

Tailor-made seafood-based meals and recipes for target consumer groups



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SUMMARY

Seafood plays a vital role in a balanced diet as it is a good source of high-quality protein, vitamins (especially vitamin B12 and vitamin D), minerals (particularly iodine, iron and selenium) and contains omega-3 fatty acids, a unique fat with many health benefits. There is growing evidence that specific subsets of the population particularly benefit from eating seafood, namely pregnant women, children and older people, as it meets their specific dietary requirements and needs. This knowledge output consists of six tailor-made seafood recipes, two for each population subset, designed by European culinary schools with the support of technical centres. The recipes use sustainable and lesser-known seafood species, and meet the nutritional needs of their target groups. Their scaling feasibility for use in restaurants and catering environments has also been validated.



KNOWLEDGE NEED

Studies have shown that pregnant women, children and older people can benefit greatly from the nutrients provided by seafood. However, these groups, as well as other consumers, rarely eat seafood. There is a need for innovative seafood dishes that appeal to consumers, meet their needs, and are widely available to ensure better intake of important nutrients in human diets.



RESULTS

This Knowledge Output consists of six recipes which have been developed to meet the nutritional needs of three target population groups and have been adapted for industrial production. Using only seafood species identified as sustainable, each recipe was designed to meet the nutritional needs of each group and following regulations of food enrichment claims. Recipes for children focused on omega 3 and vitamin D; recipes for pregnant women focused on omega 3, vitamin D and iodine, while recipes for older adults focused on vitamin D, B12, high protein and low sodium concentrations. 36 recipes were prepared by industrial partners and culinary schools from Belgium, France, Poland, Portugal, Spain and Sweden. The recipes were presented at national and European contests, where they were evaluated by a panel of representatives from the food and catering industry including chefs, nutritionists and scientists. Six winning recipes, two per target group, were selected and adapted for industrial production, using industrial equipment and following industrial protocols. Samples were analysed to validate the nutritional claims and calorie content. All recipes were found to be rich in or at least a source of vitamin D and omega 3, as well as being high in vitamin B12. The meals based on recipes for pregnant women were all found to be rich in iodine, with 89% recommending that the dishes remain unchanged. The validated recipes and protocols are available for uptake by industrial seafood processing / production companies. A selection of recipes for cooking at home have also been published in a free e-recipe book.



IMPACTS

This knowledge has the potential to strengthen market availability of tailor-made seafood products, influence consumer eating habits, and improve consumer health. This knowledge is expected to contribute to an improved health profile of the European population overall, but particularly in the selected target groups, as well as an increase in seafood sector growth, sustainability and profitability.

Contributes to the UN Sustainable Development Goal 12: Responsible consumption and production.

END-USERS & APPLICATIONS

- ➔ **Seafood companies:** could use the recipes to develop new seafood products for market and increase seafood consumption, leading to economic growth in the sector
- ➔ **Consumers, specifically pregnant women, children and older adults:** The 'cooking at home' versions of the recipes are available in the e-recipe book, which could improve consumer health. If brought to market, increased availability of seafood products could further improve consumer health and increase seafood consumption.
- ➔ **Mass catering companies / public food providers:** could use the recipes / new seafood products in school and work canteens, convalescent homes, and restaurants.
- ➔ **Food scientists and research community:** working in the area of nutrition could use the knowledge to support further research and developments in this area.

DISSEMINATION AND EXPLOITATION

Dissemination activities for society / all users:

- E-Recipe book: seafoodtomorrow.eu/wp-content/uploads/2021/03/E-book-SFT.pdf
- **SEAFOOD^{TOMORROW}** Recipe Challenge Final Contest, video montage: youtu.be/UCe3ywoJo1U
- Cookery Demonstration by Lycée & CFA Hôtelières - Marseille, France: youtu.be/oU_hvQCif3A
- Project newsletter and news articles
- Promotion on Twitter and LinkedIn

Exploitation activities for policy makers:

- Managers, regulators and policy makers will be reached through the final **SEAFOOD^{TOMORROW}** event, EC info session, and a dedicated EU policy event.

Dissemination activities for scientific community:

- Sacchetti G, Castellini G, Graffignac G, Hung Y, Lambri M, Marques A, Perrella F, Savaresec M, Verbeke W, Capri E. Assessing consumers' attitudes, expectations and intentions towards health and sustainability within the seafood sector in Italy. *Manuscript in preparation.*

Exploitation activities for seafood industry:

- IDmer/Ethic Ocean and Aquimer have reached out to seafood production companies to support uptake of this knowledge
- Samples of the selected recipes were presented for tasting at the **SEAFOOD^{TOMORROW}** demonstration workshop in Spain, of which the proceedings can be found on the project website.
- Horizon Results Platform: seafoodtomorrow.eu/horizon-results-platform



INNOVATION STATUS

Technology Readiness Level 7 – system prototype demonstration in operational environment

Patents and IPR: The recipes are owned by IDmer and are available for exploitation and industrial use.



FUTURE RESEARCH

Further economic feasibility studies must be carried out before commercial implementation. Assessments carried out within the framework of the project have shown low return rates at semi-industrial scale. Further work is needed on analysing raw material and processing costs on a larger commercial scale.

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