

How to improve aquaculture sustainability?

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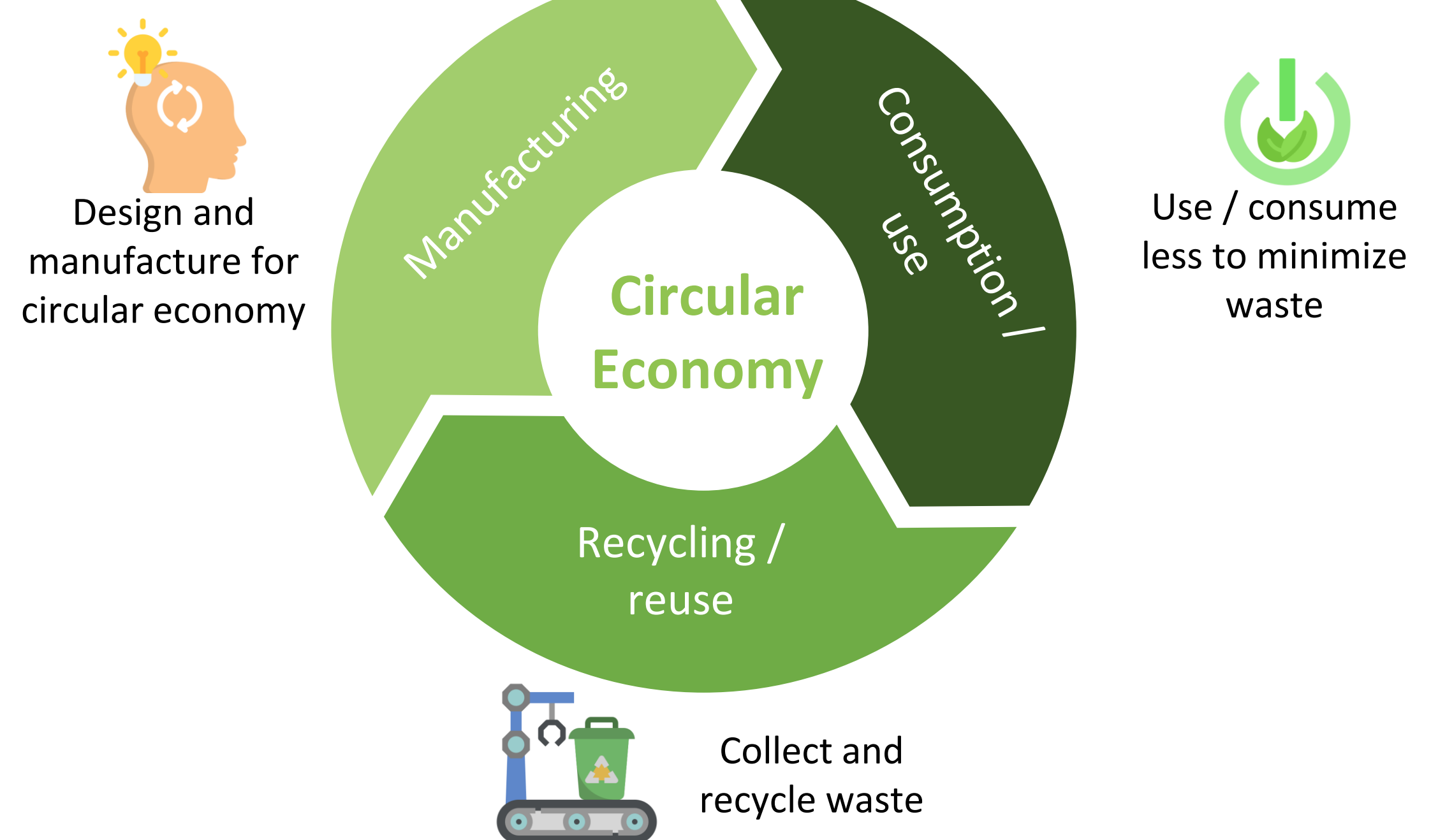
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AQUACULTURE SUSTAINABILITY PROBLEMS



- 1 Scarcity of marine ingredients**
Marine ingredients were traditionally used in aquafeeds, but they pose economical and environmental problems
- 2 Problems with vegetable feeds**
Replacing marine ingredients with plant alternative lowers feed palatability and intake, hinders fish immunity and impairs fish growth
- 3 Lower consumer acceptance**
Consumption data and consumer surveys still show that given the choice, consumers prefer wild fish compared to farmed fish

CURRENT TRENDS



HOW?

Hydrolysis → Swine blood hydrolysates with bioactive peptides

Included in plant-based aquafeeds

- One hydrolysate (RNF) increases resistance to pathogen *T. maritimum* without hindering growth
Published in Aquaculture
- All hydrolysates increase non-enzymatic antioxidant activity in the liver after a stress challenge
Published in Aquaculture Reports

- ✓ Minimizing the downsides of fishmeal replacement
- ✓ Reducing antibiotic usage
- ✓ Reducing meat industry waste

Aroma extraction with soybean oil or vacuum distillation

Aromas from cooking wastewaters from a canning industry

Included in plant-based aquafeeds

- Short-term:**
 - ✗ Feed intake is reduced
Published in Waste and Biomass Valorization
- Long-term:**
 - ✓ Feed intake slightly improved by LLE
 - ✗ FCR is compromised
 - ✓ High liking of all samples by consumers
Published in Animal Feed Science and Technology

- ✓ Cleaning of canning industry wastewaters
- ...Further optimization needed

Consumer perception of aquaculture products is essential for sustainable aquaculture growth

Literature review performed according to PRISMA methodology to understand consumer motivations

Consumers value wild fish because they perceive it as:

- Chemical-free
- Eco-friendly
- More natural
- Better quality
- Better animal welfare

Low overall knowledge about aquaculture and fisheries

WORK IN PROGRESS

Developed aquafeed strategies contribute to aquaculture sustainability and can improve aquaculture perception if adequately disseminated

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