MCS IN NAMIBIA

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GENERAL DESCRIPTION OF NAMIBIA AND ITS FISHERIES

Namibia is situated on the West Coast of Africa north of South African and south of Angola. The country is 6 times larger than the United Kingdom with a population of only 1.7 million people, with a coastline of 700 nautical miles.

Since Independence in 1989 and the establishment of the EEZ in 1990, Namibia has developed a fisheries administration and a thriving commercial capture fisheries industry that has grown rapidly, while becoming increasingly more Namibian:

- The fishing industry is based on the high productivity produced from the Benguela Current system, one of the four eastern boundary upwelling current systems in the world.
- Fisheries currently contribute over 10% to the countries gross domestic product (GDP), which represents N$2.4 billion in 1999.
- The fishing industry employs an estimated 14,000 people.
- In 1999 over 300 vessels were licensed to fish in the Namibian Exclusive Economic Zone (NEEZ) with more than 76% of these carrying the Namibian flag.
- All fish are landed in Namibia through two ports, Walvis Bay and Lüderitz.
- The export value of the fish was estimated in 1999 to be more than US$500 million.

THE MAIN FISHERIES

- **The demersal fisheries** - catches of demersal species especially hake, monkfish, kingklip and sole make up the most valuable fishery in Namibia. Currently hake is the only quota-restricted species in this fishery. Freezer and wet fish bottom trawlers and longliners fish for hake.
- **The midwater fishery** – targets horse mackerel. (Both the midwater trawlers and the purse seine vessels of the pelagic fishery catch this fish.)
- **The purse seine fishery** – targets pilchard and juvenile horse mackerel with purse seine nets. All vessels are wet boats that hold the unsorted fish in large holding tanks, which are pumped out ashore.
- **The deep-water fishery –** targets orange roughy and alfonsino. The fishery began in 1994 and has now expanded to four fishing grounds.
- **The tuna fishery –** targets albacore, big-eye, yellowfin and skipjack using longlining and pole and line methods.

- **The rock lobster fishery** – is based in Lüderitz on small vessels using carrier vessels to bring the live lobster ashore every day. The season is short, running from around November to March.
- **The crab fishery** – a small fishery that uses traps to catch deep-sea crab, this fishery operates over the whole year.

FISHERIES MANAGEMENT AND FISHERIES DEVELOPMENT

Namibia's management controls fall into two categories:

Firstly the input controls that relate to fishing effort and gear and to the permissible time and place that fishing may take place, mainly by the limitation of total fishing effort and seasons. Secondly output controls that relate to set limits and regulations on the amount of fish that may be caught and on the size and other characteristics of the fish that may be landed.

The main output control is by the establishment of Total Allowable Catches (TACs) and quota allocations. TACs are established for six species (hake, horse mackerel, pilchard, orange roughy, red crab and rock lobster) as set out in Table 1. Figure 1 shows the pattern of TACs from 1993 to 2000. TACs are established annually on the basis of the best scientific evidence available of the size and structure of stocks, modified by socio-economic factors. The trends in biomass, catch and TACs for the three major species, hake, horse mackerel and pilchard, show the same broadly consistent pattern of increases in biomass from 1990 up to 1992, followed by a sharp decline and then a general recovery, which is among other reasons a result of a successful MCS system.

Fig. 1. Total Allowable Catches 1993 - 2000 (in metric tonnes)

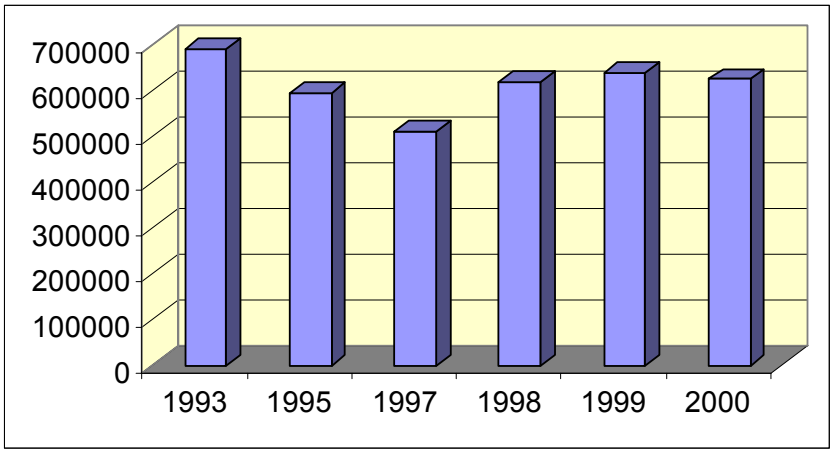

Table 1. Total Allowable Catches 1993 - 2000 (in metric tonnes)

SPECIES	1993	1995	1997	1998	1999	2000
Crab	4900	2500	2000	2000	2000	2000
Hake	120000	150000	120000	165000	210000	194000
Horse mackerel	450000	400000	350000	375000	375000	410000
Orange roughy	0	0	12000	12000	6000	2400
Pilchard	115000	40000	25000	65000	45000	15000
Rock lobster	300	230	260	300	300	400
Total	692193	594725	511257	621298	640299	625800

Looking ahead the Namibian fisheries sector seems set for a further period of expansion in 2000 and 2001, although there have emerged serious concerns about the economic future of the pilchard and orange roughy industry.

ACCESS POLICY

Namibia's policy is to encourage and support participation in the fishing industry by Namibian companies with a real interest and investment in the country. To turn this into practise the following 3 step system is used:

1. Alocation of Fishing Rights of Exploitation, then
2. Allocation of Quotas to rights holders, thenAllocation of licences to vessels

This allows control over the companies and the vessels and the crews to assure that Namibia's policy aims are being met through a differentiated resource rent system that favours Namibian participation, Namibian flag vessels, Namibian employment and an empowerment aspect in relation to the social inequalities.

NAMIBIA'S LEGISLATION

The Sea Fisheries Act and Regulations that is currently being updated covers policy for both access and management. Government Gazette Notices are issued to make smaller changes in the management methods. It is these policies backed by solid legislation and the enforcing of them that lay the basis for good fisheries management.

REGIONAL AND INTERNATIONAL CO-OPERATIONS

Namibia is increasingly taking part in the regional and international community related to fisheries. The aim of these memberships is to serve regional and international obligations to ensure a sustainable future when it comes to resource management both regionally as well as worldwide. An initative to enhance regional co-operation within MCS is established in February 2001. The practical advantages of regional MCS co-operation cannot be stressed enough in terms of efficiency, effectiveness and fisheries development. This is especially true when there are shared stocks and mutual interests to protect. Some of the key organisations that Namibia is a member of, or is in the process of becoming a member of are listed below:

- South East Atlantic Fisheries Organisation (SEAFO)
- Southern African Development Community (SADC)
- The Benguela Environment Fisheries Interaction and Training Programme (BENEFIT)
- The Benguela Large Marine Ecosystem (BCLME)
- International Commission for the Conservation of Atlantic Tunas (ICCAT)
- The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

FUTURE PROSPECTIVE

With the birth of the new millennium and the recent celebration of 10 years of independence, some attention was given to the vision for the fishery sector and the Ministry of Fisheries and Marine Resources. The visions reflect both political will and courage to plan for the future. Significant issues for Namibia are:

- The wish to see a continued growth in the Namibian ownership and participation in the industry where the people are benefiting from plentiful employment and participatory ownership. Namibia wants to see a commitment in developing human resources through schools; courses and vocational training to further strengthen professionals.
- The hope to see an industry develop markets for a range of high value end products further expanding the expertise and activity connected to Namibia's industry. The hope to see the wealth generated by the fisheries sector redistributed back to the public through fair and reasonable payments as well as a social engagement to strengthen the local communities.
- The expectation that the Namibian fishing industry will be actively operating in other nations fishing zones as well as in international waters to the benefit of the country.
- The aim to make Namibia synonymous with good and responsible fisheries management where optimal use is made of marine resources, at a sustainable level and where the whole of the Southern African Development Community (SADC) can gain from Namibia's expertise end experience.
- Namibia wants to secure its resources for future generations and not aim for fast solutions to earn strong currencies through fisheries agreements with unscrupulous nations or economic co-operations.

MCS IN NAMIBIA

The Directorate of Operations is responsible for the MCS of the EEZ of Namibia. The MCS system is an integrated system that has stations in the two Inspectorates in Walvis Bay and Lüderitz. Each of these stations are tasked with a role in the MCS system such as deploying fishery officers to air, sea or land operations, deploying fisheries observers on board fishing vessels, analysing past operations and outputs or planning future operations.

THE KEY OBJECTIVES OF MCS

The principle objective of MCS can be summed up as the regulation of fisheries sector activities within the EEZ of 200 nautical miles. However, for operational purposes this has been defined more specifically with the following main objectives:

(i) Restrict fishing activity to those entitled to do so.

(ii) Ensure that fishing activity is conducted within legal and administrative guidelines.

(iii) Ensure that revenue from landings is correctly calculated.

THE KEY ACTIVITIES OF MCS

In working towards achieving these objectives, the MCS activities of the Ministry can be broadly defined as:

- Surveillance of the EEZ by deploying Inspectors on patrol vessels and fixed-wing planes for surveillance and control;
- Deploying Inspectors to monitor and control off-loadings, coastal and inland activities and
- Deploying Observers on fishing vessels to monitor fishing activities.

THE RESOURCES OF MCS

In conducting the work of MCS various human resources and hardware resources are available to the Directorate of Operations. These resources are continuously changing and being updated to perform to higher standards and to cope with more complex tasks.

MCS resources can be divided into five groups, viz. sea, land, air, remote and support. These groups define the key management groups that are used in the planning and execution of MCS activities.

Sea MCS

Two patrol vessels P/V "Tobias Hainyeko" and P/V "Oryx" operate within the EEZ. These vessels are required for patrolling closed areas, boundary areas and conducting inspections at sea to ensure compliance with the Sea Fisheries Act and Regulations. Random inspections of fishing vessels are undertaken at sea from the patrol vessels.

The Ministry deploys contracted observers on all vessels fishing in Namibian waters. These observers gather scientific information on the catches and provide on-site monitoring of compliance with fisheries regulations. They are able to report infringements such as dumping or discarding, fishing in closed areas, control of offshore pollution, misreporting of catch, retention of prohibited catch or use of illegal gear.

Captains must complete logsheets on a daily basis and the observers check this information. This provides important information on catch and effort, which compliments the observers' scientific data collection for stock assessment.

Air MCS

An aircraft is used to monitor, locate and track fishing fleets and to detect violations such as fishing in closed areas. The aerial presence has been serving as a visible deterrent to illegal fishing for the past years and it facilitates more effective deployment of the patrol vessels.

Land MCS

Fisheries Inspectors provide an important means of verifying the amount and type of fish landed. Inspectors monitor the offloading of fishing vessels as they bring their catch ashore or for transshipment at one of the two ports. This provides accurate landing information required

for calculation of levies and quota control, scientific evaluation of fish stocks and fisheries management. This effort is complemented by the random vessel inspections carried out by Fisheries Inspectors from the patrol vessels.

Inspectors collect logsheets and trip management sheets from vessels and register their return before passing them on to researchers in Resource Management for further processing.

Coastal and inland patrol operations are carried out throughout the year by the Fisheries Inspectors from all three Inspectorates, these are made in an attempt to control the catching and trade in seafood from coastal fishing.

Remote MCS (VMS)

Remote electronic monitoring of fishing vessels, using satellite tracking can be used as a baseline tool for managing the EEZ and for planning the deployment of other MCS platforms. This programme is under development within the Ministry and is currently only available for the deep-sea fishing fleet. A tender dossier requesting bids for a whole system has just been released for an international tender.

Support to MCS

MCS activities related to air and sea operations are co-ordinated from the Inspectorate at Swakopmund, through a Maritime and Fisheries Operations Centre at Walvis Bay and an air base at Arandis.

The activities related to land monitoring and operations are co-ordinated from the Inspectorates in Walvis Bay and Lüderitz. In the Inspectorates, the majority of data on landings is collected and processed by Clerical and Inspectorate staff.

TRAINING

Early in it's development of an MCS capacity, the government identified training as the key factor to built up local knowledge and experience. The short-term MCS goals in the sense of reduced illegal fisheries were reached early on, but the largest challenge was left in the terms of human resource development and industry awareness.

The three patrol vessels (now two) were from the beginning manned with Norwegian and Danish officers and crew to solve the immediate shortage of human resources. Successful training programmes implemented a basic Namibian crew within the first year. However, as officers require a more long-term perspective, a cadet programme was established aiming for internationally recognised maritime certificates as well as specialised training for the patrol vessels. The Ministry started the first intake of cadets in February 1992. The last intake of cadets was in February 1997. The total number of cadets at this stage is 42, with 20 officers having completed their education to date. The development has proceeded in 8 years from a 100% foreign crew to only 4 expatriates left of 42 operational crewmembers.

The inspectors and the observers that were employed in the early 90s were confused by the expectations they met from the industry, due to low levels of education and little or no practical experience. Therefore, it was clear that an education programme was needed to reach the goals of the Ministry. The documentation for such an education was finalised in May 1995

and courses were first implemented in July 1995. To date four courses have been run containing 6 months theoretical and 3 months in-service training for the inspectors and observers. The course contains legal subjects' as well as biological and maritime subjects.

The observers, numbering around 230, have traditionally worked as the "eyes and ears" of the Ministry at sea. Their duties have revolved around monitoring the compliance of fishing vessels to fisheries law. This principally includes tasks such as checking gear specifications, monitoring the by-catch, assuring that no dumping occurs and compiling data on catches and operations. However, in 1996 the Ministry expanded the brief of observers to meet the information needs of stock assessment by training and equipping them to monitor and collect biological information on the fish catches. The programme that evolved has become known as the Commercial Sampling Programme.

NAMIBIAN MCS DEVELOPMENT IN HINDSIGHT - LESSONS LEARNT

HARDWARE AND EQUIPMENT

Hardware in the sense of vessels, planes and equipment is often a crucial factor for the cost effectiveness of the operation. The level of control needed, knowledge, experience and running costs should be given serious considerations in the planning phase before the initiation of a project.

Lesson leant are:

- Actual needs must be identified. It is too easy to jump on eager donor offers without analysing your actual situation and requirements. Nobody really knows or cares if you get the appropriate equipment, apart from yourself. Have you identified your needs requirements and feasibilities?
- The desire for advanced technology can be an obstacle later in the project due to underestimated training needs and capability of human resources. We all want the latest technology, but can your organisation handle it?
- High hardware investment costs and underestimated running costs can result in low MCS efficiency, when allocated budgets have to be kept within their limits. The same story as the last bullet. You want the best, but is it feasible within your budget?

HUMAN RESOURCES

Good documentation and manuals, although a major asset, will never be able to replace the quality needed by the personnel allocated to perform the task. It should also be considered if a well-trained, better-paid and smaller workforce results in higher productivity than a less competent large workforce. This should be considered in light of:

- **Knowledge levels**: What is the minimum knowledge level required for the profession?
- **Recruitment procedures**: What are the criteria used for recruitment?
- **Probability of corruption**: Have you considered any anti-corruption initiatives?

- **Training capability and capacity**: To which level can you train staff and how much time will be required?
- **Professional attitude of the organisation**: How important is the quality aspect of your human resources?
- **Political, social and policy requirements of your country**: Is your organisation aiming for a labour intensive industry or is high technology and efficiency in terms of industry profit more important? What are the government priorities and how are you going to implement them?

These factors are often underestimated and obtaining a balanced evaluation can be difficult. Again it cannot be stressed enough how important an honest well-conducted needs and feasibility analyses including an integrated approach to hardware and human resources is to the development of any organisational development or project.

TRAINING

Knowledge is one of the main keys to success in an MCS operation. If you want to empower your people you will have to train them. In spite of this, training is always prioritised downwards when budgets are reduced. Basic knowledge will be needed immediately if the organisation wants to gain respect from stakeholders and to initiate a professional and functioning operation. Training must be planned for and started as one of the first actions in developing an operation or organisation.

- In order to plan for training, an analysis of needs and current levels of knowledge within the recruited staff is required.
- The programme should include a well-designed training plan for all levels of staff, which runs throughout their career structure.
- It is recommended that modular vocational training is used for the lower level jobs in the organisation.
- It is also important that quality criteria are demanded from instructors to ensure that a certain level of quality is maintained in the teaching. The instructors must also be suitably rewarded and trained for their work.
- Education should be officially acknowledged, for example through permanent employment, higher rank, bonuses or higher salary. This is important for motivation, sustainability and recruitment.

INFORMATION MANAGEMENT

Large amounts of varied information are generated in MCS activities. Some of this is required almost immediately for surveillance activities, while other information is needed less timely but over a long time series. These different requirements for information make good information management vital. The definition of “good” is not an easy one: striving for accurate and timely information is important, but also the concerns of what information and in what format is a vital question. It is far too easy to collect too much information, which then is a burden on administration and database systems to compile, check, retrieve and store.

Again need for information should determine how information is compiled, shared and processed.

Information systems easily become over ambitious; this is especially relevant when previous systems have been manual. Implementation and the training of personnel to maintain a newly computerised system will often take longer than envisaged. In these cases a sensible approach would be to design and implement the system in a phased approach with one or two aspects of the system being implemented at a time with integration and linkage occurring later.

A good working practise analysis is needed to improve working routines before any database is designed to avoid unnecessary and expensive changes at a later stage. It is important to remember that the justification for an IT project is to enhance effectiveness and efficiency, not to duplicate work that still is done manually.

The following should be considered:

- Identify information needs through analyses of working practices, needs for shared information and management requirements.
- Avoid unnecessary information.
- Do not be over ambitious in the design and implementation phases – keep it simple.
- Do not underestimate the need for training during the implementation of a new information system. Habits are difficult to change when appropriate knowledge is lacking among the users of the system into your organisation.

OTHER MCS PLATFORMS

Governmental duplication of MCS tasks is common and often creates some discussion on where responsibilities should be allocated to maximise effects or to reduce costs. This can easily result in compromises where fisheries surveillance loses. It is quite obvious that a diverse task requires a broad knowledge of the operations with priority being directed to the main purpose.

The Navy is normally neither designed, nor educated or particularly trained for fisheries MCS operations. The organisation can be a valuable asset in the sense of boarder violations of unlicensed vessels, but is seldom efficient with catch or gear controls.

A Coastguard is far more aimed for the fisheries protection task and less advanced than a Navy in terms of training and equipment. A Coastguard is normally designed round the United Nations Law of the Seas Convention with basic police tasks to perform with emphasis on boarder violations, fisheries, Search and Rescue Operations, customs and immigration tasks. It is thus important to remember that any deviation from a pure fisheries protection service is a compromise of government duties that reduce the effectiveness of each individual function.

IMPLEMENTATION OF NEW DEVELOPMENTS

It is difficult to change old routines even when improved technology is introduced to the organisation. Changing old routines and analysing ways to improve effectiveness and efficiency are the only way to fully utilise the potential of new developments. Not doing so only creates duplication of work and a more costly MCS system without gaining the intended advantages of new initiatives. Lack of data sharing, duplication of tasks and ineffective deployment of expensive platforms are examples of less successful implementation of new developments.

DONOR ASSISTANCE

Donor assistance is in many aspects a relief for the development of any organisation lacking resources and expertise. However, there are some pitfalls related to this type of support depending on the intentions of the donor. It is often politically difficult to influence donor assistance due to diplomatic considerations. It is therefore important to participate in negotiations related to the definition of a project as early as possible. It is always sensible to try to establish the reason for why the donor assistance is offered. Questions that should be answered are:

- Is the offer based upon commercial interests (including subsidised industry) of the donor country?
- If commercial products are offered, are the prices realistic or exorbitant under the cover of donor assistance?
- Is the offer given to make sure that the donor country receives information related to your operations?
- Is the technical expertise provided qualified for the job? It is important to do evaluations of consultants and long-term technical advisers regularly. A donor co-operation is normally an economically binding agreement for both parties.

If possible, always make sure that the offer is based upon needs and requirements of the receiving country. Training and implementation should always be a part of any assistance to developing countries. Development co-operations are negotiations where all parties must participate.

CONCLUSION

- It is of vital importance to invest time and resources on analysing the actual needs of the organisation when it comes to hardware as well as human resources and training. A lot of money has been wasted on poor decisions based on weak planning. A clear definition of purposes and needs will therefore be a valuable investment in the future.
- Training facilitates the efficient use of human resources. Where as a lack of training results in unprofessional behaviour, costly maintenance, poor decisions making and lack of respect from the industry. Training is therefore a natural and key part of the development of any organisation.

- It is sensible to initially create a basic and simple organisation if the local experience is low. A good practice is to begin with only one segment of the fisheries to gain needed experience before expanding the programme by a phased approach. A larger part can then be implemented when the organisation is confident and ready to meet larger challenges.
- Always evaluate the needs, requirements and sustainability of offered or requested donor assistance. An inappropriate development or unsuitable procurement of hardware could hamper the effectiveness of your organisation through unexpected additional costs.