Biodiversity for Fisheries and Aquaculture Status, trends, drivers, gaps and opportunities

Special Information Seminar

Biodiversity for food and agriculture: take stock for the future

Rome, 13 April 2013

1. Aquatic Biodiversity

- 1a. Fishing
  - The only major food producing sector that still relies on hunting and trapping
  - >30,000 species of fish, >5000 species accessed, many more genetically differentiated stocks

1. Aquatic Biodiversity

- 1b. Aquaculture
  - The fastest growing food producing sector
  - Almost 500 species farmed, but very few domesticated strains

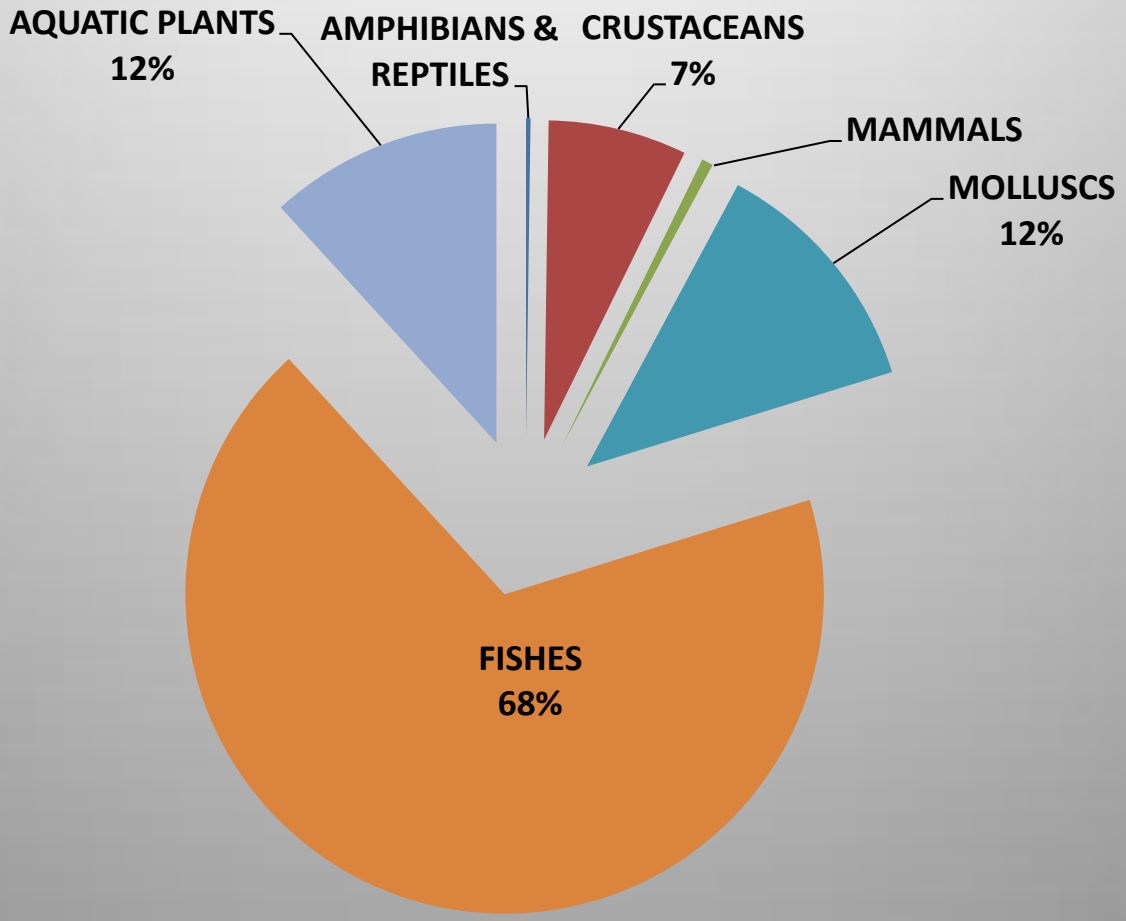
1.WILD & FARMED AQUATIC SPECIES

	Wild Species*	Cultured	Production 99%	Production 80%
Finfish	31,000	227	44	9
Molluscs	85,000	77	19	6
Crustaceans	47,000	35	11	4
Seaweeds	13,000	>20	2	2
Total		359	76	21
			21%	6%

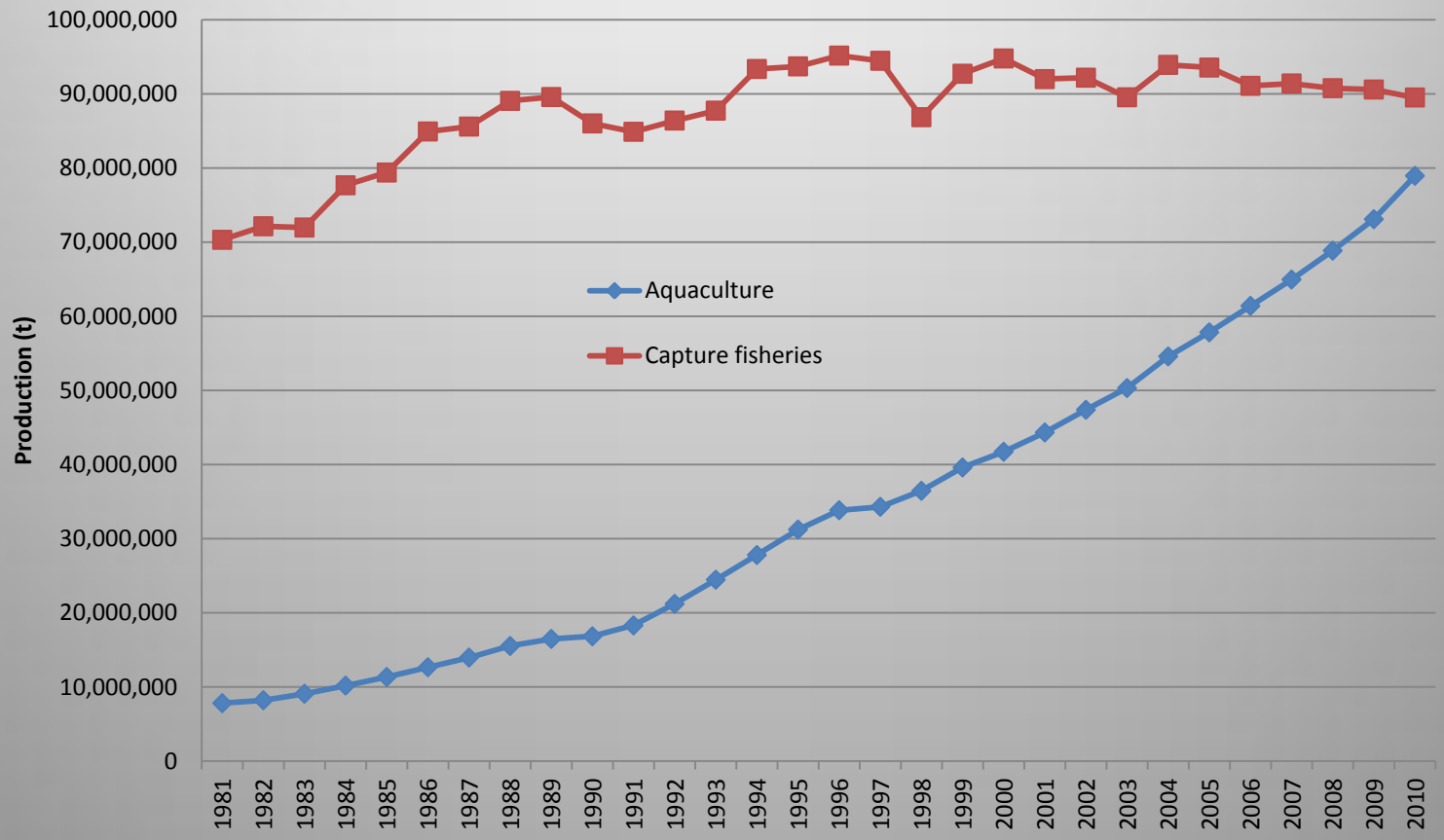
*World Conservation Union (2010)

Biodiversity in Fisheries & Aquaculture

Total production (2010) = 168,446,694 t

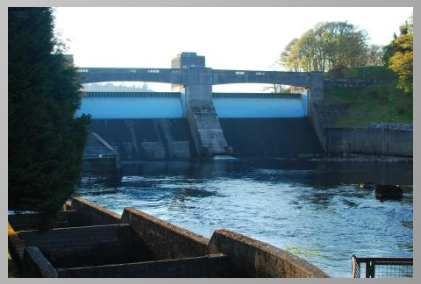


Production from Aquatic Biodiversity



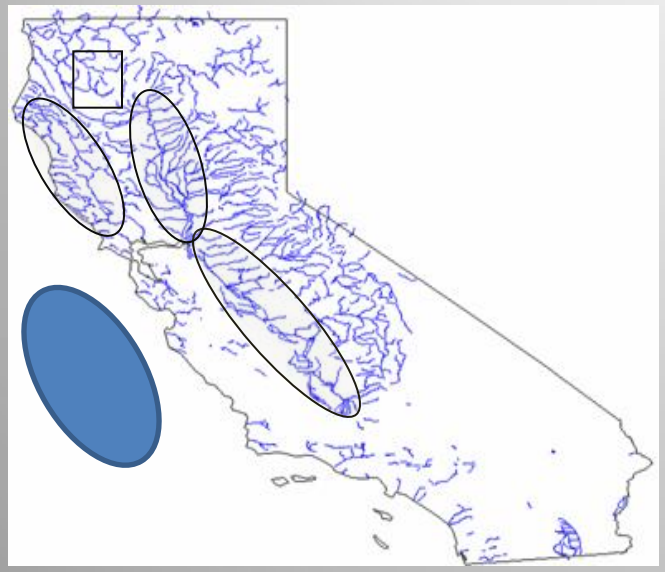
1.Drivers

- Marine fisheries
  - Fishing pressure
- Inland fisheries
  - Habitat loss and degradation
- Aquaculture
  - Market and sustainability issues
- Increased role of aquaculture
  - Fish meal; land use, alien species



2. What are the most important ways of using the genetic resources of your sector? What are the most important trends?

Fishery management



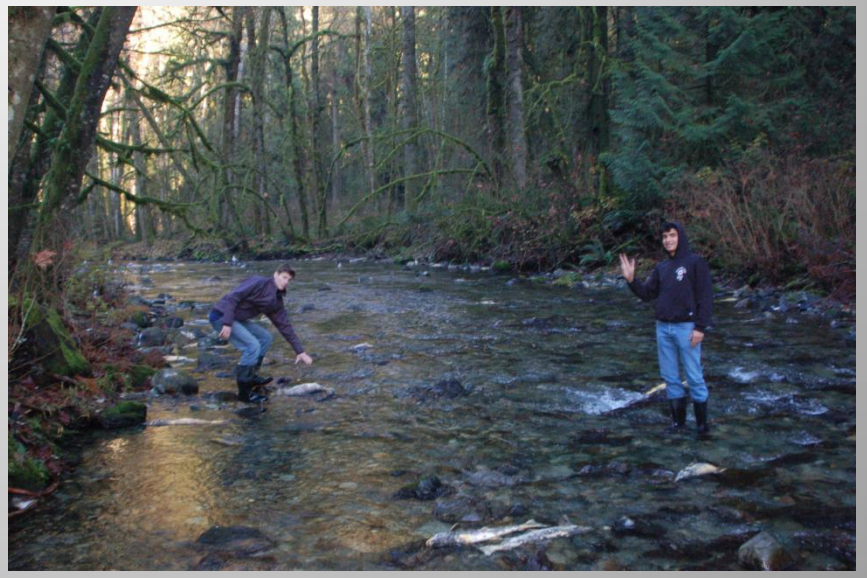
Introduced species

Domestication

Stock enhancement

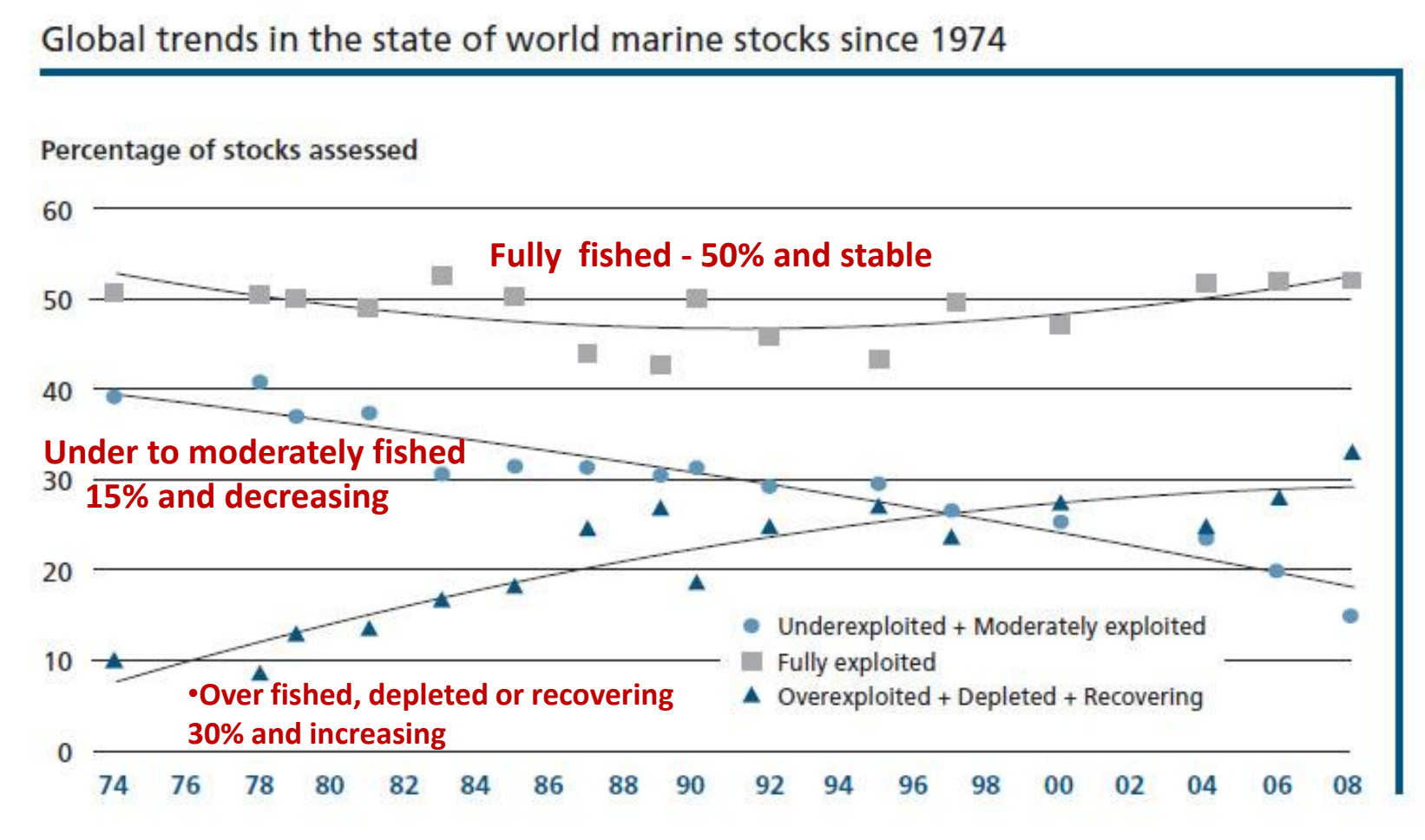
3. Ecosystem regulating and supporting services

- Nutrient cycling
  - Marine, freshwater and land connection
- Habitat improvement
  - Water quality
  - Structure
- Disease and disaster resilience
- **At species level usually**



Information on sustainability

CAPTURE FISHERIES



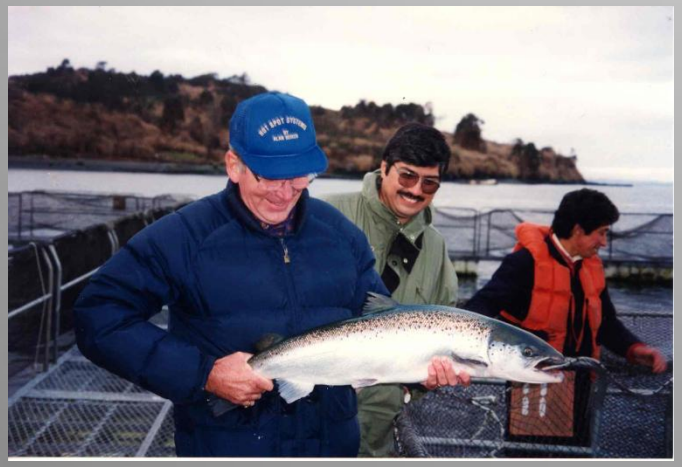
Information on sustainability

Aquaculture

Demand for 'seafood' – increase ~**2%/yr**

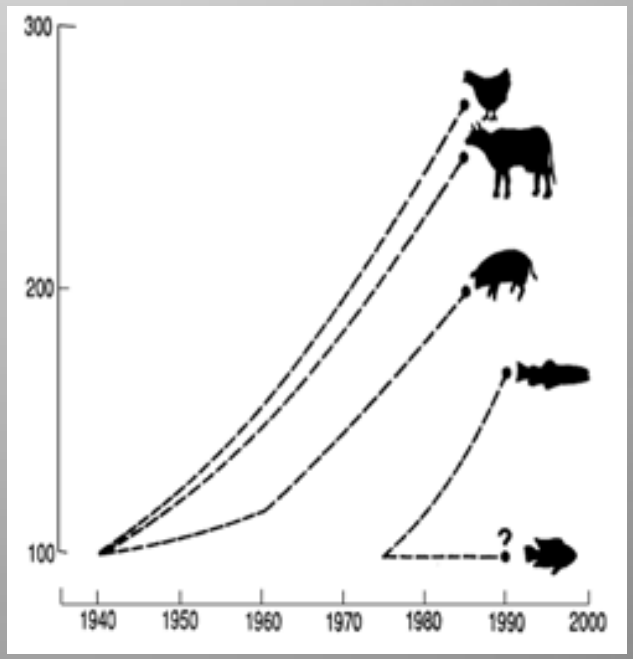
- Traditional selective breeding = **5-15% increases/yr**

- **Aquaculture** is the main reason for the **deliberate introduction** of non-native species. **Most** introductions have **not caused serious problems**, but a few have!



Information gaps

- Genetic structure of most wild fish stocks and farmed varieties not known
- **OVER 50% of global inland fishery production not identified**
- Poor capacity for and knowledge on breeding programmes
- Ecological impacts of non-native genotypes and species
- Impacts of lost stocks in nature



Better information on AqGR: Traceability and genetic improvement

http://fishpoptrace.jrc.ec.europa.eu/

Thank you for your attention