

Freshwater aquaculture in the context of bioeconomy

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Aquaculture and bioeconomy



*„Bioeconomy is Europe's response to key environmental challenges the world is facing already today. It is meant to reduce the dependence on natural resources, transform manufacturing, promote sustainable production of renewable resources from land, fisheries and **aquaculture** and their conversion into food, feed, fibre, bio-based products and bio-energy, while growing new jobs and industries.”*
(European Commission)

The aquaculture dilemma: productivity vs. sustainability



- High productivity
- Economic efficiency
- Small area
- Low labour intensity
- Continuous production
- Rely on energy and fishmeal

- Historic traditions
- Environmental value
- Recreational value
- Ecosystem services
- Role in employment
- Low-input aquaculture



Way forward



Extensive pond fish production



Intensive pond fish production

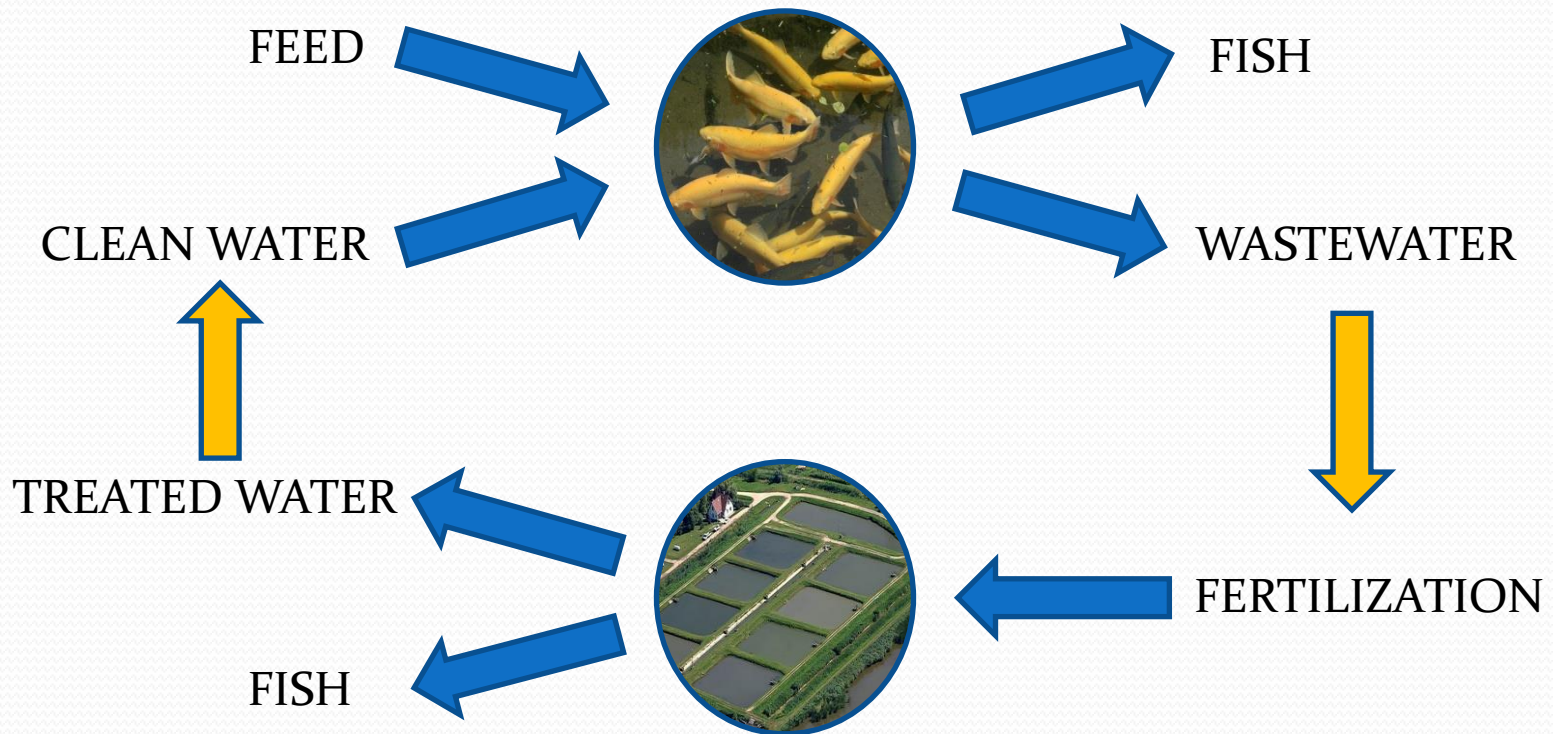


**Combined
Intensive-
Extensive
Production**

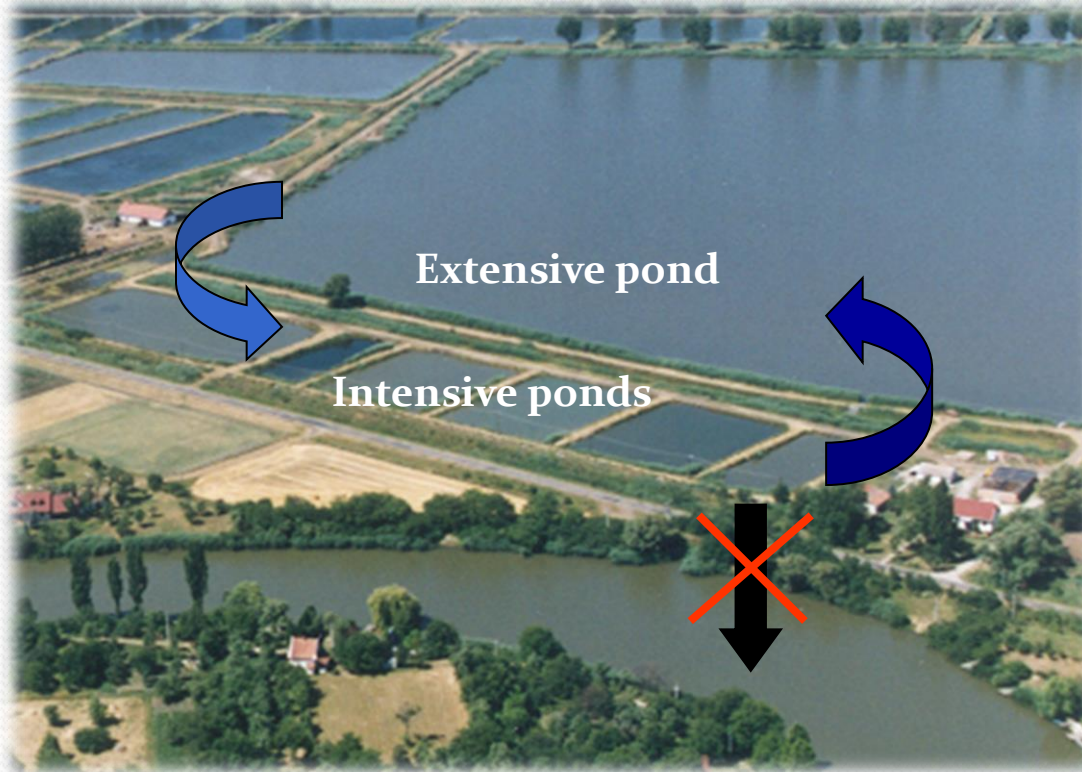


Way forward

- Moving toward circular economy – closing the loop

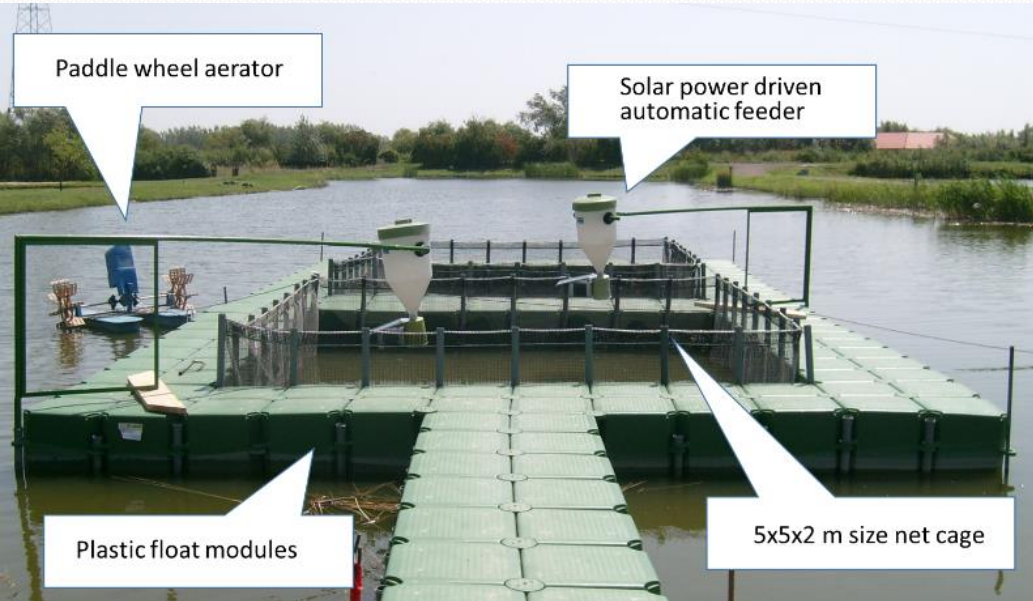


Pond recirculation system



Combines the advantages of extensive and intensive systems
Increasing production and maintaining valuable wetlands

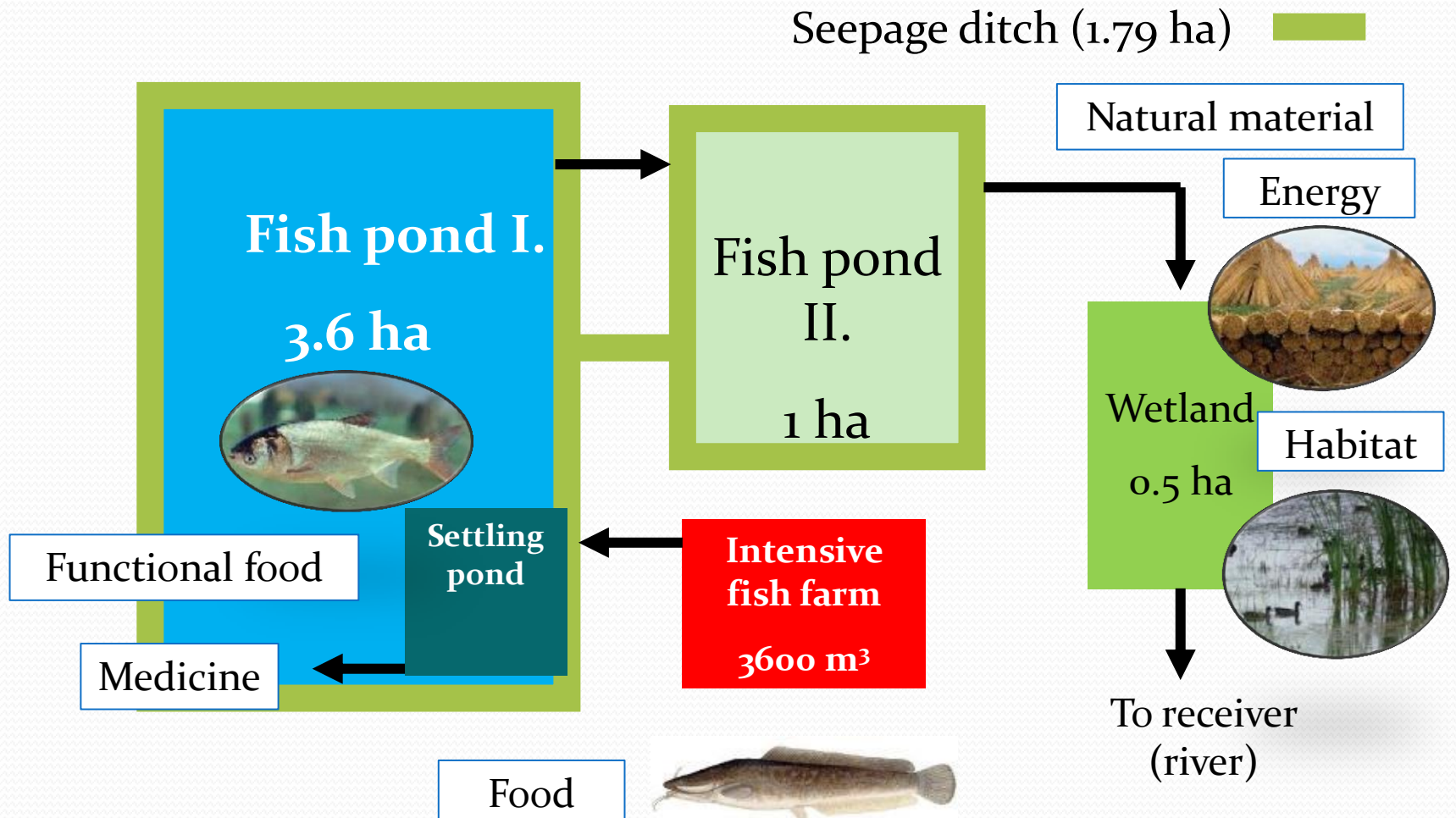
Pond-in-pond and cage-in-pond systems



2014/08/14

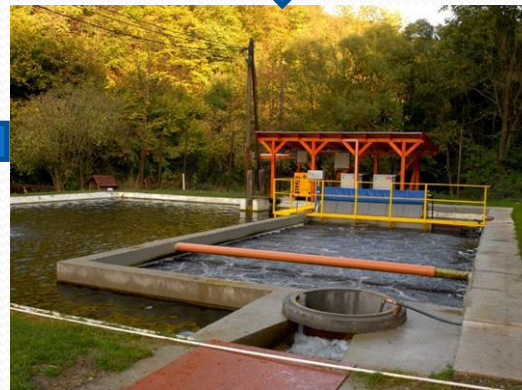


Freshwater IMTA system

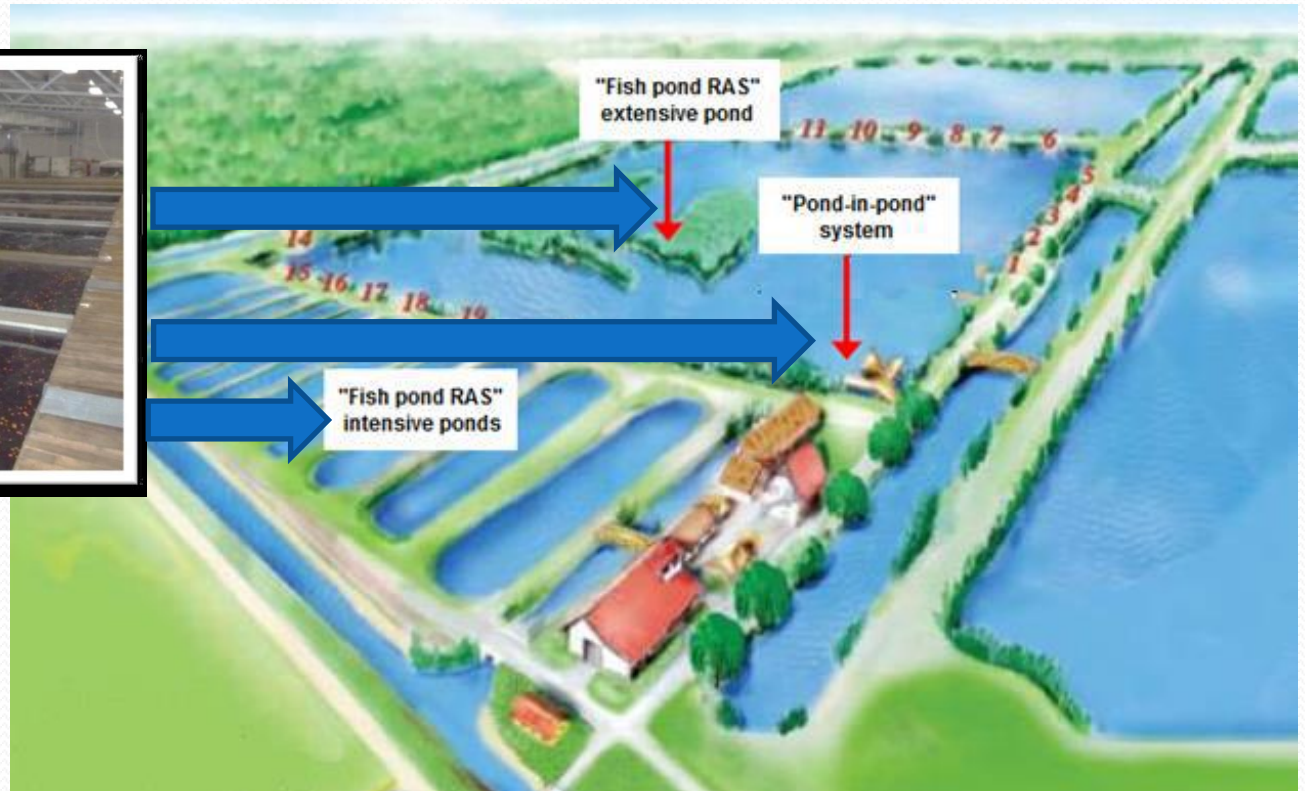


Source: Radics, 2011

Fishpond RAS and wetland at Hoitsy & Rieger Ltd.



Integration of RAS into a pond system at Jászakisér



Multifunctional pond fish farming



Higher and diversified farm income

Additional employment opportunities



A glimpse into the future?



Conclusions

- The viability of combined intensive-extensive system is well demonstrated by innovative fish farms.
- Further efforts are needed to improve the efficiency of these systems and increase their contribution to food fish supply.
- Exchange of experience and best practices at an international level is important to make the specificities and benefits of such systems better known.



Thank you for your attention

