



HAL
open science

New strategies for the construction and management of pond production systems for sustainable fish farming

Léo Girard, Joël Aubin, Marielle Thomas, Thomas Lecocq, Joël Robin, Aurélien Tocqueville, Jésabel Laithier, A. Pannard, Julie Coudreuse, Marc Roucaute, et al.

► To cite this version:

Léo Girard, Joël Aubin, Marielle Thomas, Thomas Lecocq, Joël Robin, et al.. New strategies for the construction and management of pond production systems for sustainable fish farming. Symposium of Freshwater Sciences (SEFS13), Jun 2023, Newcastle upon Tyne, United Kingdom. hal-04150723

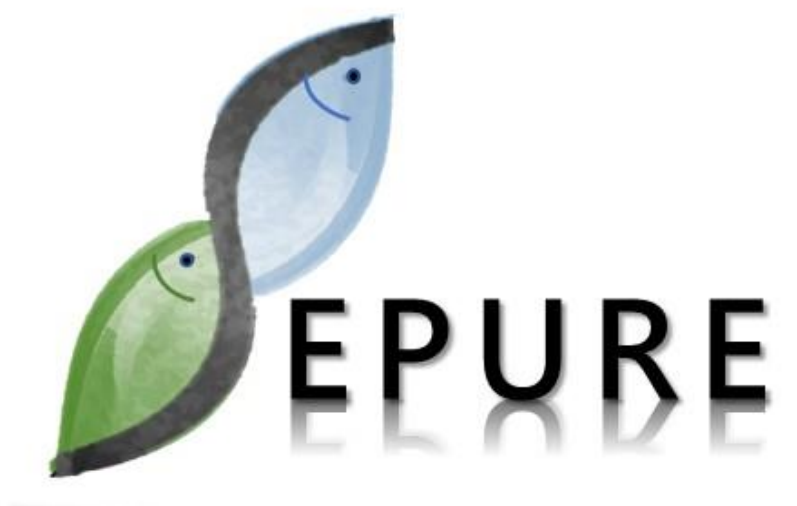
HAL Id: hal-04150723

<https://isara.hal.science/hal-04150723v1>

Submitted on 4 Jul 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



New strategies for the construction and management of pond production systems for sustainable fish farming

Contributing to a necessary revision of production systems that must be efficient, profitable, respectful of the environment and integrated into the territories

Program objectives

To propose new practices for pond fish farming

- A central theme: Defining the composition of the polyculture
- To produce in a more **sustainable way**
- Adapted to the **diversity of the contexts** (modalities of realization of the polycultures)
- Taking into account **all the biological compartments** of the ecosystem

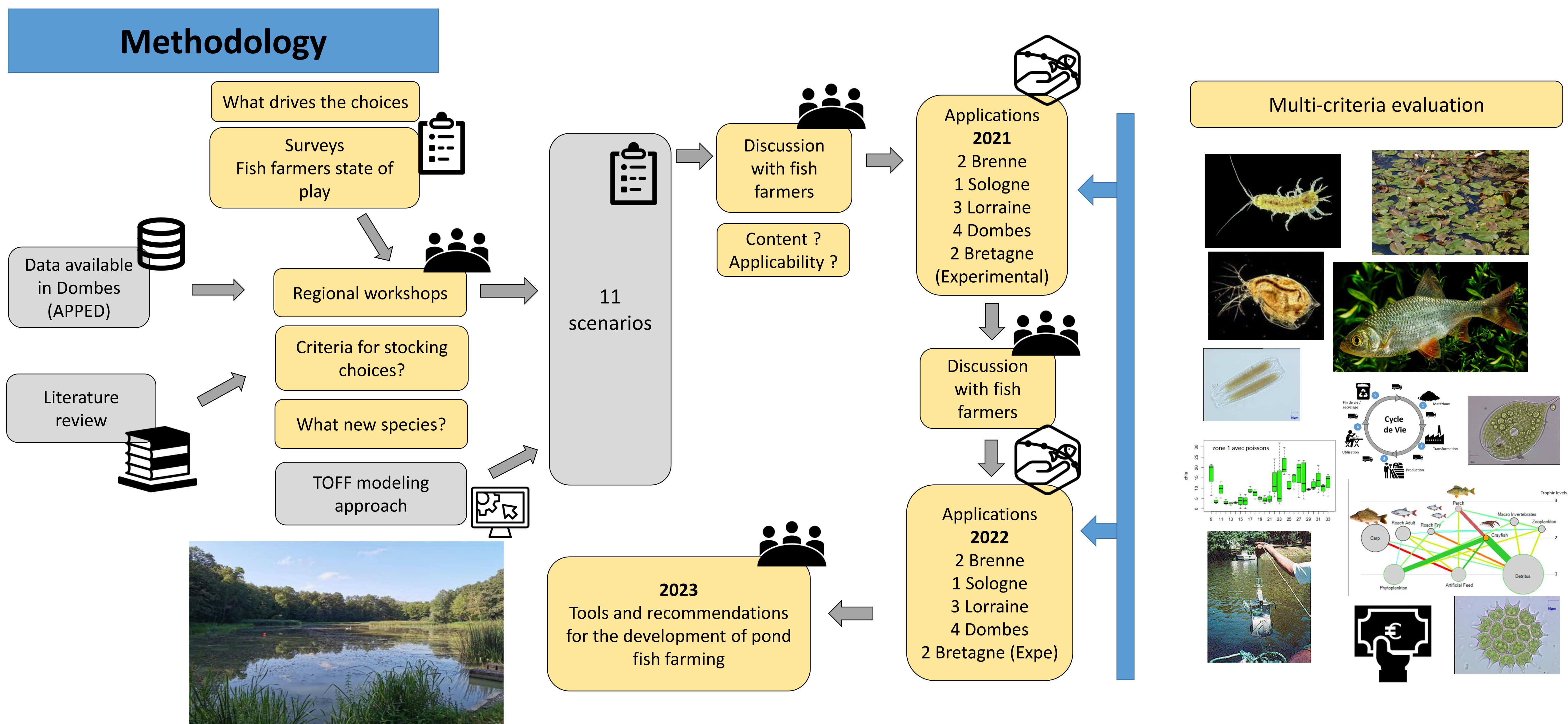
Our working method

A work of co-construction with the actors of the sector

- A **multidisciplinary approach** to address the complexity of interactions between pond compartments
- The introduction of the notion of **ecosystem services** to discuss the vocation of fishponds
- The explicit consideration of **biodiversity** in the functioning of fishponds
- To help build new solutions, **modeling approaches**

Program ambition:

To go as far as **recommendations and practical tools** for fish farmers.



First results

Sites	Surface (ha)	Fish polyculture scenarios	Stocking (kg/ha)	Yield (kg/ha)
S01	2.2	C. Carp - Orfe - Pike	110	30
L04	2.1	Roach - Rudd - Pikeperch	80	86
D02*	9.4	Roach - Tench - Pikeperch - White Sturgeon	76	145
L01	1.4	C. Carp - Tench - Roach	100	197
L03	4.1	Roach - C. Carp - Grass Carp	266	295
B01	12	Tench - C. Carp - Pikeperch	91	336
D01*	3.4	White Fish - Tench - Black Bass	76	336
Bx1	0.1	C. Carp - Roach - Tench - Pikeperch (claustration)	115	404
Bx2	0.1	C. Carp - Roach - Tench - Pikeperch (open)	115	410
B02	0.8	Roach - C. Carp - Grass Carp - Black Bass	74	435
D04*	6	White Fish - Tench - C. Carp - Grass Carp - Black Bass	156	542
D03*	3	White Fish - C. Carp - Grass Carp - White Sturgeon	272	625

Feeding Without feeding * Fertilization : Limit of 200 kg/ha

Léo Girard³, Aubin Joël¹, Thomas Marielle², Lecocq Thomas², Robin Joël³, Tocqueville Aurélien⁴, Laithier Jésabel⁴, Pannard Alexandrine⁵, Coudreuse Julie⁶, Roucaute Marc¹, Jaeger Christophe¹, Wilfart Aurélie¹, Quentin Latourre¹, Maillot Marie¹, Corson Michael¹, Cyprien Dupont³.

