

Aquatic Animal Health in Namibia



Bronwen Currie

OIE Focal point for aquatic diseases

Directorate of Aquaculture
Division: Research, Disease and Quality Control

Ministry of Fisheries and Marine Resources

Benguela Current Commission BCC



Development of Aquaculture in Namibia

1990's: Government of Namibia recognized the potential of aquaculture.

Vision:

- develop aquaculture structured to best practices, and regulated strictly;
- to repeat successful export-orientated story of capture fisheries (EU, USA, Asia and regional markets) for export aquaculture products

• Marine aquaculture:

- Intensive systems, requiring significant capital and technical expertise;
- Major role for foreign investors;
- Production of high value species intended primarily for export markets, leading to income generation and thereby improved livelihoods.

• Freshwater aquaculture:

- Primarily community-based, co-operative activity;
- Extensive, labour intensive methods;
- Production destined primarily for local markets;
- Main focus on direct food security, improved rural livelihoods (and income generation).

Freshwater aquaculture



Mariculture



First things first:

ensure that a strong legislative framework is in place:

Strategic planning of aquaculture in Namibia



2001 Aquaculture Policy:

Towards the Responsible Development of Aquaculture



2002 Aquaculture Act, promulgated in 2003

Comprehensive Act prescribes, *inter alia*,

- procedure for obtaining aquaculture licences
- monitoring and regulation of all activities
- environmental safety measures
- consumer health and safety issues
- establishment of appropriate institutional arrangements
- maintenance of genetic diversity and the integrity of the aquatic ecosystem

In summary this Act regulates responsible aquaculture production practices.

Aquaculture Act 2002:

Part IV: MANAGEMENT AND CONTROL MEASURES: sections 27, 28:

"Introduction and transfer of aquatic organisms"

- Strict control of introduction, transfer, movement of any aquatic organism;
- consultation with any other law of the country

Aquaculture Licensing regulations 2003

9. "Regulations concerning aquatic organisms health management shall be in conformity with internationally accepted standards relating to aquatic organisms health management, and consistent with Namibia's rights and obligations arising from its membership of the World Trade Organisation (WTO), and the Office International des Epizooties (OIE, the World Organisation for Animal Health)."

Regarding disease reporting and drug use:

- immediate reporting of suspected disease
- NO DRUG USE without Minister's approval

Disease control: outbreaks, spread, environmental damage are all addressed in these regulations.

Import-Export Regulations 2010

- more explicit regarding introduction and movements of aquatic organisms.
- > address the importance of disease surveillance programmes related to trade

Significantly they

- require registration of importers and exporters of live aquatic organisms and commodities, with permits required for each consignment
- outline criteria for quarantining of risk imports and provide specifications of quarantine facilities

In summary:

Namibia sees aquatic animal health as fundamental to successful aquaculture:

- > Many aspects addressed in the Aquaculture Act and its regulations
- > Obligation to the OIE
 - > (national contact point: Veterinary Services within the Ministry of Agriculture, Water and Forestry; in 2008 the Ministry of Fisheries and Marine Resources was appointed focal point for aquatic animal health).
- > Disease surveillance programme mandatory for export of aquaculture products - affects mariculture industry

What is Namibia's experience with aquatic disease?

In last 5 years:

1. Outbreak of EUS along our northern border river
2. Checks on commercial shellfish production

1. Epizootic Ulcerative Syndrome EUS

from reports of Drs. Ben van der Waal (2008), Kibria Ghulam (2009)

- Appeared first in 2006 and remains a problem to date
- Initially affected the wild river fish populations
 - by 2008 recorded in 22 indigenous river/lake species
- From 2008 affected farmed fish in northern regions
 - presented in farmed Three Spot Tilapia *Oreochromis andersonii*



EUS confirmed from the Zambezi River:

Hyphae of *Aphanomyces invadans* in muscle tissue of a barb from the Chobe River.

Information collected from multiple sources :

1. Annual fish biological surveys
2. Two-monthly biological surveys 2007/2008: ~ 70 000 fishes collected and inspected: 108 fish with sores identified
3. Monitoring of annual angling competitions
4. Two-weekly monitoring of fish market at the Katima Mulilo Open Market



Musado, dash tail barb, newly filled Lake Liembesi, June 2007

From report B. v.d.Waal 2008



EUS sore on *Serranochromis angusticeps* at the Zambezi Classic Angling Competition in August 2008.



EUS on a dash tail barb [*B. poechii*] from the Zambezi on 29 September 2008

From report by K. Ghulam 2009

Fishes with suspected EUS symptoms at Kalimbeza and Likunganelo Fish Farm of Caprivi Region in 2008



From report by K. Ghulam 2009

EUS in Karovo, Mpungu and Shipapo wa mbangandu Fish Farm of Kavango Region in 2008



From report by K. Ghulam 2009

2. Commercial: marine shellfish

- To date confined to marine molluscan shellfish
 - oysters and abalone
- Products mainly for export
- Regulated by the Ministry of Fisheries and Marine Resources (licensing)
 - export product food safety status certified by the Ministry of Trade and Industry/ National Standards Institute CA
 - health status certified by the Ministry of Fisheries and Marine Resources

To date, no evidence of disease:

- screening for OIE-listed diseases in oysters



Biggest risk is import of spat (or new culture species):

- scrutiny of incoming health certificates
- preferably establish local hatcheries
 - presently for both oysters and abalone

Lüderitz Abalone hatchery



Progress in aquatic health 2008 and 2009:

- Freshwater survey for EUS, with treatment in farms
- Intensified vigilance about transfer of animals
- Survey of Namibian farmed shellfish
- intensified scrutiny of health certification of incoming spat/ species (legal mandate)
- Pro-active support for national hatcheries, feed-production
- Planning of disease analytical laboratories - capacity to be developed

Driving force

1. Energetic and enthusiastic Aquaculture sector
2. Outbreak of Epizootic Ulcerative Syndrome along the northern border
3. Sponsorship of regional activities (SACAU, OIE, FAO) to establish aquatic animal health expertise
 - Appointment of aquatic animal health focal points; attendance at the OIE General Sessions 2008, 2009
 - Training workshops
 - Zambia, March 2008 FAO
 - Mozambique, June 2008 OIE
 - Malawi 2009 OIE
 - Namibia 2009 FAO/OIE
 - Namibia 2010 OIE

Disease not confined to aquaculture!! - Indigenous aquatic fauna not disease-free.

e.g. Microsporidia in monkfish



Cysts of *Spraguea lophii* in anglerfish brain (Giemsa)

e.g. Gross pathology of *Spraguea lophii* infection of spinal ganglia of *Lophius* sp.

In the aquatic environment containment of disease is not easy!

What needs to be done, now?

- Establish a basic understanding of the disease risks associated with movements of aquatic animals
 - Establish basic disease surveillance: look out for sick animals and report immediately
 - Establish the scientific expertise to screen for disease in key aquatic resources
- Keep vigilant:
- Apply legislation
 - Control movements
 - Recognize disease outbreak early
 - Report quickly

