REPUBLIC OF NAMIBIA

MINISTRY OF FISHERIES AND MARINE RESOURCES

ANNUAL REPORT 2003

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ACRONYMS

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
CPUE	Catch Per Unit Effort
DFID	Department for International Development (UK Government)
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agricultural Organisation
FIMS	Fisheries Information Management System
FIOC	Fisheries Inspector and Observer Course
FOA	Fisheries Observer Agency
GDP	Gross Domestic Product
GEF	Global Environmental Fund
GIS	Global Information Systems
GTZ	Gesellschaft fur Technische Zusammenarbeit
ICCAT	International Commission for the Conservation of Atlantic Tunas
INFOPECHE	Intergovernmental Organisation for Fishery Information and Co-operation Services for Fishery Products in Africa
MAC	Marine Resources Advisory Council
MCS	Monitoring and Control Surveillance
NORAD	Norwegian Agency for Development Co-operation
ICEIDA	Icelandic International Development Agency
IOC	Intergovernmental Oceanographic Commission
IUU	Illegal Unregulated and Unreported Fishing
MFMR	Ministry of Fisheries and Marine Resources
NAMFI	Namibia Maritime and Fisheries Institute
NATMIRC	National Marine Information and Research Centre
PCU	Programme Co-ordination Unit
PSC	Programme Steering Committee
PV	Patrol Vessel
SEAFO	South East Atlantic Fisheries Organisation
SST	Sea Surface Temperatures
TAC	Total Allowable Catch
UNAM	University of Namibia
UNDP	United Nation Development Programme
UNOPS	United Nations Office for Programme Services
VMS	Vessel Monitoring System

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1 FOREWORD

It is my pleasure once again to welcome readers to the 2003 Annual Report of the Ministry of Fisheries and Marine Resources. The 2003 will be remembered as having been a difficult year, particularly for the marine commercial fishing and processing sector. The sector faced economic, social and environmental challenges.

The economic challenges included the strengthing of the Namibian dollar against the Euro and US$ – the main currencies in which our fish are sold – a factor that affected all export-oriented industries in Namibia. The flat market prices for fish and fish products, erratic catches linked with the variable nature of our marine ecosystem, and high operational costs also exacerbated the problem of reduced margins for the industry. Over-supply of prime species such as hake on our traditional European markets by other producer nations also impacted on sales. Despite these hardships, the sector contributed at least N$3 billion to export revenue, due to continued improvements in the landings of the demersal and midwater sectors. In the face of these adverse economic conditions, the challenge facing the Namibian fishing and processing sector now is to identify courses of action to ensure future economic viability and competitiveness. One particularly welcome development was that I was able to re-open the pilchard fishery during the year, as a result of positive growth of the pilchard stock.

The Aquaculture sector also saw new developments during the year, including the rehabilitation and expansion of community-based freshwater Aquaculture in the Caprivi and Kavango Regions, and the development of an Inland Aquaculture Centre at Omahenene/Onavivi in Omusati Region. At the coast, commercial culture of marine species such as oysters, continued to develop well, with six oyster farmers now producing both Pacific and European oysters.

With the enactment of the Inland Fisheries Resources Act in 2003, greater effort is being given to monitor and control Inland fishery activities. Inland fishery offices have been established in Kavango and Caprivi regions and others are planned.

May I thank the Ministry's staff and all stakeholders for the continued good relations, hard work and mutual support during 2003.

DR. ABRAHAM IYAMBO

MINISTER

2 THE MINISTRY OF FISHERIES AND MARINE RESOURCES

2.1 OBJECTIVES, STRATEGIES AND FUNCTIONS

The Ministry's objectives are to:

- Promote and regulate the optimal sustainable utilisation of living marine resources within the context of conserving marine ecosystem;
- Establish a conducive environment in which the fishing industry can prosper and derive optimal income from marine resources;
- Further Namibia's interests within the international fishing community;
- Provide professional, responsive and customer focused services;
- Deliver our services efficiently and effectively providing best value for money;
- Continuously invest in human resource development;
- Establish a conducive environment for the conservation, utilisation and management of living marine resources and fresh water fish resources; and
- Develop a conducive environment for the responsible and sustainable development of aquaculture.

2.2 ORGANISATIONAL STRUCTURE

The MFMR consists of four Directorates:

2.2.1 Directorate of Operations

The Directorate is headed by a Director assisted by two Deputy Directors. The Directorate mainly regulates the fishing activities within the Namibian Exclusive Economic Zone (EEZ). Two years ago, the Directorate started to monitor the activities of Namibian vessels licensed to fish outside the EEZ. With the implementation of the Inland Fisheries Resources Act, the Directorate is now empowered to monitor and control Inland fisheries activities.

2.2.2 Directorate of Resource Management

The Directorate is headed by a Director assisted by two Deputy Directors. The Directorate provides advice on the state of marine fish stocks; recommendations on their appropriate yields; and 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 these resources.

2.2.3 Directorate of Policy, Planning and Economics (PPE)

The Directorate is headed by a Director assisted by a Deputy Director. The Directorate co-ordinates the formulation and implementation of fisheries policies and legislations. In tandem with this function, the Directorate carries out continuous policy and economic research and analyses as well as planning. The Directorate is further responsible for the management of information services of the Ministry, including administration of fishing rights and quotas as well as the collection of fees and analysis and publication of fisheries statistics. In addition, the Directorate co-ordinates overall planning of the Ministry.

2.2.4 Directorate of Aquaculture

This is a new Directorate, which was established in 2003. It is headed by a Director. The Ministry is still in the process of recruiting staff members under this Directorate.

The objective of the Directorate is to develop Aquaculture in Namibia. The following Policy and Legal framework is currently in force:

- Namibia's Aquaculture Policy Towards Responsible Development of Aquaculture 2001
- The Aquaculture Act (Act No. 18 of 2002)
- Aquaculture Licensing Regulation of 3rd December 2003

2.3 MINISTRY'S CUSTOMER CHARTER

The Ministry is guided by its Strategic Plan 1999 – 2003 in delivering services and value for money to the public.

A Customer Charter developed in 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; and
- Explanations on how to launch complaints should the public not be satisfied with the Ministry's services.

2.4 FINANCE

The operations of the Ministry are financed through the Operational Budget for all recurrent expenditure; and the Development Budget, for capital projects.

2.4.1 Operational Budget

The Operational Budget for 2003/2004 was N$94 486 000. The breakdown is indicated in Table 1.

Table 1: Operational Budget for 2003/2004.

Main division	Budget estimate (N$)
01: Office of the Minister	2 207 000
02: Administration	10 192 000
03: Resource Management	19 014 000
04: Operations and Surveillance	54 751 000
05: SADC	1 009 000
06: Policy Planning and Economics	7 313 000
Total	**94 486 000**

2.4.2 Development Budget

The Development Budget for 2003/2004 was N$27 854 000. Thirteen capital projects were identified and funded under this Budget, as shown in Table 2.

Table 2: Development Budget for 2003/2004

Project	**Estimate (N$)**
Replacement of Research Vessel	700 000
Construction of Offshore Island Jetties	3 800 000
Rehabilitation of Lake Liambezi	700 000
Relocation of the Hardap Fresh water Institute	7 104 000
Extension and Renovation of Observer Office	1 500 000
Upgrading of Arandis Hangar	600 000
Vessel Monitoring System	1 500 000
Acquisition of Patrol Aircraft	4 358 000
Aquaculture Development Project Lake Oponono	500 000
Aquaculture Development Project Olushandja Dam	1 000 000
Aquaculture Development Project Kavango	3 000 000
Aquaculture Development Project Caprivi	3 000 000
Traditional Fishing Development	92 000
Total	**27 854 000**

2.4.3 Inauguration of Traditional Fishing Development Project, Henties Bay

The Traditional Fishing Development project is a cooperative, which was co-funded by the Government of Namibia and the Government of the Kingdom of Spain. The project is situated in Henties Bay and was established with the aim of uplifting the living standard of the people of Henties Bay. This co-operative consist of 36 members. The project was inaugurated by His Excellence President Sam Nujoma on 26 April 2003.

Figure 1: His Excellency President Sam Nujoma officially inaugurates the Traditional Fishing Development Project in Henties Bay on 26 April 2003. Looking on from left, His Excellency Javier Francisco Perez-Griffo, the Ambassador of the Kingdom of Spain, Hon. Minister Dr. Abraham Iyambo, Minister of Fisheries and Marine Resources and Councillor A. J. Dames, Mayor of Henties Bay

2.4.4 Donor assistance

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

Table 3:Donors and area of support during 2003.

Donor	Type of assistance provided
Norwegian Agency for Development Co-operation (NORAD)	Marine fisheries research, technical, staff training, monitoring, control and surveillance, Namibia Maritime and Fisheries Institute (NAMFI).
Icelandic International Development Agency (ICEIDA)	Technical assistance and human resources development to the Ministry and NAMFI.
Food and Agricultural Organisation (FAO)	Technical assistance in the development of Aquaculture Legislation.
Germany - GTZ (Gesellschaft fur Technische Zusammenarbeit)	Capacity building through staff training; procurement of equipment.

Department for International Development (DFID)	Technical assistance for improvement of Fisheries Information Management System (FIMS) has been completed.
European Union (EU)	Support to NAMFI and MCS.
Government of Spain	Financial support for Traditional Fishing Development project, technical assistance for Omahenene/Onavivi Inland Aquaculture Centre, Omusati region, NAMFI and VISION 2030.
Government of Malawi	Technical Assistance (aquaculture development projects).
World Life Fund	Shared resources management on the Zambezi/Chobe Systems
Government of Cuba	Technical Assistance (Aquaculture development projects).

3 POLICY AND LEGISLATIVE FRAMEWORK

In 2003 the Ministry reviewed the 1991 White Paper on Fisheries entitled "Towards Responsible Development of Fisheries Sector". The review was necessitated by changes at national, regional and international levels in fisheries conservation, management, sustainable utilisation and socio-economic industrial developments.

The revised policy document, which will be titled "Namibia's Marine Resources Policy, "*Towards Responsible Development and Management of the Marine Resources Sector"* should be completed in 2004.

3.1 MARINE RESOURCES ACT (ACT NO. 27 OF 2000)

The legislation that enforces the implementation of marine capture fisheries policies are contained in the Marine Resources Act 2000.

3.2 INLAND FISHERIES RESOURCES ACT (ACT NO. 1 OF 2003)

The Inland Fisheries Resources Act provides a legal framework for the management and development of inland fisheries. In August 2003, extensive regional consultations were held in Caprivi, Kavango, Omusati and Oshana regions, on the Inland Fisheries Policy, Act and Regulations. The purpose of the consultations was to share and advance information on sustainable utilization of the resources, appropriate type and usage of fishing gear particularly with respect to environmental protection. Communities were also informed and requested to positively consider the essential co-existence of traditional fishers and commercial recreational fishers predominantly in the form of tourists.

Figure 2: Inland Fisheries consultation held in Caprivi region, 2003

3.3 AQUACULTURE ACT (ACT NO. 18 OF 2002)

The Aquaculture Act was enacted in 2002 and came into operation in 2003. The Act provides the legislative framework necessary to promote responsible and sustainable development of aquaculture within the context of national socio-economic development aims. The Act spells out procedures for obtaining aquaculture concessions, monitoring, regulation, processing, marketing, environmental safety measures, and consumer health and safety issues.

4 FISHERIES RESEARCH

The general approach in research continues to focus on the collection and analysis of oceanographic data and data derived from systematic surveys by the Ministry' research staff. Catch and effort data from the fishing industry is used in the assessment of stocks. This is done in an effort to better understand the impact of environmental fluctuations on fish stocks. Hence, industry socio-economic information together with stock biomass estimates are used in determining the TAC to be allocated to the Fishing Industry

4.1 STATE OF THE ENVIRONMENT

Environmental indices are developed to serve as a measurement or proxy of the state or intensity of certain environmental processes or variables for comparison over time. These indices relate to the oceanographic processes affecting fish habitat conditions such as food availability, water column stability, etc. Such environmental processes and conditions are particularly important during the early life stages of fish. During these stages, adverse environmental conditions would have a more significant effect on fish stocks than during the adult stages. World wide, attempts are continuously made to find quantifiable correlations between these and the available fisheries information.

4.1.1 UPWELLING

Wind induced coastal upwelling is the most important oceanographic process along the Namibian coast. Through this process nutrient rich water moves vertically from depth to the surface where it stimulates primary production in the sunlit zones of the water column. This forms the basis of the food chain and is thus very important for secondary production (e.g. zooplankton, eggs and larvae).

Wind and sea surface temperatures are presented below (Figures 3 and 4) as indices for upwelling variability.

4.1.2 Wind

The upwelling favourable wind time-series at Lüderitz can be divided into three prominent phases as in Figure 3. During the third phase (after 1988/89) there was a slight reversal of pattern between 1997-1999 with positive anomalies (deviation from average). The largest negative anomaly of the entire time-series occurred during the 2001 to 2003 season.

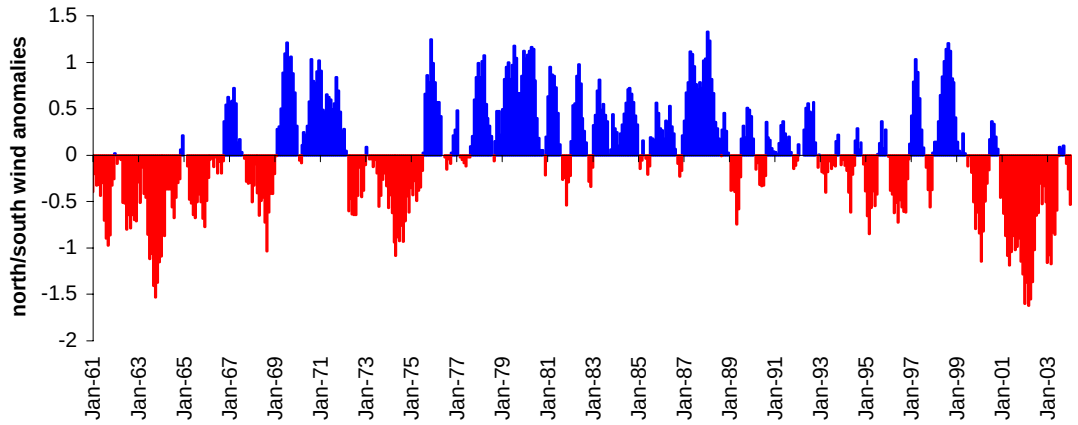


Figure 3: Monthly along-shore (parallel to the coast) wind anomalies recorded at Lüderitz. The zero-line indicates an average position, whereas the blue histograms depicts positive deviation from the average wind speed, the red is the opposite of the blue.

4.1.3 Sea surface temperature (SST)

The cumulative SST anomalies in Figure 4 were stable during most of the 1980s but show an increasing trend since 1993 to 2003.

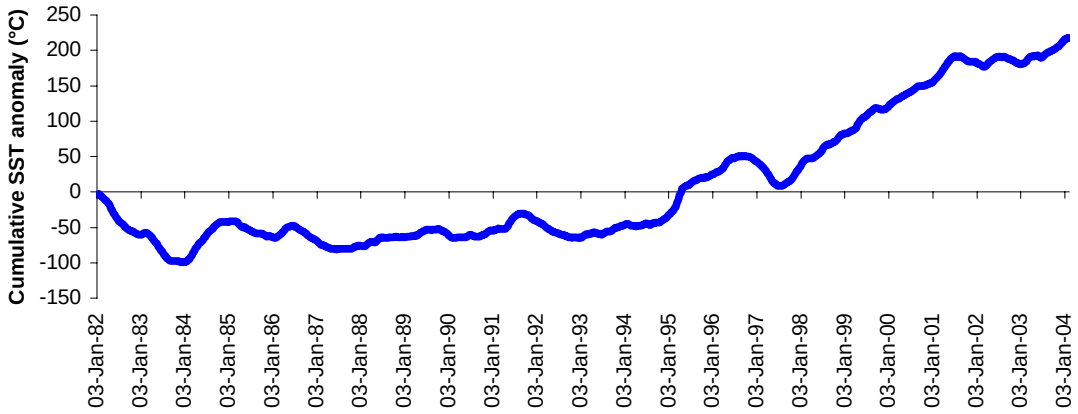


Figure 4: Cumulative SST anomaly over the Namibian shelf (satellite derived).

4.1.4 OXYGEN

Dissolved oxygen is one of the key environmental variables influencing the habitat suitability in biologically productive systems such as the upwelling system off Namibia. Oxygen status

in the water column could be a limiting factor to successful habitat conditions for certain benthic and demersal species and possibly also pelagic egg and larvae stages of various fish species occurring off Namibia. It is imperative to note from Figure 6 that on average the beginning of the summer is characterized by a low oxygen concentration in this area of the shelf.

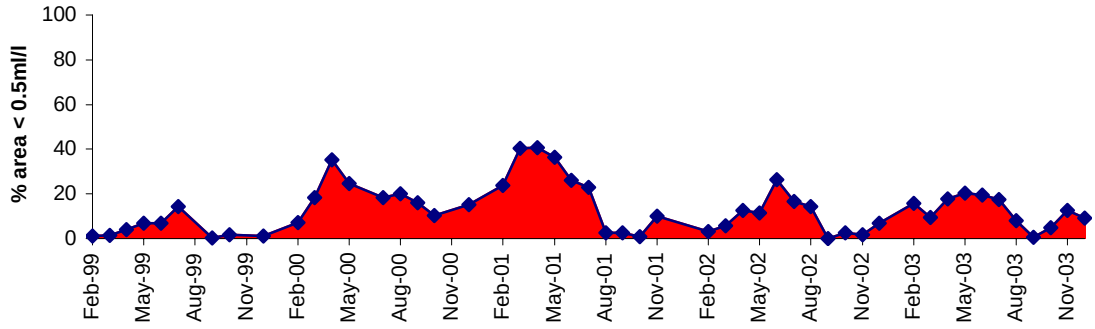


Figure 5: Percentage areas of low oxygen water (≤0.5ml/l oxygen) on the shelf off Walvis Bay. This graph depicts areas on the shelf where the dissolved oxygen concentration was lower than can be tolerated by the majority of marine organisms.

Data from the monthly sampling line off Walvis Bay has been used to calculate an oxygen index for the central Namibian shelf (% area of water column ≤0.5ml/l O_2) from 1999 to November 2003 (Figure 6). Although the same trend is seen throughout the time series it does show inter-annual variability. The water column was more oxygenated throughout 1999; during 2000 to 2001. Low bottom oxygen levels were persistent whereas in 2002 and 2003 bottom oxygen levels were average.

The time variability plot (Figure 7) of a station at the outer shelf break, which is more representative of the demersal zone and is not dominated by excess local production re-mineralisation, gives a similar picture to that of Figure 6. Noticeable is the oxygen rich period of 1996 to 1997 and 1998 to 1999 versus the extended low bottom oxygen conditions that occurred during 2000 and 2001.

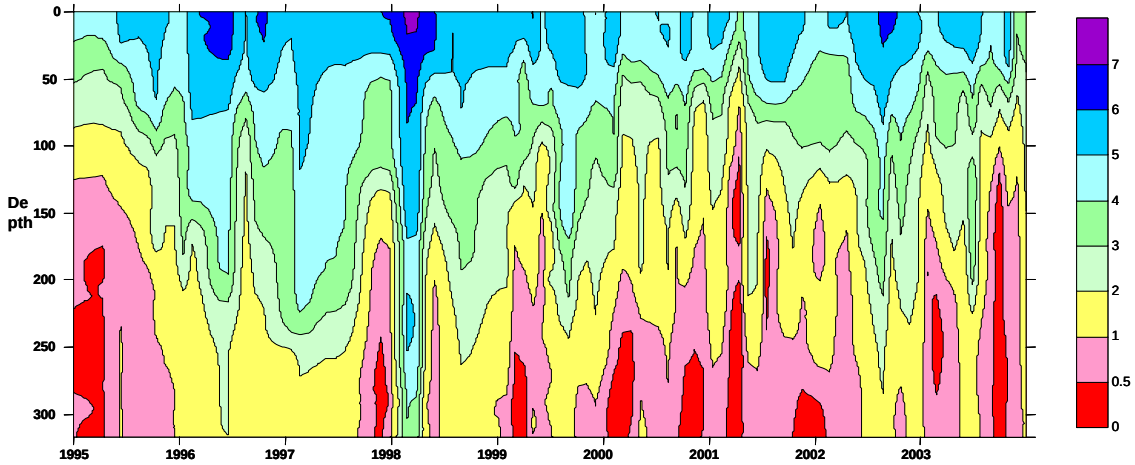


Figure 6: Temporal variability of dissolved oxygen at 23°S, 13°09E.

4.1.5 PHYTO- AND ZOOPLANKTON

During the upwelling process, surface water along the coast is moved offshore (Ekmann transport) and is replaced by cool, nutrient-rich water from deeper down in the water column. This enrichment of the surface water stimulates phytoplankton growth (primary production), which forms the basis of the food chain in the Ocean. This is then followed up by secondary production consisting mainly of zooplankton initially. Both phytoplankton and zooplankton are important food sources for many of the fish species found along the Namibian Coast, especially during their early life stages.

A weekly chlorophyll-a index, representing chlorophyll-a concentrations (phytoplankton) along the Namibian coast, has been derived from SeaWIFS satellite images (Figure 8). Highest chlorophyll-a concentrations usually occur off central Namibia, which is located downstream of the Lüderitz upwelling area.

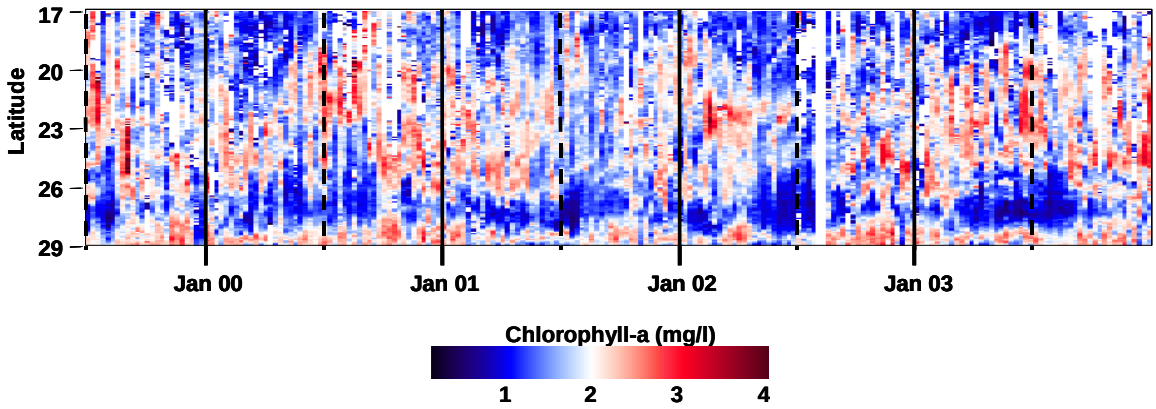


Figure 7: Weekly chlorophyll-a concentrations along the Namibian coast (17°S – 29S) since July 1999.

Copepod (a zooplanktonic species) abundance, calculated from the monthly monitoring line off Walvis Bay, provides an excellent indication of secondary production. Figure 9 shows a steady increase in copepod abundance since January 2000 to 2002, after which the abundance stabilised.

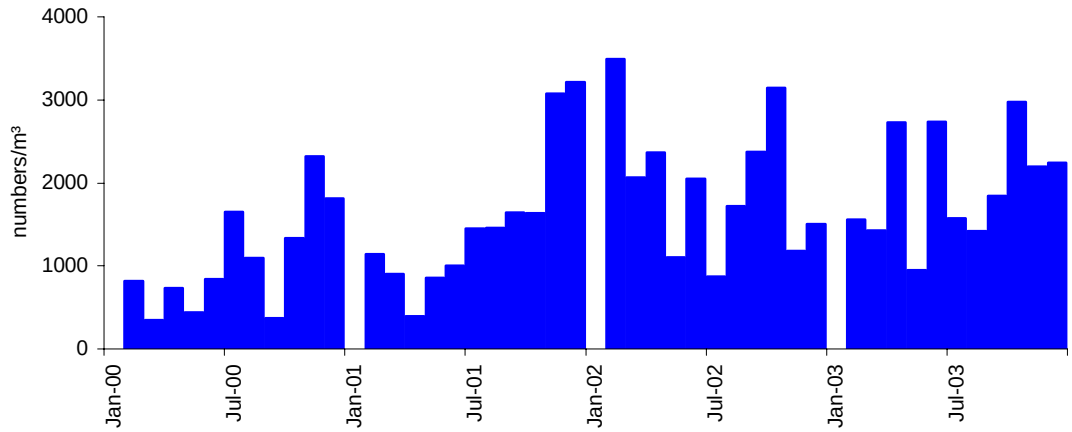


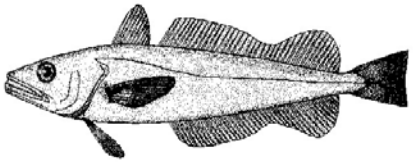
Figure 8: Copepod abundance along line 23°S since January 2000.

4.2 STATE OF THE MAIN MARINE RESOURCES

The Ministry of Fisheries has been conducting research surveys on major stocks which together with data from fishing operations (catch and effort) is used to estimate the biomass of a stock. The estimated stock biomass (adult) is generally related to Total Allowable Catch.

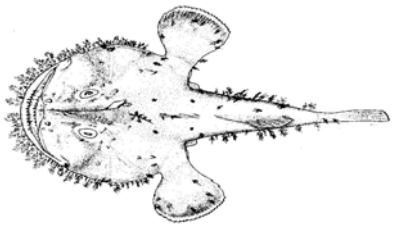
4.2.1 Hake

The spawning biomass (sexually mature fish) as assessed from the age-structured production model, was about 0.83 million mt for 2003. The research survey conducted in January/February 2003 estimated an average to low recruitment potential as reflected by 2 year-old fish, spawned during 2001.



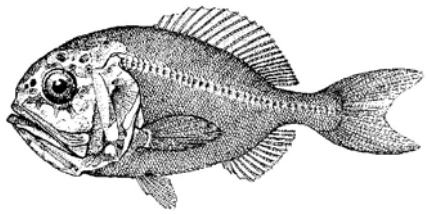
4.2.2 Monkfish

The stock assessment model estimate for the fishable biomass in 2003 is at around 35 000t.



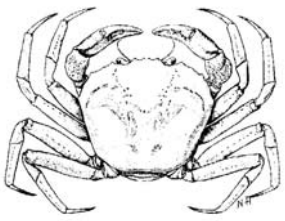
4.2.3 Orange roughy

An age-structured production model assessment estimated the current biomass (B_{2002}) at approximately 80 330 tonnes of orange roughy. The model is based on the hypothesis that either only a proportion of the spawning orange rough stock aggregates every year, or that after a resting period of some years orange roughy re-aggregate.



4.2.4 Deep-sea red crab

Since 2001 the deep-sea red crab species *Chaceon maritae* has been assessed by means of a modified De Lury model. Results of this model indicated a crab stock recovering at a slow but steady rate (i.e. an increase from 10 000 mt in 1998 to 12 000 mt in 2003). The improvement in stock level has also been observed in the increase of catch-per-unit-effort (CPUE) time-series from 3.80 kg/trap in 2000 to 4.23 kg/trap in 2003.

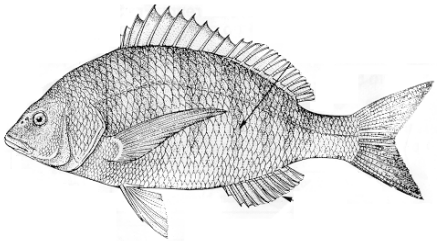


4.2.5 Rock lobster

Compared to 2002 the biomass (estimated by De Lury model) remained relatively stable during 2003 at 1900 mt.

4.2.6 Silver kob and West coast steenbras

The biomass for silver kob is estimated to be about ± 7500 tonnes. Currently the size of the stock is in the region of 40% of its pristine state. Even though about the same number of silver kob were caught this season compared to the previous season, the catch consisted of smaller sized fish.



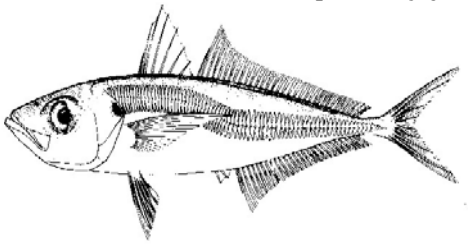
The spawner stock biomass of West Coast steenbras is small and estimated to be in the region of 2000 tonnes. The stock size is about 53% of its pristine state.

4.2.7 Pilchard

The Namibian pilchard stock was estimated at its highest point (since 1992) of about 550 000 mt in March 2003. Most of these fish were young adults and they were to spawn for the first time towards the end of 2003. The total biomass of the northern Benguela pilchard stock estimated from the October 2003 acoustic survey was 380 000mt of which about 362 000mt were adults.

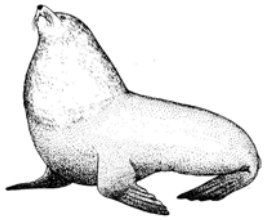
4.2.8 Horse Mackerel

The 2003 scientific surveys and stock assessment models indicate that the overall horse mackerel stock is presently just above one million tonnes (1 059 000 mt). Where 76% of the total biomass was attributed to the adult stock. This is just below the biomass estimate of the previous year which was estimated at approximately 1 500 000 mt. The other important indicator, that is the Catch Per Unit of Effort (CPUE) has declined relative to 2002 year.



4.2.9 Cape fur seal

The Namibian Cape fur seal population was estimated to be in the range of 0.9 to 1 million individuals for 2003.



Estimation of Cape fur seal stock in Namibia is based on aerial counts of pups. The highest pup counts since 1972 was experienced in 1993 totaling 219 000 animals and the 2003 count of 203 162 pups was the second highest. This depicts an 80% increase in pup numbers since the last aerial survey was conducted in 2001. Pup growth was constantly good in 2003.

4.3 AQUARIUM: VISITORS AND INCOME

The Aquarium continues to provide information into the life of aquatic organisms. There was an overall decrease in the number of visitors to the Aquarium for 2003 when compared to the previous two years. A total of N$ 286 221 was generated during 2003 compared to N$354 674 the previous year.

Table 4: Number of visitors to the National Marine Aquarium: 2001 and 2003.

Group	2001	2002	2003
Pensioners	3186	2152	1115
School groups	2548	6237	3576
Children	8199	8587	8936
Adults	21023	17995	13290
Teachers	382	353	437
Students	1253	786	714
Foreign. adults	-	4100	3646
Foreign. children	-	874	628
Foreign. pensioners	-	688	855
Total	**36591**	**41772**	**33197**

5 INLAND FISHERIES

5.1 INLAND FISHERIES INSPECTORATE

With the promulgation of the Inland Fisheries Act in 2003, the Ministry started to monitor Inland fishery activities. The Ministry established Inland fishery Offices in Kavango and Caprivi regions. Two inspectors are in charge of the Caprivi office while one is in charge in Kavango.

Fishing activities are seasonal in Oshikoto, Ohangwena, Oshana, Omusati, and part of Kunene regions. In this view, inspectors mainly from Walvis Bay will be deployed on *ad hoc* basis depending on the level of fishing activities within a particular region.

The duties of Inland inspectors include:

(a) stopping and boarding any vessel which is used or suspected of being used for fishing and perform any act necessary to ascertain whether the provision of the Act have been or are being complied with;

(b) seize any vessel or fishing gear, which the inspector has reason to believe has been used for fishing contrary to the Act or condition of a fishing license;

(c) seize any fish that the inspector has reason to believe has been caught or is being processed in contravention of a fishing license; and

(d) seize any equipment, article or substance they have reason to believe that has been used for fishing in contravention of the Act.

5.2 MONITORING PROGRAM

The annual monitoring surveys were conducted in the Lower Orange, Zambezi, Chobe, Kwando, Okavango and Kunene Rivers. Biological data were recorded that form part of a program to generate a database for these rivers that will be used for future comparisons and to identify trends in the fish population structures. Stations were identified in each river system and all habitat types were sampled. 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.

5.3 COMMUNITY CATCH DATA COLLECTION PROJECT

The community catch data collection project at Impalila Island continued during 2003 (was initiated in 2000) and were visited regularly by staff from the Katima Mulilo Office. Valuable data are recorded by the fishing group at Impalila Island and will be used to analyse the impact the subsistence fishery has on the resource. A report will be published in 2004. The interaction between the Ministry and the group is also an important aspect and gives the Ministry the opportunity to communicate and work with the fishing community.

5.4 SHARED RESOURCE MANAGEMENT ON THE ZAMBEZI/CHOBE SYSTEMS IN NORTHEAST NAMIBIA:

The project is located in Northeast of Namibia. Its purpose is to move towards the implementation of the Fishery Resources of Caprivi through the collection of information on the fishery. Furthermore, it is also to improve the understanding of the management systems with a view to develop future management strategies for the aquatic resources in co-operation with neighbouring countries.

Figure 9: Fisheries Inspector demonstrating to the fishermen on how to measure mess sizes of fishing nets in accordance with the commencement of the Inland Fisheries Act of 2003 on the bank of Zambezi river while Ministry's staff look on.

6 MONITORING, CONTROL AND SURVEILLANCE

6.1 SEA SURVEILLANCE

In the past the Ministry deployed three patrol vessels namely; PV "*Tobias Hainyeko"*, PV "*Nathaneal Maxuilili"* and PV "*Oryx"*. However, due to the transfer of PV "*Oryx"* to the Ministry of Defence only two patrol vessels were deployed during the period under review.

Table 5: Days spent at sea and inspection conducted by Patrol Vessels

Patrol vessel	Days-at sea	Distance (NM)	Number of inspections*
Tobias Hainyeko	102 days and 12hrs	14159	137
Nathanael Maxuilili	119 days and 17hrs	17660	129
Total	**222** days and 5hrs	**31819**	**266**

Note: The total number of inspections is encouraging as indicating that in most operations there have been more than one inspection per day.

Figure 10: From left to right are Chief Officer Armas Makemba, Acting Captain Paulus Kanyangela and Fisheries Inspectors Malakia Stephanus and Matti Shilunga on board of PV "*Tobias Hainyeko*"

6.2 AIR SURVEILLANCE

The fisheries patrol fixed wing plane Sea Eagle undertook 151 patrol missions totalling 878 flying hours. Some 97 vessels observations were made. In addition, 7 VIP flights were undertaken. In all, the fixed wing patrol aircraft covered 120 508 nautical miles.

Figure 11: Fisheries Patrol Aircraft

6.3 COASTAL PATROL AND INLAND INSPECTIONS

The Walvis Bay Section of Monitoring and Control undertook 1118 missions covering a distance of about 259 727 km. Deducing from Table 6, a total of 992 summonses were issued, while an amount of N$146 605 was paid to the State on 630 summonses. However, some 362 cases to the value of N$ 87 880.00 are still outstanding.

During the period under review 14 case dockets were opened at Henties Bay, Swakopmund and Walvis Bay police stations. Fisheries Inspectors, the Namibian Police, Immigration Officers and Traffic Officers jointly carried out 6 roadblocks during festive seasons in 2003.

Table 6: Transgressions reported and action taken at Walvis Bay

No. of Missions	Summons issued	Amount Paid (N$) to the state	Outstanding cases	Cases Withdrawn	Warnings issued	Warrant of Arrest Issued
1 118	992	146 605.00	319	40	1	166

Table 7: Law enforcement by staff members of the Ministry and FOA in Walvis Bay

Nature of offence	Total fines issued	Total warnings issued	Total Amount paid to the State on violation (N$)
Failed to give notice before offloading the fish	11		3 300
Offload fish without presence of inspector	13		3 900
Fish deliberately broken during processing		1	
Discard of fish	15	5	6 300
Process by-catch for fish meal, which is fit for human consumption		1	
Interfere with Observers' duties	1	1	300
Maltreatment and threatening of Observers on board	7	3	900
Not carrying official required documentations onboard	2		600
Sailing without an Observer	3		1 200
Dumping of non-biodegradable waste in the sea	3	2	1 200
Failing to record relevant information in logbook	2		600
TOTAL	**57**	**13**	**18 300**

6.4 VESSELS CLEARANCE AND INSPECTION

The harbour and Mid-water sections have conducted 64 vessel clearances and 100 general inspections, which include vessel and catch documentation inspections.

The whitefish & pelagic section has conducted 102 vessel clearances and 197 general inspections, which include vessel, catch documentation and factory inspections. In total, 166 vessel clearances were done. The importance of clearance of vessels is to verify catches on board; validity of fishing licences and catch documentations. This will enhance and strengthen both the national fisheries legislation as well as international fisheries obligations and in the process will minimise Illegal Unregulated and Unreported (IUU) fishing activities. The factory and harbour inspections totalled 297.

Figure 12: Senior Fisheries Inspector F. Wessels inspecting the vessel documentation for vessel clearance purposes.

6.5 LUDERITZ INSPECTORATE; MONITORING, CONTROL AND SURVEILLANCE

A total of 60 coastal patrol missions were undertaken from Luderitz. Areas covered include Agate beach, Diaz point, Halifax, island, Angra point, Grossebuchk and Boggenfels covering a distance of 3936 km. Due to budgetary constraints and lack of manpower the Ministry could only cover the coastal patrol of Luderitz and no Inland inspections were conducted. The low distance coverage is also due to the size of the coast of Luderitz compared to Walvis Bay coast. The recreational fisheries activities at the coast is also seasonal.

Table 8 Transgressions reported and action taken at Luderitz

Nature of offence	Total fines issued	Total amount paid to the State on violations (N$)
Failed to display vessel registration at the wheel house	3	900.00
Harvest Marine Resources without a fishing permit	10	2 550.00
Retain under size and Rock lobster in berry	220	66 000.00
Total	**233**	**69 450.00**

6.6 VESSEL MONITORING SYSTEM (VMS)

In 2003 the Ministry installed Automatic Location Communicator (ALC), a tamper prove known as Tracs-SAT/C Marine secure Vessels Unit in the patrol vessels as well as in some fishing vessels for trials. The VMS is required to monitor baseline information from approximately 150 vessels. It is planned that the VMS will be installed on some 300 vessels at a later stage.

The system has been installed, tested, commissioned and found to be working well. Initial training has been provided to the System Operator, however it has to be extended to other users with extensive module once the VMS regulation has been finalised. The system will be installed in those vessels targeting deep-sea species, mid-water trawlers, tuna, and vessels licensed to fish outside the Namibian EEZ.

7 MARINE ECONOMICS

The Marine Fisheries Sector continued to be one of the most important contributors to the Namibian economy during 2003, second to the mining sector in terms of export value.

7.1 NUMBER AND DURATION OF FISHING RIGHTS

The total number of existing rights in 2003 was 159. Table 9 shows the number and duration of existing harvesting rights for each species. In 2002, 4 out of 17 mullets right holders expired.

Table 9: Number and duration of existing harvesting rights as at December 2003

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	3	1	3	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	**4**	**25**	**38**	**92**	**0**	**159**

An evaluation of rights that are due to expire at the end of 2003 was undertaken. The outcome of the evaluation is summarized in Table 10. The fishing right for 20 years is exclusive for fishing companies that employ at least 5 000 Namibians, which is currently not the case for any company.

Table 10: Results of fishing rights evaluation in 2003.

Fishery	Motivations Received	Extension of Rights Granted		
		Seven-year	Ten-year	Fifteen-year
Hake	4	0	1	3
Linefish	1	0	0	1
Small pelagic	15	2	4	9
Monk	2	0	2	0
Large Pelagic*	**1**			**1**
Rock Lobster	**6**		**1**	**5**
Orange Roughy	**3**		**3**	
Seal	**1**			**1**
Total	**33**	**2**	**11**	**17**

Note*: Three large pelagic rights are still under review for possible extension.

7.2 VESSEL LICENCES

The number of licensed vessels operating in Namibian waters from 1999 to 2003 is indicated in Table 11 below. A total of 279 vessels were licensed for commercial fishing in 2003.

Table 11: Number of licensed vessels by fishery, 1999-2003

Fishery	1999	2000	2001	2002	2003
Small pelagic	33	30	26	25	20
Demersal Trawlers	97	111	128	114	100
Longliners	20	24	38	10	8
Midwater	26	26	24	20	26
Deepwater	6	5	3	6	5
Large pelagic	54	56	68	71	49
Linefish	27	26	22	26	19
Crab	3	2	2	2	3
Rock lobster	27	29	29	38	42
Monk				23	21
Total	**293**	**309**	**340**	**335**	**279**

7.3 TACs AND LANDINGS

The setting of Total Allowable Catches is one of the main management measures to prevent overexploitation of Namibian fish stocks. TACs are set for most commercial species in Namibia. Table 12 shows the TACs set by fishery during 1990 - 2003.

Table 12: Total Allowable Catches, 1990-2003 in tonnes.

	Pilchard	Hake	Horse Mackerel		Red Crab	Rock Lobster	Alfonsino	Orange Roughy	Monk
			Mid water	Pelagic					
1990	40 000	60 000	150 000		n.a.	n.a.	n.a.	n.a.	n.a.
1991	60 000	60 000	465 000		6 000	1 200	n.a.	n.a.	n.a.
1992	80 000	90 000	450 000		6 000	100	n.a.	n.a.	n.a.
1993	115 000	120 000	450 000		4 900	300	n.a.	n.a.	n.a.
1994	125 000	150 000	500 000		4 900	130	n.a.	n.a.	n.a.
1995	40 000	150 000	400 000	(50 000)	3 000	230	n.a.	n.a.	n.a.
1996	20 000	170 000	400 000	(90 000)	2 500	250	n.a.	n.a.	n.a.
1997	25 000	120 000	350 000	(100 000)	2 000	260	10 000	12 000	n.a.
1998	65 000	165 000	375 000	(75 000)	2 000	300	0	12 000	n.a.
1999	45 000	275 000	375 000	(50 000)	2 000	350	n.a.	6 000	n.a.
2000	25 000	194 000	410 000	(50 000)	2 000	350	n.a.	2 400	n.a.
2001	10 000	200 000	410 000	(50 000)	2 100	400	n.a.	1875	13 000
2002	0	195 000	350 000	(40 000)	2 200	400	n.a.	2 400	12 000
2003	20 000	180 000	350 000	(40 000)	2 000	400	n.a	2 650	12 500

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. Regarding the hake TAC in 1999, there was a changeover for the hake fishing year from a calendar year to the period May-April. As a consequence an interim TAC of 65 000 was given for the period January to April 1999, followed by a TAC of 210 000 for the new fishing year May 1999- April 2000.

Table 13: Harvest of the main commercial species, 1999-2003 (tonnes, except seals).

Species	1999	2000	2001	2002	2003
Pilchard	44 653	25 388	10 763	4 160	22 255
Hake	164 250	171 397	173 277	154 588	189 305
Horse mackerel	320 394	344 314	315 245	359 183	360 447
Monk	14 802	14 358	12 390	15 174	13 135
Kingklip	3 706	3 922	6 607	7 210	6 603
Tuna	1 155	2 401	3 198	2 837	3 371
Crab	2 074	2 700	2 343	2 471	2 092
Rock lobster	304	365	365	361	269
Other fish species	26 500	22 987	30 810	77 407	33 644
Total fish harvest	**577 838**	**588 404**	**554 998**	**623 391**	**631 119**
Seals (numbers)	25 161	41 753	44 223	40 000	34 000
Seaweed (gracilaria collection)	6 600	829	800	500	288

Table 13 gives the total volume of marine fish production during the 1999 – 2003 period. During this period, the average yield from all marine fisheries amounted to 595,150 tonnes. Adverse environmental conditions experienced prior to 2002 resulted in below-average yield during the 1999 – 2001 period, but catches rose steadily thereafter. A moratorium for pilchard was declared in 2002. However, anchovy and horse mackerel allocations to the pilchard fishery operators as relief helped offset the impact of a zero TAC for pilchard. This stock conservation measure has paid off, as the volume of pilchard landings recorded in 2003 is twice the amount realised in 2001. Landings from other major fisheries also recorded a moderate increase in 2003, except for the monk, crab and rock lobster fisheries.

7.4 THE ROLE OF THE FISHING SECTOR IN THE NAMIBIAN ECONOMY

The final value, i.e. the value of fish in its final form valued at export prices, of Namibian fish production has increased from N$ 2.5 billion in 2000 to N$ 3.3 billion in 2002 mainly due to value addition by onshore fish processing. In 2003, the final value of production indicated a 7% increase compare to 16% in 2002. This relative small increase is mainly the result of the adverse effects of the strengthening of the Namibian Dollar against the US Dollar, which impacted in a decline in prices. The value of exports closely follow the final value of production as can be seen from Table 14 below, since an estimated 97% of Namibian fish production is exported.

Table 14: Fisheries Economic and Production Indicators, 1999 – 2003*

	1999	2000	2001	2002	2003
Value of Production (N$ in million) Ψ					
Landed Value	1 766.7	2 029.0	2 335.3	2 608.0	2 637.7
Final Value	2 347.1	2 633.8	2 932.0	3 394.9	3 668.0
Value of Exports (N$ in million) ΨΨ					
Fish Products	2 106	2 295	2 718	3 129	3 506
% of Total Exports	**22.1%**	**21.2%**	**21.8%**	**21.3%**	**27.6%**

Source: Ψ MFMR and ΨΨ NPC

Table 15: Fisheries Gross Domestic Products contribution, 1999 - 2003

	1999	2000	2001	2002	2003
Fishing	971	1 044	1 445	1608	1627
Processing	451	548	494	703	899
Total	1 422	1 592	1 939	2311	2526
% of Total GDP Contribution	**6.9%**	**6.7%**	**7.0%**	**7.3%**	**7.8%**

Source: NPC

In 2002, the sector contributed N$ 2 311 million (7.3%) of the GDP, compared to N$ 1,939 million (7.0%) to GDP in 2001, making it the second largest contributor to GDP. Adverse environmental conditions and prolonged winter conditions also affected the processing sector in 2001 and it resulted in a reduced contribution of the processing sector to fisheries contribution to GDP. However, despite the decline in the processing sector, total fisheries contribution to GDP increased in 2001 to 7.0% and continued to increase in 2002 to 7.3%, mainly due to improvements in the hake, pilchard and mid-water trawl industries. In 2003, the contribution of the fisheries sector to GDP has shown an increase in both the fishing and processing onboard and processing ashore sector to 7.8%, due to continued improvements in the landings of the demersal and midwater sectors.

7.5 REVENUES GENERATED

The fisheries sector plays a key role in generating revenue for the State. Revenues are generated through various fees and levies. Table 16 shows revenue from various fees and levies collected from 1999 to 2003. During 2003, N$ 100 227.000 was collected from the fishing industry.

Table 16: State Revenue from the marine fishing industry, 1999-2003 (N$ thousands, current value).

Fee	1999	2000	2001	2002	2003
Quota fees	91 100	76 125	69 900	100 011	74 437
Marine Resources Fund levy	13 229	11 027	9 211	15 794	12 042
By-catch fees	9 001	10 300	12 800	15 788	13 561
License fees	172	185	172	286	187
Total revenue	**113 502**	**97 637**	**82 083**	**131 879**	**100 227***

*Note: Figures for 2003 are provisional. Arrangements are in place to collect outstanding quota fees during 2004.

7.6 FEES GENERATED BY THE RECREATIONAL PERMITS

The number of monthly recreational permits issued and the revenue generated is indicated in Table 17. 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 certainly due to Namibia's Independence Day and the Easter long week-end.

Table 17: Monthly recreational fishing permits issued and revenue generated during 2003.

Month	Monthly permit issued to Namibians	Money received in N$	Monthly permit issued to non-Namibians	Money received in N$
January	3 438	48 132.00	1075	15 050.00
February	2 299	32 186.00	2 023	28 322.00
March	2 848	39 872.00	2 739	38 346.00
April	2 788	39 032.00	1 423	19 922.00
May	2 606	36 484.00	603	8 442.00
June	1 411	19 754.00	904	12 656.00
July	1 332	18 648.00	1 000	14 000.00
August	1 502	21 028.00	393	5 502.00
September	1 438	20 132.00	712	9 968.00
October	2 141	29 974.00	630	8 820.00
November	3 286	46 004.00	741	10 374.00
December	8 911	124 754.00	3 062	42 868.00
Total	**34 000**	**476 000.00**	**15 305**	**214 270.00**

The monthly permits are in higher demand compared to the annual permits.

Table 18: Annual recreational fishing permits issued and revenue generated in 2003.

Month	Annual permit issued to Namibians	Money received in N$	Annual permit issued to non-Namibians	Money received in N$
January	163	27 384.00	1	168.00
February	98	16 464.00	0	0
March	83	13 944.00	7	1 176.00
April	66	11 088.00	1	168.00
May	75	12 600.00	5	840.00
June	53	8 904.00	0	0
July	36	6 048.00	1	168.00
August	39	6 552.00	7	1 176.00
September	48	8 064.00	2	336.00
October	107	17 976.00	0	0
November	153	25 704.00	1	168.00
December	302	50 736.00	3	504.00
Total	**1 223**	**205 464.00**	**28**	**4 704.00**

8 AQUACULTURE SECTOR

The government anticipates that sustainable aquaculture has a significant role to play in food security as well as providing socio-economic benefits to Namibians. Presently policy for this developing sector is laid out in the policy paper: Towards the Responsible Development of Aquaculture (2001). The main objective is the responsible and sustainable development of aquaculture to achieve socio-economic benefits for all Namibians and to secure environmental sustainability.

The Ministry is currently involved in developing community-based (co-operatives) intensive freshwater aquaculture in the Caprivi and Kavango Regions. Local species already adaptive to culture requirements shall be the first priority (e.g. catfish *Clarias gariepinus* and tilapia *Oreochromis andersonii*). These project initiatives will be handed over to the communities who will take full responsibility in the day-to-day running and financing of the fish farms. The Ministry will continue to provide technical assistance whenever requested to do so.

In Kavango region, at (Kamutjonga), an Aquaculture and Inland Fishery Institute has been planned, the architect and engineering plans have been completed. The objective of the Institute is to conduct Aquaculture research to provide fingerlings to the communities and carry out extension work in Kavango and Caprivi Regions. Whereas, in the Omusati Region an Inland Aquaculture Center at Omahenene/Onavivi has been developed with the financial assistance and expertise provided by Spain. The objective of this Center is to produce fingerlings for distribution to fish farmer, research and to carry out extensive extension work in the Omusati, Oshana, Ohangwena, Kunene and Oshikoto Regions. The production of fingerlings has already commenced from 1 December 2003.

In Swakopmund a Center on Mariculture will be established at the existing National Marine Information and Research Center (NatMIRC) with the following objectives:

- Establish an accredited facility for disease and quality control which will guarantee exports of Mariculture products to overseas markets
- Provide extension services to Mariculture farmers, schools and tertiary institutions

Figure 13: Ponds at Omahenene/Onavivi Inland Aquaculture Center (Omusati Region) under construction (left) and after completion (Right), which are used to breed and grow Tilapia (*Orechromus andersonii*) and catfish (*Clarias gariepinus*).

Figure 14: The two major fresh water species of tilapia (*Orechromus andersonii*) and catfish (*Clarias gariepinus*) that are currently being farmed.

Figure 15: Two types of oyster (*Crassostrea*) ranching off Walvis Bay using oyster rafts (left) and oyster lines (right).

9 HUMAN RESOURCE DEVELOPMENT

The Ministry continued to train its staff members at all levels in various fields throughout 2003. Training includes short courses, workshops, symposiums and specialised training. Funding for such training is generally made available through the Marine Resources Fund. Bursaries are granted to staff members to improve their level of academic qualifications. In addition, the Ministry receives donor support for capacity building.

9.1 TRAINING OF FISHERIES INSPECTORS AND OBSERVERS

The Ministry together with NAMFI has developed a Fisheries Inspector and Observer Course (FIOC) that take 25 students and is expected to complete by June 2004. Students graduate with certificates issued by the Polytechnic of Namibia. FIOC is a nine-month course, includes six months theory followed by three months in-service-training. The course has contributed significantly to the performance of the Ministry' Fisheries Inspectors and Observers.

9.2 CURRENT SKILLS DEVELOPMENT INITIATIVES

The Ministry is allocating bursaries to staff members for studies either full/part-time basis as well as distance learning. This result in recognised degree, diplomas and certificates. The Ministry also provide financial to NAMFI.

Three staff members are currently doing Masters degree in Fisheries Biology and Fisheries Management in Norway. Two staff members are studying in UK towards a Certificate and Postgraduate Diploma in Fisheries Management. One staff member attended a six months course in Policy Development in Iceland through Icelandic Assistance programme. The other three are doing Diplomas in Natural Resources Management at the Polytechnic of Namibia, while three staff members are doing a Diploma in Oceanography and Fisheries Management at Cape Technikon. There are also three staff members who are doing Bachelor of Science Degree in Natural Resources at the University of Namibia (UNAM).

10 REGIONAL FISHERIES RELATIONS

10.1 BENGUELA LARGE MARINE ECOSYSTEM PROGRAMME (BCLME)

The Benguela Current Large Marine Ecosystem (BCLME) Programme is a multinational cross-sectoral initiative by Angola, Namibia and South Africa to facilitate the integrated management, sustainable development and protection of the Ecosystem. It is funded by the Global Environmental Facility (GEF) under its International Waters portfolio and is implemented by the United Nations Development Programme (UNDP) with the United Nations Office for Programme Services (UNOPS) as executing agency. The three countries provide further financial and in-kind contributions. Fifty-two projects have been funded through BCLME Programme. Project Co-ordinating Unit (PCU) implements these Projects, and three activity centres located in Luanda (Biodiversity, Ecosystem, Health and Pollution; Swakopmund (Living Marine Resources) and Cape Town (Environmental Variability). In total 52 projects have been assigned to the three Activity Centres. Twelve of these projects have been already completed. Thirty-four projects are still running and have to be completed by the year 2007. While 6 of the projects have not yet started. On the Benguela Current Commission a significant progress has been made and a fast moving programme with the need for an Institutional review and the establishment of BCC is highly recommended on the agenda of BCLME programme. The ToR for such a review was developed, as well as the time schedule; methods and reporting for such a study were also drafted.

During the year 2003 various meetings/workshops on transboundary fisheries management between the BCLME states with the view to exchange technical and scientific experience. The BCLME Programme has also provided funding for the representatives from BCLME to attend meetings/workshops of the BCLME Programme and their scientists have taken various trips in transboundary stock assessment and environment monitoring cruises. In many ways the BCLME Programme has become a showcase for what can be achieved in Africa through goodwill and cooperation between nations.

10.2 BENGUELA ENVIRONMENT FISHERIES INTERACTION AND TRAINING PROGRAMME (BENEFIT)

In 2003, BENEFIT launched a process that will culminate in 2004 and which aims to transform BENEFIT into a new programme, ready to dovetail with the envisaged regional statutory marine science and management structures that have been mooted. To this end, a planning exercise was undertaken at the BENEFIT Forum in 2003.

The Management Action Group of BENEFIT has delivered a new mandate and a management-determined operating framework for a new phase of the BENEFIT programme. This will launch us into a phase of extensive planning (a new science and training plan as well as a broader development plan). The new Project Planning Matrix is available on the BENEFIT website.

These advances, along with other developments such as the acquisition of a new research vessel in Angola, the Angolan marine science plan, the proposed new regional remote sensing and Grobal Information Systems (GIS) facility, the launch of the BCLME capacity building initiatives and other developments are telling us that we are heading toward more regional integration and more regional marine ecosystem management.

All the details of these issues and the range of activities including the successful 5-month *RV Alexander Von Humboldt* Cruise in the region is available from the BENEFIT secretariat (2003 Annual Report) or website www.benefit.org.na

11 INTERNATIONAL FISHERIES RELATIONS

11.1 SOUTH EAST ATLANTIC FISHERIES ORGANISATION (SEAFO)

The SEAFO Convention was signed in Windhoek, Namibia, on 20 April 2001 on behalf of eight States and one regional economic integration organisation, as shown below. Pursuant to Article 27, "*the Convention shall enter into force 60 days after the date of deposit with the Depositary of the third instrument of ratification, accession, acceptance or approval at least one of which has been deposited by a coastal State....*" In accordance with this provision, the Convention entered into force on 13 April 2003, i.e. sixty days after the deposit of the third instrument of ratification, acceptance or approval. Instruments of ratification were deposited by Namibia and Norway, respectively on 26 February 2002 and 12 February 2003 The European Community deposited an instrument of approval on 8 August 2002. All signatories and Contracting Parties to the Convention were notified of the entry into force by a FAO circular letter dated 28 April 2003. Subsequently, on 23 July 2003, a copy of the Convention was sent to the Secretariat of the United Nations for registration.

Namibia continued to act as the SEAFO Interim Secretariat during the year, pending the establishment of the SEAFO Secretariat in Namibia. This involved coordinating the submission of relevant information from all signatory states relating to details of all vessels fishing in the SEAFO area, monthly catches data, etc.

11.2 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. Upon becoming a member of ICCAT in 1999, Namibia continues to participate actively in the work of the Commission. In November 2003, Namibia attended the 18th Regular Meeting of ICCAT held in Ireland. Regular meetings of the Commission are a forum for the review of the work of the Commission as well as assessing progress in, and compliance with existing conservation and management measures. The 2003 meeting followed on the 13th Special Meeting held in Spain the previous year from which Namibia received her first swordfish quota, beginning at 890 tonnes in 2003 and increasing to 1, 140 tonnes by 2006. It presents our industry with a stable but progressing harvesting path, necessary for developing a truly Namibian swordfish fishery.

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

INFOPECHE Unit for the SADC region (INFOSA) continue to provide fish marketing information through publications and inquiries regarding information on marketing trends, latest range of international prices, trade opportunities, matching of buyer and seller, assistance in export marketing and identifying new sources of supply for export. The Unit distributes trade publications (full net), which is published base on a range of information gathered by the other member of the FISHINFO NETWORK. The full net package consist of INFOSA trade news and INFOFISH trade news (ITN) published fortnightly, with special coverage on live, fresh /chilled

fish, frozen, dried and canned fishery products. It also feature general news on member countries; European fish price report, a monthly price bulletin with coverage on fishery products in major European markets; and GLOBEFISH Highlight, a commodity report outlines quarterly market trends and outlook on various fish products.

During 2003, INFOSA and INFOPECHE organized a buyers and seller meeting in Cape Town with special emphasis to assist African exporters and importers to established new contacts and promote intra-regional fish trade. Also during 2003, INFOSA represented the FISHINFO Network at the Fish Africa 2003 exhibition in Cape Town, which was attended by more than 3000 visitors from 43 countries around the world.

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

Namibia continued to participate as full member in the CCAMLR activities. About 6 tooth fish vessels called at Walvis Bay to offload fish. The entire discharge in Namibian ports of marine resources originated from the Southern Sea is inspected in accordance with CCAMLR Conservation Measures in force.

After careful inspecting the fishing licenses and navigation equipment by fisheries inspectors, 5 vessels were found to have fished in accordance with CCAMLR regulations, and granted permission to offload. One vessel was refused to discharge. Vessels granted permission are (*Atlantic 52, Carran, Dorita, Lugapesca*) both flagged to Uruguay, and *Viking Bay* flagged to Spain. The vessel *Virgen of Carmen* flagged to the Netherlands Antilles was refused permission.

Four Namibian companies applied for *Patagonian* tooth fish within the CCAMLR Convention waters for the 2003/04 fishing season. Applications by two companies (Ompagona, Agatha Bay and Namibian Fishermen Association) were successful. They have since been granted access right to fish tooth fish starting February 2004.

11.5 INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC) OF UNESCO

Namibia is a member of IOC. The IOC is an important facilitator of international oceanographic research programmes and Namibia is involved in its various training, technical assistance and research activities.

Ministry of Fisheries and Marine Resources (MFMR)

Annex 1: Useful contacts

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Note: The organisation of the fishing industry into fishing associations facilitates communication between the ministry and the industry.