V4 Freshwater Aquaculture Conference

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INNOVATIVE METHODS IN FRESHWATER AQUACULTURE

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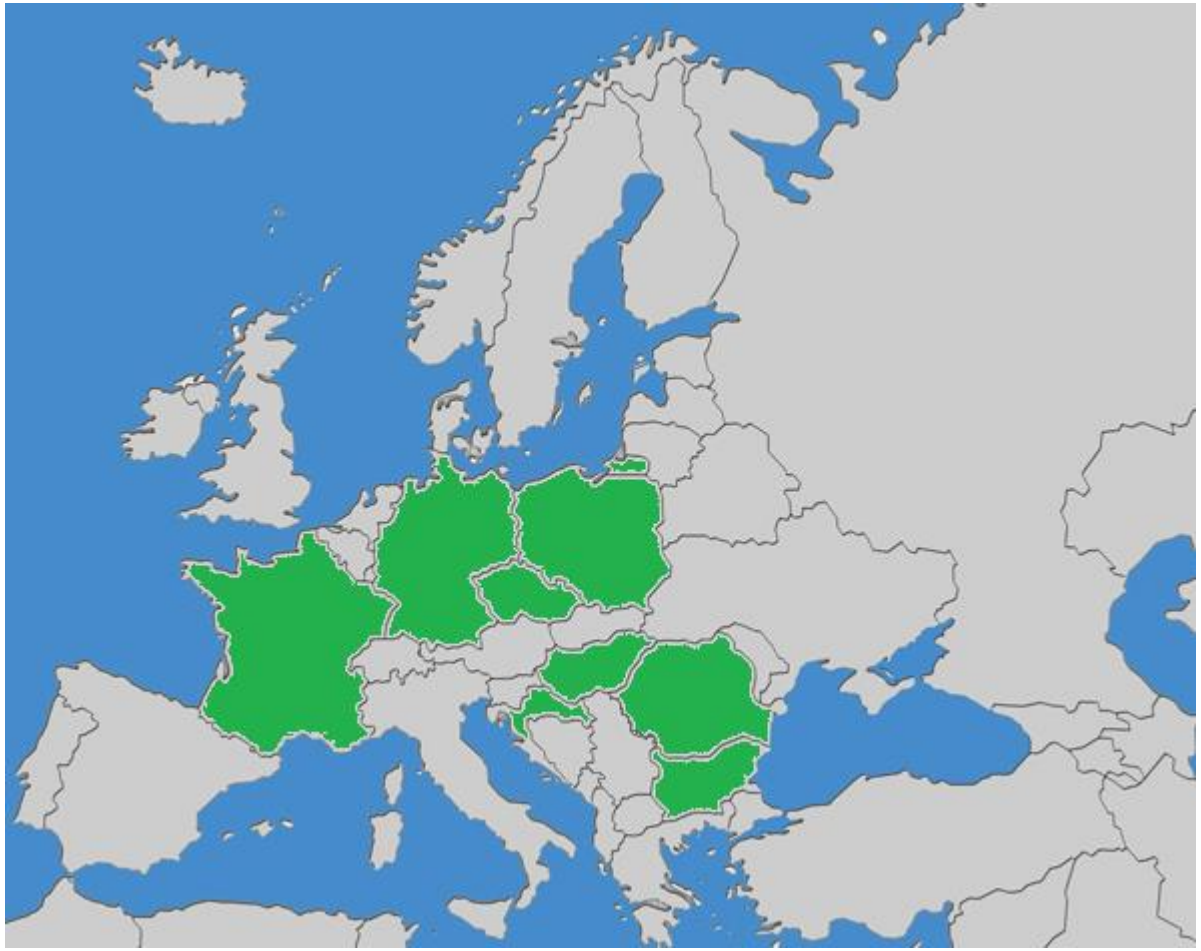
Major freshwater aquaculture systems in the EU

Extensive pond fish farms in the EU



Countries where fish pond area is more than 10,000 hectare

Romania	70,000 ha
Czech Republic	52,000 ha
Poland:	50,000 ha
France	40,000 ha
Hungary	26,000 ha
Bulgaria	21,000 ha
Germany	14,000 ha
Latvia	11,000 ha
Croatia	10,000 ha

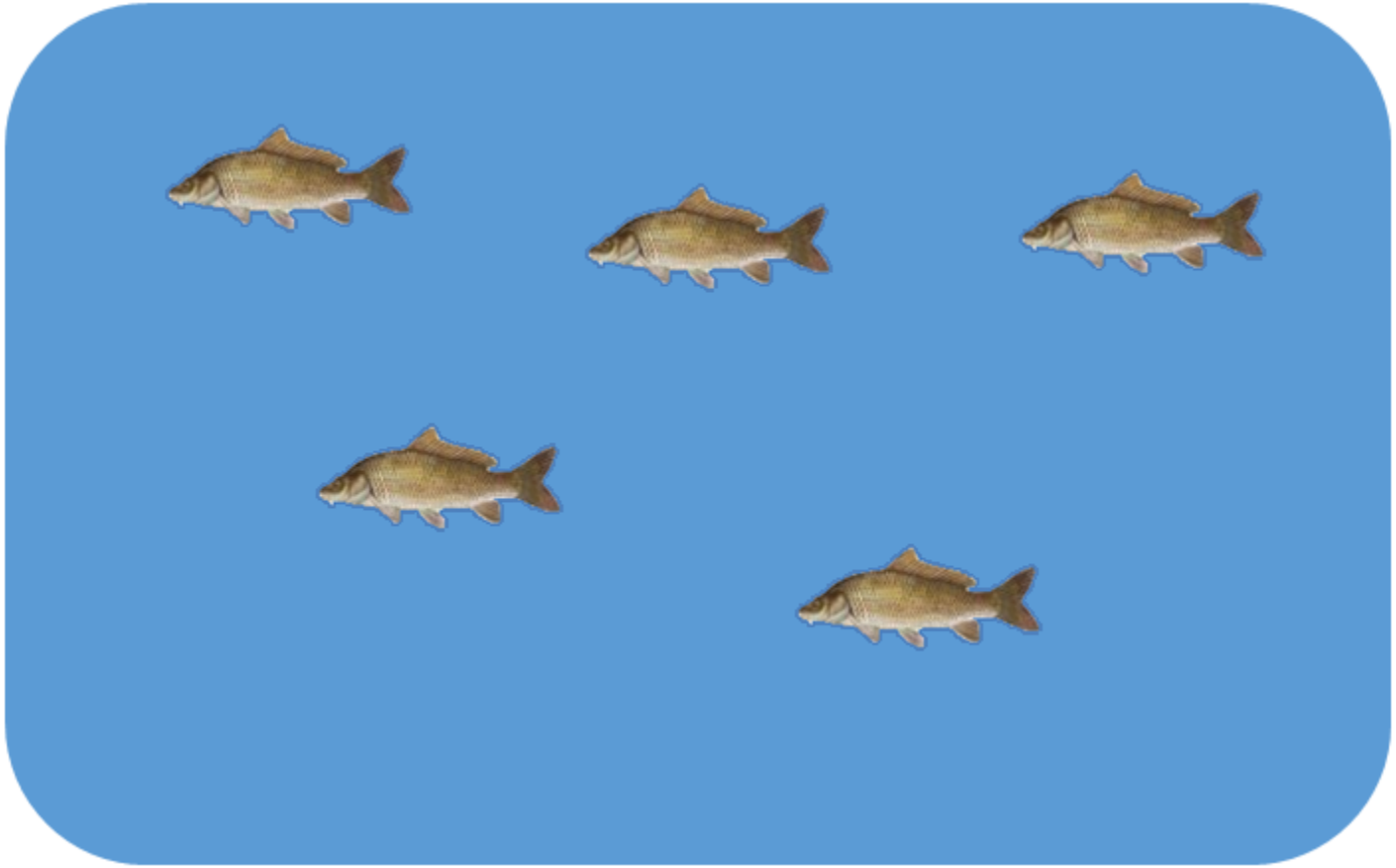
Total fish pond area in the EU is about 350,000 hectare

How to produce more fish, and increase employment opportunities, without increasing the pond area and maintain the level of ecosystem services?

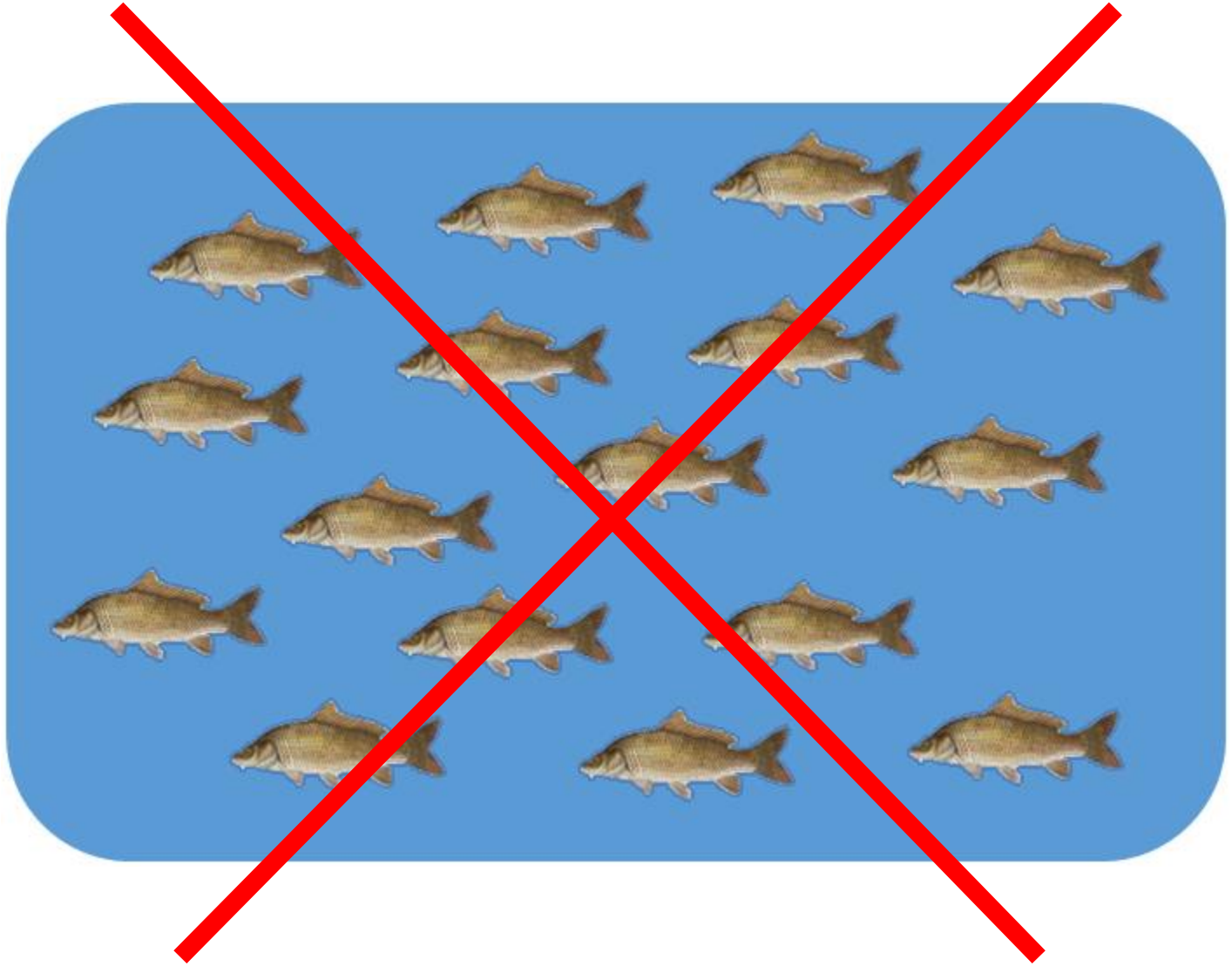
The answer is:

Sustainable intensification

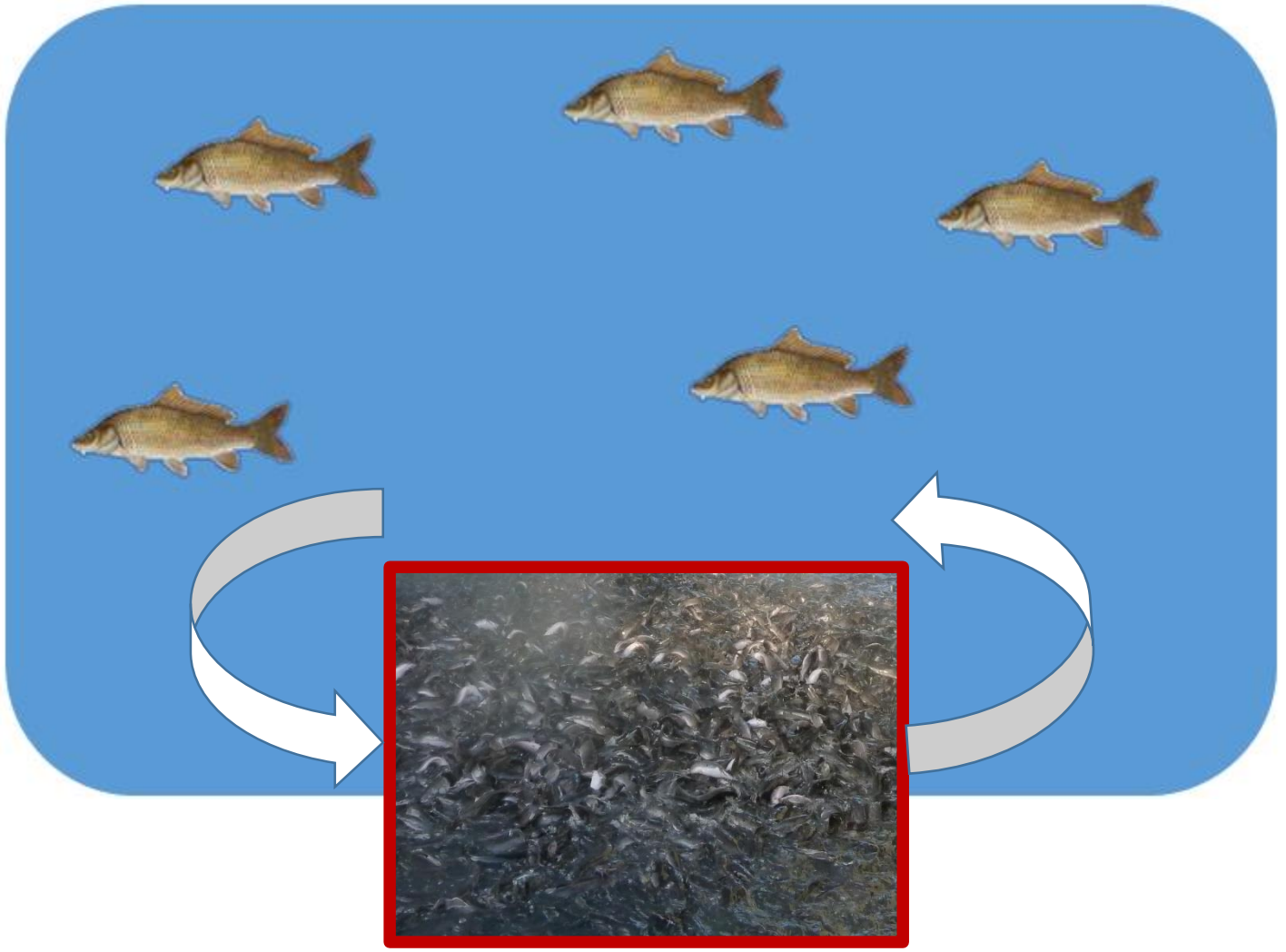
Extensive fish farming in pond



Intensive fish farming in pond

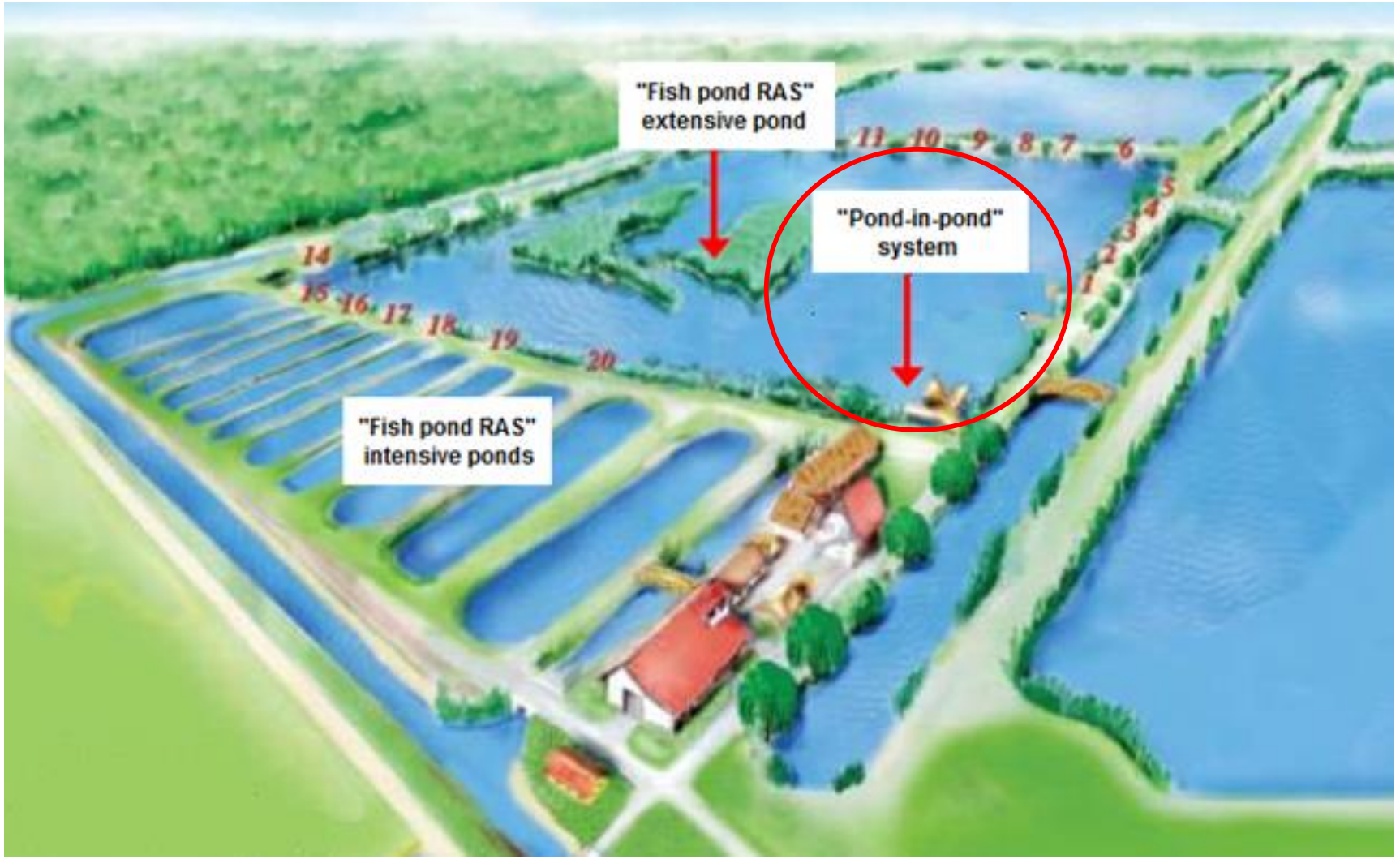


Sustainable intensification



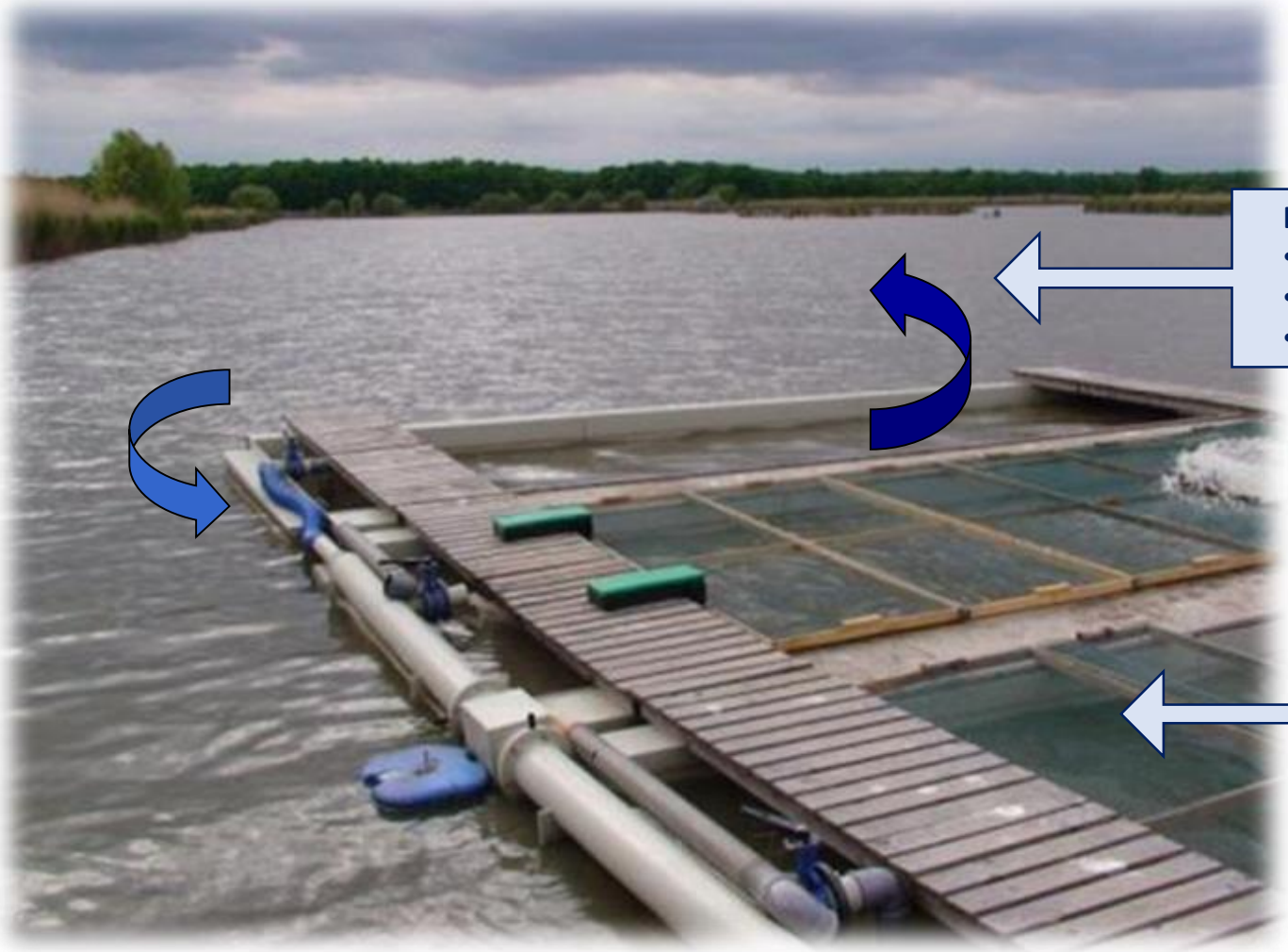
Examples of productive, water efficient and environment friendly freshwater aquaculture systems

“Pond-in-pond” system at the Jaszkiseri “Halas” Kft.



„Pond in pond” system

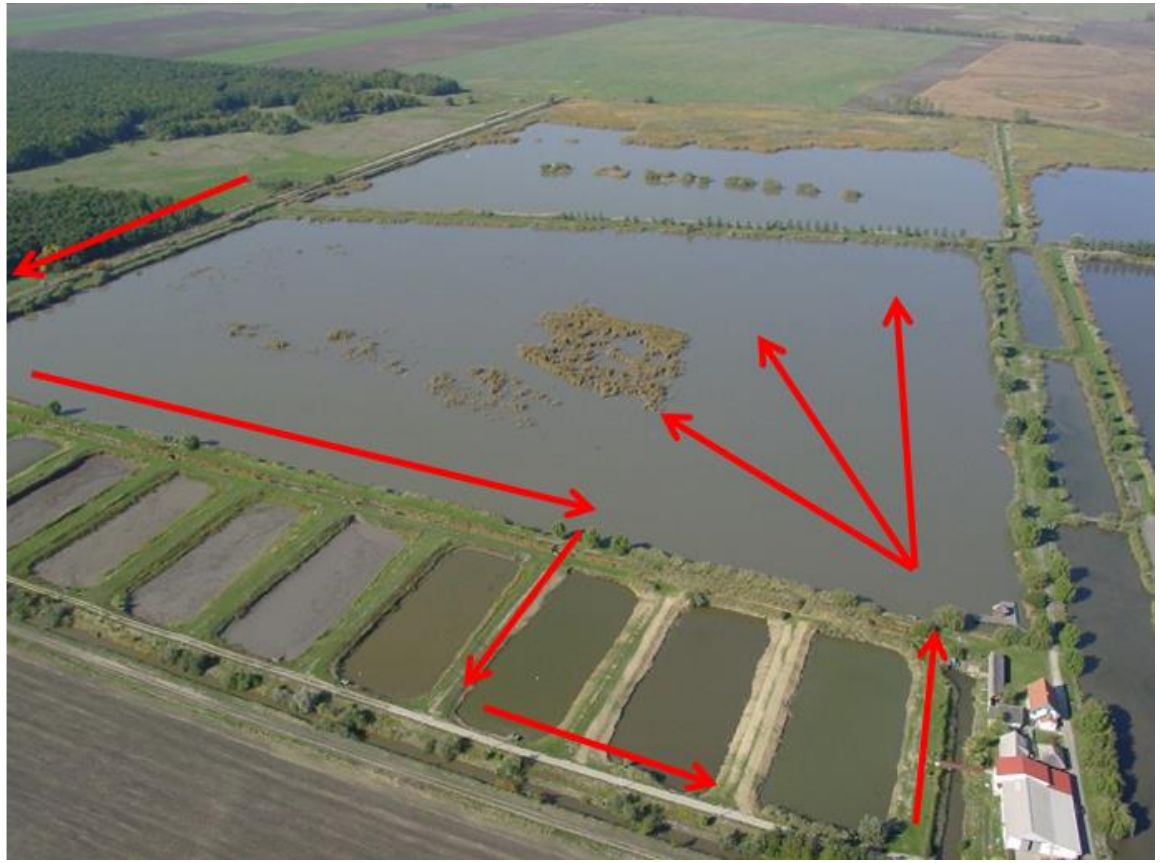
„Jászkiséri Halas” fish farm, Jászkisér



Extensive unit:
- Ecological services
- Nutrient recycling
- Fish production

Intensive unit:
Production of high value species

“Fish pond RAS” at the Jaszkiseri “Halas” Kft.



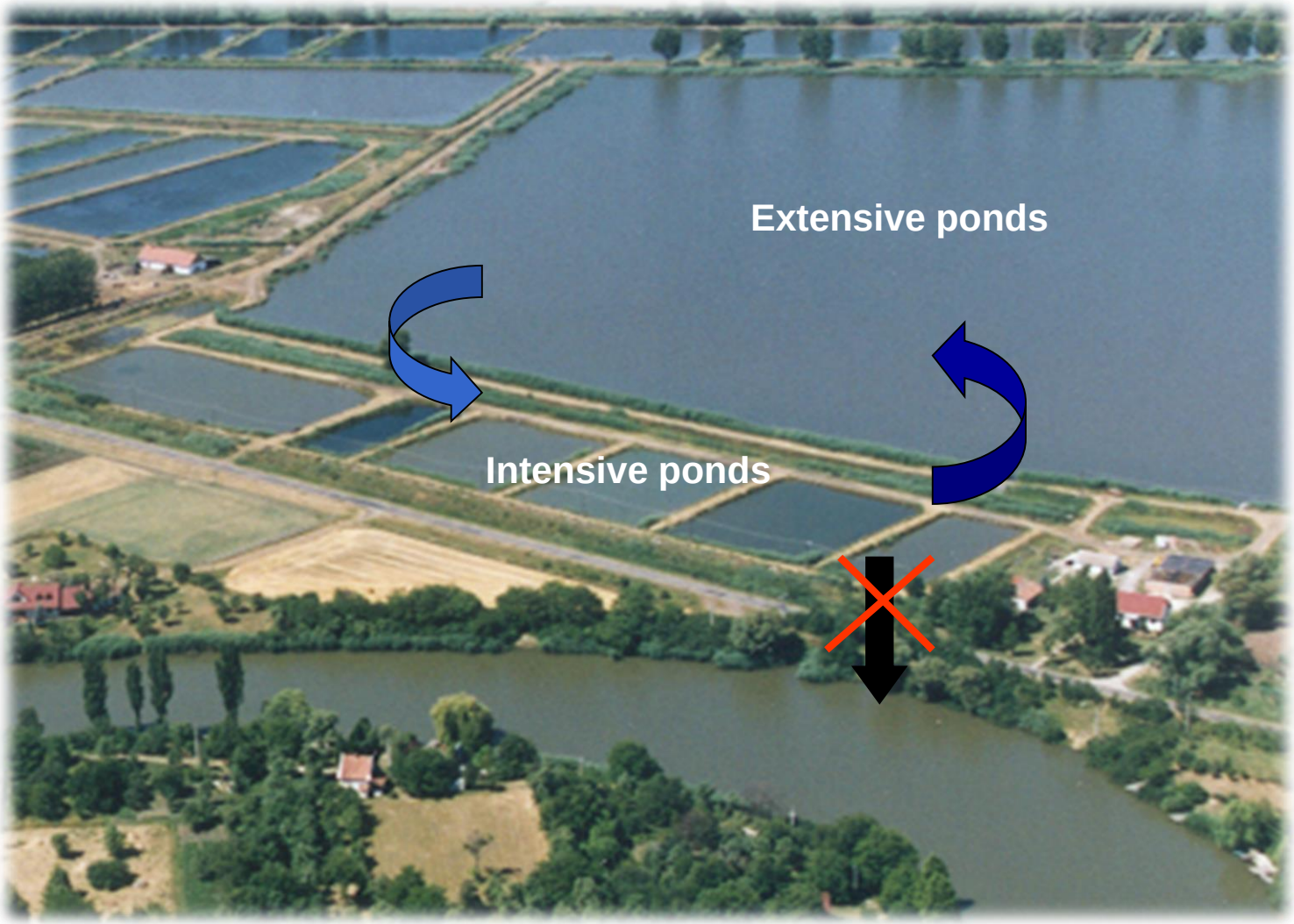
Extensive pond for polyculture fish production

Polyculture production: 1050 kg/ha yield

Intensive carp production

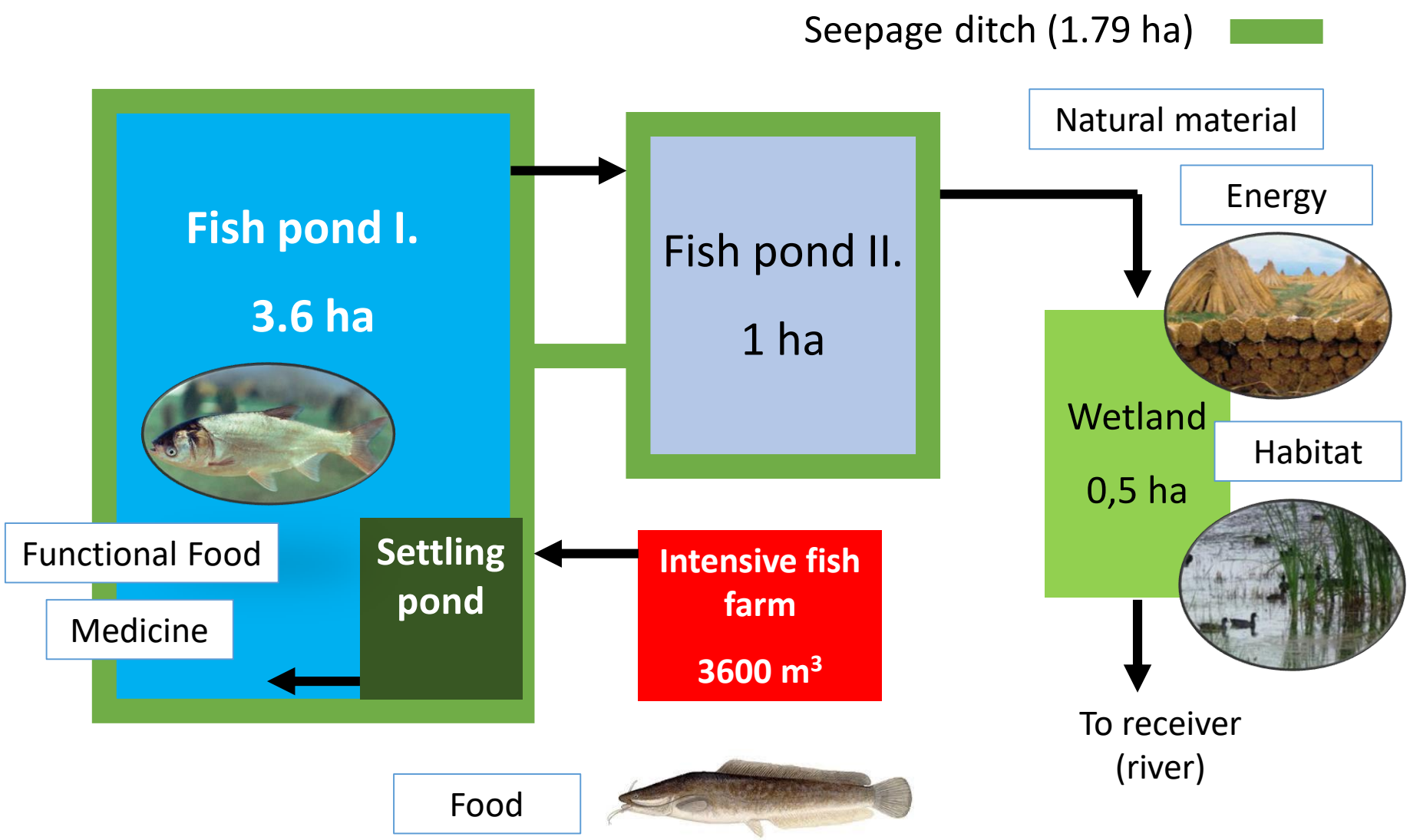
Market size (1.5 kg) carp production (10 t/ha)

Fish pond water recirculation (pond RAS)



Freshwater IMTA system

Szarvas-Fish fish farm, Hortobágy



Source: Radics, 2011

Freshwater IMTA system

Szarvas-Fish fish farm, Hortobágy

Intensive African catfish production in flow-through system supplied with geothermal water (3600 m^3 fish tank volume; ~1000 t/year production)

Effluent water treatment in constructed wetland with a total area of 7.1 ha including extensive fish ponds and plant bed (reed and bullrush)

Source: Radics, 2011

“Cage in pond” at the “Aranyponty” Zrt.

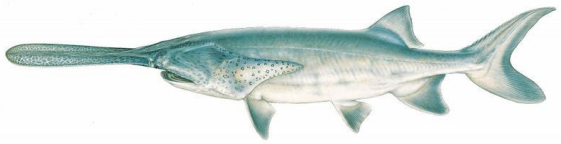
European catfish

Intensive European catfish production in net cage that is placed in a conventional fish pond

Common carp

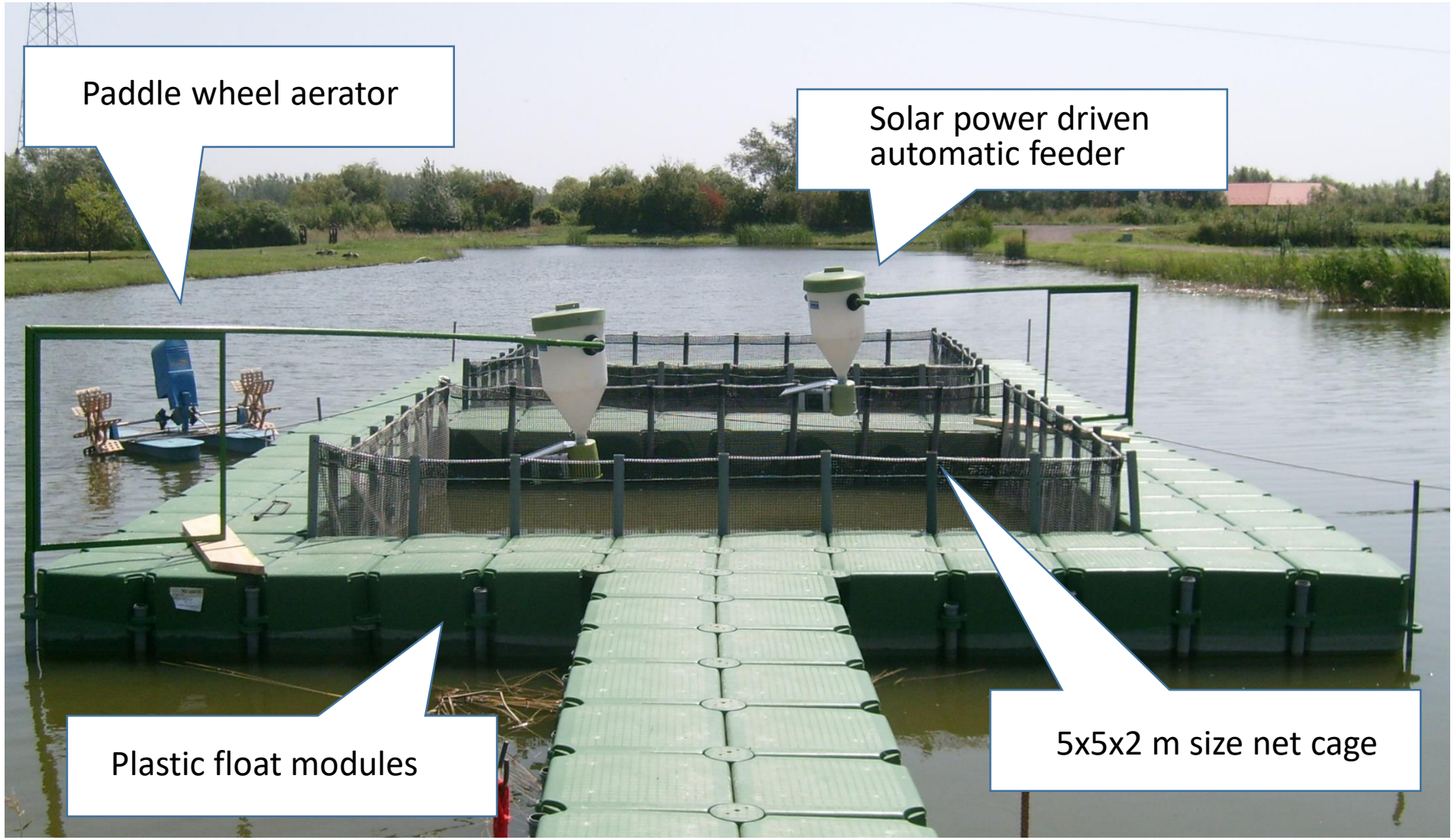
Silver carp

Grass carp

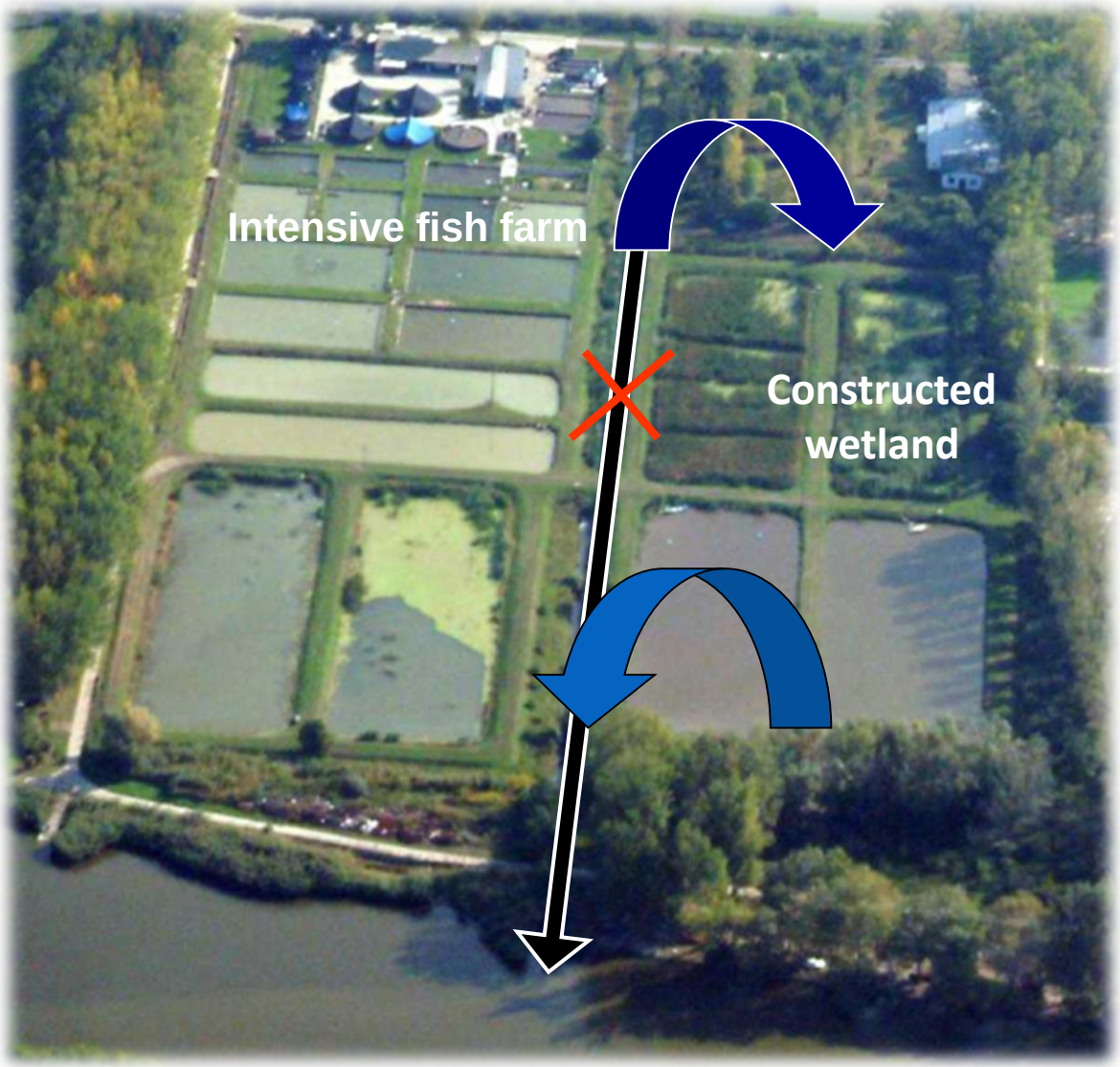


Paddle fish

The intensive unit of the “Cage in pond” system



Effluent treatment in constructed wetland



Multi-functional pond fish farming

Services

=

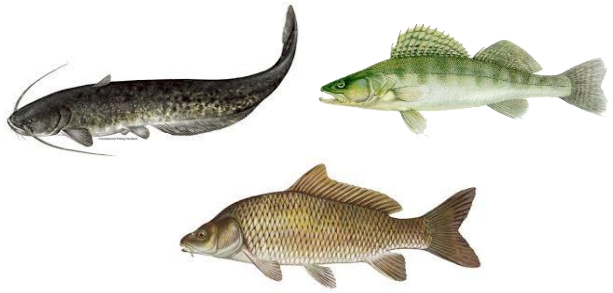
Higher and diversified farm income

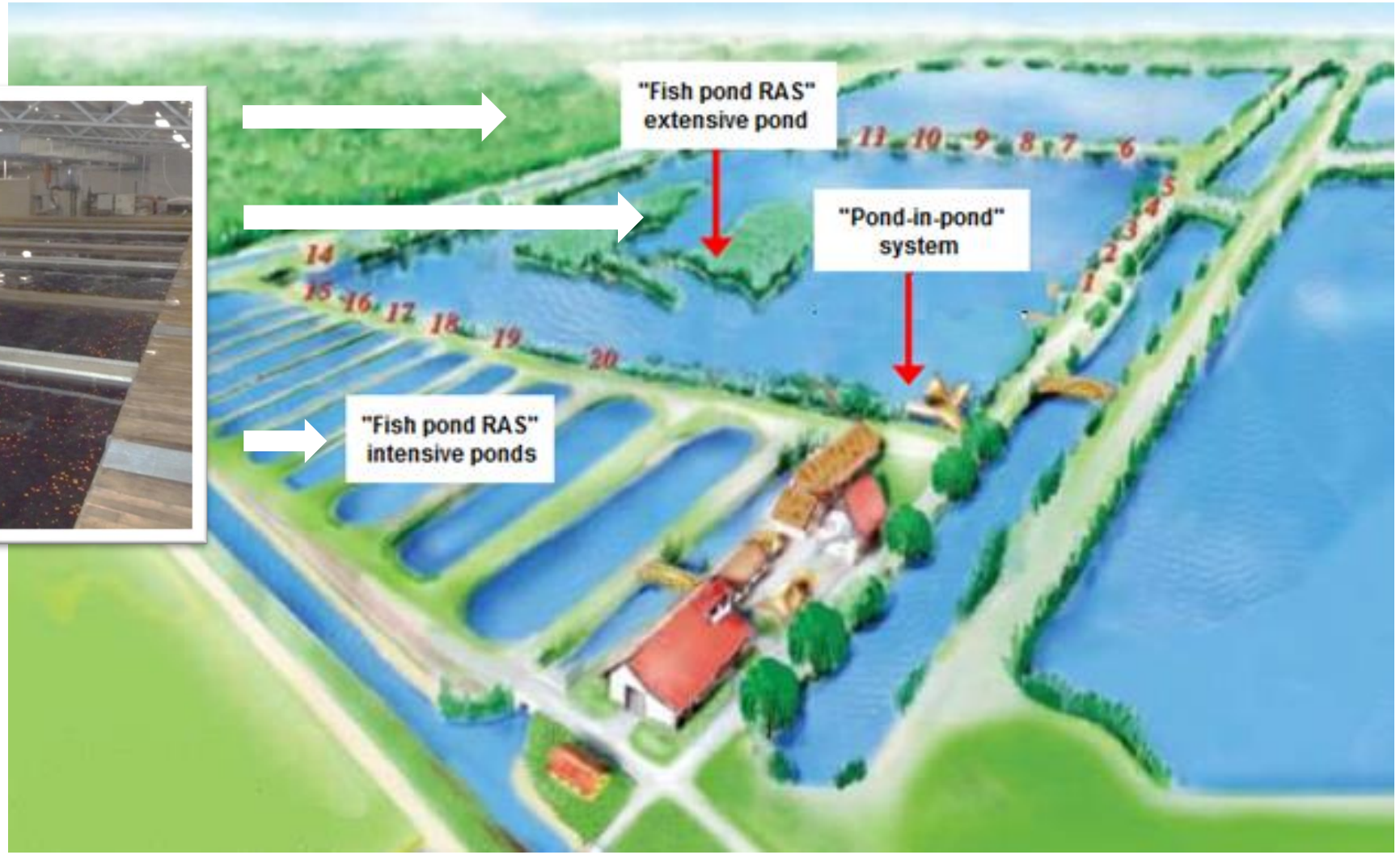
+

Additional employment

“Fish pond RAS” and wetland at the “Hoitsy and Rieger” Kft.

RAS integrated into the fish pond complex





Main conclusions

The viability of new type of fish pond systems is well demonstrated by innovative farms in Hungary

There is a need however for further efforts to improve efficiency through innovation in order to increase the share of these systems in total aquaculture production

Further efforts are also required to promote exchange of information and best practices on international level

The specificities and benefits of such systems must become more widely known


Thank you for your attention!