CFP: Which future for aquaculture
Session 2 Adding value to Aquaculture

AQUACULTURE
AND
ITS ENVIRONMENTAL SERVICES

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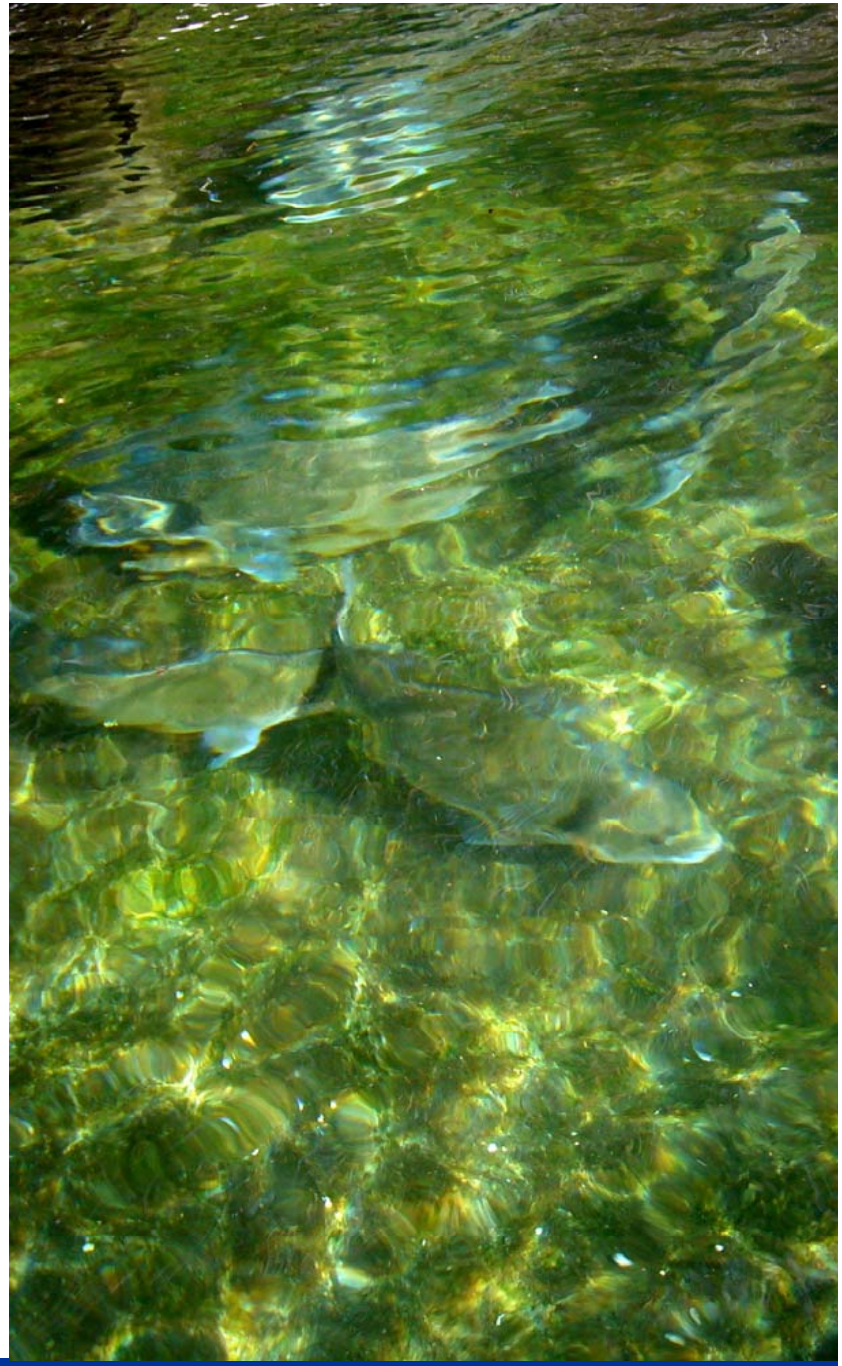
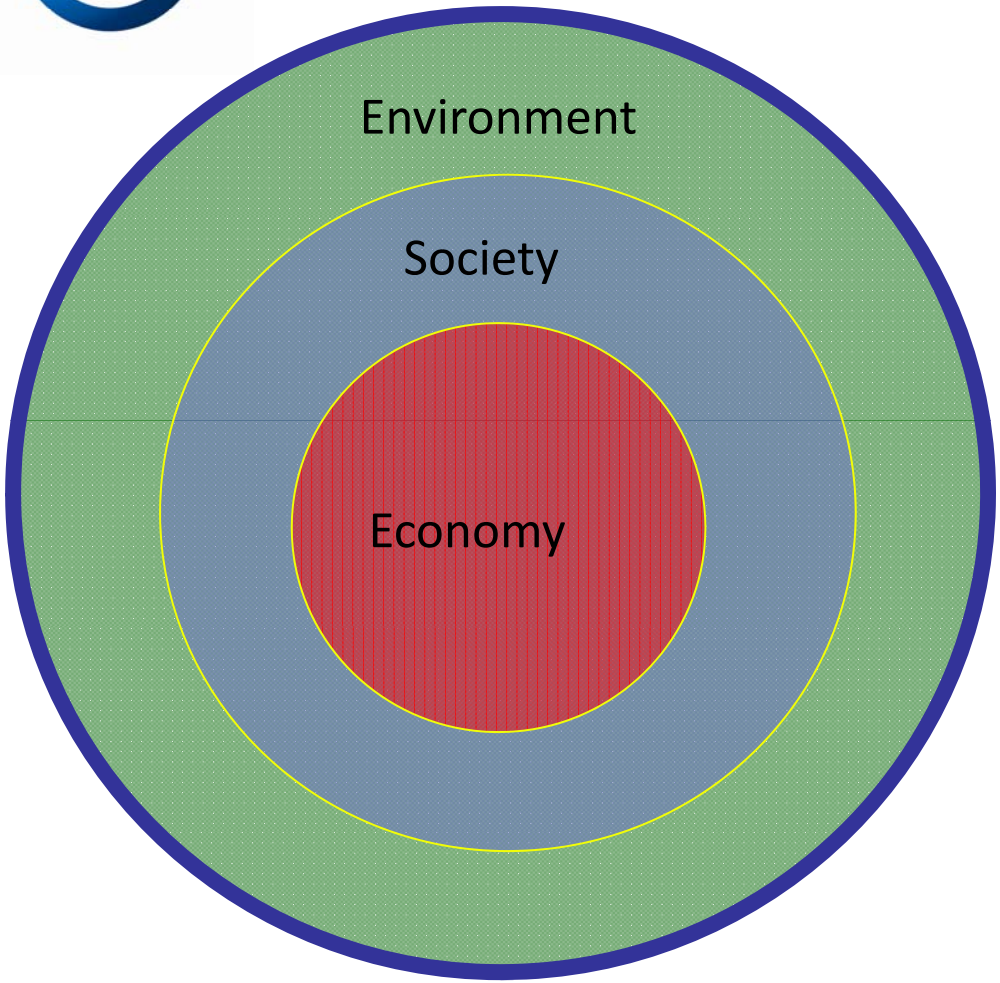
Global Marine and Polar Programme

- Ecosystem services
- Ecosystem-based management
- Sustainable development and governance
- Precautionary principle
- Food security



Definition of Ecosystem Services in the framework of the Ecosystem Approach

- Services provided by the ecosystem (natural system and human activities)
- Water of good quality, raw materials for feed, wild stocks (shellfish)
- Services are good if ecosystem is healthy (functioning)
- Issue of ecosystem services should be addressed within the framework of the sustainable development and the ecosystem approach



Cercles de Passet

Sustainable development of Aquaculture

- Environmentally acceptable ?
  - **By whom ?**
- Socially equitable ?
  - **In which social system ?**
- Economically viable ?
  - **In which stage of development ?**

The Ecosystem Approach (Ecosystem-based management)

The Precautionary Principle

The Good Governance

Site selection / site management
Feed production

The Ecosystem Approach

Convention on Biological Diversity, 2000

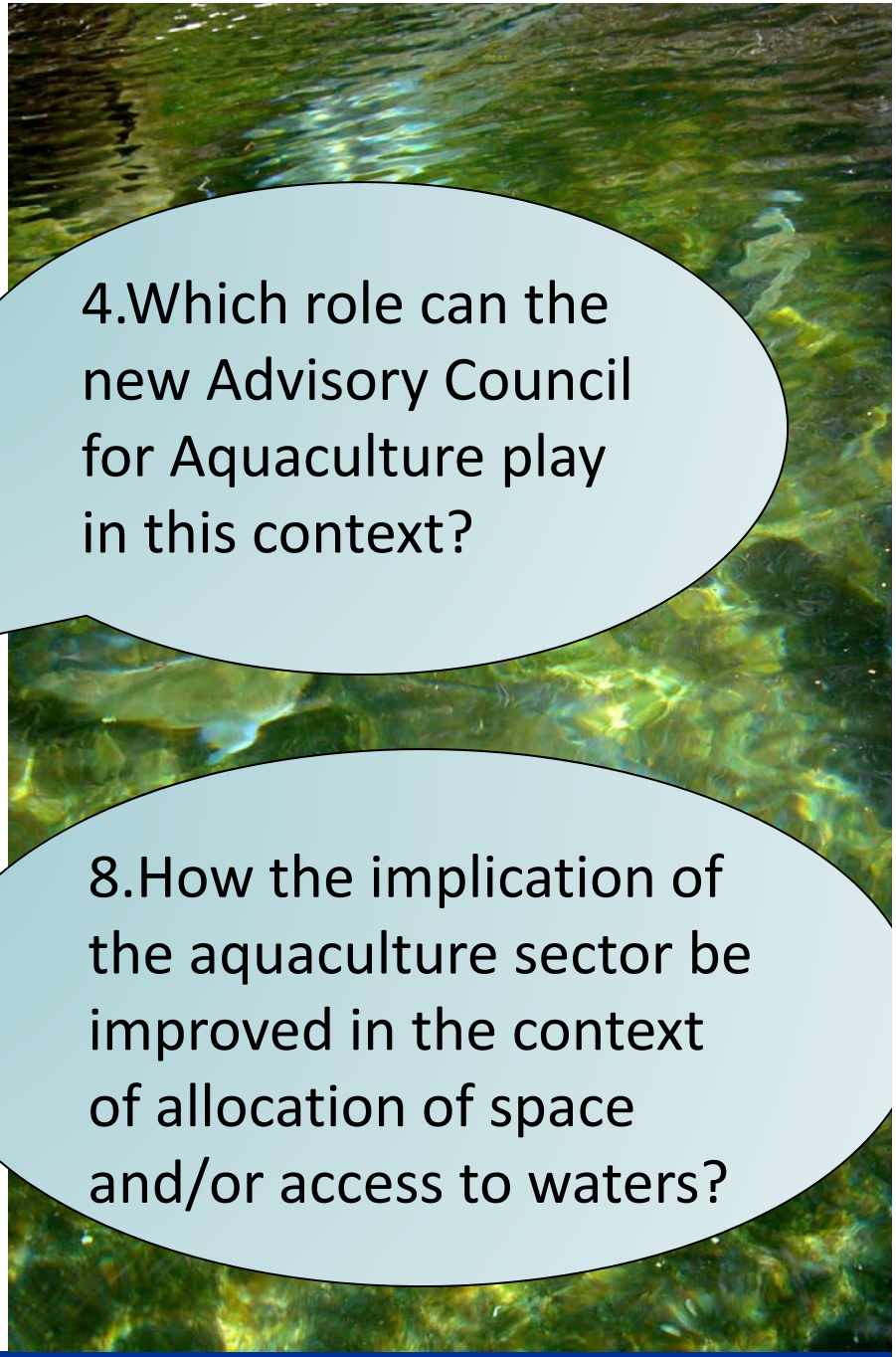
The Ecosystem Approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. The application of the Ecosystem Approach will help to reach a balance of the three objectives of the Convention: conservation; sustainable use; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

EU Marine Strategy Stakeholder Workshop, Denmark, 2002

The Ecosystem Approach is the comprehensive integrated management of human activities, based on best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of the marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.

Ecosystem Approach

- Are stakeholders (of the area) identified? **Fishermen, tourism operators, farmers**?
- Are the activities managed at the **smaller level of decentralization**?
- Is aquaculture not **impacting to, or receiving impact from**, others activities?



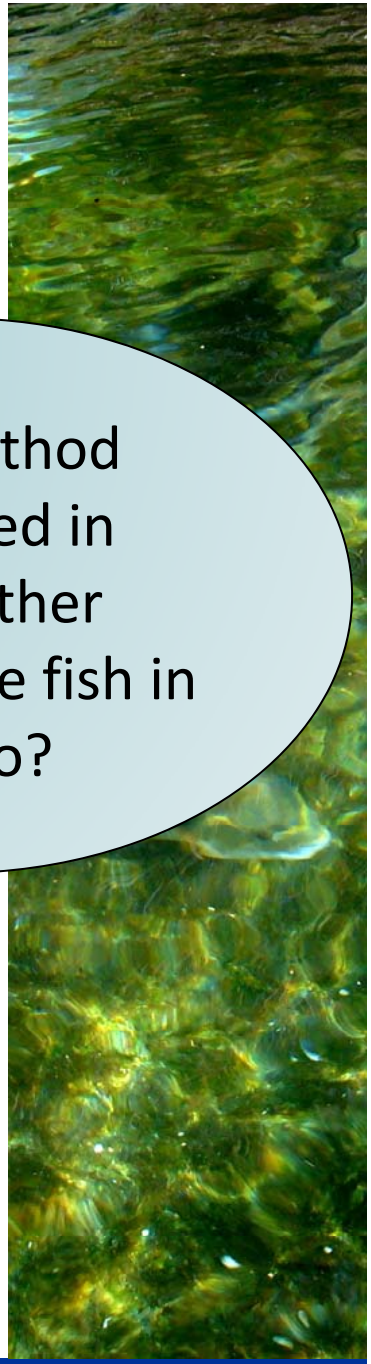
4.Which role can the new Advisory Council for Aquaculture play in this context?

8.How the implication of the aquaculture sector be improved in the context of allocation of space and/or access to waters?

Ecosystem Approach

- What is the **impact of aquaculture on the ecosystem**? Habitats, ecosystem functions, introduced species, domestication, organic matters, pollutants
- Does aquaculture uses the ecosystem services properly? **Water consumption, capture of wild socks, feed ingredients**
- (feed raw materials for the future: vegetal terrestrial proteins, fisheries by-products, food production by-products – blood proteins, micro algae...)

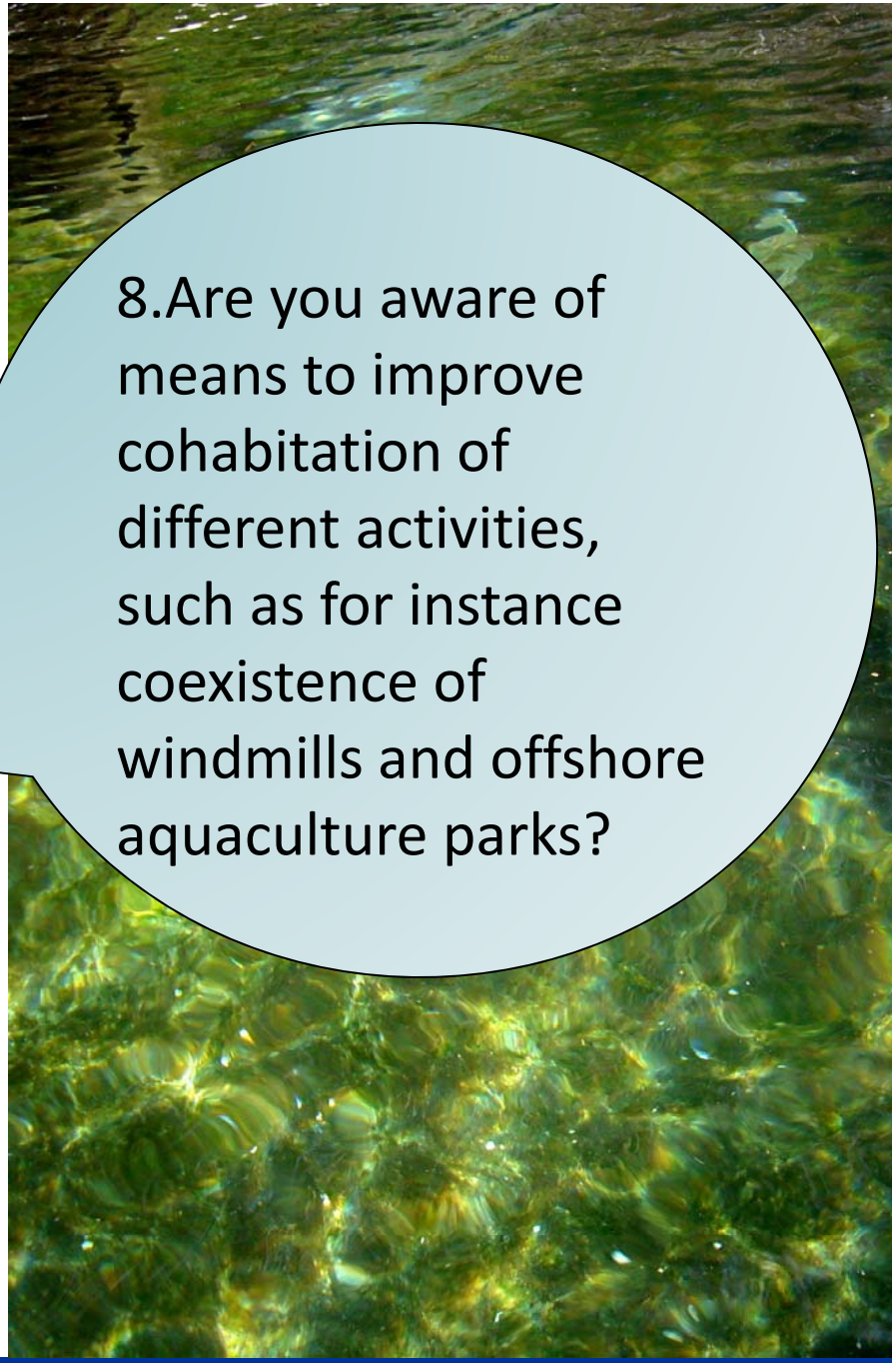
7.Which method could be used in order to further decrease the fish in fish out ratio?



Ecosystem Approach

- Is aquaculture a **societal choice**? Are the **conservation objectives clear**?

  (role of aquaculture regarding ecosystem services, role of sentinel? Aquaculture in or near protected areas? IUCN Categories V and VI: landscape and sustainable use)



8.Are you aware of means to improve cohabitation of different activities, such as for instance coexistence of windmills and offshore aquaculture parks?

Precautionary Principle

Precautionary principle and site selection /site management

- **What will be the impacts of a fish farm on local ecosystems?**
- **Introduced species**

Precautionary principle and feed production

- **Effects of use of GMO as raw materials**
- **Mad cow disease syndrome (if using "un-natural" materials)?**

Precautionary principle and Cumulative effects

- **Cumulative effects of several fish farms and agriculture on a watershed**

Burden of Precautionary measures

- **Who should afford the costs of the precautionary measures?**

Costs and Benefits / risk analysis

- **Including costs of effects on ecosystems**

Importance of knowledge

- **Avoiding measures negative to the development**

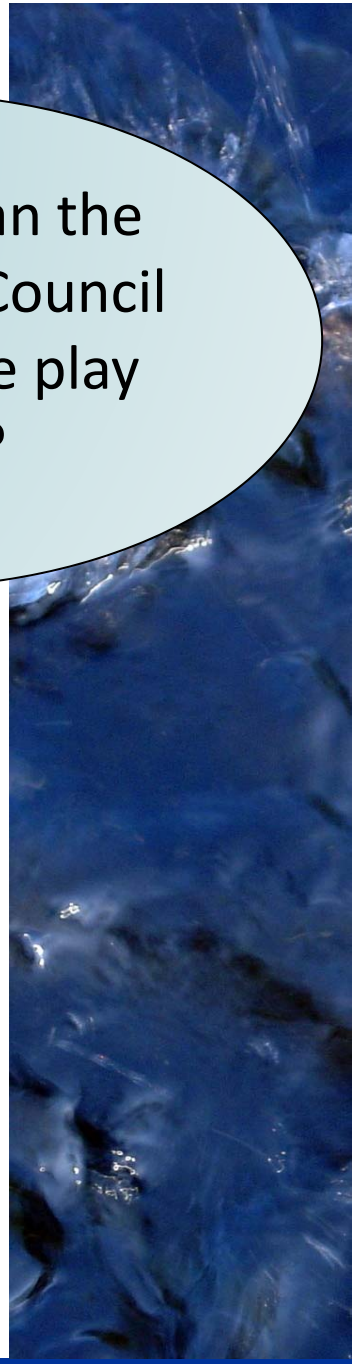
Importance of governance (decision making system)

Governance

Governance of the sea and aquacult

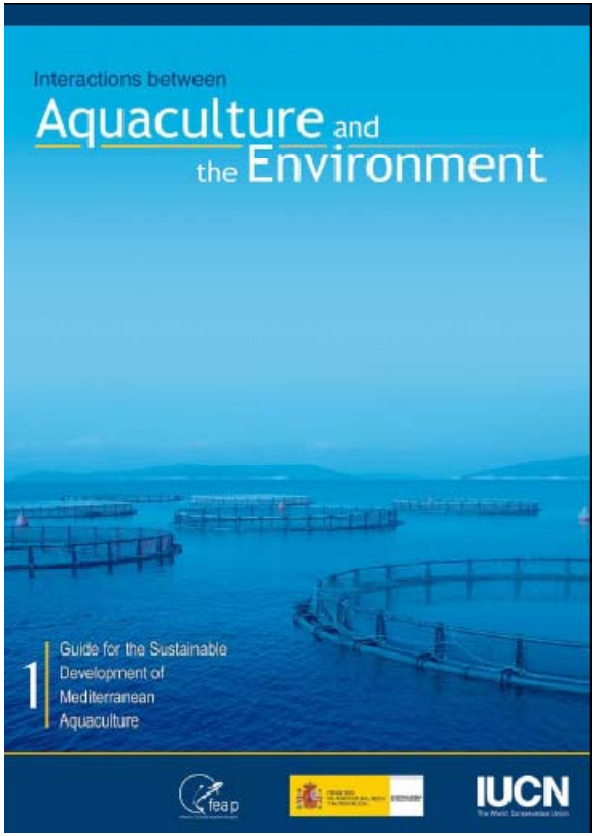
- Are site selection done throug
  process involving all relevant component of the society?
- Are the relevant stakeholder involved in the decision making and **consulted in a transparent way**, for the use of diverse raw materials in fish feed?
- Are choices and decisions taking into consideration all regulations, relevant national, international and customary laws?

4.Which role can the new Advisory Council for Aquaculture play in this context?



Conclusion

- Implementing Ecosystem-based management for aquaculture (Spatial approach
- Integration of aquaculture (in ecosystems / in societies)
- Marine / Coastal / Watershed Spatial Planning / Management
- Local role and niche
- Traditions and culture / Identity
- Common vision / Commitment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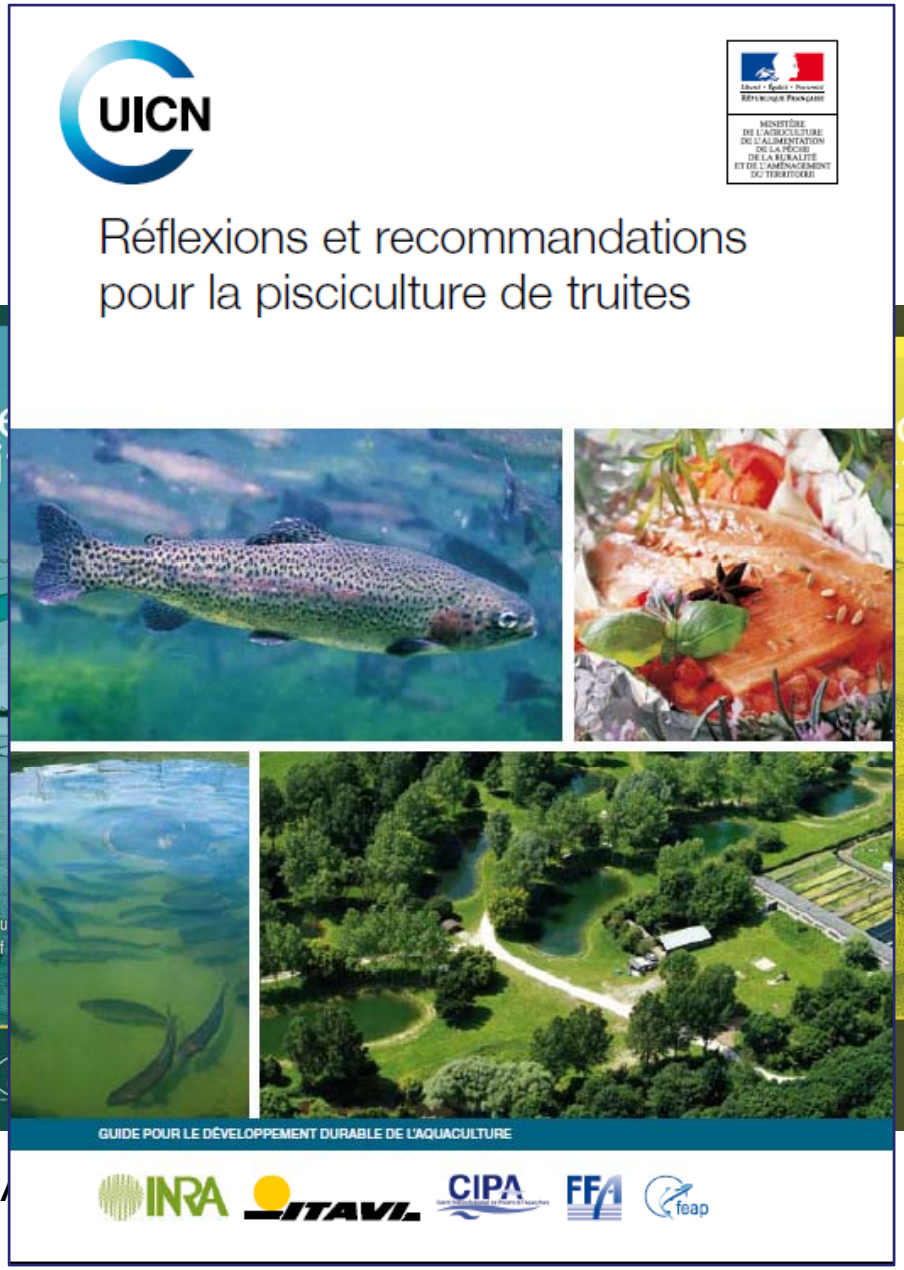
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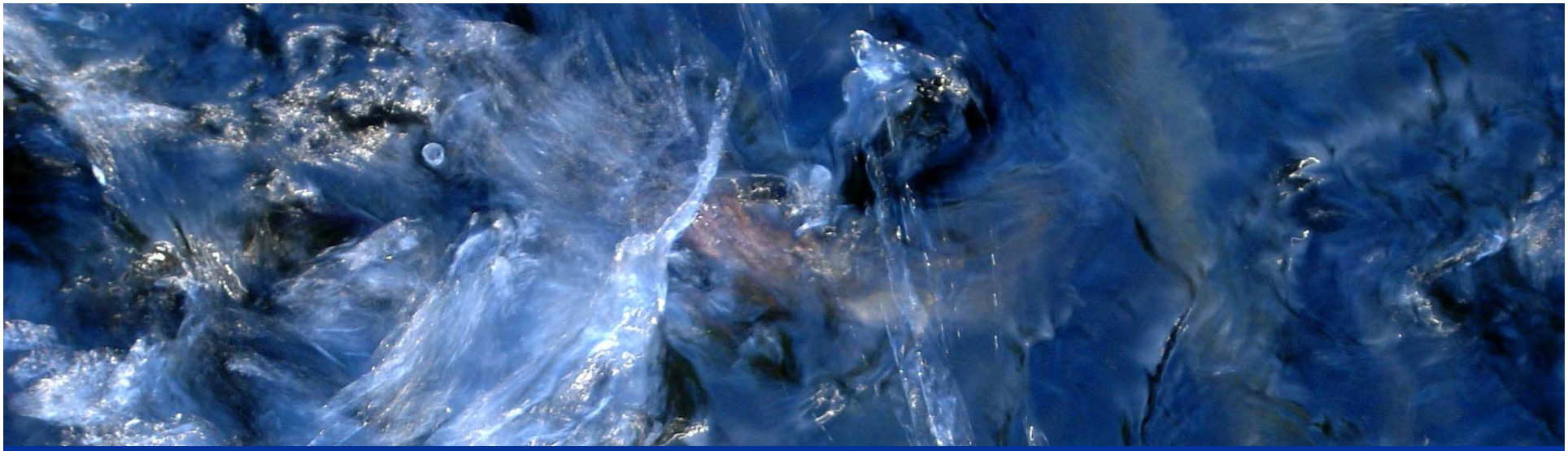
Merci pour votre attention

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