



REPUBLIC OF NAMIBIA

Developing and Promoting Aquaculture in Namibia

MINISTRY OF FISHERIES AND MARINE RESOURCES



INTRODUCTION

The Government of Namibia has identified Aquaculture as a prime priority development area. The Aquaculture sector holds potential for new businesses, such as pharmaceutical, construction, fish feed production and vegetable/crop growing. To this end, government has put in place several policies to ensure a thriving aquaculture industry.

To serve as a back up to these policies, government also has an Action Plan which when implemented should make aquaculture in Namibia the very lucrative industry it is.

THE IMPORTANCE OF AQUACULTURE IN NAMIBIA

Namibia's Aquaculture industry is a gold mine just waiting to be tapped. The unpolluted rich Benguela current off the coast of Namibia holds untapped potential for marine culture.

- Aquaculture (fish and shellfish farming) should boost food security in both rural and urban areas.
- Fish farming will alleviate poverty and create employment.
- There is potential to increase foreign exchange earnings through fish and shellfish farming.

ESTABLISHMENT OF THE SECTOR

Aquaculture started in Namibia in the 1980s with Tilapia, Carp, and Bass on a small scale. In the mid-eighties, the first large scale fish breeding and farming was realized at Hardap Dam.

To date, the Hardap Research Centre still provides training and fingerlings for the communities in the southern regions.

In October 2003, the Namibian government established a Directorate of Aquaculture under the Ministry of Fisheries and Marine Resources.

The main objective of Namibia's Aquaculture policy is the responsible and sustainable development of this sector to achieve socio-economic benefits and secure environment sustainability for all investors. The policy is laid out in the paper: Towards Responsible Development of Aquaculture (2001).

The government's Action Plan on Aquaculture aims at providing guidance on the regulatory framework, business climate, public acceptability, and strategies to ensure training, research, marketing and infrastructure development.

The legal framework to give backing to the policy was put under the Aquaculture Act which came into force on 3rd December 2003.

The legal framework prescribes the process for obtaining aquaculture licenses, monitoring, regulation, processing, marketing, environmental safety measures and health and safety issues. This helps to ensure that the sector is regulate, thus providing security for investments.

REGIONAL OFFICES ESTABLISHED TO DEVELOP TO DEVELOP AND PROMOTE THE AQUACULTURE SECTOR IN NAMBIA

- Omahenene / Onavivi Inland Aquaculture Centre (IAC) in the Omusati region
 - Training, research, breeding and fingerling production
- Kamutjonga Inland Fisheries Institute (KIFI) IN THE Kavango Region
 - Training, research, breeding and fingerling production
- Mariculture Centre in Swakopmund, Erongo region and Lüderitz, //Karas region
 - Programmes for shellfish production

- Extension office in Rundu, Kavango region
- Extension office in Ongwediva, Oshana region
- Extension Office in Katima Mulilo, Caprivi region
- Hardap Dam Fisheries institute, Hardap region

EXTENSION SERVICES

The Government, Ministry of Fisheries and Marine Resources in particular, renders extension services to boost aquaculture development in the country. Extension services include, but are not limited to:

- Site inspection and assessment
- Fingerling distribution and seeding
- Water quality monitoring and sampling
- Fish health monitoring and disease control
- Quality assurance for aquaculture products

PROJECTS INITIATED BY GOVERNMENT

- Epalela Fish Farm in the Omusati region
 - Production of Tilapia and Catfish
- Kavango Region – Mpungu Fish Farm
 - community based Fresh Water Fish Farm
- Zambezi Region – Kalimbeza and Likunganelo
 - 2 community based Freshwater Fish Farms

FRESHWATER AQUACULTURE

Freshwater Aquaculture is primarily community based with an emphasis on promoting food security, creating employment and generating income for the community members.

Excellent freshwater culture development potential exists along rivers such as the Okavango, Kunene, Orange and Zambezi, as well as lakes and dams.

Species Farmed

Species farmed include the three spot Tilapia (*Oreochromis andersonii*), red breasted tilapia (*Tilapia rendalii*) and African sharptooth catfish (*Clarias gariepinus*) and common carp (*Cyprinus carpio*).



Tilapia

Catfish

Types of culture systems used

Different types of culture systems are used in aquaculture, ranging from pond culture to cage culture. In Aquaculture, the current pilot projects use pond culture. Commercial culture of Tilapia utilizes fresh water recirculating tank systems. This system rears fish at high densities in indoor tanks within a controlled rearing environment. This is more effective and uses less water and eventually, more profitable.

Community based subsistence farming of Tilapia utilizes earthen pond culture. Earthen pond culture is the simplest way of practicing Aquaculture. It is inexpensive, utilizes low technology, and is ideal for stocking and harvesting.

MARICULTURE

Mariculture is a commercial industry focusing on the culture of high value species.

Species farmed

Two types of oyster species, Pacific (*Crassostrea gigas*) and European (*Ostrea edulis*) oysters are farmed as well as other molluscan shellfish

abalone (*Haliotis midae*), scallops (*Pecten* sp) and Clams (*Venerupis* sp) and mussels (*Mytilus galloprovincialis*).

Types of culture systems used

For the oysters, there are three methods used to culture. These include baskets suspended from rafts, long lines and on-shore raceways and ponds.

Oysters are filter feeders and feed on phytoplankton and have a fast growth rate which makes them mature very quickly for sale. There are markets for different sized oysters such as cocktail size and jumbo size. Market size is reached in 8 to 10 months for cocktail size (41 – 50g) and jumbo size (+111g) oysters.

Abalone is cultured in land based tanks. Maturity is reached after a period of at least 3 -4 years. Their staple diet is kelp which is usually washed up on the beaches.

Freshwater fish with potential for culture

- Cap (*Caprinus carpio*)
- Tilapia: Three spot tilapia (*Oreochromis andersonii*)
- Red Breast Beam (*Tilapia rendalli*), Mozambique
- Tilapia (*Oreochromis mossambicus*)
- Catfish (*Clarias gariepinus*)
- Tigerfish (*Hydrocyon*sp)
- The giant water freshwater prawn (*Macrobrachium rosenbergii*)

Tilapia and Catfish (freshwater)

For the fresh water aquaculture, Namibia is involved in the production of three-spot Tilapia and African sharp tooth Catfish. This is currently for local markets. However, the production is growing for international markets.

Mariculture species with potential for culture

- Blue mussel (*Mytilus galloprovincialis*)

- Black Mussel (*Choromytilus meridionalis*)
- Seaweed (*Gracilaria verrucosa* gracilis)
- Dusky Kob (*Argyromus japonicus*)
- Rock Lobster (*Jasus Lalandi*)
- Scallops (*Pecten* sp)
- Turbot (*Psetta maxima*)
- Cobla (*Rachycentron canadum*)
- Black Tiger Prawn (*Penaeus japonicus*)
- Oysters Pacific oyster (*Crassostrea gigas*)
- European Oyster (*Ostrea edulis*)
- Abalone (*Haliotis midae*)

Markets

The primary goal of freshwater farming in Namibia is to satisfy the demand of local markets. This should later expand regionally (SADC) and to international markets. Investment in this sector of the economy should see to the rapid development of this sector. Today, Mariculture, particularly oyster farming is expanding due to local and international demand.

Challenges

In order for aquaculture to develop in Namibia, funding institutions, local and overseas investors should make concrete efforts to invest in the sector.

Advantages for aquaculture development in Namibia

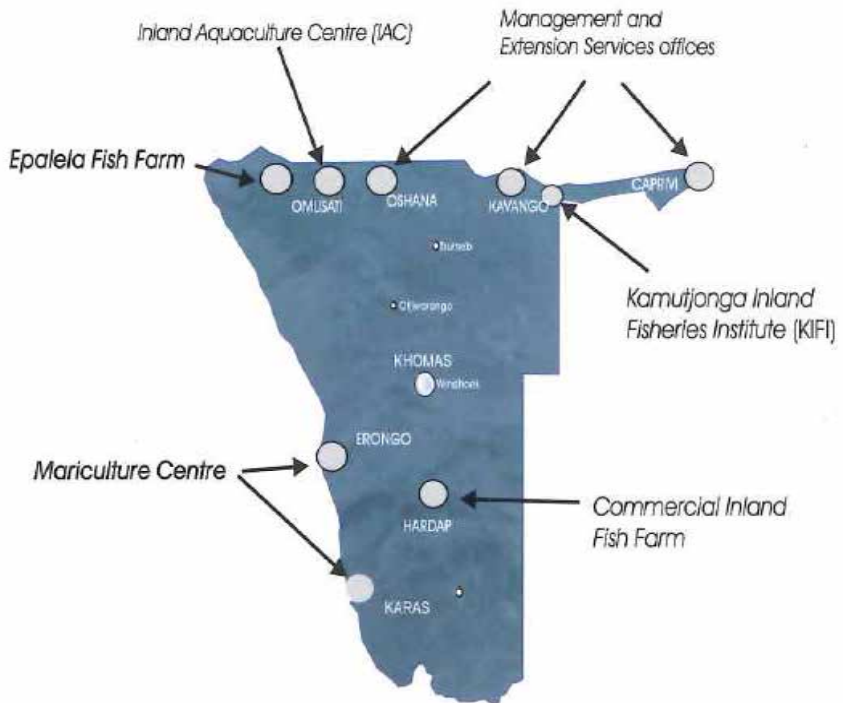
Namibia does boast of advantages for aquaculture development.

These include:

- Unpolluted and highly productive marine and fresh waters
- Availability of inexpensive fish by-products
- Rapid growth of shellfish
- Well established processing, packaging and marketing systems
- Existing markets
- Centres for research, training, and development

- Excellent security along long stretches of coast
- Peace and political stability
- The country's well established telecommunications infrastructure

Local location of aquaculture projects in Namibia



Integrated Culture (Kavango Region)

The government of the Republic of Namibia encourages and aids investors in Aquaculture to explore the nation's rich aquatic resources. Integrated Aquaculture is encouraged in Namibia for the sustainable use of scarce water resources. This derives maximum benefits from the used water. This water from the fish ponds, rich in nutrients, is then used for crop farming. Aquaculture is a rich sector of the Namibian economy just waiting to be tapped. The country's fertile and healthy ambience makes it completely worth investment.

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