-eye tuna per year through a sharing arrangement.

The Namibian Large-pelagic fishery deployed twelve fishing vessels during 2008. The deployed vessels targeted albacore, sword fish and sharks.

7.4 INTERGOVERNMENTAL ORGANISATION FOR FISHERY INFORMATION AND CO-OPERATION SERVICES FOR FISHERY PRODUCTS IN AFRICA INFOPECHE)

INFOSA continued to assist the fisheries industry and the authorities of the region with marketing and other technical information. During 2008, INFOSA maintained its collaboration with MFMR, in technical advisory services, information exchange and capacity building initiatives. A National Training Course on Freshwater Aquaculture was held at Kamutjonga Inland Fisheries Institute (KIFI), Kavango Region in October 2008. The course was co-sponsored by INFOSA and MFMR, and it involved training participants from various disciplines. The training offered the following course: whole value chain on freshwater aquaculture, which included fish production, processing, quality assurance and marketing practises.

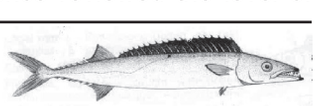
7.5 COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES (CCAMLR)

Namibia took over the chairmanship of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) for a period of two years, i.e. 2007 – 2008.

Namibia also continued to benefit from the living marine resources found within the CCAMLR Convention area. During 2007/8 fishing season, Namibia licensed two fishing vessels namely; “Antillas Refeer” and “Paloma”. These vessels caught 337 tons of fish during the 2008 fishing season.

7.6 SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

On 3-4 July 2008, Namibia hosted the Conference of SADC Ministers responsible for marine fisheries, held in Windhoek. The conference was attended by representatives from Madagascar, Mauritius, Mozambique, Namibia, South Africa, Angola and Democratic Republic of Congo. The Conference reviewed the level of



illegal, unreported and unregulated (IUU) fishing and related activities. The Ministers agreed to a Statement of Commitment to combat this devastating practice in the region. They further directed their officials to identify the practical ways to implement their commitment by developing a Plan of Action by 2009.

7.7 FISH TRADE COMMITTEE ON FISHERIES (COFI)

Namibia attended the eleventh session of the sub-committee on Fish Trade Committee on Fisheries (COFI) which was held in Bremen, Germany from 2-6 June 2008. The session was attended by 52 members of the Food and Agriculture Organization (FAO) of the United Nations, other observers from nine intergovernmental and international non-governmental organizations.

Namibia observed a broad range of trade –related activities carried out by the Fisheries and Aquaculture Department (FAO) and the high quality of work, in particular related to the World Custom Organization (WTO). The importance of FAO's work in capacity–building for developing countries, in particular in relation to market access and value addition for small scale producers in developing countries was also deliberated and emphasised on. The meeting welcomed the added transparency in FAO's activities and encouraged FAO to make more use of web-based information services to provide timely dissemination of reports from workshop and conferences, as well as to function as an information portal on issues related to international fisheries.

Furthermore, the meeting underlined the potential impact of the WTO Aid for Trade Initiatives and welcome the suggested FAO's cooperation with the WTO on fisheries specific activities under this programme. Several views were expressed regarding the funding request should be met from WTO trust fund set aside for Aid for Trade. Finally, the meeting encouraged the secretariat to provide more assessment on priorities in future meetings. The meeting also underline the need to develop a coherent strategy for the FAO Fisheries and Aquaculture Department as a basis for such priorities.

7.8 WORLD ORGANIZATION OF ANIMAL HEALTH (OIE)

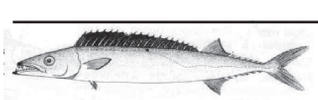
Ministry of Fisheries and Marine Resources participated in the 76th General Session of the OIE (World Organization of Animal Health) in May 2008, Paris, in its newly-appointed capacity of Competent Authority for aquatic animal health. The OIE is the international body coordinating all animal health reporting and regulation, working closely with FAO, WHO and WTO (amongst others). National surveillance programmes for aquatic animal health, specifically for the OIE listed diseases, is required for export of aquaculture products. Following initiation into the OIE reporting system, our Ministry made the first official reports on aquatic animal health to the OIE and took first steps to initiate disease reporting and diagnostic capability within the country. This participation represents compliance to the Namibian import/export regulation in accordance with the Aquaculture Act.

7.9 INTERNATIONAL CONFERENCE ON WORLD OCEAN IN GLOBALISATION

During the period 21-24 August 2008, the Namibian delegation attended the Conference on World Ocean in Globalisation: Challenges for the Marine Regions. The Conference covered four broad thematic issues; namely:

- Challenges posed by globalization
- Interaction between global and regional regulatory and policy responses
- Technology and science: Interface with ocean law and policy development
- The extended Continental Shelf

The Conference was very beneficial and worth attending as the lessons learned could apply to the Namibian situation. What needs to be emphasized is that the world has gone substantial steps ahead, when it comes to the benefits that can be derived from the marine resources. The message was clear that, unless we take care of the marine environment, the consequences can be very gustily to contemplate.

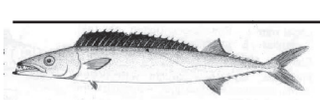


ANNEX: 1

Annex 1: Useful contacts

Institution and contact details	Mandate
Ministry of Fisheries and Marine Resources (MFMR)	
Head Office, Private Bag 13355, Brendan Simbwaye Square, Block C, Corner of Uhland & Goethe Streets, Windhoek, Namibia. Tel: +264 61 2053911 Fax: +264 61 224566 www.mfmr.gov.na	Office of the Minister, sectoral policy, planning and economics, fisheries administration, legislative controls, data collection and analysis.
National Marine Information and Research Centre, (NatMIRC), Strand Street, Box 912, Swakopmund. Tel: +264 64 410 1000 Fax: +264 64 404 385	Applied fisheries and environmental research, physical, biological and chemical oceanography, stock surveys and stock assessment, advice to MFMR on TACs for commercial stocks and other management measures, regional programmes and research collaboration, aquaculture and inland fisheries research and development.
NatMIRC Research Centre, Luderitz. Tel: +264 63 202 415 Fax: +264 63 202 495	Branch of the Swakopmund head office. Main research activities include seals, seaweed, rock lobster as well as regular commercial fish stock surveys and assessment work.
Hardap Freshwater Research Institute, Private Bag 2116, Mariental. Tel: +264 63 240 361 Fax: +264 63 242 643 Inland Fisheries - Rundu Office Private Bag 2084, Rundu. Tel: +264 66 256 853. Fax: +264 256 867 Inland Fisheries – Katima Mulilo Office Private Bag 1004, Ngweze. Tel: +264 66 253 224. Fax: +264 66 253 226	Freshwater fish and invertebrate research, migrations of freshwater fishes using radio tagging, development of freshwater aquaculture techniques and assessment of candidate species.
Fisheries Inspectorate Office, Box 394, Luderitz. Tel: +264 63 202 905 Fax: +264 63 203 337	Monitoring, control and surveillance of marine commercial and recreational fisheries.

Fisheries Inspectorate Office, PO Box 1594, Walvis Bay. Tel: +264 64 201 6111 Fax: +264 64 201 6228	Monitoring, control and surveillance of marine commercial and recreational fisheries.
Regional programmes	
INFOPECHE Unit, Kenya House, 4th Floor, Robert Mugabe Avenue – Windhoek – Namibia. Tel: +264 61 205 3112/3 Fax: +264 61 205 3041 E-mail: infosadc@mweb.com.na Web page: www.globefish.org/entry_infopech.htm	Provides timely information regarding prices and trends in the marketplace and stimulates greater intra-regional and international trade in fish products.
Other institutions	
Namibian Maritime and Fisheries Institute (NAMFI), PO Box 3228, Walvis Bay. Tel: +264 64 203 114 Fax: +264 64 203 112 Poly Andima 081 129 1983	Main institute providing education and training for MFMR staff, including Fisheries Inspectors, Fisheries Observers, patrol boat personnel and fisheries scientists.
Fisheries Observer Agency, PO Box 2903, Walvis Bay. Tel +264 64 219 500 Fax: +264 64 219 547/8	Management and administration of the MFMR Fisheries Observer Programme. Office should be fully operational from March 2002.
Fishing industry associations: Pelagic Fishing Association Hake Association Midwater Trawling Association Monk and Sole Association Tuna and Hake Longlining Association Deepwater Fishing Sector	PO Box 2513, Walvis Bay, Namibia. Phone: +264 (0)64 20 9083. Fax: +264 (0)64 20 6158. E-mail: hardrud@iafrica.com.na



ANNEX 2: MINISTRY OF FISHERIES AND MARINE RESOURCES STRUCTURAL ORGANOGRAM.