



REPUBLIC OF NAMIBIA



ANNUAL REPORT 2004

MINISTRY OF FISHERIES AND MARINE RESOURCES

Our mission:

To strengthen Namibia's position as a leading fish producing nation and contribute towards the achievement of our economic, social and conservation goals for the benefit of all Namibians

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LIST OF ABBREVIATIONS USED IN THE DOCUMENT

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
CSIR	Council for Scientific and Industrial Research (South Africa)
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agricultural Organisation
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
ICEIDA	Icelandic International Development Agency
ICT	Information and Communication Technology
INFOPECHE	Intergovernmental Organisation for Fishery Information and Co-operation Services for Fishery Products in Africa
Km	Kilometre
MCS	Monitoring, Control and Surveillance
MFMR	Ministry of Fisheries and Marine Resources
N\$	Namibian dollar
n. mile	Nautical mile
NAMFI	Namibian Maritime and Fisheries Institute
NORAD	Norwegian Agency for Development Cooperation
NPC	National Planning Commission
PV	Patrol Vessel
RV	Research Vessel
SADC	Southern African Development Community
SEAFO	South East Atlantic Fisheries Organisation
TAC	Total Allowable Catch
UNDP	United Nation Development Programme
VMS	Vessel Monitoring System

FOREWORD

It is my very great pleasure to present the 2004 Annual Report of the Ministry of Fisheries and Marine Resources. Many of the economic and operational challenges for Namibia's marine fishing and processing sectors continued during the year. These challenges included low catch per unit of effort, unfavourable exchange rates and flat market prices. An upwards trend in costs and some instances of strained labour relations also took their toll. Consequently, some operators suffered negative margins, particularly in the hake sector. Despite these difficult, albeit transitional, circumstances the marine resources sector managed to land 567,133 tonnes of fish, with a final value of nearly N\$2.9 billion. One positive aspect to these trying times is the opportunity to reflect on how we can improve the way our marine fishing and processing sectors operate, and I was pleased to have been part of many fruitful discussions during the year with stakeholders in this regard.

Also on the positive side is the fact that the stock research undertaken by the Ministry indicated that Namibia's fish stocks are generally healthy. The problems currently being faced are therefore not primarily due to fish availability, but are more of an economic and operational in nature. Some factors, such as exchange rates and fuel costs, have equally affected all export-orientated industries. In other respects, 2004 was a very active year for the Ministry and stakeholders in the marine, inland and aquaculture sectors. A new research vessel, the *Anichab*, arrived in September. Greater collaboration on shared resources of Namibia's perennial rivers was achieved through the establishment of the Aquatic Resources Working Group in July comprising Namibia, Botswana, Zambia and Zimbabwe. The Ministry's capacity to undertake effective monitoring, control and surveillance activities was given a boost with the commissioning in March of a new patrol vessel, the *Anna Kakurukaze Mungunda*, which together with *PV Tobias Hainyeko* and *PV Nathanael Maxuilili* continued to ensure effective enforcement of our fisheries laws.

On the marine aquaculture front, oyster and abalone production continued to grow and the Namibian Mariculture Association was established by industry. The Association will provide a forum for mariculture farmers to organise and provide a united front in their dealings with Government. Freshwater aquaculture was spurred by the continuing development of six community-based pilot fish farms, three each in Kavango and Caprivi Regions. These farms are facilitating the breeding of fresh water fish, primarily tilapia, in order to contribute to food security, economic growth, and the generation of employment opportunities in those two Regions. In addition, upgrading of the Omahenene/Onavivi Inland Aquaculture Centre continued throughout 2004, the aim being to produce tilapia fingerlings for small-scale fish farmers. The Centre was inaugurated on 23 April 2004 by His Excellence, Dr Sam Nujoma.

Internationally, Namibia carried forward initiatives related to the strengthening of regional cooperation in fisheries and marine science through BCLME and BENEFIT. Of particular note was the inaugural session of SEAFO in March 2004 in Swakopmund, Namibia. The meeting adopted the basic texts for the functioning of the organization and its subsidiary bodies. The permanent SEAFO secretariat will be in place by January 2005, based in Walvis Bay, Namibia. Namibia continued to act as the SEAFO Interim Secretariat during 2004 and actively urged all remaining co-signatories of the SEAFO Convention and other interested parties sign and/or ratify the Convention as soon as possible.

I hope that you find this 2004 Annual Report interesting as well as informative.

DR. ABRAHAM IYAMBO

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.
- Establish 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 our services efficiently and effectively 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 participate in domestic fishing and fish processing, and play an effective role in regional and international fisheries affairs.

1.2 ORGANISATIONAL STRUCTURE

Executive management is provided by the Office of the Permanent Secretary. The Ministry has four Directorates, namely: the Directorate of Resource Management, responsible for scientific research and advice; the Directorate of Operations and Surveillance, responsible for monitoring, control and surveillance; the Directorate of Policy Planning and Economics, responsible for administration and a range of other functions including economics; and finally the Directorate of Aquaculture, responsible for the administration and development of aquaculture. A General Services Division provides support services.

1.2.1 Directorate of Operations

Main responsibilities:

- Regulating fishing activities within the Namibian EEZ.
- Monitoring, control and surveillance activities both at sea and onshore through the operation of fisheries patrol vessels, cars for coastal inspection and fisheries patrol aircraft by Fisheries Inspectors.
- Fisheries legislation enforcement.

1.2.2 Directorate of Resource Management

Main responsibilities:

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

- It is also responsible for research on fresh water fish resources in the interior of Namibia and provides advice on the conservation and management of those resources.

1.2.3 Directorate of Policy, Planning and Economics

Main responsibilities:

- Co-ordinates the formulation and implementation of fisheries policies and legislation.
- Carries out continuous policy and economic research and analyses.
- Responsible for the management of information services of the Ministry
- Administration of fishing rights and quotas
- Collection of fees
- Analysis and publication of fisheries statistics.
- Co-ordinates overall planning of the Ministry.

1.2.4 Directorate of Aquaculture

Main responsibilities:

- Ensure the responsible and sustainable development of aquaculture to achieve socio-economic benefits 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.

1.3 MINISTRY'S STRATEGIC PLAN AND CUSTOMER CHARTER

The Ministry is guided by its Strategic Plan (2004 – 2008) in delivering services and value for money to the public. The Ministry's Customer Charter (2000) sets out the following:

- Standards of services the public should expect from the Ministry's staff.
- The Ministry's commitment to deliver a high standard of service at all times.
- Explanations on how and where to get information on the Ministry's services.
- Explanations on how to launch complaints should the public not be satisfied with the Ministry's services.

Both the Strategic Plan and Customer Charter can be accessed via the Ministry on web site: www.mfmr.gov.na.

1.4 FINANCE

The operations of the Ministry are financed through the Operational Budget for all recurrent expenditure; and the Development Budget, for capital projects. The operational budget for 2004/2005 was N\$91,473,000, the breakdown is indicated in Table 1.

Table 1: Operational Budget for 2004/2005.

Office of the Minister	1,937,000
Administration	9,806,000
Resource Management	20,245,000
Operations and Surveillance	49,057,000
Aquaculture	3,089,000
Policy Planning and Economics	7,339,000
Total	N\$91,473,000

Source: MFMR, 2004.

The development budget for 2004/2005 was N\$27,000,000. Ten capital projects were identified for funding support under this budget, as shown in Table 2.

Table 2: Development Budget for 2004/5

Project	Estimate (N\$,000)
Construction of Offshore Island Jetties	1,000
Construction of the Fresh Water Institute at Kamutjonga/Bangani	3,000
Extension and Renovation of Observer Office at Walvis Bay	100
Vessel Monitoring System	400
Acquisition of Patrol Aircraft	16,100
Aquaculture Development Project Lake Oponono	1,000
Aquaculture Development Project Olushandja Dam/Onavivi	1,504
Aquaculture Development Project Kavango	450
Aquaculture Development Project Caprivi	1,000
Traditional Fishing Development	246
Total	27,000

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

Table 3: Donor assistance received during 2004.

Donor	Type of assistance provided
Norwegian Agency for Development Co-operation	Marine fisheries research, technical, staff training, monitoring, control, and surveillance, Namibia Maritime and Fisheries Institute (NAMFI); funding the review of economic model.
Icelandic International Development Agency	Technical assistance to NAMFI, and MFMR to set up fisheries economics database.
Food and Agricultural Organisation	Development of aquaculture legislation, technical assistance
European Union	Support to NAMFI
Regional Government of the Xunta de Galecia	Financial support for Henties Bay Fishermen's' Cooperative; technical and financial assistance on aquaculture development projects (Omahenene/Onavivi); technical assistance to NAMFI; staff training in Spain.
Government of Malawi	Technical assistance (aquaculture development projects).
Government of Cuba	Technical assistance (aquaculture development projects).

2 POLICY AND LEGISLATIVE FRAMEWORK

2.1 MARINE CAPTURE FISHERIES

2.1.1 Policy

During the year, a review of the policy for the marine resources sector was completed. An approved Policy document was approved. This document, titled *Marine Resources Policy: Towards Responsible Development and Management of the Marine Resources Sector*, is available on the Ministry's web-site [www.mfmr.gov.na]

2.1.2 Legislation

The Legislation governing the marine capture sector includes (a) the Territorial Sea and Exclusive Economic Zone of Namibia Act (1990); and (b) the Marine Resources Act (Act no 27 of 2000) and Regulations (2001).

2.2 INLAND CAPTURE FISHERIES

2.2.1 Policy

Inland Fisheries Policy is outlined in the *White Paper on the Responsible Management of the Inland Fisheries of Namibia (1995)*. This aims to allow the exploitation of inland fish resources on a sustainable basis and at optimum levels. No changes were made to this policy.

2.2.2 Legislation

The Inland Fisheries Resources Act (No.1 of 2003) governs inland fisheries. No changes were made to this legal framework.

2.3 AQUACULTURE

2.3.1 Policy

Current policy for this developing sector is laid out in the policy paper: *Towards the Responsible Development of Aquaculture (2001)*. The main policy objective is the responsible and sustainable development of aquaculture to achieve socio-economic benefits for all Namibians whilst ensuring environmental stability. No changes were made to this policy during 2004.

An Aquaculture Strategic Plan was published in May 2004. The Plan provides guidance on the regulatory framework, business climate, public acceptability, and strategies to ensure training, research, marketing and infrastructure development. It forms a framework to support aquacultural activity, both private and public, and to encourage the growth of this industry. It provides a situation analysis and recommended actions in all strategic areas that impinge on aquaculture development in Namibia. It indicates targets for employment creation, investment, training and the value of production during the next five years. The recommended actions, if implemented, will overcome existing constraints and take advantage of opportunities in the aquaculture industry.

2.3.2 Legislation

The Aquaculture Act (No.18 of 2002) and Aquaculture Regulations are in place to govern the aquaculture sector while work continued on finalisation of the Aquaculture (Import and Export) regulations.

2.4 DATA COLLECTION AND ANALYSIS

The Ministry upgraded its ICT hardware and software in support of our strategic objectives to make information accessible for our clients. In this regard, ICT at the Head Office was upgraded. This new connectivity has an instantaneous effect on speedy information sharing via our Wide Area Network, across Luderitz, Walvis Bay, Windhoek and Swakopmund work centres.

The Ministry's website, [www.mfmr.gov.na] was upgraded, enhancing its robustness and coverage. A dedicated workshop on the overall performance of FIMS was held in November 2004. Based on the outcomes of this workshop, activity programs will be undertaken within the next 12 months to enhance system efficiency and compatibility of various datasets.

Furthermore, improvement of the functional design of the Fisheries Economic Database was undertaken and completed with technical assistance provided by ICEIDA. The Fisheries Economic Database utilises economic data from the marine fishing industry for the purpose of improving economic monitoring. The database was upgraded to ensure it is more versatile and compatible with the Ministry's Fisheries Information Management System.

3 FISHERIES RESEARCH

3.1 CONSTRUCTION AND INAUGURATION OF RV !ANICHAB

This new, purpose-built research vessel (Figure 1) was commissioned by the Ministry to replace the ageing *RV Kuiseb*. The vessel was constructed in South Africa at a cost of N\$4.4 million, funded by the Government of Namibia. She was inaugurated by Minister Abraham Iyambo on 16 September 2004, and has commenced fisheries research activities.



Figure 1: RV !Anichab arriving at Luderitz harbour, 26 July 2004.

3.2 MARINE CAPTURE FISHERIES RESEARCH



Research staff from the Ministry continued to conduct research aimed at quantification of the resources and the state of the environment. A demersal survey for hake was conducted with a Namibian fishing vessel fitted with gear similar to that of the *Fridtjof Nansen* (a Norwegian Research Vessel used for survey since 1991) to ensure that results from surveys undertaken with the two vessels are comparable. Horse mackerel, crab and monk were surveyed by the RV *Welwitschia* (Namibian Research Vessel). In the case of small pelagic species (pilchard) the RV *Welwitschia* did the survey and commercial vessels were used for scouting purposes as in previous years. The Fishing Vessel *Southern Aquarius* was used in surveying the orange roughy resource after having been inter-calibrated (acoustically) with the RV *Welwitschia*. TAC recommendations were presented to the Marine Resources Advisory Council concerning all major TAC-controlled commercial species.

Co-operation and sharing of expertise between scientists of Angola, South Africa, Germany and Norway was remarkable through BCLME, BENEFIT and the NANSEN programmes. BENEFIT provided training and research opportunities for both scientists and technicians within the region. Other research vessels continue to provide valuable ship time on an *ad hoc* basis for research and training e.g. RV *Meteor* and RV *Dr Fridtjof Nansen* for the Ministry in addition to their schedule.

3.3 STATE OF THE MARINE ENVIRONMENT

Marine productivity and hence the state of marine resources in Namibia are heavily influenced by environmental factors as well as the impact of fishing. The Ministry continued to monitor four main environmental factors during the year: wind direction and strength; sea surface temperature, dissolved oxygen; and primary productivity.



A new automatic weather station was established at Möwe Bay, funded through BENEFIT (Figure 2). Through the use of weather stations such as this, the Ministry has recorded a time series of wind strength and direction data since the inception of the Ministry in 1991.

The old jetties at the three manned islands off Lüderitz were upgraded. Construction work on the jetties lasted four months. The work was necessary so as to ensure easier and safer access for personnel and loading and offloading requirements for equipment and supplies.

Figure 2: New automatic weather station at Möwe Bay.

3.3.1 Wind direction and strength

Time series wind data are presented in Figure 3. This indicates that during 2004, coastal up-welling off Lüderitz was lower than average, a negative trend that has been sustained since early 1999.

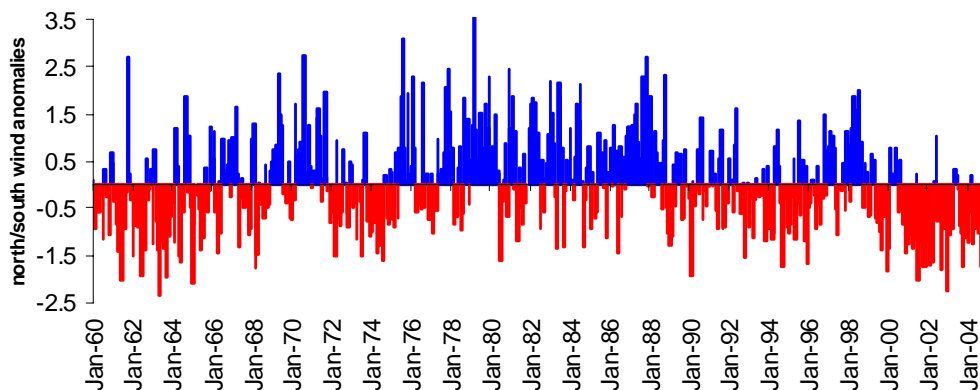


Figure 3: Monthly along-shore wind anomalies recorded at Lüderitz – blue indicates stronger than average southerly winds and red indicates below average winds.

3.3.2 Sea surface temperature

Satellite derived sea surface temperature data indicated slightly cooler than average temperatures off northern and central Namibia during the late summer to autumn of 2004. This was due to the stronger up-welling favourable winds experienced in that Region (Figure 4). The left axis indicates the Namibian coastline from the Kunene River in the north to the Orange River in the south. The bottom axis indicates time in months from July 1998 to December 2004.

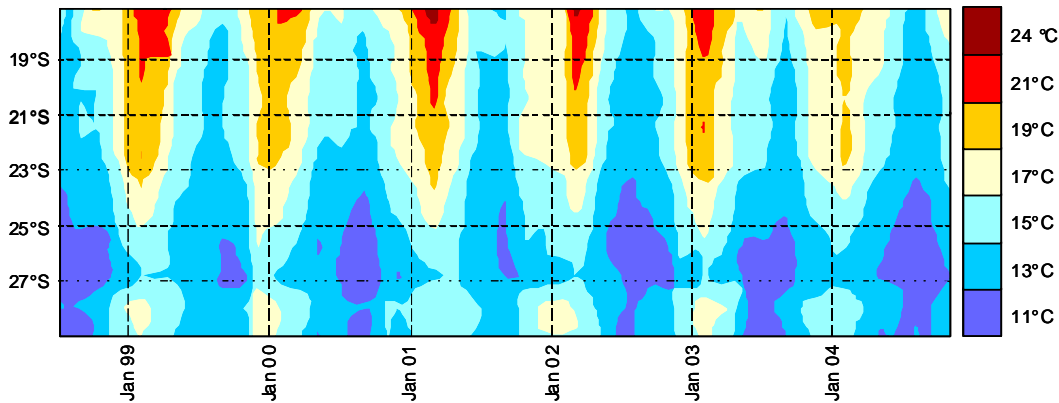


Figure 4: Time-series of monthly sea surface temperatures along the Namibian coastline.

3.3.3 Dissolved oxygen

Dissolved oxygen is a key environmental variable that influences the suitability of habitat and biological productivity in the Benguela Current. The oxygen status of the waters off Namibia were monitored using dissolved oxygen probes at various stations. Time series dissolved oxygen data is presented in Figure 5 below.

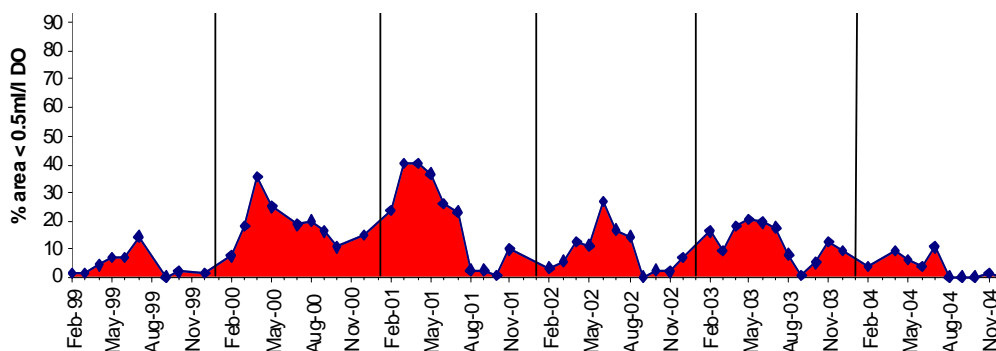


Figure 5: Percentage areas of low oxygen water (≤ 0.5 ml/l oxygen) on the shelf off Walvis Bay.

Dissolved oxygen levels over the central Namibian shelf were higher during 2004 than during the past four years. The thin layer of anoxic bottom water that covered most of the central Namibian shelf area during summer to autumn was flushed out during the winter and spring up-welling season.

3.3.4 Primary productivity

Copepods dominate the zooplankton community in the northern Benguela and their production was rather average during the winter and spring months of 2004, but the first indications are positive that production will increase during the summer period. (Figure 6)

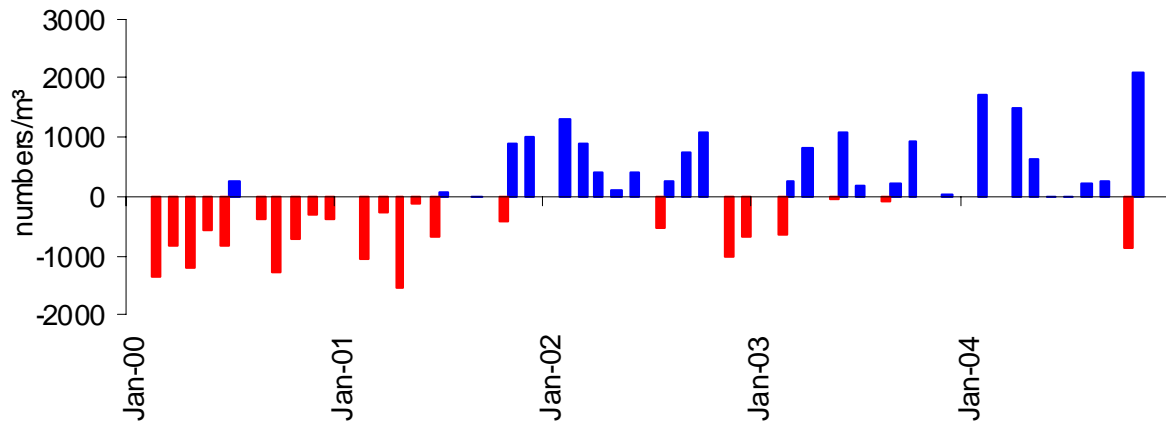


Figure 6: Average copepod abundance anomaly along the 23°S transect.

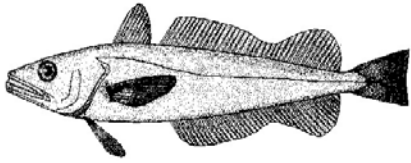
Marine environmental sampling was conducted largely using the research vessel *RV Welwitschia* (Figure 7).



Figure 7: Students and crew retrieving a Conductivity Temperature Depth from the water on to the deck of the *RV Welwitschia* during an environmental survey.

3.4 STATE OF MARINE RESOURCES

3.4.1 Hake

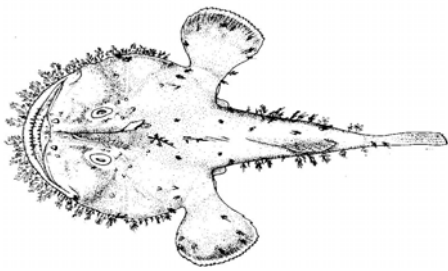


The spawning biomass of hake was estimated at 1.3 million tonnes and the allocated TAC for the 2004/5 fishing season was 195,000 tonnes.

In addition, the research survey conducted in January/February 2004 estimated very high recruitment (2 year-old fish, spawned during 2002). This suggests that a strong cohort is expected to

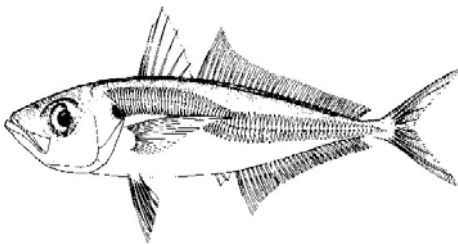
recruit to the fishable component of the commercial fishery during the 2005/6 fishing season, which gives reason for future optimism.

3.4.2 Monkfish



Four dedicated monkfish biomass surveys have been conducted since 2000. The monkfish stock is surveyed annually at the end of each year. The fishery Catch per Unit Effort and surveys data indicate that there is a downward trend in the biomass of monkfish and that catches have to be slightly reduced to counter for this. The stock assessment model estimate for the fishable biomass in 2004 at around 35,000 tonnes.

3.4.3 Horse mackerel



The 2004 acoustic abundance survey estimate this resource at 1.4 million tonnes, comprising of 47% juvenile and 53% adult fish. The size distribution ranged from 5 to 43 cm with the majority of fish between 10 and 24 cm total length. The distribution pattern was similar to that of previous years with fish occurring mainly north of 21°00' South latitude. Adult fish were found mostly offshore, while juveniles were found in inshore waters.

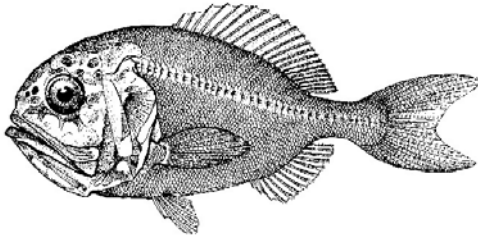
3.4.4 Pilchard



During the October 2004 stock survey, pilchard were found in patchy aggregations in central Namibia extending into southern Angola. The proportion of the stock found in southern Angola had increased to 35% of the total biomass. The pilchard stock was estimated at approximately 327,000 tonnes. The

stock was composed of two age classes, adults and juveniles. The adult stock decreased from 320,000 tonnes estimated in October 2003 to 147,000 tonnes in a period of one year. Despite this decrease, recruitment from the 2003/2004 spawning season was very good and the juveniles (with a modal length at 17 cm) accounted for about 60% of the total biomass estimated in October 2004. A TAC of 25,000 tonnes was granted for 2004.

3.4.5 Orange roughy

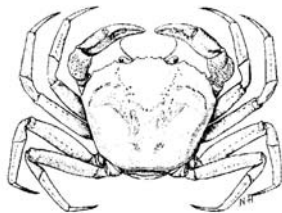


In July 2004 a biomass assessment survey of the Johnnies and Frankies Quota Management Areas was conducted. The survey covered the spawning period of orange roughy, during which time orange roughy aggregate, thus increasing the probability of surveying a larger proportion of the spawning (mature) biomass.

The acoustic survey of Frankies indicated a biomass of 4,070 tonnes, which was slightly lower than in 2003. The swept area survey of Johnnies estimated the biomass at 5,870 tonnes, which is six times higher than in 2003.

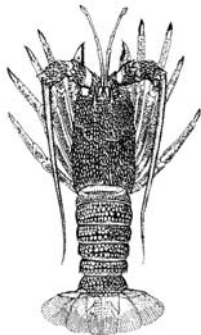
The annual deep-sea red crab survey of 2004 included the Angolan stock. This will allow an assessment of the combine Angolan and Namibian stock in future.

3.4.6 Deep sea red-crab



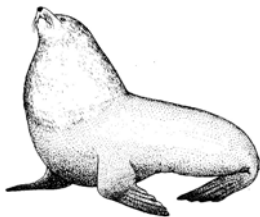
The estimated total biomass of deep-sea red crab during 2004 was between 10,000 and 13,000 tonnes. The biomass of this species has remained relatively stable since 1993. The allocated TAC for the 2004 season was increased from 2,000 tonnes in 2003 to 2,200 tonnes in 2004. The annual deep-sea red crab survey of 2004 included the Angolan stock. This will allow an assessment of the combine Angolan and Namibian stock in future.

3.4.7 Rock lobster



The Namibian rock lobster is shared with South Africa. The two countries share a common larval pool, since adult lobsters do not tend to migrate along the shore. Stock assessment is based on commercial catch and effort data as well as lobster length frequencies, and annual recruitment surveys. During the 2003/2004 commercial season the lobster fishing fleet again did not succeed in filling the lobster TAC, similar to the previous three seasons. This was again mainly due to high swell conditions (and possibly also due to the high bottom dissolved oxygen levels, resulting in adult lobsters having migrate to deeper waters and thus out of reach of the fleet). Catch per unit effort was lower to that of the previous season, and about one half of the TAC remained uncaught.

Cape fur seals



During 2004, a rolling TAC was set for the period 2004-2006. The harvesting TAC was set at 60,000 pups and 5,000 bulls.

The harvest figures for the 2004 sealing season was 28,496 pups and 3,415 bulls.

3.5 INLAND FISHERIES RESEARCH

Annual monitoring surveys were conducted in the Lower Orange, Zambezi, Chobe, Kwando, Okavango and Kunene Rivers. A range of different fishing gear types were used to ensure that all fish species and sizes are recorded, reflecting an accurate representation of the fish population in the different river systems. A monitoring program was launched to study the dynamics of the fish population entering a recently inundated lake.

A report was published on the work done on the Kwando River. "Fish populations, gill net catches and gill net selectivity in the Kwando River, Namibia. A final technical report, *Current practices and future opportunities*, was produced for the project "Shared resource management on the Zambezi/Chobe Systems in northeast Namibia.



Figure 8: Sampling on the Zambezi River.

3.5.1 Regional cooperation

The shared nature of Namibia's perennial rivers makes it imperative for the Ministry to collaborate with neighbouring countries. An Aquatic Resources Working Group was established in July 2004 comprising Namibia, Botswana, Zambia and Zimbabwe. This Group aims to facilitate research collaboration on the Zambezi and Kavango Rivers. It is funded by the African Wildlife foundation.

The project "Shared Resource Management on the Zambezi/Chobe Systems in northeast Namibia: Current practices and future opportunities" was jointly funded by the World Wildlife Fund – LIFE project in Namibia and by the Ministry. The purpose was to move towards the implementation of the fishery resources of the Caprivi Region through the collection of information on the fishery whilst improving our understanding of the management systems with a view to develop future management strategies for the aquatic resources in co-operation with neighbouring countries. The project ended in July 2004 and a final technical report was published.

3.5.2 Migration behaviour of three selected fish species in the Zambezi River

A total of 45 fish were radio tagged in the Upper Zambezi River to follow the movement of the fish over a period of six months. The three species selected are all important in the subsistence fishery in the Caprivi Region. Some of the individuals moved onto the inundated habitats that became available during the flood season whereas others stayed in the main stream. The project will provide valuable data for the establishment of fish sanctuaries as well as the regional work currently done in the area.



Figure 9: Scientists tracking tagged fish on the Zambezi River.

3.6 KATIMA MULILO FISH MARKET SURVEY



This is a long-term monitoring program to document the general patterns of supply to the market, the sizes and species of fish sold at the market, the processing of the fish and vendor characteristics. The survey was done on a weekly basis.

Figure 10: Fish vendors at the Katima Mulilo Market.



Figure 11: Ministry staff on the Zambezi River during an Induction Workshop.

4 COMPLIANCE AND ENFORCEMENT

4.1 MARINE SURVEILLANCE DURING 2004

The Ministry continued to undertake sea surveillance utilising its three patrol vessels. Table 4 summarises the activities of these three vessels during the year.

Table 4: Patrol vessel activities during 2004.

Patrol vessel	Missions	Days at sea	Distance (n. miles)	Inspections
Tobias Hainyeko	15	109	15,903	140
Nathanael Maxuilili	10	130	19,696	90
Anna Kakurukaze Mungunda	12	87	12,207	110
Total	37	326	47,806	340

Source: MFMR

Table 5 below summarises the resulting actions of sea patrol missions undertaken, in terms of summons issued and fines paid.

Table 5: Resulting actions of sea surveillance missions

No. Missions	Summons issued	Amount Paid (N\$)	Outstanding cases	Cases Withdrawn	Warnings issued
37	97	29 100	0	0	31



PV Nathanael Maxuilili undertook 10 missions during the year. She successfully apprehended a Spanish-flag vessel, *MVF Maral*, for illegal fishing in the Namibian EEZ. The Captain of the *Maral* appeared before Namibian Magistrate Courts, pleaded guilty and paid a fine of N\$342,000.

Figure 12: MFV *Maral*, under arrest for illegal fishing in Namibian waters, 2004.

4.2 AERIAL SURVEILLANCE

The fisheries patrol aircraft Sea Eagle undertook 140 patrol and training missions totalling 448 flying hours. This includes 110 vessel observation flights, nine training flights, seven VIP flights and 14 maintenance flights. In all, the patrol aircraft covered 78,477 nautical miles.

4.3 COASTAL SURVEILLANCE OPERATIONS

Staff of the Walvis Bay Inspectorate Office undertook coastal missions covering a distance of 272,011 km during the year. A total of 15 roadblocks were jointly manned in co-operation with the Namibian Police and Immigration Officers. A total of 1,198 summons were issued. Around N\$209,065 was paid as fines issued under 785 summons, with 307 cases to the value of N\$85,520 still outstanding at the end of the year.

A total of 16 case dockets were opened at Henties Bay, Swakopmund and Walvis Bay Police stations. The total amount paid under case dockets was N\$10,700. A total of 261 arrest warrants were issued with 83 executed and 178 still outstanding. In addition, 18 factory and harbour offences were recorded. Offenders paid a total of N\$5,400.

A new fisheries patrol vessel, Anna Kakurukaze Mungunda, was constructed in Spain. She arrived in Walvis Bay on 29 February 2004 and officially was inaugurated on 22nd March 2004 by Minister Abraham Iyambo. The vessel is named after a Namibian heroine. She joined the two other fisheries patrol vessels: *Nathaniel Maxuilili*, and *Tobias Hainyeko* in order to strengthen the MCS activities in our EEZ.



Figure 13: New Fisheries Patrol Vessel: Anna Kakurukaze Mungunda

Table 6: Walvis Bay operations - Offences and fines, 2004.

Area of operation	Nature of offence	Fines issued	Paid (N\$)
Harbour and Mid-water	Fail to give notice before offloading.	6	1,800
	Leaving Namibian EEZ without clearance.	1	300
	Offload fish without presence of inspectors.	9	2,700
Whitefish and pelagic	Offload fish without presence of inspector.	2	600
Total		18	5,400

Source: MFMR

A total of 134 coastal patrol missions were undertaken by staff of the Lüderitz Inspectorate Office, totalling 4,895 km. Sixteen roadblocks were manned jointly with the Namibian Police and Immigration Officers during festive seasons on the main road between Lüderitz and Aus.

Table 7: Luderitz operations - Offences and fines, 2004.

Area of operation	Nature of offence	Fines issued	Paid (N\$)
Harbour	Failure to display vessel registration in wheel house	1	300
Coastal Patrol	Harvesting marine resource without fishing permit	12	3,600
	Rock lobster not in a whole state	3	900
	Exceeding the daily bag limit for Rock lobster	9	8,100
	Transporting 52 rock lobsters	2	17,400
	Retaining under size rock lobster	1	300
Factory Inspections	Retaining under size rock lobster	167	50,100
	Retaining rock lobster in berry	76	2,2800
Observer Reports	Threatening a Fisheries Observer	3	900
	Failure to fit selectivity device	1	300
	Sailing without an Observer	1	300
	Discarding marine resources	3	900
	Round straps shorter than 50%	7	2,100
	Not having logbook onboard	1	300
	Not having a copy of the Marine Resources Act onboard	1	300
Total		287	108,600

Source: MFMR

4.4 INLAND SURVEILLANCE OPERATIONS

Inland Fisheries Inspectors continued to enforce an Inland Fisheries Resources Act in Caprivi and Kavango Regions. Staff members from the Walvis Bay Inspectorate undertook inspections in Oshikoto, Ohangwena, Oshana, Omusati Regions and part of Kunene Region.

It is planned to increase the number of Inland Fisheries Inspectors from three to six in 2005. Also, one post has been created for Ongwediva to cater for Oshikoto, Ohangwena, Oshana, Omusati and part of Kunene Regions.

4.5 VESSEL MONITORING SYSTEM (VMS)

In 2004, a memorandum of understanding was signed in Cape Town by SADC coastal member States for the implementation of a Regional VMS. This is in line with Article 18 of the SADC Protocol on Fisheries, which calls for State Parties to exchange complete and detailed information essential for achieving the objective of the Protocol. It is envisaged that the Regional VMS will become operational in 2005.

4.6 EXTENSION AND RENOVATION OF OBSERVER OFFICE IN WALVIS BAY

The aim of this Project was to renovate and extend the Fisheries Observer Agency (FOA) office located at Walvis Bay. It was initiated during 2003, and upon completion was inaugurated by Minister Abraham Iyambo on 15th July 2004. The Project cost N\$2.3 million and was funded entirely by the Government of Namibia.



Figure 14: Hon. Minister Dr. Abraham Iyambo (right) and Governor of Erongo Region Hon. Samuel Nuyoma (left) pictured at the inauguration of the FOA office in Walvis Bay, 2004

The FOA is an executive body established under the Marine Resources Act. The tasks of the FOA observers are to:

- Observe the harvesting, handling, and processing of marine resources and related operations and record data concerning such operations;
- Collect and record biological and other information related to fishing activities; and
- Collect samples of harvested marine resources.

The FOA, located in the same complex as the Walvis Bay Fisheries Inspectorate of the Ministry, maintains a close daily working practice with the Ministry.

5 THE MARINE RESOURCES SECTOR

The marine resources sector continued to be one of the most important contributors to the Namibian economy during 2004. It remained as the second most important sector to the mining sector in terms of export value.

5.1 NUMBER AND DURATION OF FISHING RIGHTS

The total number of rights of exploitation in 2004 was 159. Table 8 shows the number and duration of existing rights of exploitation for each species.

Table 8: Number and duration of existing harvesting rights as at December 2004

Fishery	Duration of Rights					Total
	Four-year	Seven-year	Ten-year	Fifteen-year	Twenty-year	
Hake	0	10	6	22	0	38
Monk	0	2	2	5	0	9
Horse Mackerel	0	0	11	1	0	12
Large Pelagic	0	1	6	12	0	19
Red Crab	0	1	2	0	0	3
Rock Lobster	0	0	1	20	0	21
Line Fish	1	1	2	8	0	12
Orange Roughy	0	0	5	0	0	5
Pilchard	0	7	5	10	0	22
Mullets	0	0	0	13	0	13
Seals	0	2	1	1	0	4
Guano	0	1	0	0	0	1
Total	1	25	41	92	0	159

Source:MFMR

No evaluation of rights was undertaken during 2004.

5.2 VESSEL LICENCES

The number of licensed vessels operating in Namibian waters from 2000 to 2004 is indicated in Table 9 below. A total of 334 vessels were licensed for commercial fishing in 2004.

Table 9: Number of licensed vessels by fishery, 2000-2004

Fishery	2000	2001	2002	2003	2004
Small pelagic	30	26	25	20	16
Demersal Trawlers	111	128	114	100	125
Longliners	24	38	10	8	17
Midwater	26	24	20	26	24
Deepwater	5	3	6	5	5
Large pelagic	56	68	71	49	73
Linefish	26	22	26	19	16
Crab	2	2	2	3	2
Rock lobster	29	29	38	42	34
Monk			23	21	22
Total	309	340	335	279	334

5.3 TOTAL ALLOWABLE CATCHES (TAC'S)

The setting of total allowable catches is one of the main management measures by which to prevent overexploitation of Namibian fish stocks. TACs are set for most commercial species in Namibia. Table 10 shows the TACs set by fishery since 2000.

Table 10: Total Allowable Catches, 2000-2004 in tonnes.

	Pilchard	Hake	Horse mackerel:		Red crab	Rock lobster	Orange roughy	Monk
			Mid water	Pelagic				
2000	25,000	194,000	410,000	(50,000)	2,000	350	2 400	n.a.
2001	10,000	200,000	410,000	(50,000)	2 100	400	1 875	13,000
2002	0	195,000	350,000	(40,000)	2 200	400	2 400	12,000
2003	20,000	180,000	350,000	(40,000)	2,000	400	2 650	12 500
2004	25,000	195,000	350,000	(40,000)	2 200	420	2 600	12,000

Source:MFMR Notes: n/a means 'not applicable'. Figures in brackets indicate the portion of the TAC (column immediately to the left) of industrial fish caught for fishmeal.

5.4 LANDINGS

Production of marine resources for the period 2000 to 2004 is given in the Table 11. The total volume of marine resources production for 2004 amounts to 567,133 tonnes. This amount compares with 631,121 tonnes landed during the previous year, including a decline of about 10 per cent.

The horse mackerel, hake and monk fisheries recorded lower landings compare to the previous year. This is mainly due to lower catch rates and less fishing effort deployed as a result of high cost of fishing. These fisheries usually account for more 70% of landings; observed lower preliminary landings during this period are almost due to lower catches in these fisheries.

An important development to note is that the 25,000 tonnes TAC for pilchard *Sardinops sagax* allocated for 2004 season, which ended in August, was landed in full. This TAC was almost entirely landed for canning (85%). As well, good catches for crab and tuna fish were realized during the year. The 2,200 tonnes TAC for crab was landed in full.

Overall, exchange rate volatility and cost of fishing were not the most favourable to the fisheries and resources sector during the reporting period. This affected the operation of major fisheries such as those for, horse mackerel, hake and tuna.

Table 11: Harvest of the main commercial species, 2000-2004 (tonnes, except seals).

Species	2000	2001	2002	2003	2004
Pilchard	25,388	10,763	4,160	22,255	28,605
Hake	171,397	173,277	154,588	189,305	173,902
Horse mackerel	344,314	315,245	359,183	360,447	310,405
Monk	14,358	12,390	15,174	13,135	8,961
Kingklip	3,922	6,607	7,210	6,603	7,067
Tuna	2,401	3,198	2,837	3,371	3,581
Crab	2,700	2,343	2,471	2,092	2,400
Rock lobster	365	365	361	269	214
Other fish species	22,987	30,810	77,407	33,644	31,997
Total fish harvest	588,404	554,998	623,391	631,121	567,133
Seals (numbers)*	41,753	44,223	40,000	34,000	31,971
Seaweed	829	800	500	288	n/a

Source:MFMR Note: other fish species are orange roughly, alfonsino, anchovy, sharks, sole, linefish species, amongst others.*Seals are in number, not tonnes. N/a = not available.

5.5 CATCH VALUE

The value of fish and fish products serves as an indicator of the performance of the fishing industry. Table 12 shows three different value indicators for fish and fish products from 2000 to 2004. The first one is the landed value of the catch. This is the value of fish in the form the fish is landed (i.e. ex-vessel price). It may be seen that the landed value has been increasing every year, even in years when the quantity of fish landed declined, although in 2004 there was a sharp decrease due to falling market prices for main species and the strength of the Namibian dollar.

The second indicator is the final value of the fish. This is the value of fishery products in their final form at export price. The difference between the two values is due to value addition by onshore fish processing. During the last five-year period, the final value has been increasing except in 2004.

The final indicator is the export value, which gives the Namibian dollar equivalence of foreign currency earnings brought into Namibia due to the sale of fish and fishery products. Since approximately 90% of Namibian fish is exported, the final and export values follow each other closely.

Table 12: Value of fish and fish products, 2000-2004 (N\$ millions, current value).

Value	2000	2001	2002	2003	2004*
Landed value	2 029.0	2 335.3	2 608.0	2 862.7	2 528.3
Final value	2 633.8	2 932.0	3 394.9	3 867.8	3 466.5
Export value	2 579.6	2 862.7	3 311.2	3 506	3 332
% of total exports of goods	25.0%	25.8%	23.0%	27.6%	24%

Sources:* MFMR economic model and NPC provisional figures.

5.6 REVENUES GENERATED

The marine resources sector plays a key role in generating revenue for the State. Revenues are generated through various fees and levies. Table 13 shows revenue from various fees and levies collected from 2000 to 2004. During 2004, not less than N\$120,292,000 was collected from the sector.

Table 13: State Revenue from the marine fishing industry, 2000-2004 (N\$ thousands, current value).

Fee	2000	2001	2002	2003	2004
Quota fees	76,125	69,900	100,011	74,437	84,629
Marine Resources Fund levy	11,027	9,211	15,794	12,042	17,663
By-catch fees	10,300	12,800	15,788	13,561	16,294
License fees	185	172	286	187	110
Total revenue	97,637	82,083	131,879	100,227	120,292

Source: MFMR

5.6.1 Fees generated by recreational fishing permits

The number of monthly recreational permits issued and the revenue generated is indicated in Table 14. Monthly permits are in high demand during the Christmas/New Year festive season (mid-November to mid-January). The increase in demand for monthly permits is also recorded in March due to Namibia's independence day and the Easter long week-end.

Table 14: Total recreational fishing permits issued and revenue generated during 2004.

Month	Permits issued	Revenue collected (N\$)
January	4,572	89,264
February	4,807	83,146
March	5,331	87,416
April	4,631	73,150
May	3,060	54,544
June	1,763	30,072
July	2,622	44,114
August	2,191	40,992
September	2,297	41,650
October	2,829	52,388
November	4,764	98,574
December	14,284	228,774
Grand Total	51,772	924,084

Source: MFMR

Table 15 below indicates the breakdown in monthly and annual permits issued. Monthly permits were again far more in demand than annual permits, as has been the case in previous years.

Table 15: Types of permit issued in 2004.

Period	Total number of Permits	Amount Received (N\$)
Monthly permits issued	50,478	706,692
Year permits issued	1,294	217,392
Total	51,772	924,084

Source: MFMR

Annual permits are mainly purchased by Namibian recreational anglers. The greatest number of permits was issued in December 2004, as most anglers both Namibians and non-Namibians take holidays at that time. Also, the rock lobster season has contributed to the high issuing of permits as it starts from the 1st November until the end of April each year.

Table 16: Permits issued by nationality of purchaser in 2004.

Nationality	Number of Permits	Amount Received (N\$)
Namibians	36,845	713,104
Non- Namibians	14,927	210,980
Total	51,772	924,084

Source: MFMR

5.6.2 The Marine Aquarium: visitors and income

The number of visitors (individual and groups) that visited the Aquarium increased to 35 360 during 2004, compared with 34,940 in 2003 (Table 17). Revenues also increased slightly, to N\$343 964 during 2004 compared to N\$341,228 in 2003.

Table 17: Number of visitors to the National Marine Aquarium in 2003 and 2004.

Visitor category:	2003		2004	
	Numbers	Revenue (N\$)	Numbers	Revenue (N\$)
Children	8,748	43,740	9,112	45,560
Foreign Children	889	13,335	749	11,235
Adults	12,805	128,050	14,095	140,950
Foreign Adults	4,205	126,150	4,089	122,670
Pensioners	1,153	5,765	1,038	5,190
Foreign Pensioners	838	12,570	571	8,565
Teachers	638	3,190	489	2,445
Student Groups	691	3,455	533	2,665
School Groups	4,973	4,973	4,684	4,684
Total	34,940	341,228	35,360	343,964

Source: MFMR

5.7 CONTRIBUTION TO GROSS DOMESTIC PRODUCT

Another important economic indicator for the marine resources sector is contribution to GDP. This is essentially the gross income earned, wages and salaries, gross profits, and indirect revenues from fish production. It does not, however, include the value of intermediary inputs and it is therefore much less than the value of production.

Table 18 indicates the contribution of the fishing industry to GDP, both for harvesting and processing. The contribution of the fisheries sector to GDP has shown a decrease in the fishing and processing onboard and processing ashore have increased due to continued improvements in the landings of the demersal and midwater sectors, although the processing ashore sector has indicated a more substantial increase.

Table 18: Fisheries Gross Domestic Products contribution, 2000 – 2004

GDP Contribution:	2000	2001	2002	2003	2004*
Fishing	1,044	1,445	1,608	1,627	1,293
Processing	548	494	703	899	920
Total	1,592	1,939	2,311	2,526	2,213
% of GDP	6.7%	7.1%	7.3%	7.8%	6%

Source: NPC. * Provisional figures

6 AQUACULTURE SECTOR

The Government foresee the role of freshwater aquaculture to enhance food security, generate incomes and improve rural livelihoods. On the other hand, the Government recognise the development of marine aquaculture as requiring significant capital and technical expertise in producing high value species intended primarily for export.

6.1 MARINE AQUACULTURE

Commercial marine aquaculture production in 2004 included 4,5 million oysters 1,2 tonnes abalone, 25 tonnes clams and marine algae.

6.2 INLAND AQUACULTURE PRODUCTION

Development of coastal mariculture depends to a major extent on the quality of the seawater in which the mariculture products grow and therefore a focal task for this team was to set up a water- and product-quality monitoring system. In this regard the mariculture team has ensured that growing areas along the central coast are monitored every two weeks. In the southern Luderitz area the testing procedure relies on the farmers themselves.

The Ministry established the Division of Disease and Quality Control within the Directorate of Aquaculture, which is tasked with food safety and quality assurance of shellfish sanitation, water quality and HAB monitoring, biotoxin and microbial testing.

Routine procedures at this office include the collection of water samples from all active mariculture farming sites around the Swakopmund – Walvis Bay area. Samples are analysed to determine the possible presence of faecal bacteria and identification of other micro-organisms. Heavy metal analysis is also conducted every six months.

Since April 2004 the central Namibian coast has been monitored for water quality. This involves sampling of water and shellfish (oysters and mussels) for bacterial contamination, and examination of water samples for HAB phytoplankton species. Oyster samples are collected from producing farms and sent at the farmers' cost for biotoxin analyses to CSIR laboratories in Cape Town.

During 2004 the Namibian Mariculture Association was established to provide a forum for mariculture farmers to organise and provide a united front in their dealings with Government.

Freshwater aquaculture involves the culture of tilapia, catfish and freshwater crayfish clued.

Detailed figures are not available for production of fish from inland sources in Namibia. However, production is estimated to be not less than 2,000 tonnes per annum for the Caprivi Region, 800-1000 tonnes for the Okavango Region, 250 tonnes for the Cuvelai system and minimal amounts for the Orange and Kunene Rivers.

The most popular fishing methods used by inland fishermen include gill nets, spears and hook and line. Dragnets are also used, mainly during the low water periods when they are more effective. Fish catches vary with different seasons while catch per unit effort may differ with constant level of effort depending on the time of year or season that affects fish availability.

There is a clear reliance on the fishery by those involved. For example, about 30% of the households in the Kabe constituency depend primarily on the fishery for subsistence and income purposes. Earned income from the fishery went to meet basic expenses such as food and clothing. Tigerfish, bream and catfish are the important species collected. A marked preference for fresh fish followed by dried fish is reported. Smoked fish is less popular while tinned marine fish is consumed in small quantities.

The Ministry continued the development of six community-based pilot fish farms, three each in Kavango and Caprivi Regions. These farms are facilitating the breeding of fresh water fish, primarily tilapia, in order to contribute to food security, economic growth, and the generation of employment opportunities in those two Regions. This in turn will help alleviate poverty, in line with the Government policy for aquaculture. Further progress was made during the year in the integration of fish culture into the growing of fruits and vegetables. The Rt. Hon. Prime Minister, Theo Ben Gurirab, inaugurated the six fish farms on the 28th October 2004, at a ceremony conducted at Karovo fish farm (Figure 14).



Figure 15: Karovo fish farm, one of three community-based farms in Kavango Region.

6.2.1 Omahenene/Onavivi Inland Aquaculture Centre, Omusati region

Work to develop the Omahenene/Onavivi Inland Aquaculture Centre commenced in 2003 and continued throughout 2004. The main aim of this Centre is to produce tilapia fingerlings for small-scale fish farmers. The Project is co-funded by the Government of Namibia and the Regional Government of the Xunta de Galicia. His Excellency, Dr Sam Nujoma, inaugurated the Centre on 23 April 2004. Spain has provided Spanish technical experts for the Centre. An important aspect involves intensive training of both public and private sector personnel in all aspects of freshwater fish farming.

To date, the Centre has distributed 50,000 fingerlings to 72 subsistence fish farmers in the Oshana, Oshikoto, Ohangwena and Omusati Regions. In addition, the first commercial harvest totalling two tonnes of tilapia took place on the 3rd December 2004



Figure 16: Tilapia (*Oreochromis andersonii*) harvested from the Omahene/Onavivi Inland Aquaculture Centre, Omusati Region, December 2004.

6.2.2 Aquaculture regional offices at Rundu and Katima Mulilo

Two extension offices were established during the year at Rundu, Kavango Region, and at Katima Mulilo, Caprivi Region. These have a total compliment of nine staff members. An aquaculture expert from Malawi continued to provide technical guidance to Ministry staff in both Regions. The Ministry continued to carry out management and extension services to the six pilot-scale community fish farms.

These employ a total of 194 cooperative members. During 2004, the highest flood levels recorded in the past 30 years occurred in these two Regions. This resulted in the flooding of Litapi Fish Farm in the Caprivi Region and Shipapo wa Mbambangandu Fish Farm in the Kavango Region.



Figure 17: Fish sampling at Likunganelo Fish Farm, Caprivi Region.

6.2.3 Regional Offices

Aquaculture extension offices were established in May 2004 at Oshakati to provide extension services to existing and emerging fish farmers in Omusati, Oshana, Ohangwena and Oshikoto Regions. A fingerling production center at Ongwediva is planned.

Seventy-two potential fish farm sites have been identified and assessed since establishment of these offices. The distribution of fingerlings to fish farmers is carried out in co-operation with staff based at Onavivi Inland Aquaculture Centre.



Figure 18: Site visit at one of the Small Scale Farmers pond in Omusati Region.

7 HUMAN RESOURCE DEVELOPMENT

The Ministry continued to train its staff members at all levels and in various fields throughout 2004.

7.1 BURSARIES

The Ministry provides a bursary scheme for staff members. Bursaries are awarded on an annual basis for staff members to further their studies in fields relevant to their daily duties. Funding is provided from the Marine Resources Fund. In 2004, a total of 20 staff members benefited from the bursary scheme, pursuing various degrees/diplomas/certificates locally and abroad on a part-time or full-time basis.

7.2 DECK OFFICER TRAINING

The Ministry continued with the training and upgrading of Deck officers who have previously obtained a Class 3 Certificate of Competency for Deck Officers at NAMFI. The aim of this course is to obtain a Class 2 certificate at management level. Six Deck Officers were successfully trained by the end of 2004. This training is essential to allow these officers to take over officer positions occupied by expatriates on patrol vessels.

7.3 MARINE ENGINEER OFFICER TRAINING

Five Engineer Officers were sent to Cape Technikon in Cape Town, South Africa, with financial assistance from NORAD. Three successfully obtained a Class II Marine Engineering certificate. Unfortunately, two tragic motor vehicle accidents involving Ministry trainees occurred during 2004. One resulted in the death of an engineering student in September 2004. The second accident resulted in one engineering student being seriously injured.

7.4 TRAINING AT NAMIBIAN MARINE AND FISHERIES TRAINING INSTITUTE

This course is offered by NAMFI. It is a nine months course for fisheries inspectors, fisheries observers and includes theory followed by practical in-service training. A total of 25 inspectors and observers completed the course during the year under review.

NAMFI continues to play an important role in the training of Namibians for the fishing industry. In 2004 NAMFI trained an average of 500 students in navigation, engineering and safety.

The structure of the Institute was re-organised by the Board following the completion of a study that examined the requirements of the International Convention on Standards of Training, Certification and Watch-keeping for Seafarers. This Convention has compelled NAMFI to re-orient its educational strategies and methods and to carry them out as in accordance with the required international standards.

Aquaculture staff participated in several training courses covering quality control and monitoring of growing areas. Aquaculture staff also undertook theoretical and practical studies and laboratory analysis of biological samples. Courses attended include:

- Four staff at Domasi College, Malawi (fresh water fish farming).
- One staff member at Busan, South Korea, (mariculture).
- One staff member at Cairo, Egypt (brackish water fish farming).

7.5 DONOR ASSISTED TRAINING

In addition, the Ministry utilises available donor support for capacity building through training of technical and professional staff. Donor agencies that continued to provide support for capacity building during the year included BENEFIT, BCLME, NORAD, ICEIDA, and SADC Regional Fisheries MCS Programme. A total of 14 staff members benefited from support provided by these donors.

8 REGIONAL FISHERIES RELATIONS

8.1 SADC REGIONAL FISHERIES MCS PROGRAMME (SADC MCS)

Namibia continued to benefit from this Programme during the course of the year. Fisheries Inspectors and Observers attended a total of 182 various courses in the field of safety at sea, investigation techniques, radio operation techniques to management. Also opportunities were extended to some staff members to study fisheries economics, and human resource management in the UK. Others participated in regional MCS courses in South Africa.

Sea surveillance missions were undertaken using the Namibian PV *Anna Kakurukaze Mungunda* in the EEZs of Angola and South Africa, with funding and technical assistance provided by the Programme.

Other activities arranged under the Programme include a review of the Marine Living Resources Act (2000). Further, technical assistance was provided in the areas of MCS economics, compliance information systems and legal matters.

8.2 BENGUELA LARGE MARINE ECOSYSTEM PROGRAMME (BCLME)

BCLME is a multi-sectoral initiative by Angola, Namibia and South Africa to facilitate the integrated management, sustainable development and protection of the ecosystem. It is funded by GEF through the United Nations Development Programme with financial and in-

kind contributions by the three member countries. The programme commenced in May 2002. The Programme Management Unit is located in Windhoek, Namibia.

Main Programme activities during 2004 in which Namibia participated included an fish ageing and genetics feasibility study, assessment of data collection in the SADC Region, development of the ecosystem approach to fisheries management, determination of optimal harvesting strategies for the hake trawling and longlining fisheries in Namibia and South Africa, development of a management plan for bronze whaler shark resources and development of responsible aquaculture. Namibia hosted the first regional workshop on developing an ecosystem approach to fisheries management in the BCLME Region which was formally opened by Minister Abraham Iyambo in Windhoek.

A 25-minute CD-ROM based documentary film on the Benguela Current Large Marine Ecosystem: *Current of Plenty*, was formally launched in Windhoek in October 2004 by Minister Iyambo. Copies of the film were subsequently distributed to schools in Namibia to raise educational awareness of importance of Benguela Large Marine Ecosystem.

8.3 BENGUELA ENVIRONMENT FISHERIES INTERACTION AND TRAINING PROGRAMME (BENEFIT)

BENEFIT is a sub-regional programme involving three SADC countries: Angola, Namibia and South Africa. The programme management unit is located at Swakopmund, Namibia. The programme aims to create the basis for long-term cooperation between the three countries in the area of management and protection of marine resources, which they share in some cases, through building regional capacities and technical skills.

During 2004, BENEFIT hosted a Consultative Workshop on Biodiversity and Conservation, and also the Lüderitz Orange Rivers Cone Workshop. In conjunction with BCLME, BENEFIT co-funded four legs of a research and training cruise aboard the German research vessel, the *Alexander Von Humboldt*. New BENEFIT research projects on shark biology, hake and *Dentex* ageing as well as *Dentex* biology were started, in which Namibia is taking an active role.

A BENEFIT Forum was held in April 2004, which provided an opportunity for Namibian scientists to interact with international leaders in their fields of science. Several of these experts gave presentations at the forum. In April 2004, the BENEFIT Management Advisory Council gathered for a workshop, which aimed to develop a mandate to develop BENEFIT in line with the BCLME goal of establishing a regional commission. This successful workshop resulted in a new set of goals and outputs for BENEFIT.

9 INTERNATIONAL FISHERIES RELATIONS

9.1 SOUTH EAST ATLANTIC FISHERIES ORGANISATION (SEAFO)

SEAFO establishes a management regime for conservation and sustainable utilisation of fish, molluscs, crustaceans and other sedentary species in the high seas portion of FAO Statistical Area 47, but excluding those sedentary species that are subject to the fishery jurisdiction of coastal States and also tuna and tuna-like species because these fall under the jurisdiction of ICCAT. Namibia became the first signatory nation to ratify the Convention in November 2001.

The inaugural session of SEAFO was held in March 2004 in Swakopmund, Namibia. The meeting was devoted to the adoption of the basic rules for the functioning of the organization and its subsidiary bodies. Regulations regarding the financing of the organization, its rules of procedure and staffing arrangements were agreed. Guidelines and priorities for the work of the Scientific Committee, to be composed of scientists from each party, were adopted at the meeting. It was also decided that a permanent secretariat would be in place by January

2005, based in Walvis Bay, Namibia. For the remainder of 2004, Namibia continued to act as the SEAFO Interim Secretariat, and coordinated arrangements for the recruitment of a full time Executive Secretary. During the year, Namibia urged all remaining co-signatories of the SEAFO Convention and other interested parties sign and/or ratify the Convention as soon as possible.

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

ICCAT is responsible for the conservation and management of tunas and tuna-like species in the Atlantic Ocean and adjacent seas. Namibia becomes a member of ICCAT in 1999. Namibia has a developing, lucrative large-pelagic fishery, comprising 19 right holding companies targeting albacore, swordfish and sharks. The United States of America and Japan are the most important markets for Namibia's swordfish, tuna and shark products.

In November 2004, Namibia attended the 18th Regular Meeting of ICCAT held in New Orleans, USA. At this meeting, Namibia was applauded by entire ICCAT membership for developing and implementing a National Plan of Action for the Conservation and Management of Sharks. A particularly important outcome from this meeting regarding Namibia was the three-year sharing arrangement for Southern Atlantic Albacore, starting in 2005 and ending in 2007, albacore tuna being an important target species for the Namibian Large Pelagic industry. Under this agreement, Namibia's share of this resource is unrestricted and only requires catch monitoring and reporting to the Commission. Another important development for Namibia and other developing member states of ICCAT was the coming into force of the Madrid Protocol of 1992, starting in March 2005. The Madrid Protocol provides for preferential treatment of developing states' financial contribution to ICCAT. Under this scheme, and starting from 2006, Namibia's financial contribution to ICCAT will be significantly less than in 2004.

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

The INFOPECHE Unit was established in 2001 in Windhoek, Namibia. The purpose of the INFOPECHE unit is to promote fish and fish products trade within and outside the region through the development and maintenance of a high quality international market information base.

On 13 September 2004, Hon. Svein Ludvigsen, Norway's Minister of Fisheries and Coastal Affairs, officially inaugurated the INFOPECHE regional office in Windhoek. This office was created in order to give services on regional fisheries sector market and also to publish specific market study on fish products of interest to our SADC region and beyond.

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

CCAMLR is responsible for the management of living marine resources found in the Southern Sea, including Patagonian toothfish, deep-sea crab and krill. Namibia has been a member since 2002.

Namibia participated at the 23rd Annual Meeting of the Commission in Tasmania, Australia (25 October – 5 November 2004).

Annex 1: Useful contacts

Institution and contact details	Mandate
Ministry of Fisheries and Marine Resources (MFMR)	
<p>Head Office, Private Bag 13355, Brendan Simbwaye Square, Block C, Corner of Uhland & Goethe Streets, Windhoek, Namibia.</p> <p>Tel: +264 61 2059 (switch) Fax: +264 61 233 286 www.mfmr.gov.na</p>	<p>Office of the Minister, sectoral policy, planning and economics, fisheries administration, legislative controls, data collection and analysis.</p>
<p>National Marine Information and Research Centre, (NatMIRC), Strand Street, Box 912, Swakopmund.</p> <p>Tel: +264 64 410 1000 (switch) Fax: +264 64 404 385</p>	<p>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.</p>
<p>NatMIRC Research Centre, Luderitz.</p> <p>Tel: +264 63 202 415 Fax: +264 63 202 495</p>	<p>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.</p>
<p>Hardap Freshwater Research Institute, Private Bag 2116, Mariental.</p> <p>Tel: +264 63 240 361 Fax: +264 63 242 643</p> <p>Inland Fisheries - Rundu Office Private Bag 2084, Rundu. Tel: +264 66 256 853. Fax: +264 256 867</p> <p>Inland Fisheries – Katima Mulilo Office Private Bag 1004, Ngweze. Tel: +264 66 253 224. Fax: +264 66 253 226</p>	<p>Freshwater fish and invertebrate research, migrations of freshwater fishes using radio tagging, development of freshwater aquaculture techniques and assessment of candidate species.</p>
<p>Fisheries Inspectorate Office, Box 394, Luderitz.</p> <p>Tel: +264 63 202 905 Fax: +264 63 203 337</p>	<p>Monitoring, control and surveillance of marine commercial and recreational fisheries.</p>
<p>Fisheries Inspectorate Office, PO Box 1594, Walvis Bay.</p>	<p>Monitoring, control and surveillance of marine commercial and recreational</p>

<p>Tel: +264 64 201 6111 Fax: +264 64 205,008</p>	<p>fisheries.</p>
<p>Regional programmes</p>	
<p>SADC Regional Monitoring, Control and Surveillance of Fishing Activities Programme, Private Bag 13355, Windhoek Namibia.</p> <p>PO Box 9768, Windhoek, Namibia.</p> <p>Tel: +264 61 205 3016 Fax: +264 61 242 502 www.mcs-sadc.org</p>	<p>EU-funded regional programme to enhance capacity in regard to MCS matters.</p>
<p>Benguela Current Large Marine Ecosystem (BCLME) Programme, PO Box 40728 Aussenplatz Circle, Windhoek, Namibia.</p> <p>Tel: +264 61 246 948 Fax: +264 61 246803 E-mail: pcu@bclme.un.na www.bclme.org</p>	<p>Multinational cross-sectoral initiative by Angola, Namibia and South Africa to manage the living marine resources of the Benguela Current Large Marine Ecosystem in an integrated and sustainable manner and to protect the marine environment.</p>
<p>Benguela Environment Fisheries Interaction and Training (BENEFIT) Programme, PO Box 912, Swakopmund, Namibia.</p> <p>Tel: +264 64 410 1165 Fax: +264 64 405 913 www.benefit.org.na</p>	<p>To establish a research framework for biological and oceanographic investigation of the entire Benguela Current system. Principal focus is training in resource management research in support of the major fisheries of the three co-operating countries: Namibia, South Africa and Angola.</p>
<p>INFOPECHE Unit, Kenya House, 4th Floor, Robert Mugabe Avenue – Windhoek – Namibia.</p> <p>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</p>	<p>Provides timely information regarding prices and trends in the marketplace and stimulates greater intra-regional and international trade in fish products.</p>
<p>Other institutions</p>	
<p>University of Namibia (UNAM), Private Bag 13301, 340 Mandume Ndemufayo Avenue, Pioneerspark, Windhoek.</p> <p>Tel: +264 61 206 3111 Fax: +264 61 206 38760</p>	<p>Provides input to courses for MFMR staff including Fisheries Inspectors and Observers course, commercial sampling for fisheries observers, cadet programme for patrol boat officers, scientific technical assistance course.</p>

<p>URL: www.unam.na</p>	
<p>Polytechnic of Namibia, Private Bag 13388, 13 Storch St., West Windhoek.</p> <p>Tel: +264 61 207 9111 Fax: +264 61 207 2444 URL: www.polytechnic.edu.na</p>	<p>Provides input to courses for MFMR staff including Fisheries Inspectors and Observers course, commercial sampling for fisheries observers, cadet programme for patrol boat officers, scientific technical assistance course.</p>
<p>Namibian Maritime and Fisheries Institute (NAMFI), PO Box 3228, Walvis Bay.</p> <p>Tel: +264 64 203 114 Fax: +264 64 203 112</p> <p>Poly Andima 081 129 1983</p>	<p>Main institute providing education and training for MFMR staff, including Fisheries Inspectors, Fisheries Observers, patrol boat personnel and fisheries scientists.</p>
<p>Fisheries Observer Agency, PO Box 2903, Walvis Bay.</p> <p>Tel +264 64 219 500 Fax: +264 64 219 547/8</p>	<p>Management and administration of the MFMR Fisheries Observer Programme. Office should be fully operational from March 2002.</p>
<p>The Namibian Chamber of Commerce. www.ncci.org.na</p>	<p>Provides a forum of discussion between business persons on matters of common concern; represents the views of commerce and industry to Government; provides a range of services of benefit to its members; and seeks to assist in setting up local and regional chambers.</p>
<p>Namibian Ports Authority (NamPort). Head Office: Namport, No 17 13th Road, P O Box 361, Walvis Bay, Namibia.</p> <p>Tel: (+264 64) 208 2207 Fax: (+264 64) 208 2323 e-mail: jerome@namport.com.na Manager: Marketing & Strategic Business Development: Mr Jerome Mouton Port of Lüderitz, Hafen Street, P O Box 836, Lüderitz, Namibia.</p> <p>Tel: (+264 63)20 0217 Fax: (+264 63) 20 0218 www.namport.com</p>	<p>Promotes efficient and effective port and related services for seaborne trade between Namibia, it's neighbours and their international trading partners as well as for the Namibian fishing and other offshore industries.</p>
<p>Fishing industry associations:</p> <p>Pelagic Fishing Association Hake Association Midwater Trawling Association Monk and Sole Association</p>	<p>PO Box 2513, Walvis Bay, Namibia.</p> <p>Phone: +264 (0)64 20 9083. Fax: +264 (0)64 20 6158.</p>

Tuna and Hake Longlining Association Deepwater Fishing Sector	E-mail: hardrud@iafrica.com.na
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Annex 2: Ministry of Fisheries and Marine Resources Structural organogram.

