OIE Workshop for Aquatic Animal Focal Points
Swakopmund, Namibia
15-19 June 2010

Why is Aquaculture and Aquatic Animals Health so important?

Ricardo Enriquez S
Vice-President
Aquatic Animals Health Standards Commission

Aquaculture

- Started as freshwater food production system (Asia)

- spread to all continents
  all aquatic ecosystems
  a range of aquatic sp

- Small scale, non commercial and family based
- large scale commercial and industrial production
- trade at national, regional and international levels

Aquaculture-capture fisheries

- capture fisheries decline
- fisheries overcapture 1/3 sp disappear
- the last 30 years 50% reduction of the natural resources
- biological value of the protein

Aquaculture, fastest growing food-producing sector in the world

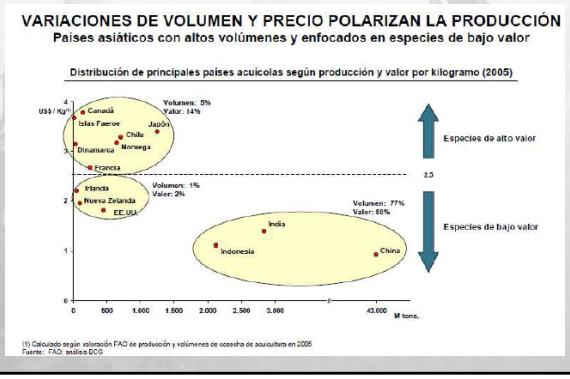
- global population increase > demand for aquatic food products
- 45 % of the capture fisheries
- market and trade increase (import-exporting Members, SPS-WTO)
- consumption preferences (safe and quality products)

Aquaculture

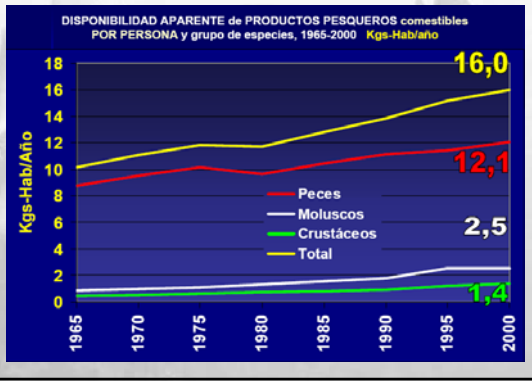
Country/region	Production (mill/ton)	Production vol (%)	Value (US$/ton)
China	32.4	67.3	1111
Asia-Pacific Region	10.7	22.3	1925
Western Europe	2	4.2	2710
Latin America+Caribbe	1.4	2.9	3743
North America	0.6	1.3	2167
Near East-North Africa	0.6	1.2	1383
Central-Eastern Europe	0.3	0.6	2233
Sub-Saharan Africa	0.1	0.2	2500

Subasinghe et al., 2009

Aquaculture



Aquaculture



Aquaculture

1950 1 mill/ton
2005 48,1 mill/ton

Av. annual growth rate 8,8 %

Value US$ 70,3 billion

Aquaculture

Trends in developments

- continuing intensification
- continuing diversification
- new production systems and practices
- increasing influence of markets, trade and consumers
- enhancing regulation and improving governance
- better management
- non GMO suplies
- fish meal protein sustitution by vegetable protein

Aquaculture

- Special consideration for Africa
  diagnosis
- Limited development in Sub-Saharan Africa
- Contribution to World aquaculture < 1%
- Per capita consumption of fish has dropped
- Full resource potencial for aquaculture growth
- Cage culture developing in Ghana, Kenya, Malawi, Uganda, Zambia, Zimbabwe
- A hight-priority region for aquaculture development
- Desert expanding

Aquaculture

- Special consideration for Africa
  needs
  - Develop agents and institutions
  - Armonize authorities
  - Limited resources to deliver quality public goods and services
  - Renewe and long-term focussed assistance to aquaculture in Africa
  - Making public-private partnerships

Aquaculture

- Special consideration for Africa
  needs
  - International cooperation
  - Benefiting several countries
  - Quality feeds
  - Genetic improve of tilapia seed

Aquaculture

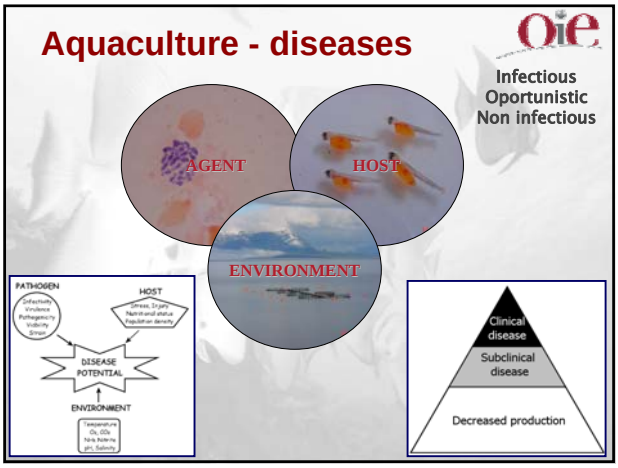
- Better regulation and governance
- Sustainable development
- Responsable production (better management practices)
- > intensify and diversify
- Diminish wildlife impacts
- Aquatic animal welfare

Aquaculture

Constraints

- **Impact of climate change (T°, weather, water quality and supply)**
- **global economic changes**
- **tsunamis**
- **freshwater provision**
- **pollution**
- **disease epidemics**

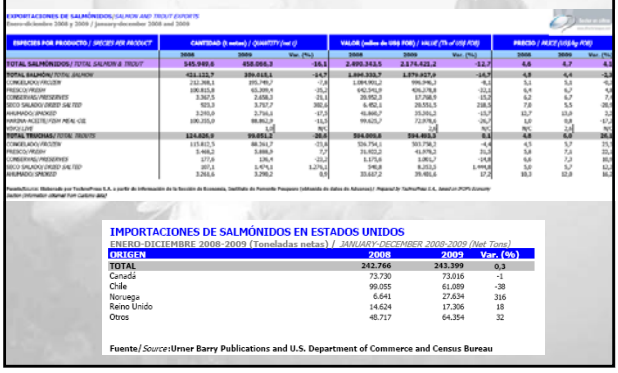
Aquaculture - diseases



Aquaculture - diseases

- Mortality
- Efficiency of production process
- Cost of diagnosis and control
- Environmental impacts
- Disemination of pathogens (regional, national, international levels)

Aquaculture - diseases



IMPORTACIONES DE SALMÓNIDOS EN ESTADOS UNIDOS
ENERO-DICIEMBRE 2008-2009 (Toneladas netas) / *JANUARY-DECEMBER 2008-2009 (Net Tons)*

ORIGEN	2008	2009	Var. (%)
TOTAL	242.766	243.399	0,3
Canadá	73.730	73.016	-1
Chile	99.055	61.089	-38
Noruega	6.641	27.634	316
Reino Unido	14.624	17.306	18
Otros	48.717	64.354	32

Fuente/*Source*:Urner Barry Publications and U.S. Department of Commerce and Census Bureau

Aquaculture - diseases

- Antimicrobial use
- Residues
- Quality of products
- Lost of market
- Lost of jobs

Disease outbreaks due to international trade

Although local pathogens combined with other factors such as poor husbandry and inadequate water quality are the most common causes of disease outbreaks in aquaculture,

the introduction of 'exotic' pathogens through international trade in live aquatic animals and their products continues to be a major reason for new epizootics.

Some examples of international spread of aquatic animal diseases

- White spot disease in shrimp has spread to 22 countries via international trade in post-larvae (and products?)
- Taura syndrome to Asia from Americas via live shrimp transfers
- *Gyrodactylus salaris* to Norway from Sweden via live juvenile salmon for stock enhancement

Some examples of international spread of aquatic animal diseases

- First cases of Sleeping Disease of trout in UK linked with imported trout fillets
- EHN virus to Finland from Germany via live farmed sheatfish imports
- First cases of SVC in Switzerland, USA, Denmark linked with koi carp imports
- Koi herpes virus disease via international koi carp trade.
- Infectious salmon anaemia to Chile from Norway (via eggs?)??

Thus, the introduction of 'exotic' pathogens into a country can and does occur through importation of live aquaculture animals and/or their products

but

endemic pathogens and unregulated internal transfers of live aquatic animals, combined with other factors such as inadequate farm-level biosecurity, poor husbandry, inappropriate feed, poor water quality, etc., are more common causes of outbreaks and spread of diseases in a country's aquaculture industry. Therefore, national and farm-level biosecurity precautions are essential adjuncts to any international biosecurity measures.

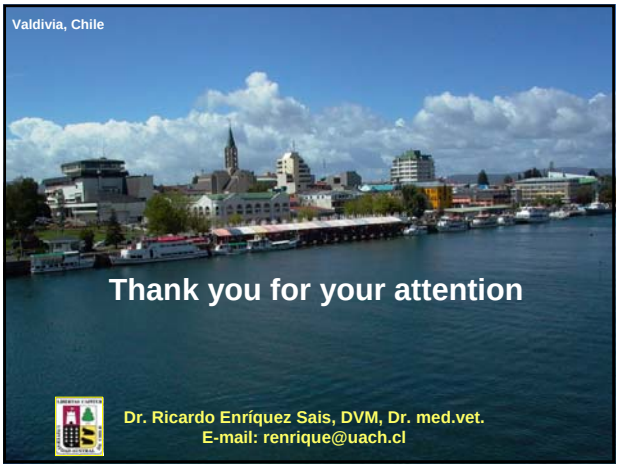
- Thus, to prevent disease incursion, outbreaks and spread, biosecurity measures are needed at all levels - farm, national and international.
- Without effective implementation of such biosecurity measures, the occurrence, trans-boundary spread and serious economic impact of diseases in aquatic animals will continue.

- The main aim of OIE is to ensure the sanitary safety of international trade in live animals and their products.
- This is achieved by providing guidelines on the health measures to be used by the competent authorities of importing and exporting countries to prevent the transfer of agents pathogenic for aquatic animals, while avoiding unjustified trade barriers.

Developing the OIE standards for aquatic animals
is the role of the
Aquatic Animal Health Standards Commission

Aquatic animals

Valdivia, Chile



Thank you for your attention

Dr. Ricardo Enríquez Sais, DVM, Dr. med.vet.
E-mail: renrique@uach.cl