



**Shrimp Aquaculture Dialogue**  
**Development of standards for responsible**  
**shrimp farming**  
**Belize City, April 1st 2008**

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Thank you for coming to the first Shrimp Aquaculture Dialogue meeting in Central America and Mexico

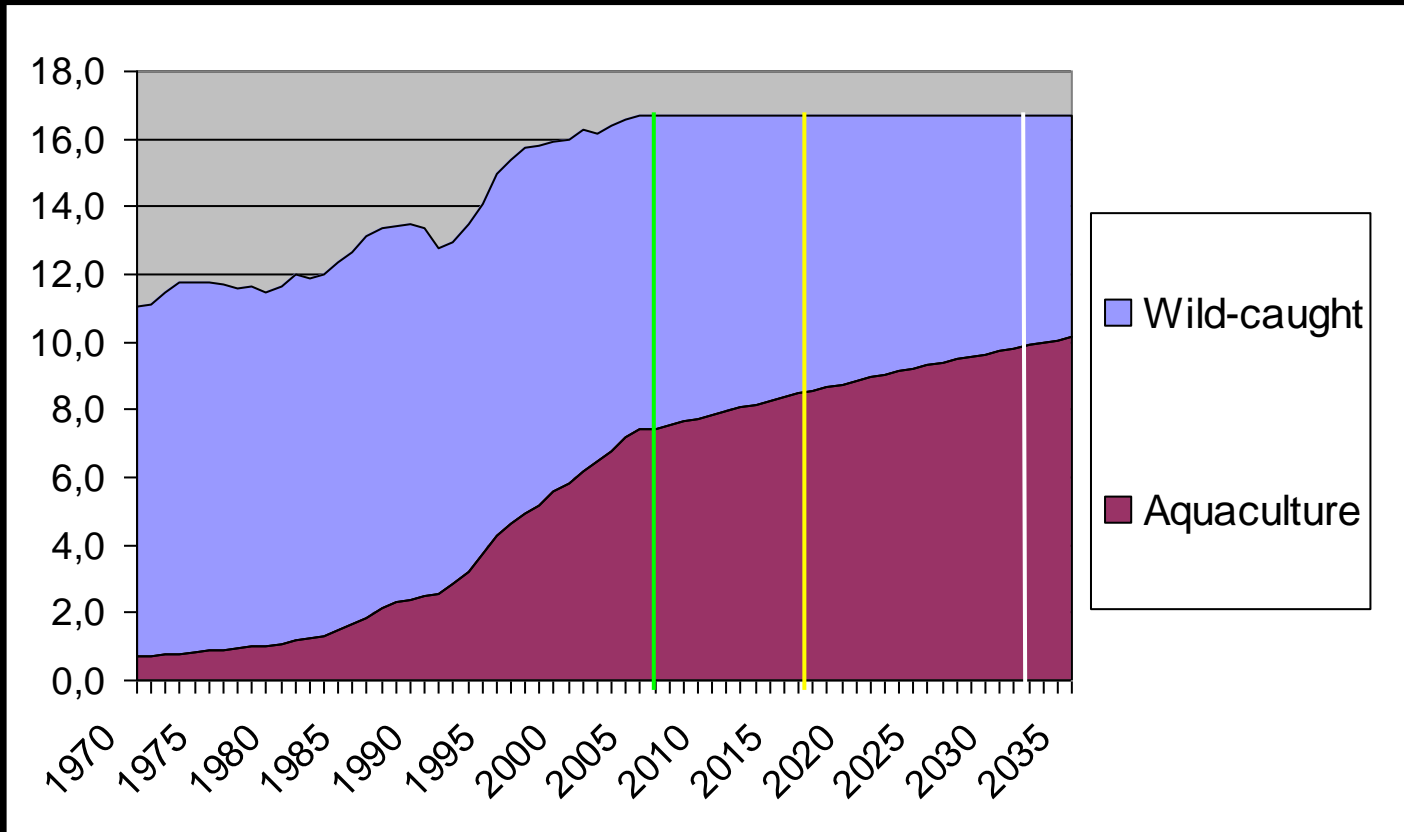


Seafood Production and Aquaculture Production trend  
The International Principles for Responsible Shrimp Farming  
The Shrimp Aquaculture Dialogue





# Aquaculture Production is on the rise

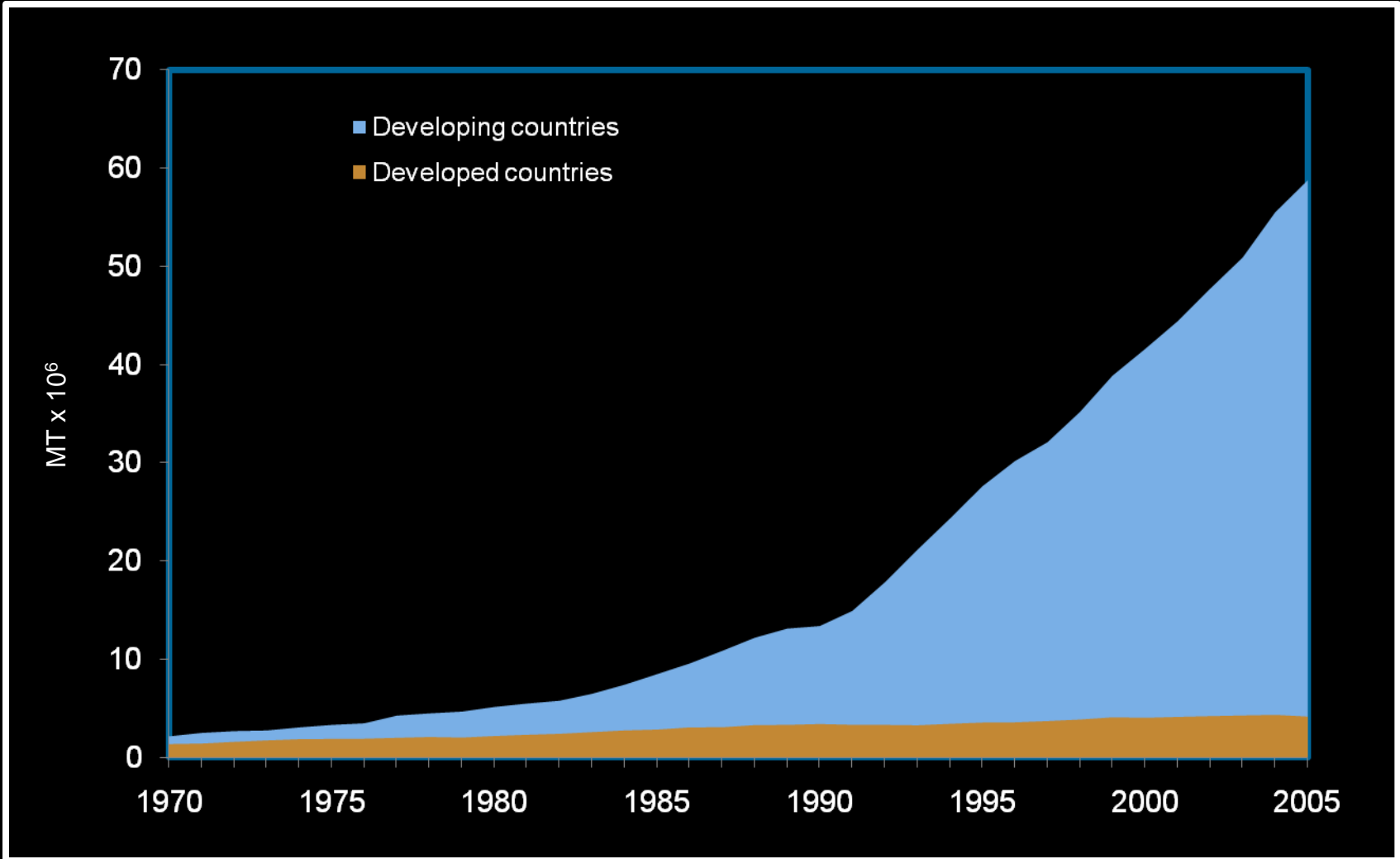


Source: FAO, 2007





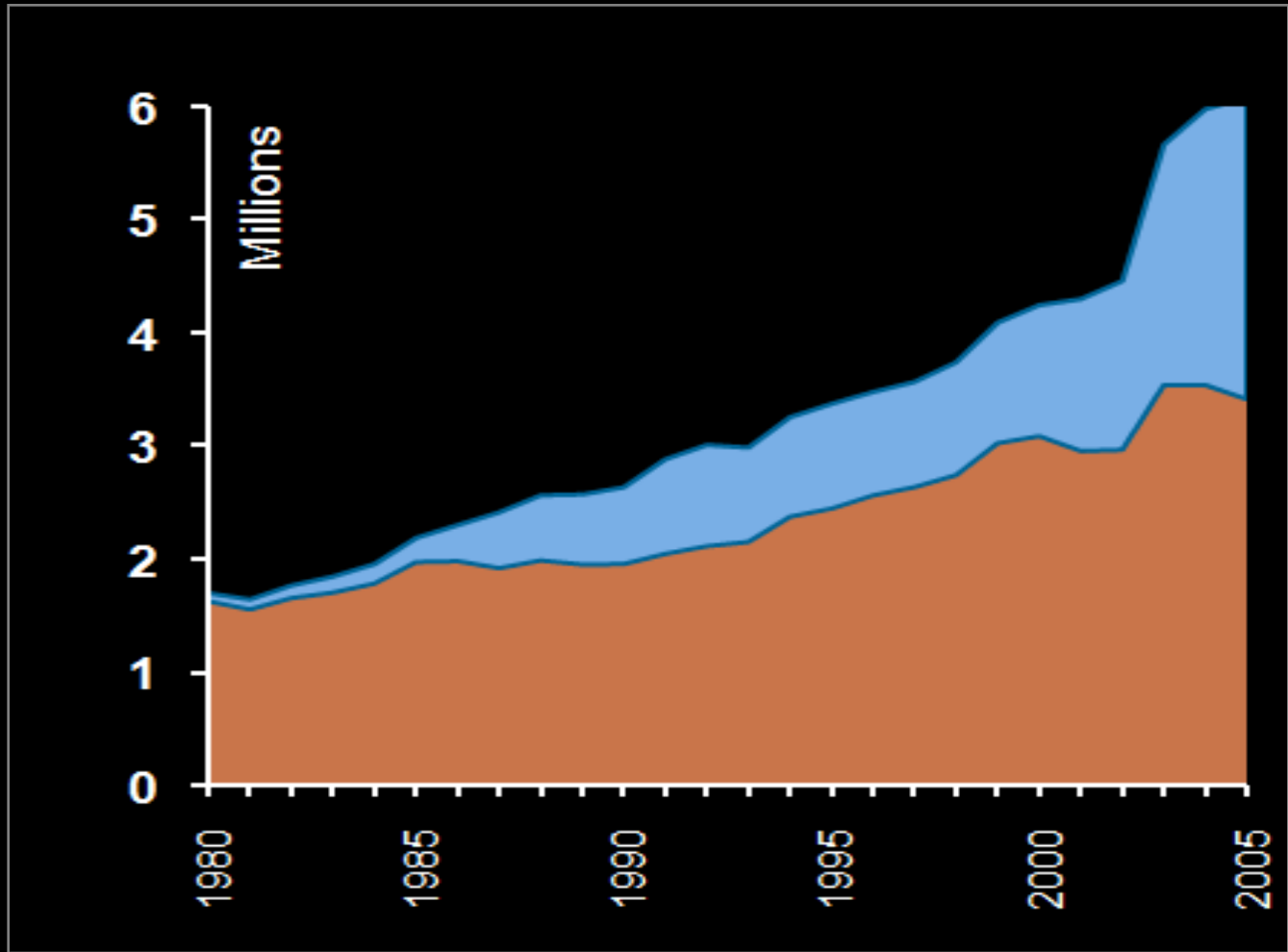
# Developing countries are the main players



Source: FAO, 2007



# Farmed shrimp is on the rise



Aquaculture

Capture



# Aquaculture helps meet growing demand for seafood

- World has limited resources
- Fishing has impacts—76% of fisheries at or beyond capacity
- Aquaculture is the fastest growing food production system in the world
- 46% of the fish consumed globally is from aquaculture

BUT aquaculture also can have negative impacts  
on the environment and society





# Level of perceived impacts varies between species

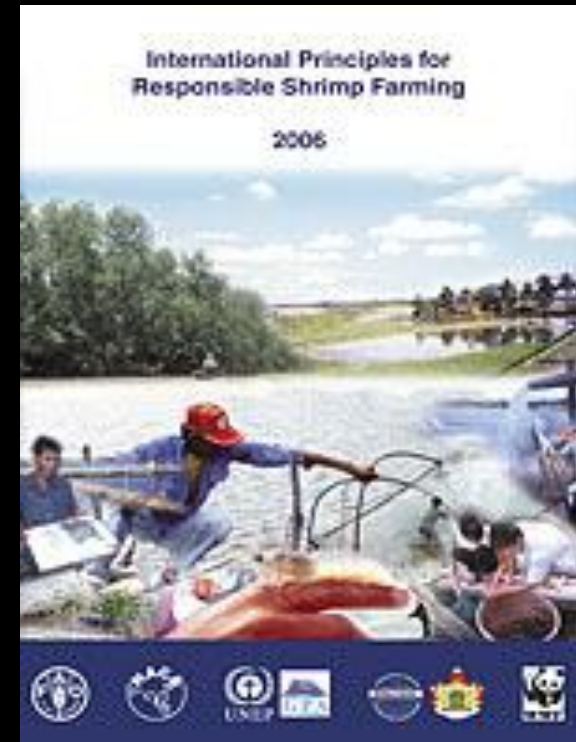
Species/ Species Groups												
Issues	Tuna	Shrimp	Salmon	Trout	Catfish	Tilapia	Abalone	Scallops	Oysters	Clams	Mussels	Seaweed
Antibiotic use	M	H	H	H	M	M	M	NA	NA	NA	NA	NA
Benthic biodiversity	H	M	M	M	L	M	L	M	M	M	M	L
Chemical use	L	H	M	H	H	L	M	L	M	M	L	L
Disease transfer	H	H	H	L	L	L	M	L	H	L	L	L
Escapes/Invasive	H	M	H	L	L	H	M	L	H	L	L	L
Genetic alteration	L	L	H	H	H	H	L	M	H	L	M	NA
Land and water use	L	H	L	H	H	H	M	M	M	M	M	L
Mortality removal	L	L	M	M	H	H	L	L	L	L	L	NA
Fish meal/oil use	H	H	H	H	M	M	M	NA	NA	NA	NA	NA
Water pollution	H	H	M	H	M	H	L	L	L	L	L	NA
Predator control	L	M	M	H	H	H	H	H	H	H	H	L
User conflicts	M	H	M	L	L	M	L	M	M	M	M	M

Relative importance levels (L = low; M = medium; H = high; NA = not applicable)



# Aquaculture Dialogue

- 1999: WWF joined FAO, NACA & WB (then UNEP) in the Consortium Program on Shrimp Farming & the environment
  - 120 researchers, 40 case studies, 140 meeting, 8000 peoples
  - Developed “International Principles for Responsible Shrimp Farming”
  - Adopted by FAO in 2006
  - Global (COFI) endorsement!







# Consortium has identified the key impacts

- Ecological consequences of conversion of natural ecosystems, particularly mangroves
- The effects such as salination of groundwater and agricultural land
- Use of fishmeal in shrimp diets
- Pollution of coastal waters due to pond effluents
- Biodiversity issues arising from collection of wild brood and seed
- Social conflicts
- Disease outbreak





# Consortium has identified the Principles

- Principle 1: Farm siting
- Principle 2: Design and Construction
- Principle 3: Water use
- Principle 4: Broodstock and Post larvae
- Principle 5: Feed management
- Principle 6: Health management
- Principle 7: Food safety
- Principle 8: Social responsibility





# The Shrimp Aquaculture Dialogue: what is it?

- A time for leaders in the shrimp industry to talk about transforming aquaculture
- A time to share information
- A time to have an open dialogue





# Dialogue are transparent

- Information posted on WWF and partner websites
- Updates in the free Aquaculture Dialogues monthly e-newsletter



- Contact me at [ebernard@wwf.fr](mailto:ebernard@wwf.fr)
- Press releases in industry trade publications
- ISEAL compliant





# The Goals of the Shrimp Aquaculture Dialogue

- Adapt the International Principles and criteria for a species and an area
- Gain consensus on principles, criteria, and indicators
- Develop performance-based standards
- Use transparent, multi-stakeholder processes
- Pass Dialogue standards on to independent standards-holding body





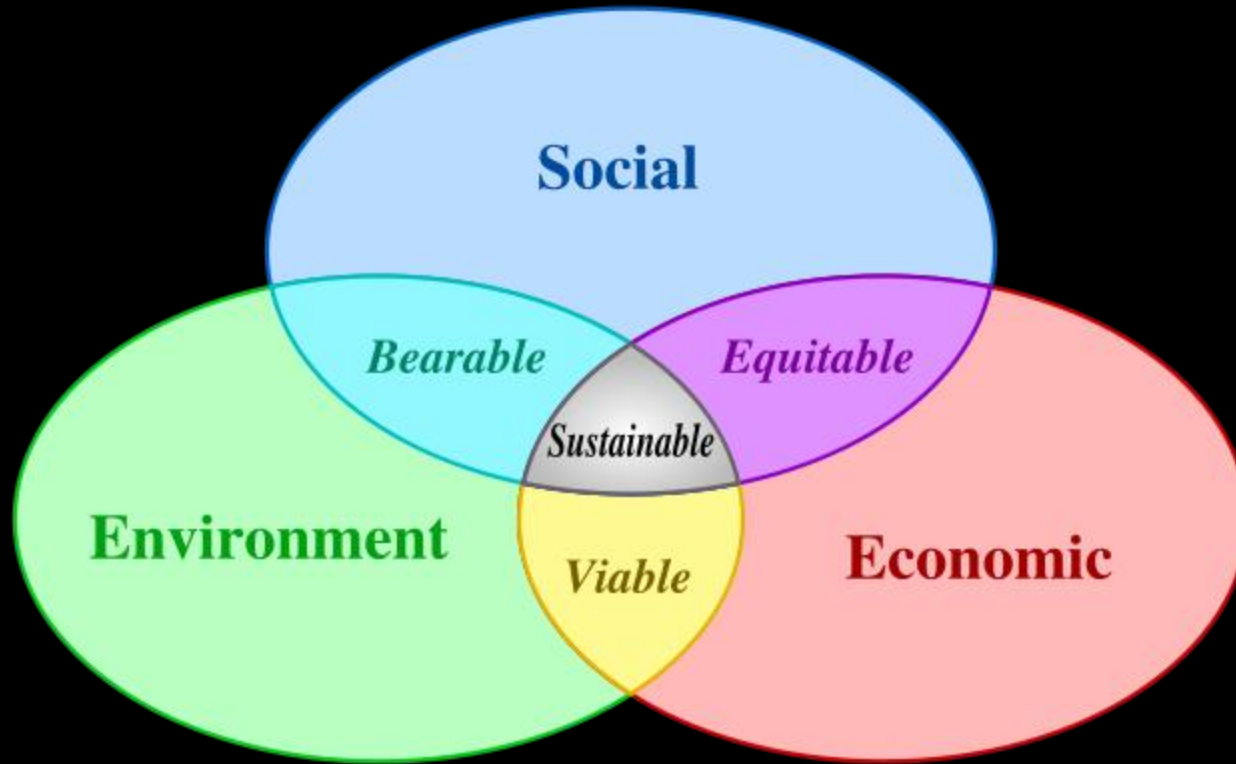
# From the International Principles to metric standard

- Impact – Use of fishmeal in shrimp diets
- Principle 5 – Utilize feeds and feed management practices that make efficient use of available feed resources, promote efficient shrimp growth, minimize production and discharge of waste
- Criteria example – Use of wild fish for feed
- Indicators should be developed to determine if principle is being achieved – Feed Fish Equivalent Ratio (FFER), other ?
- Quantitative standards developed from indicators: 0.8 ?





# Aquaculture and Sustainable development





# Madagascar and East Africa: *P. monodon*, semi intensive farms

- Stakeholder meeting in April 2007 in Antananarivo
  - 60 attendees
- Outcomes
  - Principles and criteria posted on WWF website in English and French
  - There are existing BMPs that can be used
  - Some BMPs need to be developed
  - Technical working group has been formed to propose possible indicators
- Perspectives
  - Discuss proposed indicators by the Technical Working Group in a 2<sup>nd</sup> workshop (possible date: 3 and 4 of June 08)







# Central America and Mexico: *L. vannamei*, from semi intensive to hyper intensive farms

- First stakeholders meeting in Belize
  - Can consider Madagascar document and other Aquaculture Dialogue inputs
- Expected outcomes
  - Principle and criteria for responsible shrimp farming
  - Possible key indicators and existing BMPs
  - Elect steering committee
- Perspectives
  - Post on website (Spanish and English version) proposed “Principles and criteria for responsible shrimp farming in Central America and Mexico” for public consultation and the Steering Committee members
  - Steering Committee to integrate stakeholders comments and propose action plan to move forward





# Shrimp Aquaculture Dialogue will move to Asia

- First workshop expected this summer: *P. monodon* and *L. vannamei*
- Will emphasize the needs of small- scale producers
- Will consider existing documents from Central America/Mexico and East Africa, other Aquaculture Dialogues and existing BMPs





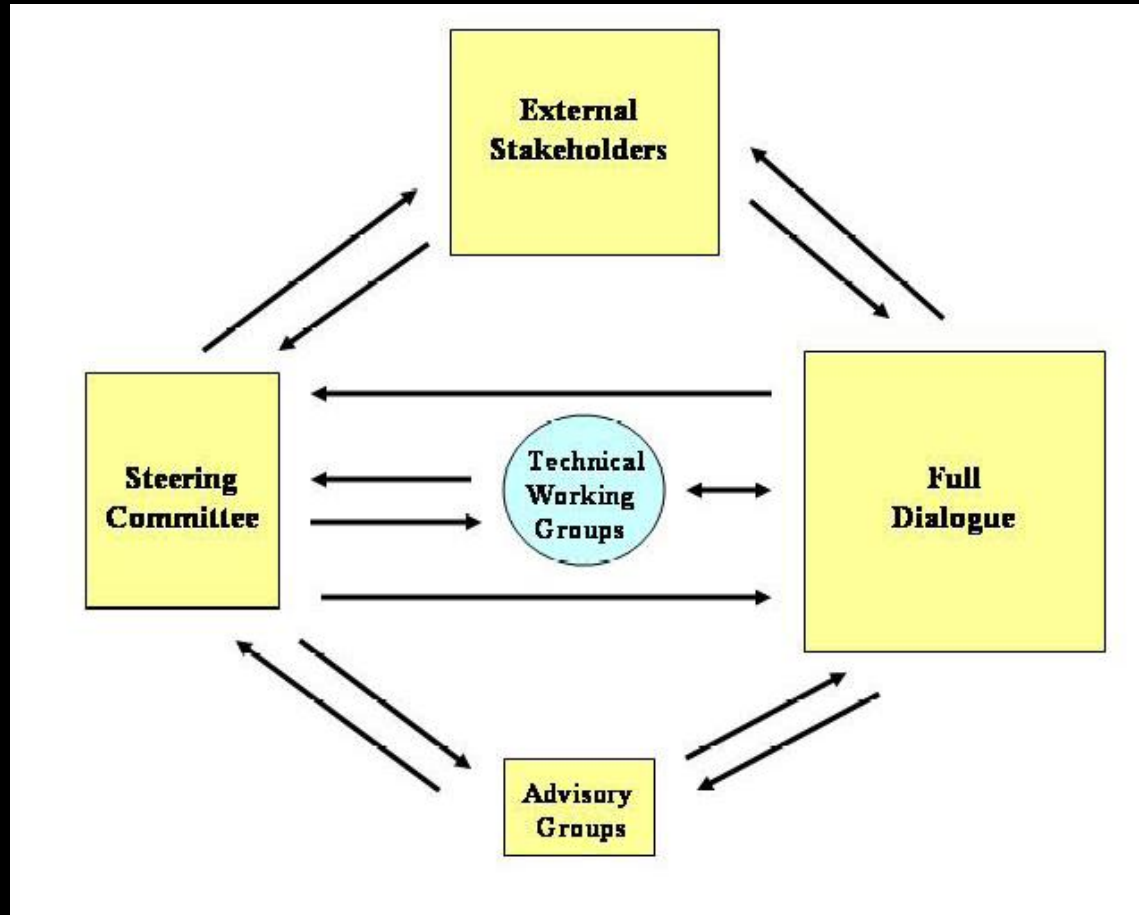
# All stakeholders can participate

- Steering Committee: Serves as the prime decision-making body, is inclusive of multiple sectors and regions. Each Dialogue steering committee must agree upon and document its decision making process.
- Technical Working Groups
- Full Dialogue
- Advisory Groups
- External Stakeholders
- Dialogue Coordinator





# Level of implication in an Aquaculture Dialogue





Thank you

