



## *FISH PONDS AS SOCIO-ECOLOGICAL SYSTEMS*

Understanding the diversity of stakeholder  
perceptions on fish ponds



Agence Nationale de la Recherche

# ANR





The research group Agroecology and Environment at ISARA-Lyon, France, works since several years on fish pond systems, their best management, and more specifically about the question of biodiversity in these systems. In an interdisciplinary approach, they also conduct research with the social science research group on socio-ecological systems.



## PRESENT SITUATION OF FISH PONDS AND RESEARCH ON FISH PONDS

In Europe, several agricultural landscapes exist where fish ponds have a large importance. Regions with a high density of fish ponds can be for example found in France, Belgium, Poland, Czech Republic, Germany, and Austria. Most of these cultural landscapes have been created during the Middle Ages and are presently still used with different intensity for the production of fish. These ponds are the support and the result of human activities linked to the ponds, and create specific socio-ecological systems.

### TODAY'S FISH POND CHALLENGES

Fish ponds are places of high environmental interest. Today, the fish production system faces important challenges. Profitability of traditional fish production is generally declining because the economic yield is not sufficient with the market prices for fish, and relatively cheap fish in supermarkets. Other challenges are increasing bird populations, such as cormorants, feeding on the fish, sometimes leading fish farmers abandoning their practices. Also, climate change may impact the annual availability of water resources to fill the ponds after they have been emptied and harvested for fish.

Traditionally fish ponds are places for fish production, farming activities around, and leisure activities such as angling, hiking or hunting. These activities rely on different services provided by fish ponds ecosystems. Recent evolutions of fish farming, agricultural activities around the ponds and its consequences on fish production, and sometimes angling or hunting, can strongly modify the use of ponds and jeopardise the functioning of the ponds and the services provided. Therefore is important to understand what different type of stakeholders know about ecological functions and services provided by fish ponds, what are their representations about ponds, and what are their activities in relation to the ponds.

### STUDY AREAS AND RESEARCH METHODS USED

The analysis of perceptions, knowledge, and use of fish ponds was carried out by interviewing different types of stakeholders and by participation at stakeholder meetings in two study areas in France (Dombes, Forez).

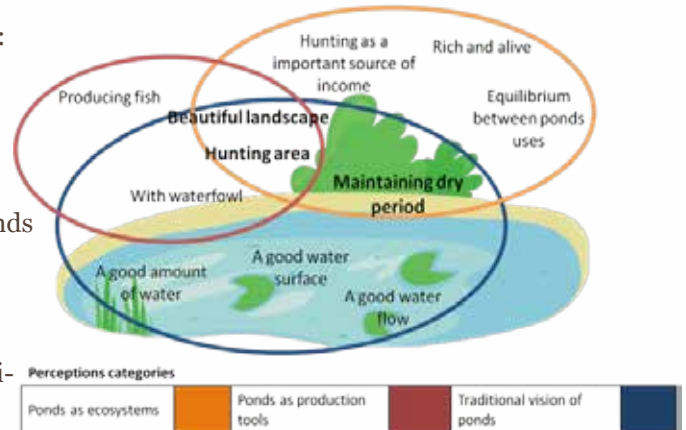
Interviews were carried out using semi-structured interviews with 20 fish pond owners and/farmers, 19 representatives from different organisations such as environmental NGO, farmers unions, local authorities, 1 fish trader, and 14 local inhabitants.

# RESULTS

## Stakeholders' perceptions of a good fish pond

- Perceptions of ponds are clearly dependent of stakeholders' activities:
  - The majority of fish pond owners/farmers express a "traditional vision" of pond integrating fish production, the importance of "a dry period" (a year without water in the pond) and hunting.
  - Few fish farmers and fish traders have a more restricted view of ponds as a tool for fish and waterfowl production.
  - Only representatives from environmental NGOs and fish farmer unions see ponds as ecosystems emphasizing the importance of biodiversity.
- Only ecologists speaks of "ecosystem services" but fish farmers know a lot about ecological functions of fish ponds.

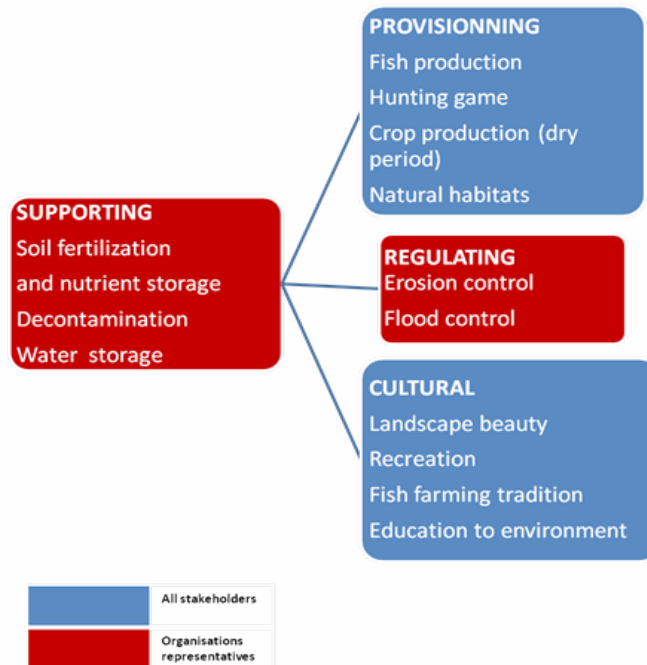
Different perceptions of "a good fish pond"



## Stakeholders' perceptions of services provided by fish ponds

All stakeholder refer to provisioning and cultural services in relation to fish ponds. Only representatives of organisations refer to supporting and regulating services.

Stakeholders refer to different ecosystemic services



## Conclusions

- Perceptions of ponds are clearly dependent of stakeholders' activities.
- Stakeholder groups perceive the services provided by ponds with different importance and knowledge.
- Understanding the perceptions and use of fish ponds by different stakeholders is the baseline for future joint management of ponds in taking also into account their different interests.

## **PARTNERS**

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