

UNLOCKING FISH BY-PRODUCTS POTENTIAL

**90
MILLION
OF
TONS**

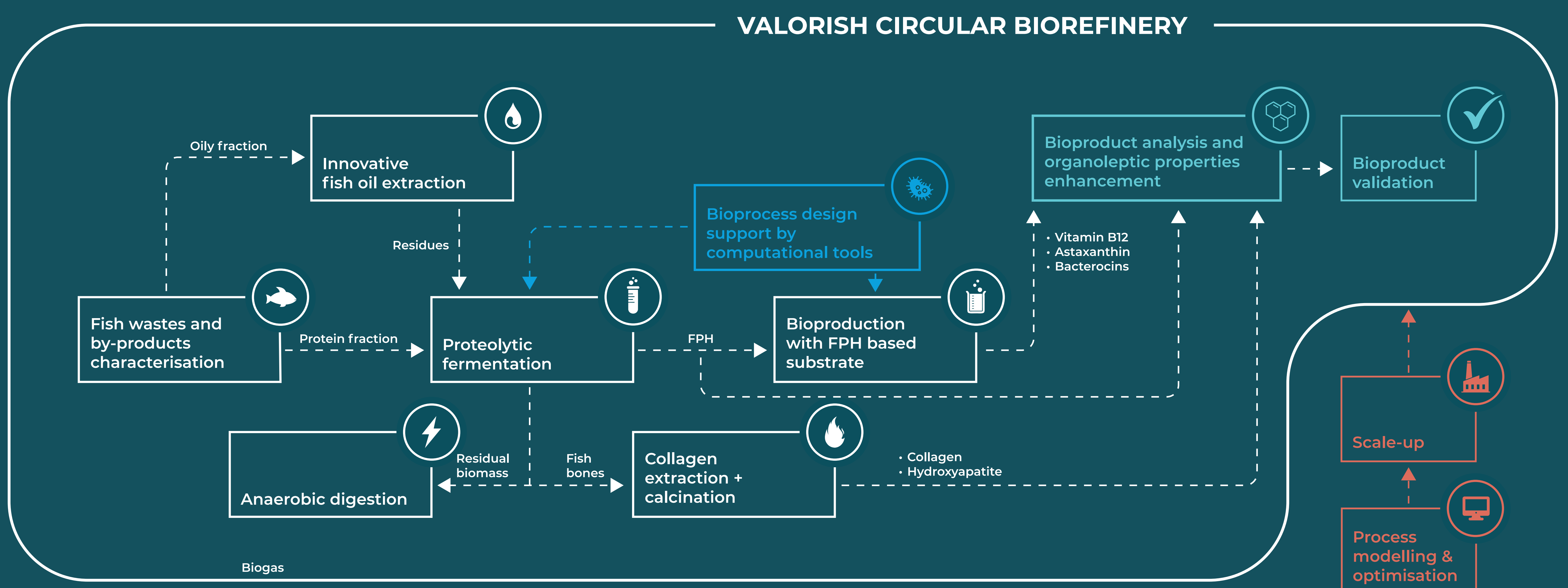
Globally, over 90 million tons of fish and shellfish are caught each year. During processing, significant amounts of by-products—such as heads, bones, and guts—are generated, accounting for 30 to 70% of the total fish. These by-products are rich in valuable macro- and micronutrients but are often underutilised, frequently ending up as waste. This contributes to environmental challenges and economic inefficiencies. Finding sustainable ways to valorise this biomass is essential for advancing circular bioeconomy principles and achieving true environmental and economic sustainability.

THE VALORISH PROJECT

In VALORISH, we are developing an innovative, computationally-assisted methodology to design and implement a cascade biorefinery that transforms fish waste and by-products into high-value bioproducts for food applications.

How do we achieve this?

- 1 Evaluating diverse fish industry by-products to determine their characteristics and identify the most efficient bioprocessing routes.
- 2 Optimising core biorefinery processes such as fish oil extraction, fish protein hydrolysis through fermentation, and downstream processing techniques.
- 3 Leveraging advanced computational tools to design, optimise, and integrate the biorefinery core processes.
- 4 Purifying, formulating, and testing high-value bioproducts for their potential applications in the food industry.



As part of the VALORISH project, a comprehensive assessment of the developed circular biorefinery will be conducted to ensure their environmental, economic, and societal viability. In particular:

- Life Cycle Assessment (LCA) will be employed to evaluate the environmental performance of these technologies, comparing them against conventional approaches to demonstrate their reduced environmental impact.
- Techno-economic analyses will be performed to validate the financial feasibility of the processes.
- Furthermore, the societal implications will be examined, focusing on the social acceptance of the bioproducts and the broader social benefits of deploying VALORISH technologies.
- Finally, certification and standardisation activities will be carried out to ensure compliance with industry standards, facilitating the adoption of these innovative processes.

PROJECT INFO

OVERALL PROJCT BUDGET:
€ 3 935 845.00

START DATE:
1 May 2024

END DATE:
31 October 2027

TOTAL MONTHS:
42 months

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