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Deliverable

Co-creation framework

D3.1

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D3.1 | Co-creation framework			
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Mr.Goodfish3.0 Project

Short project summary

"**Mr.Goodfish3.0: Co-creating Solutions for Sustainable Seafood Consumption**" is a project funded under the European Union's research & innovation programme Horizon Europe and the EU Mission "Restore our Oceans & Waters" which aspires to protect and restore the health of European oceans and freshwaters through research & innovation, citizen engagement and investments in the blue economy, with a 2030 target.

The project builds on the existing European programme "Mr.Goodfish" originally launched in March 2010 in France by Nausicaá, Centre National de la Mer, in Italy by Acquario di Genova and in Spain by Aquarium Finisterrae. In the continuity of this programme, Mr.Goodfish3.0 aims to raise awareness for responsible consumption of sea, freshwater and aquaculture products by upgrading and expanding the Mr.Goodfish app as part of an EU-wide awareness campaign. The app will be part of an ecosystem of tools and activities to be co-created by stakeholders in three pilot sites and upscaled in two replication sites, each representing up to two of the following major European sea or freshwater basins: the Mediterranean Sea, the Atlantic Ocean, the North Sea & Channel, the Baltic Sea, the Arctic Ocean, the Black Sea and the Danube River.

Co-creative & participatory methods will inform the development of new content for the app, enriching scientific data with socio-cultural and economic input through engagement with stakeholders throughout the seafood value chain as well as with citizens & consumers. Thanks to this approach, the app will be upgraded with data on seasonal seafood in each basin along with information about health benefits or food waste as well as new co-created features.

The programme will also roll out a European-scale awareness campaign involving social and traditional media, a call for multipliers across EU Member States, the dissemination of a package of communication material and educational activities, reaching adults & youth alike and promoting the app & Mr.Goodfish label among European sustainable seafood providers. Mr.Goodfish will link up with other well-established initiatives such as the European Union's #TasteTheOcean campaign.

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Definitions and abbreviations

Table 1. List of concept definitions

Concept	Definition
Co-creation	"Co-creation is a non-linear process that involves multiple actors and stakeholders in the ideation, implementation and evaluation of products, services, policies and systems with the aim of improving their efficiency and effectiveness, and the satisfaction of those involved in the process." (Rizzo et al., 2018)
Co-creation journeys	Co-creation journeys are processes where stakeholders collaboratively ideate, develop, and refine interventions, products or services. They emphasise active participation and collective decision-making to meet the needs and expectations of all involved.
Social innovation	Social innovation refers to strategies, processes, and services based on societal needs such as new sustainable practices in specific organisations, neighbourhoods, cities or collaborative initiatives to address problems together.
Stakeholder engagement	Strategic approach to involve relevant stakeholders in the project, ensuring active participation and incorporating their input throughout the co-creation process.
Co-created solutions	Co-created solutions are collaboratively developed outcomes or interventions designed to address identified user needs, challenges, or opportunities.
Scalability	The potential for the co-creation framework and solutions developed in pilot sites to be adapted and implemented in new regions or contexts, expanding project impact.
Pilots	Pilots are small-scale, preliminary implementations used to test and refine ideas, processes, or solutions before broader deployment. These can be case studies, feasibility studies, demonstrators, etc.
Replication sites	Additional locations in Bulgaria and Poland where the co-created solutions and processes tested in pilot sites are considered to validate scalability and adaptability across diverse ecosystems.

Table 2. List of abbreviations

Abbreviation	Full name
DoA	Description of Action
PC	Project Coordinator
WP	Work Package
IP	Intellectual Property
MGF3.0	Mr.Goodfish3.0: Co-creating Solutions for Sustainable Seafood Consumption
MSC	Marine Stewardship Council
ASC	Aquaculture Stewardship Council
3OC	Three o'clock
CMMI	Cyprus Marine and Maritime Institute
Nausicaá	Nausicaá, Centre National de la Mer
NNV	Nordnorsk Vitensenters
EUFIC	European Food Information Council
UCY-OC	University of Cyprus - Oceanography Centre
RIF	Research and Innovation Foundation
AKTH	Agricultural Research Institute of Cyprus
CSTI	Cyprus Sustainable Tourism Initiative
MARBEC	Marine Biodiversity Exploitation And Conservation
INRAE	The French National Research Institute for Agriculture, Food, and Environment
NAMMCO	North Atlantic Marine Mammal Commission
UiT	The Arctic University of Norway

Executive Summary

The report titled *Co-creation Framework* outlines the approach adopted by the Mr. Goodfish 3.0 project, focusing on three pilot sites: Boulogne-sur-Mer (France), which is positioned near the North Sea and serves as a gateway to the Atlantic Ocean; Tromsø (Norway), which is located near the North Sea and the Arctic Ocean; and the southern region of the Republic of Cyprus, situated in the Mediterranean Sea.

This framework serves as an adaptive toolkit, incorporating co-creation methods, tools, and techniques to guide partners from the early stages of the project. It provides a comprehensive strategy for stakeholder identification and engagement, ensuring active participation throughout.

After an introduction to the project, the second part of the document describes the methodology envisioned by the task leader, Three o'clock, drawing on its expertise in co-design and stakeholder engagement. This section outlines the co-creation concept, its application within the pilot sites, the governance structure, stakeholder mapping and engagement plans, and the co-creation methods and tools. It also highlights peer exchanges and briefly reviews co-creation examples from similar projects.

In the third section, the co-creation framework is grounded in each pilot site, offering a context analysis based on literature review, survey results and interviews with local stakeholders, the co-creation challenges and scope, a stakeholder mapping and engagement plan, early ideas for engagement strategies, including green nudging, and potential risks and mitigation strategies for local and national engagement efforts.

The fourth part of the document focuses on the scalability and replication of the co-creation process, defining key phases and necessary conditions for successful application across the pilot sites. It also details the exploitation strategy to ensure long-term success.

The final section complements the scalability strategy by presenting a monitoring and evaluation framework, designed to track the progress of the co-creation process and ensure it stays on course.

The report was authored by Three o'clock, with contributions from three pilots and reviews from Nausicaá and the Cyprus Marine and Maritime Institute.

1. Introduction

The report and deliverable 3.1, titled Co-creation framework, is produced under T3.1, and outlines the strategy for engaging stakeholders and identifying key partners in the early stages of the project. It is scheduled for delivery in month 6, October 2024. The report presents a structured methodology and its contextualisation in each of the three pilots.

1.1 Development of task and WP

WP3 will organise co-creation journeys (task 3.2) through a co-creation framework (task 3.1) guiding pilot teams and stakeholders in collaboratively developing, testing, and implementing solutions that encourage behavioural changes toward more sustainable seafood production, supply and consumption. The focus is on reducing consumption of seasonal and endangered species, minimising food waste, and lowering the carbon footprint by integrating Mr Goodfish 3.0 and other project outcomes. Stakeholder engagement in the pilots will also facilitate the co-design of user experience and new functionalities for the Mr Goodfish app. Additionally, WP3 will monitor and assess the uptake of these new practices and impact of behavioural changes such as practices, lifestyle and habits across pilot sites (task 3.3).

The development of the co-creation framework in M6 relies on knowledge and tools already developed by project partners, and especially WP leader Three o'clock (3OC), in previous projects. Covering the early phases of the project, this task generates data and knowledge through desk research, collective intelligence and 5-9 interviews per pilot to collect expectations, pains and gains from a representative sample of stakeholders. In addition, first surveys results initiated in parallel in T3.2 are providing complementary information and supporting validation of insights generated in T3.1. Consequently, co-creation framework provides a broad perspective and includes co-creation phases envisioned in the development of task 3.2:

- **Task 3.2.1. Context analysis (M1-M6):** In this phase, key stakeholders in each pilot site will be identified, focusing on their motivations for co-creation and existing green nudge techniques. Stakeholders will be mapped, incorporating relevant European and national initiatives and networks. Additionally, a public survey with at least 100 responses per pilot site, conducted in the local language, will assess consumer behaviour trends and engagement preferences.
- **Task 3.2.2. Envisioning of alternatives and prototyping (M6-M24):** Pilot leads will engage local stakeholders to co-create a journey roadmap and define their roles by

M9. Each pilot site will host at least three thematic co-design workshops: by M10, visualising seafood and aquaculture value chains and identifying circularity gaps (to inform T2.2); by M12, co-designing stakeholder journeys for Mr.Goodfish3.0 (to inform T4.1); and by M18, prototyping new solutions using the Mr.Goodfish app and integrated nudging techniques. This will involve consumers such as children, families, blue schools, and vulnerable groups affected by higher seafood prices (to inform T3.2.4, T3.3, and T4.3). Prototyping will focus on enhancing information flows within value chains, developing capacity-building and education programmes, implementing nudging plans, and fostering new synergies and organisational improvements among stakeholders.

- **Task 3.2.3 Scalability validation and iteration (M18-M24):** Prototyped solutions will be tested with at least 30 end-users at each pilot site, with their feedback shaping final conclusions on the solutions' use and replication by M21. These insights will guide the next sub-task and inform T3.3.
- **Task 3.2.4 Scaling in, out and deep (M6-M32):** Co-creation teams will devise strategies for scaling in, out, and deep, focusing on capacity-building, systemic innovation, and nudging plans to integrate and validate new solutions during a local co-design workshop. Practical insights on uptake will be shared with T3.3, T5.2, and T5.3.

1.2 Relation to other WPs and tasks

Table 3 describes the relationship between Task 3.1 (T3.1), the associated work packages and their respective tasks.

Table 3. Relation to other WPs and tasks

WP	Contribution to other WPs and tasks
WP1 Project Management	Task 3.1 will establish a basis for effective collaboration with relevant stakeholders and actors in pilots to ensure high-quality project results and societal, economic and environmental impacts. It will influence development of quality and risk assessment with specific input to encouraging gender equality and co-ownership of Intellectual Property (IP). This task supports development and operationalisation of the stakeholder pool and the Advisory Board.

WP	Contribution to other WPs and tasks
WP2 Content development	Task 3.1 will provide initial steps on how to harvest ideas and collective intelligence in pilots in relation to the stakeholder expectations toward desirable knowledge, know-how and good practices that will be embedded into the upgraded Mr.Goodfish app. Also, deeper understanding about concerns, educational gaps and skills among the stakeholders in relation to the scientific and industry knowledge about sustainable consumption will be tackled.
WP4 Media Product Development	The co-creation framework will set up working conditions and collaborative grounds to discuss the existing app and its functionalities, and work on its identified weaknesses and opportunities for improvement from the perspective of pilot needs. Consequently, it will describe how prototyping of new five functionalities and enhanced user experiences can be iterated along the co-creation journeys. WP4 will pay particular attention to content that extends beyond species lists, ensuring it aligns with user needs and project goals.
WP5 Awareness-raising through Dissemination, Communication & Exploitation	Through task 3.1, first ideas on stakeholder engagement and participation will be outlined which will directly support overall planning of communication, dissemination, exploitation, and replication of key results and valuable outcomes.

2. Methodology

2.1 Approach to co-creation

Mr.Goodfish3.0 (MGF3.0) builds on the knowledge and resources generated through European Commission funding from H2020 SwafS calls, centred on Responsible Research and Innovation (RRI). Projects such as H2020 SISCODE[1] have made co-design and co-creation practical and assessable. SISCODE developed 10 co-creation labs (i.e. co-creation journeys) across 10 countries over 24 months. This groundwork, alongside co-creation frameworks from ongoing Horizon Europe projects such as RES4CITY[2], D4RUNOFF[3], NEUTRALPATH[4], and Erasmus+ project SHERLOCK[5] have strengthened Three o'clock's success in advancing participatory and inclusive methodologies. These efforts bring research closer to society and make collective intelligence more accessible to researchers and policymakers.

At the proposal stage, three pilot sites were identified, in Boulogne-sur-Mer (France), Tromsø (Norway), and the southern region of the Republic of Cyprus. Within 24 months, these pilots are expected to deliver concrete solutions tailored to their local and/or regional contexts. They will address regional and national policies and collaborate closely with key stakeholders who can benefit from supporting sustainable practices in seafood production, distribution, consumption, and the reutilisation of bycatch and other food waste.

The pilots serve a dual role:

1. **Local/regional solutions**: Address specific local/regional challenges and develop concrete solutions.
2. **Testing and informing**: Act as a playground to test and refine key exploitable results, such as an upgrade of the Mr.Goodfish app and an EU and EEA-wide awareness-raising campaign.

[1] The SISCODE project website: https://siscodeproject.eu
[2] The RES4CITY project website: https://www.res4city.eu
[3] The D4RUNOFF project website: https://d4runoff.eu
[4] The NEUTRALPATH project website: https://neutralpath.eu
[5] The SHERLOCK project website: https://www.sherlockproject.eu

These results are designed to be integrated into local solutions in ways that suit each pilot's context, ensuring practical relevance and uptake. Co-creation is the central approach, utilised as both a mindset and methodology.

2.1.1 Co-Creation as a mindset and methodology

- **Mindset**: Co-creation helps understand the pluralism of real-world problems, encouraging systems thinking and fostering mutual understanding of concerns and solution ideas. It prompts reframing problems through deeper exploration of the "fuzzy front end" before jumping into solutions.
- **Methodology**: Co-creation supports context exploration and stakeholder engagement. Through workshops and collaborative activities, stakeholders—rather than imagined personas—participate directly in co-creation processes. The project also collaborates with existing local initiatives to complement and enhance findings.

2.1.2 Co-creation in Mr.Goodfish3.0

Co-creation in MGF3.0 is defined as a collaborative approach to developing and delivering innovative solutions for sustainable seafood and aquaculture practices. It engages a wide range of stakeholders in the fish and seafood value chain through long-term co-creation journey, including producers, distributors, consumers, retailers, fishermen, researchers, educators, policymakers, and cluster organisations. In these journeys, co-creation frameworks guide participants through a series of interactions aimed at fostering innovation and addressing real-world issues. By encouraging shared ownership and diverse perspectives, co-creation journeys can yield solutions that are more inclusive, practical, and aligned with the needs and values of the communities they are designed to serve.

This journey often follows a structured approach with at least four stages, including problem identification, ideation, prototyping, testing, validation and refining solutions, all with active involvement from participants at each step:

1. **Context analysis and problem reframing**: Stakeholders are first informed about the project and consulted on their needs, challenges, and interests. This ensures pilot's challenge is aligned with the territorial context and project's main goals and objectives.
2. **Envision of alternatives**: Stakeholders are then invited to co-design the engagement process and prototype first solution ideas, planning how they will be involved in the co-development and implementation (use) of solutions.

3. **Co-development & iteration**: Stakeholders actively contribute to co-development and iteration of ongoing activities and plans through continuous discussion, prototyping, testing and validation. This step relies on the feedback provided during each testing activity, fostering knowledge transfer and replication planning to sustain valuable outcomes.
4. **Use and scaling of solutions**: The solutions are actively prototyped and co-developed in few iteration cycles to adjust criteria, characteristics and formats toward more feasible, desirable and viable solutions per pilot and stakeholders. At the end of each pilot's co-creation journey, final version of the solution is discussed, and scaling strategies are set in place. These solutions are envisioned as short-term and/or long-term local initiatives and services. Thus, their potential replications in other organisations, neighbourhoods, cities or regions are considered.

In parallel, the MGF3.0 team also oversees dissemination and sustainability strategies of co-created solutions and keeps monitoring and assessing the impact of pilot actions at a local and at the project level.

The co-creation framework (**Figure 1**) illustrates the structured involvement of stakeholders, guiding them through these phases to ensure that their expectations are met, and the project's key results are effectively utilised and adapted to local realities.

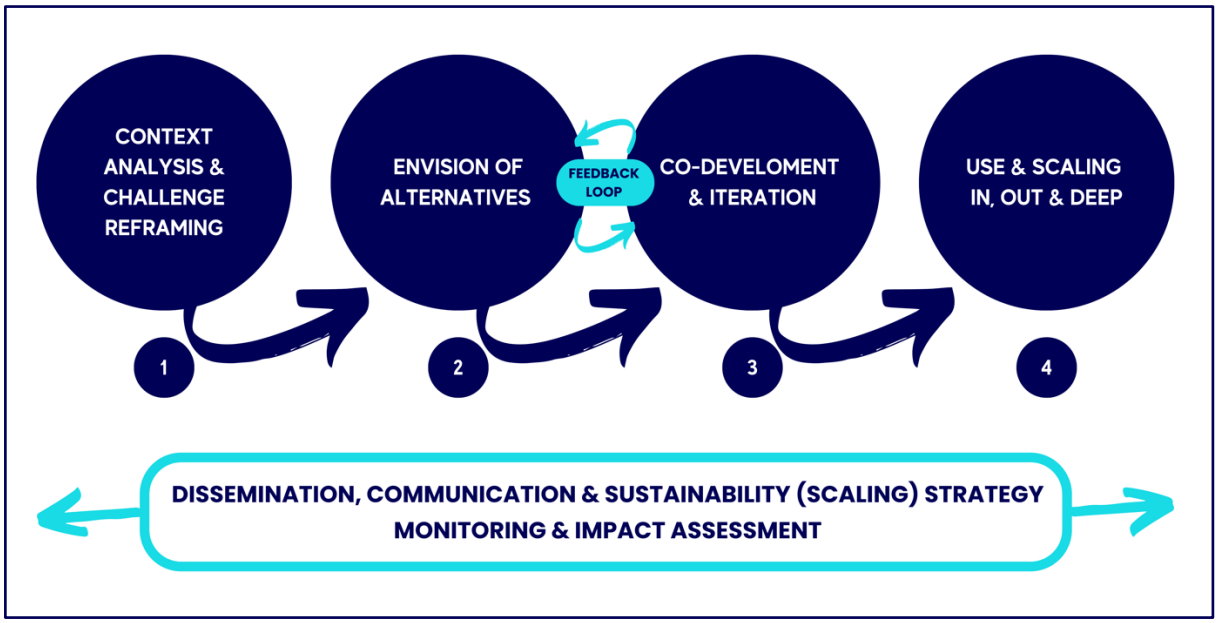

Figure 1. Co-creation framework in MGF3.0

2.2 Application of co-creation in pilots

2.2.1 Staging pilots as co-creation journeys

The co-creation in MGF3.0 follows a structured process consisting of three key phases: pilot setup, launch and implementation of co-creation activities, and validation and scaling of results to all EU countries (see **Figure 2**).

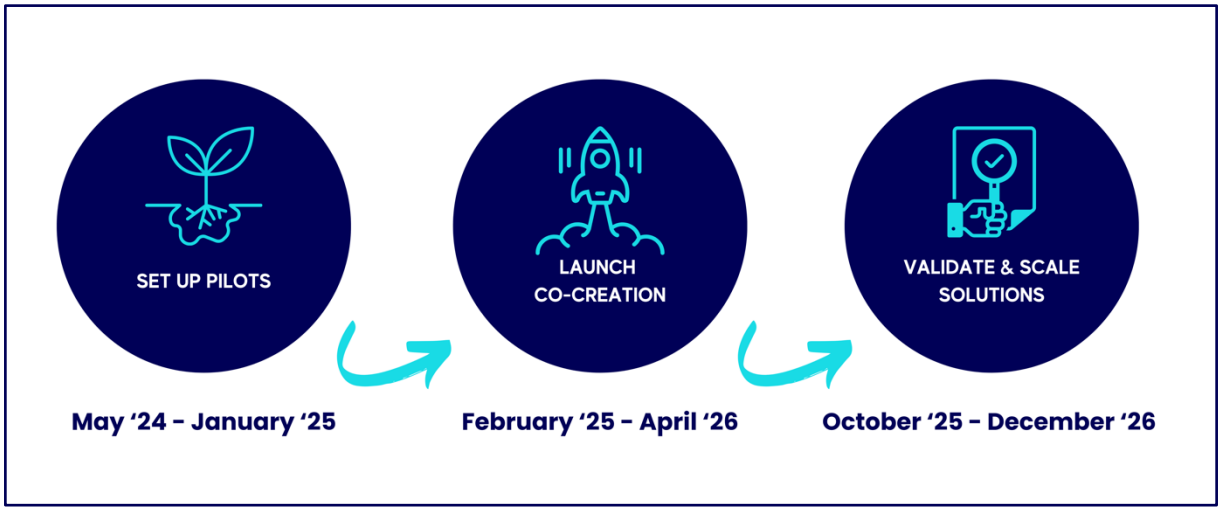

Figure 2. Approach to co-creation in pilots

Setting up the pilots

To establish the pilots, an in-depth context analysis was conducted, which included qualitative interviews with stakeholders, an ongoing consumer survey, and a literature review based on desk research. The setup phase focused on defining the core challenge for each pilot. By identifying the main pain points shared by stakeholders, the project team was able to reframe these issues in ways that could be effectively addressed by the MGF3.0 intervention. This analysis not only supports local teams in understanding their context but also guides them toward actionable solutions.

At the June 2024 kick-off meeting, pilot partners were introduced to two initial exercises: stakeholder mapping and co-creation journeys. These activities aimed to help local teams identify key stakeholders and envision collaborative working methods. Partners were encouraged to recognise societal needs to be addressed and to conceptualise potential outcomes through their collaborative efforts.

The pilot exercises highlighted struggles to engage certain stakeholder groups and to identify the most suitable organisations for project involvement. This challenge primarily stemmed from the pilot team's limited experience with specific stakeholder types or a lack of awareness regarding their significance before mapping and discussing their roles.

While engagement with consumers, researchers, and producers was relatively straightforward, involving intermediary stakeholders, such as hotels, restaurants, and catering services (HORECA), proved more challenging. Additionally, discussions considered the territorial context—whether at the city or regional level—as significant factors.

The necessity to frame challenges in a manner that is adequate, timely, and feasible was also emphasised, given the complexity of the issues surrounding this topic.

Launch and implementation of co-creation activities

Following the setup, the co-creation journey will be officially launched at each pilot site. Over the course of the project, three in-person co-creation workshops are scheduled to take place in M10, M12, and M18. These workshops will bring together stakeholders to collaboratively develop solutions. In addition to these workshops, various other formats—such as in-person or online meetings and joint events—will be utilised to maintain momentum and engagement.

Validation and scaling of results

In the final phase, the focus shifts to validating the co-created solutions. Pilots will ensure that their proposed solutions are reviewed and endorsed by external actors and potential end-users to guarantee their relevance and sustainability. During this stage, the lessons learned from the pilots will be shared with replication sites, facilitating the exploitation and adaptation of key results to other contexts. This phase is crucial for ensuring that the project's outcomes have lasting impact and can be scaled beyond the initial pilot regions.

Together, these phases ensure a comprehensive co-creation process that is both participatory and adaptable to local needs, while also allowing for broader replication and impact at the European level.

2.2.2 Co-creation methods and tools

Interviews

In total 23 stakeholder interviews have been conducted in the three pilots by 3OC and the three pilot leads. The pilot leaders adjusted the interview questions to local contexts and the expertise of interview partners, representing the seven stakeholder groups (consult **Table 4** and Annex I for more details). The interviews investigated the specific challenges faced when promoting and implementing more sustainable fishing practices, consumption and issues affecting the current value chain. The interviews were explorative and allowed finding common themes and concepts across the three pilots, encompassing cultural, socio-economic and professional aspects. Moreover, the interviews focused on stakeholders' experience in the application of sustainable fish and seafood production and their expectations for developing solutions within the MGF3.0 project.

Table 4. An overview of interviews conducted in pilots

Stakeholder Group	Cyprus	Norway	France
Producers	-	3	2
Distributors	1	1	2
Consumers	2	1	1
Educators	-	1	1
Civil Society	-	1	1
Policymakers	1	1	1
Research	1	1	1

Interviewees were asked to sign a consent form explaining the purpose of the data collection and possible risks related to confidentiality and data use. The interviews were transcribed and coded with qualitative analysis software MaxQDA. An inductive coding process was chosen to derive the codes directly from the data and develop them embedded in the local contexts.

Consumer survey

Based on the first results from the interviews, a consumer survey was drafted to further research and quantify identified topics. The survey collected demographic information such as age, gender, profession, household composition as well as respondents shopping habits, ways of gathering information about sustainable fish and seafood products and main causes that prevent them from consuming seafood and fish, whether sustainable or not. The survey was distributed across France, Norway and Cyprus, as pilot areas, but also targeted audiences in the replication sites in Bulgaria and Poland. Moreover, respondents from other countries also had the opportunity to take part. While the survey is a tool to gather information on consumer behaviour, it also functioned as a first contact and informative interaction with MGF3.0 and its goals.

The survey was launched on 2 October 2024 and is set to remain open until the end of November 2024. Hence, all results communicated in this deliverable are preliminary descriptive statistics and indicate trends only, not completed conclusions. At the time of writing, the survey had 405 respondents: 160 from France, 93 from Cyprus and 22 from Norway. Because of the low response rate for Norway preliminary results for this pilot were not included.

The results of the consumer survey will be presented in D3.2 which builds on the work done in task 3.1.

Co-creation workshops

In each pilot, a minimum of three thematic co-design workshops will be conducted to enhance collaboration and innovation within the seafood and aquaculture sectors. These workshops will be facilitated by local pilot teams in a collaboration with 3OC's facilitators.

The first workshop, scheduled for M10, will focus on visualising value chains and identifying circularity gaps to inform Task 2.2 Use case scenarios.

The second workshop, taking place by M12, will aim to co-design user and stakeholder journeys for the MGF3.0 initiative, contributing insights for Task 4.1 Core feature outline, design of functionalities and content integration.

Finally, by M18 or soon after (when the prototype of enhanced Mr.Goodfish app is ready for testing), the third workshop will prototype new solutions using the Mr.Goodfish app and integrated nudging techniques. This session will engage relevant stakeholders, particularly consumers—including families with children, young people and vulnerable groups with

limited access to seafood due to cost constraints—informing Tasks 3.2.4 Scaling in, out and deep; 3.3 Monitoring and impact assessment; and 4.3 User testing, scalability proofs, deployment. The prototyping efforts will address key areas such as improving information flows between stakeholders in the value chains, developing capacity-building and education programmes, creating nudging plans, and reshaping organisational structures to foster new synergies among stakeholders.

Sustainability workshop

The sustainability workshop will focus on co-creating strategies for scaling, capacity-building, and systemic innovation, enabling participants to embed and validate sustainable solutions locally and share insights with related tasks (T3.3, T5.2, and T5.3).

Local Meetings

Besides the co-creation and sustainability workshops, pilot teams are encouraged to make the most of local events and activities linked to their MGF3.0 goals. As they deem fitting, project pilots can organise meetings and engagement activities to promote collaboration and keep MGF3.0 stakeholders motivated in their co-creative efforts. By doing so, pilot teams can strengthen relationships, share knowledge, and address related issues, ultimately enhancing the overall impact of the MGF3.0 project.

Awareness-raising campaigns & multiplier events

The methods and tools developed through the awareness campaign will be tested and validated in pilot sites, ensuring their effectiveness and relevance to local contexts. This process will provide valuable insights into how these strategies can enhance stakeholder engagement and foster collaboration among diverse participants. By incorporating these validated approaches as part of the co-creative solutions offered in the pilots, they will serve as key components of the service delivery, promoting active involvement and co-creation among stakeholders in achieving the project's goals.

2.2.3 Governance structure

As shown in **Figure 3**, the pilots are being managed in a horizontal governance structure. The three pilot leads Nausicaá Centre National de la Mer (France), Cyprus Marine and Maritime Institute (Cyprus) and Nordnorsk Vitensenters (Norway) are the main contact points for local stakeholders and leading local engagements. They play a crucial role in forming long-term relationships with the project's target groups. Local engagements will take place in the form of interviews, workshops and public events.

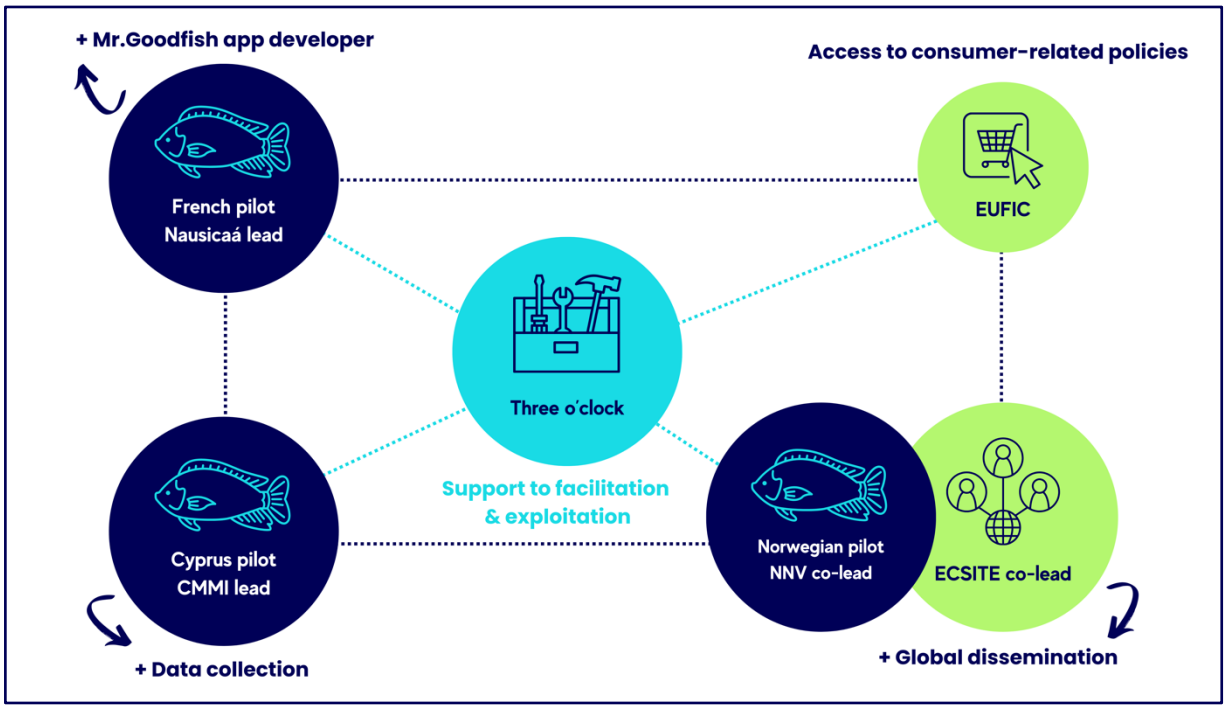

Figure 3. Governance structure

Cyprus Marine and Maritime Institute (CMMI) is a centre of excellence in marine and maritime research, technology development and innovation, with relevant expertise in marine ecology as well as in marine and fisheries governance and policy. CMMI is also leading the efforts to gather and process all background information needed to upgrade Mr.Goodfish app and enrich its database. CMMI is the pilot lead for the Cypriot pilot which aims to involve stakeholders in raising awareness around sustainable fishing practices in the Mediterranean and the opportunities to include locally fished, edible non-indigenous species in local menus.

Nausicaá, Centre National de la Mer (Nausicaá) is the largest aquarium in Europe. It has run the Mr.Goodfish programme since 2010 which was created in cooperation with two other aquariums Finisterrae (Spain) and Acquario di Genova (Italy), all three members in the

World Ocean Network. Nausicaá leads the effort to upgrade the existing Mr.Goodfish mobile application. Nausicaa has provided CMMI with the data collection, analysis and selection methodology used for the Mr.Goodfish programme to adapt and spread it across the EU sea basins. Nausicaá also manages the French pilot that will address stakeholders on the North Sea, Channel and Atlantic coast.

Nordnorsk Vitensenters (NNV) and **ECSITE** co-manage the Norwegian pilot in Tromsø and the surrounding region of the Norwegian sea and the Atlantic. The partners are steering the pilot towards a more collaborative approach within the seafood value chain with regards to sustainable fishing and aquaculture practices.

European Food Information Council (EUFIC) has a role to keep pilots informed on the latest policies related to consumption and leverage its network to disseminate key activities and results to consumer audiences.

3OC's role in the co-creation process is to support and steer the trajectory of the pilot development and network on how to co-create and upscale valuable results for a stronger impact. 3OC leads the methodological foundation and nana the implementation of the co-creation framework in MGF3.0.

2.2.4 Peer knowledge and skill transfer

WP3 monthly calls between 3OC, EUFIC, ECSITE and the three pilot leads are a space to exchange on current challenges and success in the pilots to enable mutual learning and skill transfer on their co-creation practice. More peer exchanges are planned during the annual consortium meetings in the form of workshops to continue train-of-trainers and collaborative efforts.

2.3 Review of examples of co-creation in similar contexts

During the kick-off meeting, 3OC shared examples from other initiatives to inspire the pilots and guide future work. These examples highlighted societal challenges and innovative approaches that pilot teams could adapt for their own projects. By showcasing these initiatives, 3OC aimed to encourage creativity and collaboration among participants, prompting them to think critically about enhancing their efforts and effectively reaching their goals.

2.3.1 OPEN MIND

- **Context:** This initiative was developed by Science Gallery Dublin under the H2020 SISCODE project.
- **Challenge:** 'Mental health and well-being management in young people' is one of the biggest problems facing Ireland's youth today.
- **Solution:** This programme is a co-created educational module for teachers to implement in school (**Figure 4**). The programme aims to develop students' understanding of mental health and to equip young people with tools to manage their well-being, with a focus on personal hobbies and interests.

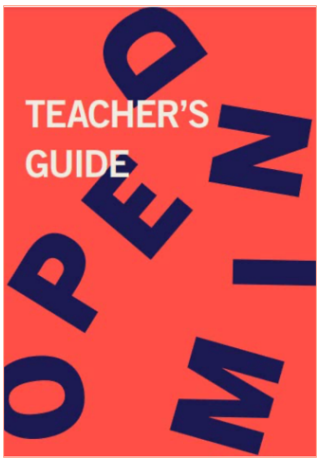

Figure 4. Open Mind

2.3.2 The Apple Girl

- **Context:** The Apple Girl is a case study developed by the company and was supported by the H2020 Designscapes project.
- **Challenge:** Today there's a need for alternative materials. Producers overlook waste management affecting consumer wellbeing. Customers have warranted health and sustainability concerns.
- **Solution:** The Apple Girl is a biotechnology company, using trash to create something new, valuable and useful by upcycling resource streams in food production in an innovative technique to make biodegradable textile alternatives such as Apple Leather (**Figure 5**).

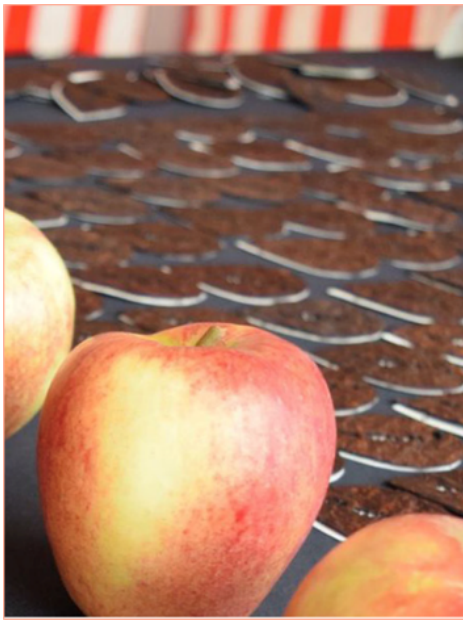

Figure 5. The Apple Girl

2.3.3 The Wild Spot

- **Context:** This initiative was developed by Futuribile as local intervention in the framework of the T-Factor H2020 project dedicated to temporary urbanism
- **Challenge:** Most of young people's experience of the world is filtered by digital means, impacting their well-being through a high cognitive burden and lack of embodied experiences.
- **Solution:** This co-created temporary urbanism experience turned an underutilised green area of a university campus into a hotspot for connecting with nature, other students, and oneself through nature-based installations and community events (**Figure 6**).

Figure 6. The Wild Spot

2.3.4 SWINGA

- **Context:** SWINGA is a feasibility study developed by Gothenburg, Karlstad and Stockholm cities and supported by the H2020 Designscapes project (**Figure 7**).
- **Challenge:** Consumption in Karlstad and other European cities are highly unsustainable, with underused assets being an increasing problem.
- **Solution:** The overall aim of Swinga is to create a platform where neighbours can connect and borrow underutilised small capital goods from each other or rent from a local company. Swinga's

Figure 7. SWINGA

mission is to halt overconsumption and strengthening helpfulness and community.

3. Co-creation framework

3.1 Cyprus - CMMI

3.1.1 Context analysis

Location

The Republic of Cyprus (RoC) has been a member of the European Union since 2004. Following the division of the island of Cyprus in 1974, the RoC has effective control only over the southern part of the island which is where the pilot focuses on. Cyprus is in the Levantine Basin - Eastern Mediterranean, one of the most oligotrophic seas in the world, characterised by very low nutrient availability.

The fishing industry in a nutshell

Today, the fishing fleet is structured according to the national Fisheries Law, which defines the type and the number of fishing licenses available. The fleet can be broadly divided into the large-scale fleet (LSF) which consists of vessels over 12 meters length overall, and the small-scale fleet (SSF) which consists of vessels of less than 12 meters length overall. The SSF uses seasonally deployed polyvalent passive gear whilst the LSF has three categories, the demersal trawlers and/or demersal seiners, the purse seiners and the vessels using polyvalent 'passive' gears. According to the 2023 Annual Economy Report, the SSF remains the most important fleet segment, both in terms of numbers and value. In 2020 and 2021, SSF represented almost 95% of the total fleet in terms of the number of vessels and employment, whilst it represented 36% of the total weight of landings and accounted for 48% of the total value of landings (JRC, 2023).

Cyprus is a minor EU-27 producer for fisheries and aquaculture products with an annual per capita consumption of seafood in 2020 of 22,79kg (EUMOFA, 2023). A substantial part of demand that may reach up to 40% is covered by imports; this trend is augmented during the tourist period. Appearance (77%) and cost (58%) are the main purchasing factors of consumers with environmental, social or ethical impact having a rather low percentage

(10%). Younger people between 15 and 24 years of age are less likely to consume fish than older people (Eurobarometer, 2021).

The main local native species are red mullet, white sea brim, saddler sea brim.

Aquaculture in Cyprus constitutes around 85% of the total Cypriot fisheries production in both quantity and value, providing around 350 full-time direct jobs (*Multi-Annual National Strategic Plans for the Development of Sustainable Aquaculture for the Period 2021 to 2030 Summary CYPRUS "Multi-Annual National Strategic Plan Aquaculture 2021-2030,"* 2023). Aquaculture has been the fastest growing primary food production industry in Cyprus over the past 15 years. Production focuses on marine species like gilthead seabream, European seabass, meagre, rainbow trout, sturgeon, and marine shrimp, predominantly in offshore cages in marine waters.

Culture and history of fishing

Traditionally, fishing in Cyprus has been carried out with small fishing boats (less than 12m) (Garcia & Demetropoulos, 1986). Today, 93% of the active fleet is still made up of small boats, which cover 74% of fleet employment.

The Cypriot fishing industry, and especially SSF RoC have been called to deal with multiple issues and changes such as the following: i) the rise of marine aquaculture and the discovery of hydrocarbon reserves in the RoC's Exclusive Economic Zone (EEZ) which have led to a decrease in marine space and fishing grounds particularly for SSF; ii) the threats and pressures faced by the coastal and marine environment in Cyprus act synergistically, exacerbating the impacts on marine and coastal ecosystems (Hadjimichael, 2020). Among the major pressures are tourism and residential development, pollution, mainly eutrophication due to the influx of nutrients from point (measured) and non-point sources, coastal erosion and coastal works, overfishing, increasing presence of Non-indigenous Species (NIS) (mainly Lessepsian migrants). NIS create additional and very important stressors to the fishing sector as they have a significant impact on the marine ecosystems and the fishing stocks (Hadjimichael, 2020; Papageorgiou et al., 2024).

3.1.2 Co-creation challenges

As identified in the desk study, stakeholder interviews confirm that the Cypriot fishing sector faces a variety of challenges linked to sustainability, and these challenges often differ depending on the sector.

Sustainability challenges to the fishing sector

The three main fleets —bottom trawlers, pelagic longline fleets (targeting albacore tuna and swordfish), and SSF—face different sustainability challenges. It is suggested for example that bottom trawlers may require drastic measures, including possible cessation of operations due to the environmental impacts they cause. SSFs, on the other hand, need to focus on reducing bycatch by testing selective fishing gear, such as fishing traps, which can help minimise harm to non-target species like dolphins and turtles. It has been noted, however, that due to the lack of research on the effectiveness of these traps, fishers are reluctant to adopt them.

Another sustainability challenge mentioned was the effect of growing numbers of non-indigenous species on local marine ecosystems and local fisheries with estimates suggesting that 74% of bycatch consists of such invasive species (Papageorgiou & Moutopoulos, 2023). Moreover, species like the Rabbit Fish which now make up a significant portion of bycatch also damage fishing nets.

On the other hand, it was noted that some of the NIS, like lionfish, are starting to become part of the local cuisine. Appropriate promotion and support of this practice could further reduce pressure on native species. The success of turning people's appetites towards invasive species can be linked to their lower prices compared to native species. However, as exemplified in the interview with an environmental researcher, in some cases, such species can also generate high prices: *Siganus luridus* was discarded in Greece but has turned into an expensive delicacy in Cyprus. Such shifts can change fishers' behaviours towards targeting NIS more as consumer demand rises.

Another sustainability challenge noted was recreational fishing which poses a significant challenge for professional fishers, as both groups compete for the same resources. Recreational fishers are often wealthier and equipped with better tools, whilst they are not subjected to the same regulations that govern professional fishers. This tension over resources not only increases pressure on fish stocks but can also lead to illegal sales of fish to restaurants at lower prices, thereby undermining the income of professional fishers. These issues have exacerbated the already dramatic decline in fish stocks, negatively impacting

the quality of fish available in the market and reducing the number of professional fishers (Michailidis et al., 2020).

Improving traceability and introducing sustainability labels

Issues around traceability as well as labelling fish sustainability labels were highlighted as very important among different stakeholders interviewed. A unified traceability system, for example, would enable real-time updates on fish stocks and provide a database accessible to consumers, fishmongers, and distributors while promoting transparency and sustainability in the supply chain. A significant information gap was mentioned in several interviews, stressing that consumers in Cyprus do not tend to think about the sustainability of the seafood they purchase and consume. There is a lack of proper labelling in seafood products, thus for example fish from SSF cannot be separated from fish caught by bottom trawlers, or unlicensed fishers. There are also indications that for some distributors who are based in small communities, sourcing sustainable seafood to their customers is based on trust relations with their local SSF.

There is no established seafood certification system in Cyprus to guide consumers and as the interviews indicated, there is limited knowledge regarding the existence of such certification schemes. In the preliminary results of the consumer survey, organic labels (54%) and fair trade (37%) labels were the most frequently recognised by Cypriot consumers, while fish and seafood-specific labels like Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC) 9% and MSC (23%) were shown to be less familiar to respondents.

Technological advancements, including the use of artificial intelligence (AI) in fishing, which are being explored in other countries to better monitor catches and identify bycatch on board were mentioned as good practices. AI systems, for example, can help fishers make real-time decisions that promote sustainability, such as closing fishing areas temporarily when high bycatch rates of vulnerable species like turtles are detected. One of the issues identified hindering the adoption of AI is resistance among fishers due to the invasive nature of this technology, which would fundamentally alter traditional fishing practices.

The decline in local seafood consumption has been linked primarily to the following two aspects:

1. The decrease in the local seafood production because of overfishing, changes in the marine ecosystems and impacts of non-indigenous species (NIS). The decrease in local fish production can lead to an increase in the price of locally sourced fish, which can also be harder to find.

2. A shift in people's preferences towards cheaper and easier-to-cook seafood. In the consumer survey, for example, the two main reasons why individuals rarely ate fish were the smell and taste, as well as the price of fish and seafood. Interviews also indicated a tendency for younger generations to be increasingly opting for imported products like salmon, frozen cod, and fish fingers, rather than purchasing local fish from markets whilst in cases consumers purchase local fish, they often prefer aquaculture species like seabass and seabream over wild-caught varieties.

Consumer habits and lack of awareness

Across the interviews, a lack of awareness around sustainability issues related to fish and seafood amongst consumers was highlighted. In Cyprus targeted information campaigns about fishing and its sustainability challenges are absent and the population receives little education on these issues. The public therefore does not tend to take into consideration the environmental impacts of fishing, nor the most sustainable choice when buying seafood.

According to the Cypriot Consumer Association, data on consumer behaviour and fish consumption in Cyprus is very limited, making reliable projections about trends very difficult. In addition, the representative of this association emphasised that consumers are not educated on the differences between caught and farmed fish. Nevertheless, there is a general perception that aquaculture is more harmful to the environment. Cypriot consumers tend not to consider environmental or sustainability aspects when choosing their fish or seafood, while they might pay more attention to these factors for other foods. This highlights the lack of information, sensitisation and education of the consumers on the fishing industry, rather than a general disinterest in sustainability issues.

To address these challenges, workshops and collaborations with small-scale fishers have been organised by institutions previously. These fishers are highly aware of the environmental changes affecting their livelihoods and are eager to participate in initiatives aimed at promoting sustainable fishing practices. Ultimately, increasing demand for local fish and enhancing transparency and traceability in the industry are crucial steps for ensuring the long-term sustainability of Cyprus's fishing sector and fostering consumer trust.

The demand for fresh fish in Cyprus is high, especially during tourist seasons. However, the supply is limited, and distributors and restaurants can mislead customers by selling them imported and frozen fish while advertising it as fresh and locally sourced. In addition, the survey results show that most respondents, 89.41%, prefer fresh fish and seafood, making it the most popular choice. Frozen fish and seafood are also widely consumed, with 62.35% of

respondents selecting this option. Frozen options are also popular because they tend to be cheaper.

It remains difficult to explain the complexity of fish and seafood sustainability issues to the public. This indicates a need to develop effective fundamental communication campaigns to distribute scientific findings but showcase sustainable options for Cypriots in their everyday lives. Starting off with more simple messaging like a logo or short information, in everyday life, especially in supermarkets and on packaging could improve general awareness of these issues. Labels like MSC and ASC are not commonly known in Cyprus and there are no local or national certifications to fill this gap. Therefore, the Mr.Goodfish3.0 co-creation will be an important first step in raising public awareness.

3.1.3 Stakeholder mapping and engagement plan

CMMI has identified 32 stakeholders based in Cyprus who will be called to actively participate in MGF3.0, ensuring the local context is well integrated into the pilot activities (see **Figure 8** and **Table 5**). These stakeholders will contribute to addressing Cyprus-specific challenges such as sustainable seafood sourcing, local consumption patterns, and environmental impact in coastal regions. Their involvement will also help tailor solutions to Cyprus' unique regulatory and market conditions, ensuring that the project's outcomes are relevant and impactful within the local framework. This engagement will support the development of business models and collaborative solutions that reflect Cyprus' needs while contributing to the broader goals of the MGF3.0 initiative.

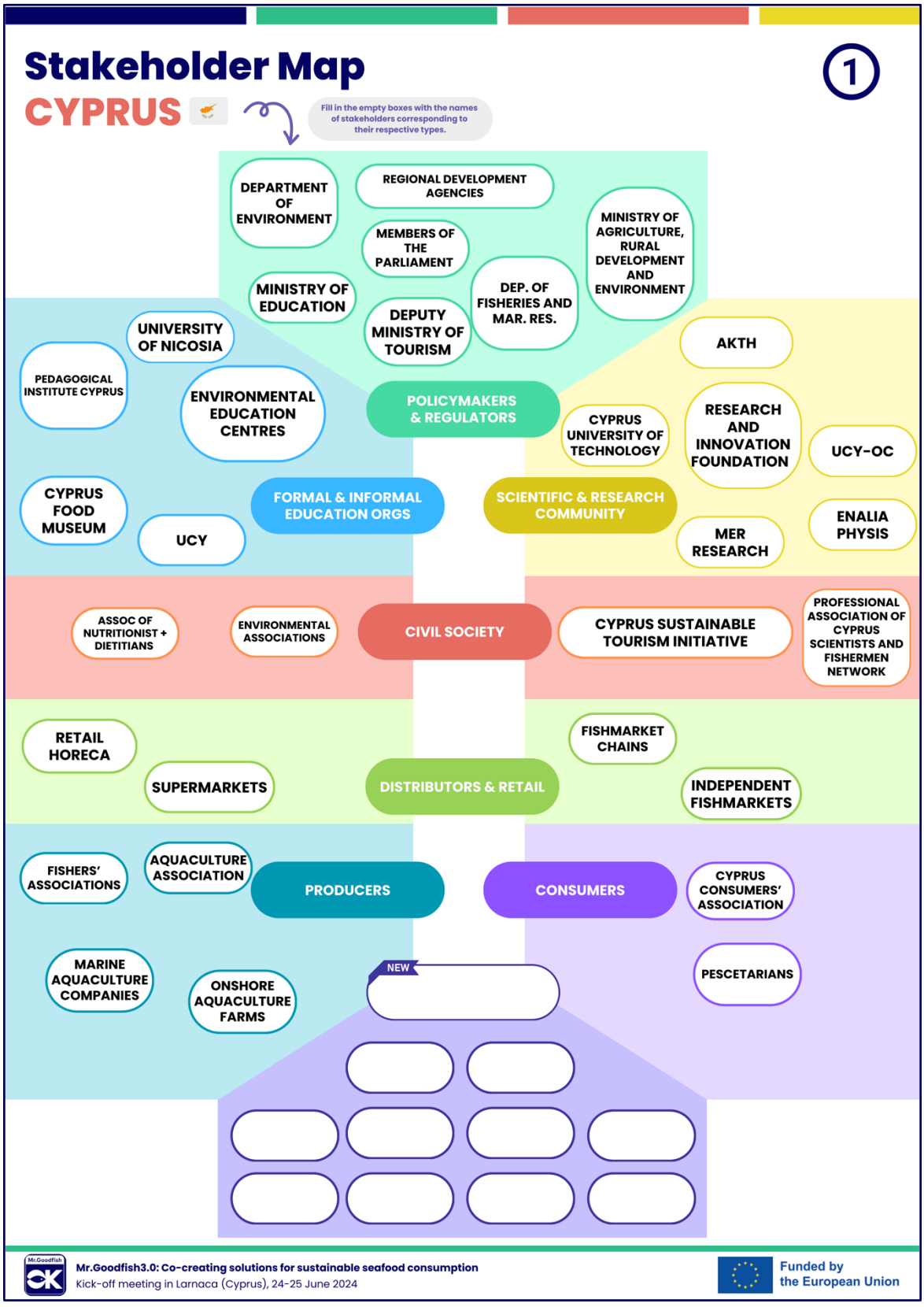

Figure 8. Mapped stakeholders of relevance for Cyprus pilot

Table 5. Relevant stakeholders identified for a pilot in Cyprus

Stakeholder	Type	Relevance
Ministry of Education, Culture, Sport and Youth	Policymakers & Regulators	This ministry plays a crucial role in integrating marine and seafood education into school curricula, promoting awareness of sustainable practices among young people. **They will be informed and consulted on MGF3.0 initiative and results.**
Department of Environment (Ministry of Agriculture, Rural Development and Environment)	Policymakers & Regulators	Responsible for environmental policies and regulations, this department can support the project by ensuring compliance with sustainability standards and promoting best practices in marine conservation. **They will be informed and consulted on MGF3.0 initiative and results.**
Ministry of Agriculture, Rural Development and Environment	Policymakers & Regulators	This ministry oversees agricultural policies, including fisheries and aquaculture. Its involvement is vital for promoting sustainable practices and regulations in seafood production. **They will be informed and consulted on MGF3.0 initiative and results.**
Members of Parliament	Policymakers & Regulators	Elected representatives can influence legislation and policy related to marine and fisheries management, making their support essential for advancing the objectives of the MGF3.0 project. **They will be informed and consulted on MGF3.0 initiative and results.**
Ministry of Tourism	Policymakers & Regulators	This ministry is key to promoting sustainable tourism practices that include responsible seafood consumption, which can enhance the project's outreach and impact. **They will be informed and consulted on MGF3.0 initiative and results.**
Department of Fisheries and	Policymakers & Regulators	This department is responsible for managing fisheries and marine resources, playing a

Stakeholder	Type	Relevance
Marine Research (Ministry of Agriculture, Rural Development and Environment)		critical role in the implementation of sustainable fishing practices and ensuring the health of marine ecosystems. **They will be informed and consulted on MGF3.0 initiative and results.**
Regional Development Agencies	Policymakers & Regulators	These agencies focus on the economic development of specific regions in Cyprus. Their role in the MGF3.0 project is essential for fostering local-level policy support and creating synergies between regional development strategies and sustainable seafood practices. **They will be informed and consulted on MGF3.0 initiative and results and will be invited to participate in co-creation workshops.**
Pedagogic Institute Cyprus	Formal & informal education organisations	Through its resources and training programmes, the Institute can support environmental education initiatives and raise awareness about sustainable practices in seafood consumption among educators and students alike. **It will be actively involved in co-creation workshops to facilitate the development of tailored educational content.**
Cyprus Food Museum	Formal & informal education organisations	The Cyprus Food Museum is dedicated to preserving and promoting the culinary heritage of Cyprus, with a special emphasis on local ingredients and sustainable food traditions. By engaging with the Museum, the project will leverage its cultural expertise to enhance public understanding of sustainable seafood. **The Museum will participate in co-creation workshops, offering insights into traditional practices and modern sustainable**

Stakeholder	Type	Relevance
		approaches that resonate with the local community.
Enalia Physis Environmental Research Centre	Scientific & Research Community	This organisation conducts research on marine and coastal ecosystems, contributing valuable scientific data and insights to support sustainable practices in fisheries and aquaculture. **This organisation aims to support the reframing of environmental and societal challenges and will be invited to participate in co-creation workshops.**
MER Research (Marine and Environmental Research)	Scientific & Research Community	Focused on marine science, this research entity provides expertise in oceanography and marine biology, essential for informing sustainable seafood initiatives and policies. **This organisation aims to support the reframing of environmental and societal challenges and will be invited to participate in co-creation workshops, particularly the first two.**
RIF (Research and Innovation Foundation)	Scientific & Research Community	The RIF promotes research and innovation in Cyprus, providing funding and support for projects like MGF3.0 that aim to enhance sustainability in marine resource management. **They will be informed and consulted on MGF3.0 initiative and results.**
UCY-OC (University of Cyprus - Oceanography Centre)	Scientific & Research Community	This academic centre focuses on marine research and education, offering expertise and scientific knowledge crucial for developing sustainable seafood practices and conducting outreach programmes. **This organisation aims to support the reframing of scientific and societal challenges and will be invited to participate in co-creation workshops, particularly the first two.**

Stakeholder	Type	Relevance
Professional Association of Cyprus Scientists and Fishermen Network	Scientific & Research Community	This network connects scientists and fishermen, facilitating collaboration to enhance sustainable fishing practices and promote knowledge sharing between industry and academia. **This organisation will be invited to participate in the co-creation workshops and the co-development of business models.**
University of Nicosia	Scientific & Research Community	As a higher education institution, the University of Nicosia contributes to research and education on sustainability, providing a platform for developing new ideas and practices in seafood consumption and management. **This organisation aims to support the reframing of scientific and societal challenges and will be invited to participate in co-creation workshops, particularly the first two.**
Cyprus University of Technology	Scientific & Research Community	This university conducts research in areas related to sustainability and innovation, helping to advance the goals of the MGF3.0 project through academic expertise and applied research. **This organisation will be invited to participate in co-creation workshops and co-development of business models.**
AKTH (Agricultural Research Institute of Cyprus)	Scientific & Research Community	The institute focuses on agricultural research, including aquaculture, providing essential insights into sustainable practices that can be integrated into the seafood value chain. **This organisation will be invited to participate in co-creation workshops and co-development of business models.**

Stakeholder	Type	Relevance
CSTI (Cyprus Sustainable Tourism Initiative)	Civil Society	CSTI promotes sustainable tourism practices in Cyprus, including responsible seafood consumption. Their involvement will help raise awareness among tourists and tourism-related businesses about sustainable marine practices. **This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation workshops.**
Association of Consumers	Civil Society	This association represents consumer interests, helping ensure that the seafood products promoted through the MGF3.0 project are safe, sustainable, and affordable for the public. Their input will be valuable in co-developing business models focused on consumer needs. **This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation workshops.**
Association of Nutritionists and Dietitians of Cyprus	Civil Society	This group provides expert insights into the nutritional aspects of seafood consumption. Their involvement will support the project's efforts to promote healthy and sustainable seafood diets among consumers, especially vulnerable groups. **This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation workshops.**
Environmental Associations	Civil Society	Various environmental groups in Cyprus focus on marine conservation and biodiversity. Their participation will support the MGF3.0 project in promoting eco-friendly seafood practices and raising awareness about marine sustainability.

Stakeholder	Type	Relevance
		This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation workshops.
Retail HORECA	Distributors & Retail	This group represents the retail and distribution network for the hospitality industry. Their participation in the MGF3.0 project is crucial for ensuring sustainable seafood practices are adopted by hotels, restaurants, and catering services, directly influencing consumer choices in the foodservice sector. **Organisations who fall under this focus aim to support the reframing of socio-cultural challenges and will be invited to participate in co-creation workshops.**
Supermarkets	Distributors & Retail	There are several large supermarket chains in Cyprus, distributing seafood to the public. Their involvement in the project can help promote sustainably sourced seafood, raise consumer awareness, and support responsible purchasing. **Supermarkets could support the reframing of socio-cultural challenges and will be invited to participate in co-creation workshops.**
Fish Market Chains and Independent Fish Markets	Distributors & Retail	There are several fish market chains as well as many independent fish markets in Cyprus which we can get them involved. Their participation will ensure that sustainable sourcing practices are adopted in the supply chain. **The organisations identified aim to support the reframing of socio-cultural challenges and will be invited to participate in the co-creation workshops.**

Stakeholder	Type	Relevance
Aquaculture Association	Producers	The aquaculture sector in Cyprus is a key part of primary agricultural production, demonstrating remarkable growth rates and producing high-quality export products. Their involvement will be crucial for implementing sustainable fishing and eco-friendly aquaculture practices. **The involvement of the association will support the reframing of socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Fishers' Associations	Producers	These associations represent local fishermen and their interests. Their participation is essential for integrating sustainable fishing practices into traditional fisheries and ensuring that local fishing communities benefit from eco-friendly approaches. **This organisation aims to support the reframing of socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Marine Aquaculture Companies	Producers	The Marine Aquaculture Companies contributes to the seafood value chain in Cyprus by cultivating fish in a controlled environment. Their involvement in the MGF3.0 project is important for promoting sustainable aquaculture practices and improving seafood supply chains. **This kind of organisations aim to support the reframing of socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Onshore Aquaculture Farms	Producers	Onshore aquaculture farms in Cyprus primarily focus on breeding various fish species and itis limited but plays a role in

Stakeholder	Type	Relevance
		freshwater species cultivation, particularly for trout farms in the Troodos mountain range[6]. **Getting onshore aquaculture farms involved it is important to support the reframing of socio-economic challenges and will be invited to participate in the co-creation and exploitation workshops.**
Pescetarian	Consumers	This group represents consumers who follow pescetarian and vegetarian diets, focusing on seafood (in the case of pescatarians) . Their involvement in the MGF3.0 project is important for understanding and addressing specific dietary preferences related to seafood consumption. They can provide insights into sustainable seafood choices, concerns over the environmental impact of seafood production, and preferences for alternatives, which will be essential for tailoring the project's offerings and engagement strategies. **This stakeholder group will support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**

[6] DFMR. *Aquaculture – Overview Cyprus Aquaculture*. Ministry of Agriculture, Rural Development and Environment. https://www.moa.gov.cy/aquaculture-cyprus

Early engagement strategy

Key messages for the main stakeholder groups are outlined to capture attention and engage them in co-creation. The strategy aims to foster initial behavioural changes through nudging and awareness, leveraging existing commercial partners of MGF3.0 in Cyprus, especially local fishmongers and restaurants, as well as CMMI's educational activities.

By engaging these stakeholders through tailored workshops and direct outreach, CMMI will promote the adoption of sustainable fishing practices that align with national efforts. This approach will not only raise awareness about the benefits of sustainable seafood but also create a sense of ownership and collaboration among participants, driving community support for the MGF3.0 initiative in Cyprus.

In the following text, initial ideas for stakeholder engagement are outlined that will be considered and aligned with WP5 objectives and planned activities:

Producers (small-scale fishers and aquaculture)

- **Key message**: "Adopt sustainable fishing and aquaculture practices to ensure long-term productivity, protect native species, and tackle invasive species."
- **Format**: Workshops on sustainable practices like selective fishing gear (fishing traps) to reduce bycatch, including the use of local invasive species like lionfish in the market.
- **Nudges**: Offer a "Mr.Goodfish" labelling for sustainable practices; mentorship from experienced fishers; subsidies for adopting new sustainable gear.

Distributors and processors

- **Key message**: "Sustainably sourced seafood enhances brand trust and meets growing consumer expectations for transparency."
- **Format**: Engage through local trade events and provide a self-assessment toolkit for sustainable sourcing practices.
- **Nudges**: Highlight seafood sustainability through "Mr.Goodfish" labels; support in promoting underused local species (e.g., Siganus luridus); help with marketing to tourists seeking authentic Cypriot cuisine.

Retailers (supermarkets, fish markets)

- **Key message**: "Sustainable seafood offers a competitive advantage in the Cypriot market, especially with rising tourist demand."

- **Format**: Provide training for staff on the importance of sustainability, promotional materials in stores, and offer QR codes linked to the Mr.Goodfish app for more transparency.
- **Nudges**: Labelling through "Mr.GoodFish"; recipe cards featuring local fish; price incentives for sustainably sourced fish.

Policymakers

- **Key message**: "Promote sustainable fishing and aquaculture through targeted policies, public awareness, and education."
- **Format**: Policy roundtables with fishers and industry stakeholders to promote dialogue on the future of Cyprus' fishing industry, particularly regarding invasive species and sustainable tourism.
- **Nudges**: Launch joint awareness campaigns; data-sharing from Mr.Goodfish on local species' stock levels to guide policy decisions.

Consumers

- **Key message**: "Choose sustainable, locally sourced seafood to support Cypriot fishers, protect marine ecosystems, and enjoy healthier, affordable options."
- **Format**: Public events in supermarkets, schools, and tourist locations; campaigns focusing on youth, especially to increase awareness of sustainable seafood consumption among younger generations.
- **Nudges**: Launch a local seafood recipe competition with prizes; interactive educational games for families through the Mr.GoodFish app.

3.1.4 Potential risks and mitigation measures for local/national engagement

Table 6 addresses the potential risks associated with local and national engagement efforts specifically within the Cyprus pilot of the MGF3.0 initiative. Engaging local communities and national stakeholders is critical for the success of the pilots, but it also presents various challenges.

Table 6. Risks and mitigation measures in Cyprus pilot

Risks	Mitigation measures
Lack of understanding and interest in MGF3.0 initiative from fishing and aquaculture professionals	Showcase level of commitment and reach by other Cyprus and European stakeholders and actors
Little consumer interest for changing habits towards local and sustainable consumption	Involve local and credible individuals and professionals who have capacity to reach people's hearts and minds (social media influences, famous restaurants and chefs, local public figures from research, education or policy sector) and raise awareness by exposing invasive sea species and other key environmental issues that are created through local and national seafood consumption
Language barriers occurred during co-creation activities	Pilot leads are trained in facilitation, stakeholder engagement and co-creation journeys (i.e. service design)
Insufficient engagement of young people and families	Create activities for families and young people, educating them on how to cook simple and fun meals with as less food waste as possible
Little interest for replicating/adopting co-created solutions	Keep all stakeholders informed and, in the loop, ensure they have the know-how on how to adapt solutions and apply them into their context. Keep open discussion with replication sites and learn at early stages what are similar issues so that replication sites can benefit as well.
Lack of basic knowledge concerning sustainable fishing and production among local citizens and fisherman communities	Fisherman communities and local citizens will be informed through easy-to-comprehend formats about sustainable fishing practices

3.2 France - Nausicaa

3.2.1 Context analysis

Location

The French pilot concerns the northern area of France, Nord/Pas-de-Calais, on the English Channel part of the Atlantic Ocean.

The fishing industry in a nutshell

France is one of the leading marine fishing nations in the EU, with the second-largest fleet capacity measured by vessel gross tonnage. it accounted for 15% of the EU's total fish catches, landing 517,000 tonnes valued at €1 billion. Despite its significance, the French fishing fleet has been steadily decreasing in size over the past decades. According to Ifremer, 4188 fishing vessels were registered with the Flotte de Peche Communautaire (FPC) in 2022. This represents a steep decline of 52% from the 8771 registered vessels in 1990. Most fishing boats are small in size with 23% being under 7m long and 39% having a size between 7-10m (Ifremer, 2024).

In 2022, 333 species were landed and marketed in mainland France. In the Atlantic, 49 species made up 95% of total volume, and 72 species in the Mediterranean. Sustainably fished stocks accounted for 56% of landings, up from 51% in 2021. Of these, 49% were in good health (e.g., scallops in the Channel, anglerfish in the Bay of Biscay), and 7% were recoverable stocks (e.g., bluefin tuna, whiting). Landings from overfished stocks were at 20%, such as sardine in the Northeast Atlantic, down from 42% in 2000. Collapsed stocks made up 2% of landings, like hake in the Mediterranean (Vermard & Ulrich, 2024).

France ranks second in Europe for shellfish farming, producing an average of 140,000 tonnes of seafood annually, with a turnover of 508 million euros. It is also the third largest producer of freshwater trout in Europe, with nearly 39,500 tonnes produced in 2019. Additionally, France is one of the world's top caviar producers, with an annual output of 43 tonnes. In recent years, the seaweed farming industry, particularly for spirulina, has experienced rapid growth (European Comission, 2023).

The fish and seafood consumption per capita is 33,7 kg. Freshness, price and national origins are the main purchase drivers. Salmon, cod and saithe were the more commonly consumed species in 2023 (FranceAgriMer, 2024)

Culture and history of fishing

Fishing has been a vital part of French coastal life, especially in regions like the Haut-de-France, Brittany, Normandy, and Provence, where it has sustained generations of families. Boulogne-sur-Mer is France's first fishing port and European leader of seafood products. Traditionally, France's fishing culture focused on small, artisanal vessels, particularly for species such as sardines, mackerel, and shellfish like mussels or oysters, which remain central to French cuisine. Today, most of the fishing vessels in established on the Atlantic, especially in Brittany, while the Mediterranean regions see a decline in fishing practices.

3.2.2 Co-creation challenges

As identified in the desk study the French fishing industry is an important economical factor but has declined over the last decades. Interviews conducted with local stakeholders have further contextualised the pilot challenges, particularly regarding economic challenges of the fishing industry and gaps in people's awareness about where their food is coming from.

Producer challenges: EU regulations, quotas and traceability

The European Commission has called for greater transparency in how EU Member States, including France, allocate fishing opportunities. Similarly, the European Parliament has advocated for public disclosure of these allocation methods, emphasising the need for fishing communities, regional authorities, and other relevant stakeholders to be involved in their development and implementation. The French Competition Authority has raised concerns about the lack of clarity in the allocation and management processes, particularly within Producer Organizations (POs). Several elements of the French allocation system highlight the opacity in both procedures and outcomes (Oceana and BLOOM Association., 2024). Furthermore, the interview with a representative from the auction in Boulogne-sur-Mer highlighted the tension between EU fishing quotas and the views of local producers on sustainable fishing. While most fishers understand that the health of their business depends on sustainable fishing so that future generations have enough to live from, their everyday observations often suggest more fish and seafood availability than permitted under quotas. Hence, the inflexible EU fishing quotas and what fishers perceive as available stocks make collaboration on sustainability difficult. Moreover, fishers are hesitant to take the initiative to change their practices and mainly wait for regulations before introducing new techniques. This is also due to fishing being a highly regulated sector in France and investment required to change practices may be considerable.

As mentioned by a French distributor, under EU regulations the auction must register each catch that comes in:"[…] from Monday to Saturday, six days a week, […]we transfer all the information[…]. Each box must have traceability on it to know where it was caught, the date, the name of the boat, which sort of engine was used etc. And each day we must transfer this information to FranceAgriMer, which is the name of the public institution that collects all the tracking." As a representative of a French research cluster pointed out, once the fish have been bought at auction, operators use different coding methods and software, or even carry out the process manually. This results in the use of different acronyms, barcodes and annotations. As a result, even important information is lost between the catch, the auction and the final sale to the consumer. The support for introducing a uniform system is low and likely to provoke resistance amongst some professionals, particularly fish traders and fishers "I think that if there were already a common system for reading and annotating products, it would be much simpler. But now, since everyone has established their own framework, changing that… well, they won't want to because it will put them at a disadvantage for a while until they get used to using the new system." as a distributor commented. In addition, collaboration between the various links in the fishing industry to identify the most common problems to improve data compliance and supply chain transparency needs to be improved. Improved traceability could ensure that only fish and seafood that have reached legal capture size, or even better, sexual maturity and reproduced already once are caught. may

Economic challenges to the fishing industry

The older generation of fishers tend to show higher scepticism about climate change, while younger generations take more steps to get sustainable training and show higher awareness. Nevertheless, it is hard to find young people who want to carry on with the fishing profession and the turnover of newcomers is often high.

Current local fishing practices still have many sustainability issues; however, some interview participants have also highlighted a growing interest in more responsible fishing amongst fishermen, e.g. more selectivity about gear and preference for traps and gillnets over bottom trawling. Moreover, Brexit and rising fuel costs have contributed to this mindset change as these solutions can be more cost-effective. Especially, because Brexit led to the loss of business for French and European professionals in some fishing zones meaning that many fisheries had to rethink their business. However, more environmentally friendly fishing techniques like line fishing often do not generate enough volume and money for fishers to live from to only implement them, as an oceanology and geosciences researcher commented.

The traceability of fish and seafood products is increasingly requested by consumers. Yet, the demands on local fisheries are much higher than on foreign counterparts as they often do not require environmental labelling and largely do not provide information on fishing methods, animal welfare, location of the catch or the conditions of aquacultures. The data on these factors is scarce, which reinforces uneven standards. In addition, aquaculture plays an increasingly important role in the aquatic products sector in France, which some coastal fishers see as a threat. However, aquaculture presents its own challenges directly linked to the living conditions of the species reared, their food and the environmental impact. Aquaculture is therefore a highly labour-intensive activity, requiring substantial and solid investment if it is to be part of a sustainable approach. The pilot, Boulogne-sur-Mer, has taken significant steps as a French fishing hub especially when it comes to processing fish on side, reducing food waste and introducing shorter supply changes. Should showcase these local successes in the case studies and facilitate peer exchanges to motivate others to follow suit and see benefits firsthand.

Consumer concerns

According to the interview findings and specially from mass retail, prices remain a high-priority factor when consumers make buying decisions. Many French households currently experience an economic squeeze and are very calculating when it comes to making purchases. Hence, fish often falls off the menu as people generally choose meat over fish to consume proteins. Despite these challenges, fish and seafood remain popular especially when consumers want to treat themselves. For example, scallops are making good sales, and it is easy to provide information about their quality and sourcing as they are usually from France. Consumers also prefer French products as they associate them with higher quality. Nevertheless, these preferences for a certain treat are another sustainability challenge, as people rarely experiment with different types of fish and seafood and tend to stick to what they are familiar with or already prefer. In the preliminary results of the survey, more than half of respondents 51% stated that they tried new fish or seafood species rarely or never. This increases the pressure on specific species while more sustainable choices are available. The whole supply chain is trying to meet this demand and is concentrating on a few major species: salmon, tuna, cod and prawns (which are mainly imported) according to Ifop survey for Le Marin and Ouest France in May 2024 (IFOP, 2024).

There is a growing concern amongst French consumers when it comes to the environmental impact of fishing and animal welfare. The French fleet has generally old boats which generate pollution. This highlights the importance of educating consumers about the work of fishers and the various methods they use, which can help consumers make more informed choices. Fishing for personal consumption and recreation is still common in the

coastal areas of northern France. However, even among recreational fishers, there are disparities. As an interviewed educator stated, lower-income individuals who fish from the coastline are subject to stricter checks by local authorities regarding their catches, while wealthier individuals who own boats often face less scrutiny.

Disconnect between food production and food consumption

It was mentioned in several interviews that a disconnect between what people find on their plates and where their food is coming from was observed. An educator reported that children would often attend workshops and educational events not knowing that the processed fish fingers they liked to eat were made of fish – the animals. This disconnect also leads to a lack of understanding of how to prepare fresh fish and seafood, as well as how to integrate types of fish beyond popular species like salmon.

Hence, a fundamental re-education of children and adults on how fish and seafood live, their role in the environment, the way they are fished and how they can be prepared and eaten as food, was seen as a vital entry point in changing people's consumption habits. Not only were fish and seafood seen as generally more expensive than meat, although prices depend on the seasonality and species, but they were also understood as harder to prepare despite a generally lower cooking time than meat. When talking about approaches to getting people to eat more fish and seafood, a representative from a non-profit organisation mentioned:" [F]or the past few years, instead of just focusing on the consumption of fish, we've shifted towards giving people the tools to know how to eat healthily at a lower cost." This everyday life approach and emphasis on building daily habits with an economic incentive of saving money can also be considered when shifting consumer behaviours toward sustainability.

3.2.3 Stakeholder mapping and engagement plan

For the French pilot, a total of 63 stakeholders have been identified to engage actively in MGF3.0 (see **Figure 9** and **Table 7**). This diverse network will facilitate a tailored approach to sustainable seafood practices, addressing factors such as accessibility of information, traceability, and purchase choices specific to the French market. The pilot will work with stakeholders to address consumer concerns about aquaculture, environmental impacts, and animal welfare in seafood production, ensuring project outcomes resonate with local preferences for taste, smell, and traditional cuisine. This engagement strategy aims to foster collaboration across sectors and deliver impactful, context-specific solutions for sustainable seafood in France.

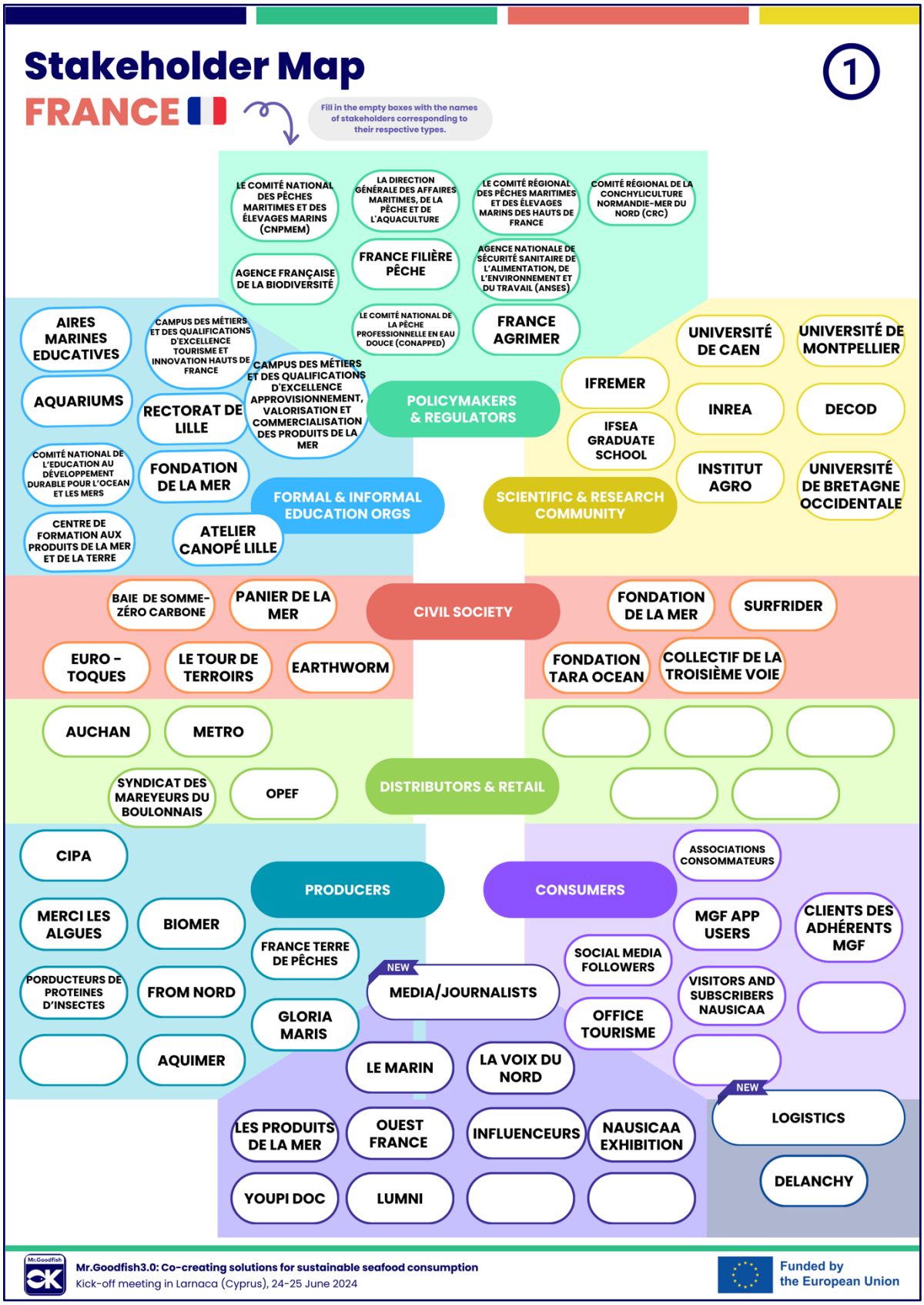

Figure 9. Mapped stakeholders of relevance for French pilot

Table 7. Relevant stakeholders identified for a pilot in France

Stakeholder	Type	Relevance
Campus des métiers et des qualifications d'excellence tourisme et innovation Hauts de France and Campus des métiers et des qualifications d'excellence approvisionnement, valorisation et commercialisation des produits de la mer	Formal & Informal Educational Organisation	A network of vocational institutions offering specialised training in various trades, including the fishing sector and HORECA. Nausicaa is already collaborating with those partners. **They will be invited to co-creation workshops and to collaborate on dissemination activities.**
Aires marines éducatives	Formal & Informal Educational Organisation	Educational marine areas that promote the conservation of marine biodiversity through community and pupil engagement. Nausicaá is used to welcome schools and classes involved in such projects and collaborates with teachers and educational authorities on a regular basis. It proposes educational workshops about responsible seafood consumption to schools[7]. It will be a good opportunity to meet teachers and pupils when they are in visit at Nausicaa or when they work with science communication team. **They will be informed to collaborate on dissemination activities.**
Aquariums	Formal & Informal Educational Organisation	Oceanopolis, Brest and Mareis, Etaples are key institutions in marine education and conservation. These aquariums serve as platforms for raising public awareness about

[7] Nausicaá's educational workshops: https://www.nausicaa.fr/fr/education/animations-pedagogiques/la-mer-quelle-richesse (Retrieved 29 October 2024).

Stakeholder	Type	Relevance
		marine ecosystems and sustainable practices in seafood consumption. **They will be informed and consulted on MGF3.0 initiative and results.**
Rectorat de Lille	Formal & Informal Educational Organisation	Nausicaá has established a partnership with this regional educational authority for Hauts de France, responsible for overseeing educational policies. **They will be informed and consulted on MGF3.0 initiative and results.**
Comité national de l'éducation au développement durable pour l'océan et les mers	Formal & Informal Educational Organisation	The National Committee on Education for Sustainable Development for the Ocean and the Seas aims to support the development of public policy on education for sustainable development in this field, to help pupils understand the major challenges facing the planet today. **They will be informed and consulted on MGF3.0 initiative and results.**
Centre de formation aux produits de la mer et de la terre – Boulogne sur Mer	Formal & Informal Educational Organisation	The purpose of this centre is to provide vocational training and consultancy services in response to the needs expressed by companies in the agri-food sector. **They will be invited to co-creation workshops and to collaborate on dissemination activities.**
Atelier Canopé Lille	Formal & Informal Educational Organisation	Réseau Canopé's mission is lifelong learning and the professional development of teachers. It helps them to adopt digital tools and environments. Ateliers Canopé provide regional training, resources, facilitation and events. They offer a range of

Stakeholder	Type	Relevance
		services tailored to the new challenges facing education. **They will be informed and consulted on MGF3.0 initiative and results.**
Fondation de la Mer	Formal & Informal Educational Organisation	The Fondation de la Mer was created by experts from the maritime world and civil society. It implements programmes to protect biodiversity, combat pollution, support research and innovation, mobilise businesses and raise awareness among young people and the public. Nausicaá already collaborates with this organisation. **They will be informed and consulted on MGF3.0 initiative and results.**
Le Comité national des pêches maritimes et des élevages marins	Policymakers & Regulators	The national Fisheries Committee represents and supports fishing professionals, offering governance and resource management. **CNPMEM aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Direction générale des affaires maritimes, de la pêche et de l'aquaculture	Policymakers & Regulators	The General Directorate for Maritime Affairs, Fisheries, and Aquaculture, responsible for policy and regulation of maritime industries. **They will be informed and consulted on MGF3.0 initiative and results.**
Comité régional des pêches maritimes et des élevages marins des Hauts de France	Policymakers & Regulators	The regional Hauts de France Fisheries Committee represents and supports fishing professionals, offering governance and resource management.

Stakeholder	Type	Relevance
		This committee aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.
L'Office français de la biodiversité	Policymakers & Regulators	The French Office for Biodiversity is a public institution dedicated to the protection and restoration of biodiversity in Metropolitan France and its Overseas Territories, under the supervision of the ministries responsible for Ecology and Agriculture & Food. **It aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
France Filière Pêche	Policymakers & Regulators	An inter-professional organisation that supports the French fishing sector, from sustainable fishing practices to product distribution. **It aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail - ANSES	Policymakers & Regulators	The National Agency for Food, Environmental, and Occupational Health Safety, responsible for food safety regulations, including seafood. **It aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Comité national de la pêche professionnelle en eau douce - CONAPPEP	Policymakers & Regulators	The National Committee for Professional Freshwater Fishing (CONAPPEP) brings together the ten

Stakeholder	Type	Relevance
		approved associations of professional freshwater fishermen. **They will be informed and consulted on MGF3.0 initiative and results.**
France Agrimer	Policymakers & Regulators	A national agency managing agricultural and seafood markets, supporting sustainable food production and distribution. **They will be informed and consulted on MGF3.0 initiative and results.**
Université de Caen	Scientific & Research Community	The University of Caen offers programmes in marine biology, aquaculture, and oceanography, supporting research in the marine sector. **They will be informed and consulted on MGF3.0 initiative and results.**
UMR MARBEC	Scientific & Research Community	Marine Biodiversity, Exploitation, and Conservation Research Centre of the Montpelier University focusing on the sustainable management of marine resources. **They will be informed and consulted on MGF3.0 initiative and results.**
IFREMER	Scientific & Research Community	The French Research Institute for Exploitation of the Sea, focused on oceanographic research, fisheries, and marine ecosystems. **They will be informed and consulted on MGF3.0 initiative and results and will be invited to participate in co-creation workshops.**
INREA	Scientific & Research Community	The French National Research Institute for Agriculture, Food, and Environment, conducting research in sustainable food production.

Stakeholder	Type	Relevance
		This organisation aims to support the reframing of scientific and societal challenges and will be invited to participate in co-creation workshops.
DECOD	Scientific & Research Community	A research group working on sustainable development in marine and coastal ecosystems, often collaborating with IFREMER. **They will be informed and consulted on MGF3.0 initiative and results.**
IFSEA- ULCO	Scientific & Research Community	A graduate school at Université du Littoral Côte d'Opale, focusing on maritime and fisheries sectors. **This project aims to support the reframing of and scientific societal challenges and will be invited to participate in co-creation exploitation workshops and the co-development of dissemination activities business models.**
Institut Agro	Scientific & Research Community	The Institut Agro is a higher education and research establishment in the fields of food, agriculture, the environment and landscape, which carries out its activities in close collaboration with research bodies, universities, high schools and players in the socio-economic world (public and private) in France and around the world. **They will be informed and consulted on MGF3.0 initiative and results.**
Université de Bretagne occidentale / Institut européen de la mer	Scientific & Research Community	The Institut Universitaire Européen de la Mer is a multi-disciplinary organisation in the field of marine and coastal sciences, the activities of which are centred around 3 missions: research, training and observation.

Stakeholder	Type	Relevance
		This organisation aims to support the reframing of scientific and societal challenges and will be invited to participate in co-creation workshops.
Baie de Somme-Zéro Carbone	Civil Society	A regional initiative aimed at reducing the carbon footprint in the Baie de Somme area, often linked to sustainable fishing practices. **This organisation aims to support the reframing of touristic and societal challenges and will be invited to participate in co-creation workshops and dissemination activities.**
Les Paniers de la Mer	Civil Society	A social integration project that collects unsold fish products and redistributes them to people in need, while raising awareness about sustainable consumption. **This organisation aims to support the reframing of social and societal challenges and will be invited to participate in co-creation workshops and dissemination activities**
EURO -TOQUES	Civil Society	A network of chefs promoting sustainable and quality food production, including seafood sourcing. **This organisation aims to support the reframing of gastronomic challenges and will be invited to participate in co-creation workshops and dissemination activities.**
Le Tour de Terroirs	Civil Society	An initiative promoting local and traditional French products, including sustainable seafood, through events and outreach. **This organisation aims to support the reframing of gastronomic challenges and will be invited to participate in**

Stakeholder	Type	Relevance
		co-creation workshops and dissemination activities.
Earthworm	Civil Society	An organisation focused on sustainable sourcing, supporting initiatives related to sustainable seafood and ocean conservation. **This organisation aims to support the reframing of scientific and societal challenges and will be invited to participate in co-creation workshops and dissemination activities.**
Fondation de la Mer	Civil Society	A foundation that supports projects protecting marine environments and promotes awareness of ocean conservation. **They will be informed and consulted on MGF3.0 initiative and results.**
Surfrider	Civil Society	An environmental NGO focused on protecting oceans, beaches, and coastlines, advocating for sustainable fishing practices. **This organisation will be invited to participate in co-creation workshops and dissemination activities.**
Fondation Tara Océan	Civil Society	France's first publicly recognised foundation dedicated to the Ocean **They will be informed and consulted on MGF3.0 initiative and results.**
Collectif de la Troisième voie agricole	Civil Society	This collective brings together five players in French agriculture with a commitment to CSR (Mr.Goodfish represents aquatic products in this group). The ambition is to highlight responsible agriculture production patterns, and convince citizens, society and institutions that responsible and sustainable

Stakeholder	Type	Relevance
		agriculture is not only possible, but that it already exists. **They will be informed and consulted on MGF3.0 initiative and results.**
Auchan	Distributors & Retail	A major French supermarket chain involved in sustainable seafood sourcing and distribution practices. Already involved in Mr.Goodfish. **This organisation will be invited to participate in co-creation workshops and dissemination activities.**
Metro	Distributors & Retail	A wholesale distributor that works with professionals in the food industry, promoting sustainable seafood and responsible fishing practices. Already involved in Mr.Goodfish . **This organisation will be invited to participate in co-creation workshops and dissemination activities.**
Organisation des Poissonniers Ecaillers de France - OPEF	Distributors & Retail	The OPEF defines itself as the only organisation representing employers in the fish and shellfish trade and the only body authorised to negotiate changes to agreements and regulations in the sector. **This organisation will be invited to participate in co-creation workshops and dissemination activities.**
Syndicat de s Mareyeurs du Boulonnais	Distributors & Retail	Founded in 1946, the Syndicat Général des Mareyeurs de Boulogne-sur-Mer now represents almost all the seafood businesses in the Boulogne-sur-Mer area, i.e. more than 60 companies. **This organisation will be invited to participate in co-creation workshops.**

Stakeholder	Type	Relevance
Comité Interprofessionnel des Produits de l'Aquaculture	Producers	The Interprofessional Committee for Aquaculture Products promotes the sustainable development of the aquaculture sector. **This organisation will be invited to participate in co-creation workshops and dissemination activities.**
Biomer	Producers	This natural marine-based product supplier is involved in biotechnological solutions related to the marine environment or seafood. **They will be informed and consulted on MGF3.0 initiative and results.**
Insect protein producers for aquaculture	Producers	An educational or research organisation focusing on the technical and scientific aspects of the fishing industry. **They will be informed and consulted on MGF3.0 initiative and results.**
France Terre de Pêches and FROM Nord	Producers	These producer organisations bring together fishing companies that have in common a daily commitment to the sea, and through fishing and its trades, for the maritime sovereignty of France and food security. **These organisations will be invited to participate in co-creation workshops and dissemination activities**
Gloria Maris	Producers	Gloria Maris Group promotes sustainable aquaculture, on sites in Corsica, Noirmoutier and Gravelines. **This organisation will be invited to participate in co-creation workshops.**
Aquimer	Competitiveness Cluster used to work with producers	Aquimer supports companies in their innovation and development projects (search for scientific, technical, industrial partners, fund raising, and

Stakeholder	Type	Relevance
		marketing new products, services and processes). **This organisation will be invited to participate in co-creation workshops.**
Consumer associations	Consumers	Consumer Organisation working to protect consumer rights, including food safety and sustainability. **These organisations will be invited to participate in co-creation workshops and dissemination activities.**
Mr.Goodfish app users	Consumers	Consumers using the current Mr. Goodfish app. **They will be involved in providing feedback about the current app and in the app upgrading process.**
Mr.Goodfish social media followers	Consumers	Subscribers to current social media dedicated to Mr.Goodfish: FaceBook, Instagram, Twitter/X, LinkedIn **They will be engaged thanks to new information, updates on the programme and events.**
Nausicaá visitors and subscribers	Consumers	900K visitors/year **Visitors of Nausicaá will be involved in information sessions, events or workshops and other awareness raising activities about Mr.goodfish3.0.**
Tourist offices	Consumers	Tourist offices, places where tourists can get information about what to see and do, in particular in coastal regions can be good relays of the Mr.Goodfish 3.0 activities and the app. **They will be informed and consulted on the Mr.Goodfish3.0 project media products and results and can help in dissemination activities.**

Stakeholder	Type	Relevance
Members of the current Mr.Goodfish programme	Consumers	Members of the current Mr.Goodfish programme are a solid base for surveys the pilot workshops and awareness raising activities. **They will be informed and consulted on Mr.Goodfish3.0 project and results and invited to help in dissemination activities**
Le Marin	Media/Journalists	A specialised French publication dedicated to the maritime industry, providing news and updates about fisheries, shipping, and ocean policy. **They will be informed and consulted on Mr.Goodfish3.0 project and results and asked to help in dissemination activities.**
La Voix du Nord	Media/Journalists	A regional newspaper in northern France. **They will be informed and consulted on Mr.Goodfish3.0 project and results and asked to help in dissemination activities.**
Les Produits de la Mer	Media/Journalists	A publication or organisation dedicated to promoting and supporting seafood products, focusing on the fishing industry, distribution, and sustainability. **They will be informed and consulted on Mr.Goodfish3.0 project and results and asked to help in dissemination activities.**
Ouest France	Media/Journalists	One of the largest regional newspapers in France. **They will be informed and consulted on Mr.Goodfish3.0 project and results and asked to help in dissemination activities**

Stakeholder	Type	Relevance
Nausicaá Exhibition	Media/Journalists	A permanent exhibition about the current Mr.Goodfish programme is proposed in Nausicaá as part of the visitor main path. **The exhibition is a means to promote the project and the app .**
Youpi doc and Lumni	Media/Journalists	Nausicaá has already collaborated with these two media outlets addressing the youth. **They will be informed and consulted on Mr.Goodfish3.0 project and results and asked to help in dissemination activities.**
Food Influencers	Media/Journalists	Collaborations with food influencers can carry the message of Mr.Goodfish to a younger and more online audience. **They will be informed and consulted on Mr.Goodfish3.0 project and results and asked to help in dissemination activities.**
Delanchy	Logistics	A logistics and transportation company specialising in the distribution of fresh and frozen goods, including seafood, with a focus on sustainability. **This organisation will be invited to participate in co-creation workshops.**

Early engagement strategies

The early engagement strategy is a starting point for establishing collaborations in the pilot sites and proposes specific engagement formats. It outlines the key messages for the main stakeholder groups identified. These messages are designed to attract people's attention to the project and involvement them in the co-creation process. The strategy also intends to introduce first behavioural changes amongst stakeholders through nudging and awareness raising.

The strategy also builds on involving pre-existing commercial partners of the Mr.Goodfish initiative, particularly on the side of distributors like Auchan, local fishmongers and restaurants. It will also build on Nausicaá's educational activities of the project.

In the following text, initial ideas for stakeholder engagement are outlined that will be considered and aligned with WP5 objectives and planned activities:

Producers

- **Key message:** "Continue to adopt sustainable fishing practices for long-term business health "
- **Format:** sustain peer exchanges and sharing of best practices in the supply chain (through encounters) through online community groups (e.g. WhatsApp community); enhance guidance on branding and promoting their existing sustainable practices, popularising technical aspects related to different sustainable fishing techniques to emphasise stock preservation and attract environmentally conscious consumers.
- **Nudges:** Develop a mentoring system; provide Mr.Goodfish label; Access Mr.Goodfish3.0 community and database; network with potential partnership/business leads

Distributors

- **Key message**: "Offering sustainable seafood is key to meeting consumer demand and building trust. Supporting traceability has economic benefits"
- **Format: D**iscount schemes for customers, self-assessment of status quo, display information in shop or at market stand (inc. QR-codes,, discount schemes); Training of distributor staff, either onsite or e-learning.
- **Nudges:** Advocate to introduce loyalty cards and discounts for customers, provide Mr GoodFish label; online self-assessment quiz through Mr.Goodfish3.0 website or app

Policymakers

- **Key message:** "Collaboration and clarity are crucial for a sustainable future."
- **Format:** Multi-stakeholder roundtables, campaign partnerships, simplified reporting processes
- **Nudges:** Advocate for incentive programmes that can reward producers and fishers who adopt traceable digital systems for their catches, offer further collaboration through ongoing EU and national initiative and campaigns

Consumers

- **Key message:** "Support the local economy and sustainable fishing with every purchase."
- **Format:** educational events; cooking workshops; recipes; excursions (from ocean to plate tours)

- **Nudges:** use “pledge cards at events”, "sustainable seafood challenge" where participants share their dishes on social media; discounts for food at end of ocean to plate tours to connect to local distributors

3.2.4 Potential risks and mitigation measures for local/national engagement

Table 8 addresses the potential risks associated with local and national engagement efforts specifically within the French pilot of the MGF3.0 initiative. Engaging local communities and national stakeholders is critical for the success of the pilots, but it also presents various challenges.

Table 8. Risks and mitigation measures in French pilot

Risks	Mitigation measures
Lack of trust in Mr.Goodfish initiative from fishing and aquaculture professionals	Testimonials from long-time French partners
Lack of trust from consumers, perception of Mr.Goodfish as “just another label”	Increase communication efforts and transparency around the labelling process
Language barriers for co-creation activities	Train local partners in facilitation
Consumers’ reduced purchasing power make fish a luxury good	Create recipes that value every part of a fish for creating several dishes, making it a good investment
Little engagement of young generations	Create playful activities for children and teenagers, teach young adults to cook and optimising fish parts
Little interest for replicating/adopting co-created solutions	Engage with potential adopters early in the process, provide them with international visibility

3.3 Norway - NNV

3.3.1 Context analysis

Location

The Norwegian pilot concerns the coastal areas in Northern Norway, especially in Tromsø, on the Arctic Ocean.

The fishing industry in a nutshell

Norway is a lead exporter of seafood (2022: seafood exports worth; approx. 12.8 billion €), with EU Member States being the main client (7 out of 10 top markets in 2022 were EU countries) and salmon accounting for 71% of the total value of all seafood exports. 2023 was a record year, with seafood exports worth NOK 172 billion (approx. 14.5 billion €). The weak Norwegian krone, coupled with general price inflation in global markets, pushed the export value to unprecedented levels, despite the quotas for some species seeing an important decrease (e.g. 20% for cod) (Sørli, 2024).

In parallel, aquaculture has increased steeply since 1970. The number of fish farms grew substantially, providing jobs to local communities. In 2022, the production of salmon and trout was 99% of the country's total fish and seafood production both in terms of volume and value. The most important fisheries today are those for cod (coastal and high seas), herring, and mackerel. Included in the cod fisheries are also haddock and saithe (Norges Råfisklag, 2024).

In 2022, fish and seafood consumption in Norway averaged 18.96 kg per capita, reflecting an almost 11% decline compared to 2003. The primary factor behind this drop has been the rising cost of seafood products, which has made them less accessible to consumers, according to data from the Norwegian Seafood Council. According to the Norwegian Seafood Research Fund, the loss of the MSC certification for coastal cod in 2021 did not affect prices on the market *(*Johansen*, 2023)*. Over 90% of the country's fishing fleet are vessels below 15 meters, employing between 1 and 3 people (Jensen, 2023).

Culture and history of fishing

The fishing sector in Norway has a deep-rooted history, playing a vital role in both its economy and culture. By the early 20th century, Norway's fishing industry was further formalized with the creation of institutions like the Institute of Marine Research in 1900, which paved the way for sustainable fishing practices.

Key milestones include the rise of the herring industry in the mid-20th century, followed by the development of mackerel and greyfish fisheries. During the "herring adventure" in the 1940s and 1950s, many coastal towns, such as Måløy, saw a boom in fishing activities and infrastructure development. Even when herring stocks declined in the 1960s, Norway adapted by focusing on new species and innovating with modern technologies like freezing and processing facilities, helping sustain the industry's global competitiveness.

Norway's commitment to sustainability emerged in the late 1980s when it became one of the first nations to enforce a discard ban and implement quota systems to protect fish stocks.

The Saami indigenous communities are most engaged in small-scale, coastal fisheries, which play a crucial role in their subsistence and cultural practices. They primarily fish for cod, salmon, and other coastal species. Saami fishing rights have been a subject of political discussion and legal battles, particularly regarding access to coastal areas and the protection of traditional fishing grounds from overfishing by large commercial fleets. In recent years, the Norwegian government has recognised Saami fishing rights through agreements that acknowledge their cultural connection to marine resources. This includes the establishment of quotas and protections.

Because of its geographical position, Norway faces high geopolitical stakes in the management of stocks, which requires close cooperation with Russia and the EU. Norway and Russia share responsibility for managing cod, haddock, and capelin stocks in the Barents Sea. The joint management of these resources is overseen by the Joint Norwegian-Russian Fisheries Commission, which sets annual quotas. However, rising tensions, particularly following Russia's invasion of Ukraine, have complicated this cooperation. The war in Ukraine led also to sanctions on Russia, which influenced trade in both directions.

Following the UK's exit from the European Union, North Sea agreements must be negotiated on a tripartite basis between Norway, the EU, and the UK. In the Scandinavian country's case, this becomes particularly important when managing North Sea cod and herring. Moreover, fishing restrictions, particularly on salmon, affect Saami's communities and their traditional fishing rights in the Arctic region.

A substantial quota reduction of 25-30% for white fish species like cod, pollock, and haddock is anticipated for 2025. The Norwegian Fishermen's Association views this as particularly concerning, citing potential negative impacts on both employment and profitability within the industry (Sørli, 2024).

The traceability of wild-caught fish is quite advanced in Norway. Since 2022, all Norwegian fishing vessels over 11 meters in length are required to use electronic systems to report their activities (Viken Strand & Thakur, 2022) and vessels log and report quite extensive data electronically. This includes the date and time of the catch, geographic coordinates,

quantities of fish caught, the types of species and the used fishing gear, allowing authorities to track fish from capture to market. This information is publicly available to anyone with a Norwegian IP address.[8] Additionally, blockchain technology is increasingly used to ensure transparency, prevent illegal fishing, and meet regulatory requirements, improving both supply chain management and consumer confidence in sustainable seafood products. (*TRACE4EU Seafood Tracing - EBSI -*, 2024). Nevertheless, challenges remain as limited information is shared between fishing vessels and processors on the quality of the catch (Viken Strand & Thakur, 2022). Another implication of the high availability of digital tools and mapping information is that fishing professionals can make informed decisions when selecting fishing sites. As reported by a fisherman in an interview, "Tools such as Barentswatch, landing information, catch data and various other tools that we have today mean that we can go directly to the places we consider to have the best chance of catching fish, which means that we can operate in an appropriate way both financially and environmentally."

In contrast to the other two pilots, the media landscape in Norway is already over-saturated with sustainability messages about fish and seafood. It will be crucial to communicate the importance of Mr.Goodfish and its cross-European reach to distinguish this project from a similar Norwegian project called Godfisk. Messaging about the wider European scope of Mr.Goodfish3.0 could also highlight Norway's geographical context which requires close cooperation with Europe to protect its fish stocks.

3.3.2 Co-creation challenges

Based on desktop research and interviews with local stakeholders, the following key challenges for co-creation in the Norwegian pilot were identified.

Environmental concerns caused by aquaculture

Salmon lice are a threat to fish in aquaculture and have a wider environmental impact on wild species. Most salmon farming occurs in open cages where salmon lice and other parasites can easily transfer from farmed to wild fish. The significant increase in available hosts along the coast has resulted in a higher prevalence of salmon lice among wild salmonids, posing a challenge to sustainable growth within the aquaculture industry. To mitigate the impact of lice on wild fish populations, the government has implemented

[8] The information can be accessed through ***https://www.rafisklaget.no/leveranseopplysninger***.

regulations to limit the number of salmon lice on farmed fish. Nevertheless, as mentioned in the interview with an ecology researcher, treatments to prevent farmed fish are also having a wider impact on the coastal environment. Chemicals used to treat farmed salmon with lice are sinking to the bottom of the sea in the form of leftover feed and faeces, where they attack wild crustaceans.

Apart from the economic losses caused by the salmon lice, the treatments raise questions about the environmental impact of farmed fish and animal welfare, which impedes the wider acceptance of these products. Norwegian authorities are conducting an ongoing assessment of new solutions like semi-closed pens for fish farming or growing marine worms to dispose of aquacultural waste. These factors have led to increasing concerns around locally farmed fish in Norway, and Norwegian salmon production has become a hotly debated contentious topic in local and national media, and within the public sphere.

As pointed out by a marine researcher, who compared her current experiences to a few years ago:

"[…] now it's not uncommon for Norwegians to say they don't want to eat farmed salmon. Whereas when I first came [here], I think it would have been very unusual to hear a Norwegian say that. And that's because of an increase in awareness of many of these environmental challenges."

Consumer habits

Campaigns around sustainability have significantly increased in Norway and are commonly found (e.g. see Goodfisk.no; smakavkysten.no; fiskesprell.no). Nevertheless, some interviews showed scepticism towards labels like MSC and ASC, although they're commonly known. Consumers are generally more cautious of products that promise sustainability and can see them as green or blue washing. In the case of ASC, consumers are wary of the environmental impacts of farmed fish on the environment. While the market demands better labelling, particularly ASC's salmon standard is perceived as too weak. This even results in cases where salmon farmed under ASC-certification standards is not labelled as such for sale. According to Gulbrandsen et al., less than 15% of ASC-certified salmon is sold with the ASC label (2022).

While Norwegian consumers expect distributors to provide more sustainable options, this does not necessarily translate into more sustainable consumer choices. As a representative from the Seafood Council stated: "In terms of importance among consumers, [Norway] has always [been] one of the worst countries. Sustainability is not on the top […]of the agenda of the average consumer in Norway, unfortunately." Interestingly, several interviewees

reported a high level of trust by consumers in Norwegian food systems, which may partly explain why consumers see sustainability as a lesser priority, since, for better or for worse, sustainability is "taken care of" through institutions and regulatory frameworks.

Recreational and subsistence fishing are popular in Northern Norway, often supplementing store-bought foods. Thus, large campaigns in supermarkets might be less effective and instead, a personally experienced decrease in the availability of certain species like cod, could be leveraged for achieving behavioural changes and incentivise people to actively participate in sustainability campaigning. Moreover, communication should underline the cultural significance of fishing and increase local consumption instead of the current economic emphasis on exports.

In addition, a representative from the Norwegian Seafood Council pointed out that initiatives to increase seafood in Norway have been met with mixed results. However, several interviewees pointed out that following food trends, especially amongst younger generations could increase interest, as an ecology researcher explained: "The older generations are better, but we're seeing the youngest one, the younger generations eat less. Sushi, helped a lot, and it's a good source for the younger generations to eat more seafood."

Moreover, a more direct engagement and learning about nature and the local environment was highlighted in several interviews to increase the interest and understanding of food systems like fishing. This education is encouraged from an early age and should be part of home life as well as public education starting from nursery. As one educator pointed out, toddlers as young as two can be taught about sustainability – the key is to modify the message to their learning abilities and to teach actionable, age-appropriate habits (i.e. saving leftovers).

Decreasing quotas and loss of MSC certifications

Norway lost its Marine Stewardship Council (MSC) certification for parts of its Northeast Arctic (NEA) cod and haddock fisheries primarily due to issues related to coastal cod, a distinct and vulnerable stock. The loss of certification was attributed to Norway's inability to meet MSC requirements concerning the coastal cod which is often caught as bycatch in the inshore NEA cod fishery (Nordøy Snellingen, 2021). Over the past 20 years, Norway has experienced significant fluctuations in its cod fishing quotas, primarily due to changes in the stock levels of Northeast Arctic (NEA) cod. After having relatively high quotas, between 2021 and 2024 the quota for cod was reduced by 20% annually. Similarly, haddock quotas will see a decline of 16% for 2025 (McBride, 2024). One producer expressed concerns about the reduction in quotas for fishing trawlers and regarded the regulatory framework as 'missing the big picture' especially with regards to innovation. In Norway, a pro-small-boats

discourse is often found, but big vessels are appealing to young staff as they are safer and help individuals to spend less time at sea. This interest in innovation has led many fishers to invest in new boats and equipment when quotas were higher. Today, many face debts and are unable to return the same profits as when quotas were higher.

3.3.3 Stakeholder mapping and engagement plan

For the Norwegian pilot, a total of 71 stakeholders have been identified to actively engage in the MGF3.0 initiative (see **Figure 10** and **Table 9**). They will be invited to think together critically regarding sustainability, particularly in addressing the often-conflicting media messages surrounding seafood consumption, such as the debate over "eat seafood" versus "eat less fish." This collaborative approach will ensure that project activities are tailored to Norway's specific context, driving impactful solutions for sustainable seafood practices and enhancing public understanding amidst a saturated media landscape.

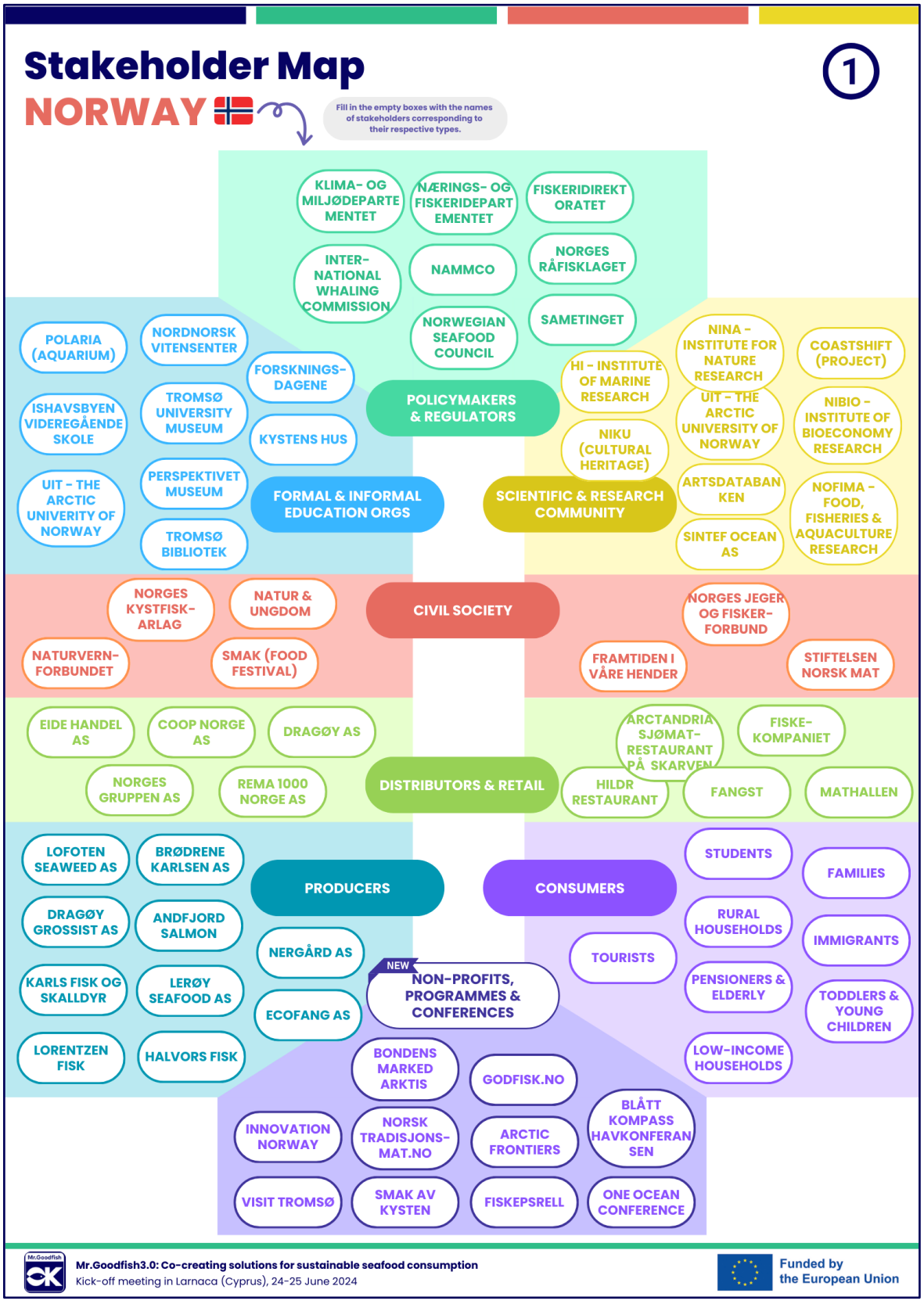

Figure 10. Mapped stakeholders of relevance for Norwegian pilot

Table 9. Relevant stakeholders identified for a pilot in Norway

Stakeholder	Type	Relevance
Klima- og miljødepartementet	Policymakers & regulators	Norwegian Ministry of Climate and Environment. **They will be informed and consulted on MGF3.0 initiative and results.**
Nærings- og fiskeridepartementet	Policymakers & regulators	Norwegian Ministry of Trade, Industry, and Fisheries. **They will be informed and consulted on MGF3.0 initiative and results.**
Fiskeridirektoratet	Policymakers & regulators	Norwegian Directorate of Fisheries, it operates under the Norwegian Ministry of Trade, Industry and Fisheries. **They will be informed and consulted on MGF3.0 initiative and results.**
Sametinget	Policymakers & regulators	The Sámi Parliament is a democratically elected body representing the Sámi people, that addresses their political, cultural, and social interests. It operates independently, sets its own priorities, and is the main partner for the Norwegian government on Sámi-related policies. NNV has previously collaborated with Sametinget. **This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
International Whaling Commission	Policymakers & regulators	Oversees the conservation and management of whale populations and regulates the whaling industry. **They will be informed and consulted on MGF3.0 initiative and results.**
NAMMCO	Policymakers & regulators	The North Atlantic Marine Mammal Commission is an international organization promoting the sustainable management and conservation of marine mammals in the

Stakeholder	Type	Relevance
		North Atlantic. Its member countries—Norway, Iceland, Greenland, and the Faroe Islands—focus on responsible hunting practices. NNV has an ongoing collaborative relationship with NAMMCO. **NAMMCO aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Norges Råfisklaget	Policymakers & regulators	The Norwegian Fishermen's Sales Organization for Fresh Fish is responsible for managing the first-hand sale of fresh fish and seafood, acting as a marketplace regulator and ensuring fair trade between fishermen and buyers, as well as overseeing quality, pricing, and sustainability standards. NNV has an ongoing collaborative relationship with Norges Råfisklaget. A representative of Norges Råfisklaget participated in a pilot interview as part of Task 3.1. **Norges Råfisklaget aims to support the reframing of socio-economic and socio-cultural challenges and will be invited to participate in co-creation workshops.**
Norwegian Seafood Council	Policymakers & regulators	Government agency responsible for promoting and marketing Norwegian seafood products both domestically and internationally. A representative of Norwegian Seafood Council participated in a pilot interview as part of Task 3.1. **The Norwegian Seafood Council aims to support the reframing of socio-economic and socio-cultural challenges and will be invited to participate in co-creation workshops.**

Stakeholder	Type	Relevance
Polaria	Local formal and informal education organisations	Aquarium in Tromsø. NNV has an ongoing collaborative relationship with Polaria. **Polaria aims to support the reframing of socio-cultural and scientific challenges and will be invited to participate in the co-development of dissemination activities.**
Nordnorsk vitensenter	Local formal and informal education organisations	The Science Centre of Northern Norway, linked third party and active in the project, is an educational and interactive science centre located in Tromsø. **Nordnorsk vitensenter is the pilot lead for Tromsø.**
Ishavsbyen videregående skole	Local formal and informal education organisations	Vocational public secondary school (for pupils ages 16-19) with a study track in restaurant and food studies. NNV has previously collaborated with Ishavsbyen VGS on projects. **Ishavsbyen VGS aims to support the reframing of socio-economic and socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Tromsø University Museum	Local formal and informal education organisations	The oldest scientific institution in Northern Norway, it is part of the Arctic University of Norway. The museum focuses on the natural and cultural history of Northern Norway and the Arctic region. NNV has previously collaborated with Tromsø University Museum on projects. **TMU aims to support the reframing of socio-cultural and scientific challenges and will be invited to participate in the co-development of dissemination activities.**
UiT - The Arctic University of Norway	Local formal and informal education	Public research university. It focuses on issues related to the Arctic environment,

Stakeholder	Type	Relevance
	organisations + scientific and research community	climate change, indigenous studies, and sustainable development. NNV has an ongoing collaborative relationship with UiT – The Arctic University of Norway. A researcher from UiT participated in a pilot interview as part of Task 3.1. **UiT aims to support the reframing of socio-economic, socio-cultural and scientific challenges and will be invited to participate in co-creation workshops.**
Kystens Hus	Local formal and informal education organisations	Maritime-focused centre, it serves as a hub for the seafood industry, marine research, and coastal culture, aiming to promote sustainable development. NNV has previously collaborated with Kystenshus on projects. **They will be informed and consulted on MGF3.0 initiative and results. Some individual organisations located in Kystens Hus will participate in co-creation.**
Perspektivet Museum	Local formal and informal education organisations	Cultural history museum - owners of a summer-opened exhibition titled "In Cod We Trust" located in a historical boat house. NNV has previously collaborated with Perspektivet Museum on projects. **This organisation will be invited to participate in the co-development of dissemination activities.**
Forskningsdagene	National formal and informal education organisations	The National Science Days is an annual science festival held across Norway. NNV has an ongoing collaborative relationship with Forskningsdagene. **They will be informed and consulted on MGF3.0 initiative and results; they will be invited to collaborate on dissemination activities.**

Stakeholder	Type	Relevance
Tromsø bibliotek	Local formal and informal education organisations	Main public library. NNV has an ongoing collaborative relationship with Tromsø bibliotek. **They will be invited to collaborate on dissemination activities.**
Havforskningsinstituttet – Norwegian Institute of Marine Research	Scientific and research community	Norway's leading marine research institute, focused on studying marine ecosystems, fish stocks, and the impacts of human activities on the oceans. It provides scientific advice to ensure sustainable fisheries, aquaculture, and marine resource management. NNV has previously collaborated with the Norwegian Institute of Marine Research on projects. A researcher from HI participated in a pilot interview as part of Task 3.1. **HI aims to support the of scientific and societal challenges and will be invited to participate in co-creation and exploitation workshops.**
NINA - Institute for Nature Research	Scientific and research community	Focuses on the study and conservation of natural ecosystems, biodiversity, and sustainable resource management. NNV has previously collaborated with NINA on projects. **They will be informed and consulted on MGF3.0 initiative and results.**
CoastShift (Project)	Scientific and research community	CoastShift (Tromsø-based) project aims to optimize sustainable food production along by integrating Blue-growth industries and agriculture, creating synergies between land and sea while minimizing ecosystem impact. A researcher representing CoastShift participated in a pilot interview as part of Task 3.1. **This project aims to support the reframing of and scientific societal challenges and**

Stakeholder	Type	Relevance
		will be invited to participate in co-creation exploitation workshops and the co-development of dissemination activities business models.
NIKU (Cultural Heritage)	Scientific and research community	Norwegian Institute for Cultural Heritage Research **NIKU aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation exploitation workshops.**
NOFIMA - Food, Fisheries & Aquaculture Research	Scientific and research community	Tromsø-based research institute focused on food science, aquaculture, and fisheries, working to improve sustainability, innovation, and efficiency in food production and related industries. Project partner of Verifish – sister project of Mr.Goodfish3.0. **NOFIMA aims to support the reframing of socio-cultural and societal challenges and will be invited to participate in co-creation exploitation workshops and the co-development of dissemination activities.**
NIBIO - Institute of Bioeconomy Research	Scientific and research community	Focuses on bioeconomy i.e. sustainable use of biological resources for producing food, energy, products, and services. Primary goal is to develop knowledge and solutions that promote sustainable management and utilization of natural resources esp. agriculture, forestry, environment, and rural development. **They will be informed and consulted on MGF3.0 initiative and results.**
SINTEF Ocean AS	Scientific and research community	Research organization that specializes in marine research and innovation. It is part of the SINTEF group, one of Europe's largest independent research organizations. **They will be informed and consulted on MGF3.0 initiative and results.**

Stakeholder	Type	Relevance
Artsdatabanken	Scientific and research community	Norwegian Biodiversity Information Centre manages and provides information on biodiversity. It was established to gather, maintain, and share data on species, ecosystems, and nature types in Norway. **Artsdatabanken aims to support the reframing of scientific societal challenges and will be invited to participate in co-creation and exploitation workshops.**
Norges Kystfisk-arlag	Civil society	The Norwegian Coastal Fishermen's Union represents the interests of small-scale, coastal fishermen in Norway. **This organisation aims to support the reframing of socio-economic and societal challenges and will be invited to participate in co-creation workshops.**
Natur & Ungdom	Civil society	Youth organization of the Norwegian Society for Nature Conservation (Naturvernforbundet) in Norway. **This organisation aims to support the reframing of socio-cultural and societal challenges and will be invited to participate in co-creation and exploitation workshops.**
Naturvern-forbundet	Civil society	Norwegian Society for Nature Conservation. **This organisation aims to support the reframing of socio-cultural and societal challenges and will be invited to participate in co-creation and exploitation workshops.**
SMAK	Civil society	Food festival about local food, culinary traditions, and sustainable practices in the food industry. NNV has previously collaborated with SMAK. **This organisation will be invited to participate the co-development of dissemination activities and business models.**

Stakeholder	Type	Relevance
Norges Jeger Og Fiskerforbund	Civil society	Norwegian Association of Hunters and Anglers – promotes sustainable hunting and fishing practices. **This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Framtiden i våre hender	Civil society	NGO focused on promoting sustainable development and social justice. NNV has previously collaborated with Framtiden i våre hender. **This organisation aims to support the reframing of societal challenges and will be invited to participate in co-creation and exploitation workshops.**
Stiftelsen Norsk Mat	Civil society	The Norwegian Food Foundation is a non-profit organization in Norway dedicated to promoting and preserving Norwegian food culture, traditional food production methods, and local ingredients. **This organisation aims to support the reframing of socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Eide Handel AS	Distributors and retail	Well-known family-owned grocery store and delicatessen est. 1953. **Eide Handel AS aims to support the reframing of socio-economic and socio-cultural challenges and will be invited to participate in co-creation and exploitation workshops.**
Coop Norge AS	Distributors and retail	One of the largest grocery retail cooperatives in Norway. **Coop Norge AS aims to support the reframing of socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**

Stakeholder	Type	Relevance
Dragøy AS	Distributors and retail	Local company specializing in seafood processing and distribution both B2B and B2C. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. A representative of Dragøy AS participated in a pilot interview as part of Task 3.1. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Norges Gruppen AS	Distributors and retail	Retail conglomerate, owning and managing several well-known supermarket chains, such as Meny, Kiwi, and Spar. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Rema 1000 Norge AS	Distributors and retail	Leading Norwegian discount grocery chain and part of the larger Reitan Group. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Arctandria Sjømat-restaurant på Skarven	Distributors and retail	Well-known seafood restaurant offering traditional and locally sourced seafood dishes. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**

Stakeholder	Type	Relevance
Fiskekompaniet	Distributors and retail	Fine dining seafood restaurant with a focus on modern interpretations of traditional Norwegian and Arctic cuisine. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Hildr Restaurant	Distributors and retail	Restaurant known for its focus on local ingredients and traditional Norwegian cuisine. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Fangst	Distributors and retail	Newly opened contemporary seafood restaurant in Tromsø. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Mathallen	Distributors and retail	Renowned restaurant specializing in modern Nordic cuisine with an emphasis on seasonal produce, including fresh seafood. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**

Stakeholder	Type	Relevance
Halvors Fisk	Producers	Seafood company specializing in producing and distributing high-quality, traditional seafood products, for ex. dried and salted cod ("klippfisk"). **Halvors Fisk aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**
Lofoten Seaweed AS	Producers	Harvesting and processing of seaweed in the Lofoten. **Lofoten Seaweed AS aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**
Brødrene Karlsen AS	Producers	Based on the island of Senja, the company works across the entire seafood value chain, from fishing to processing and distribution. **They will be informed and consulted on MGF3.0 initiative results.**
Dragøy Grossist AS	Producers	Locally based wholesale distribution of seafood. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. A representative of Dragøy AS participated in a pilot interview as part of Task 3.1. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**
Andfjord Salmon	Producers	Aquaculture company focused on sustainable salmon farming - known for its innovative land-based salmon production. A representative of Andfjord Salmon participated in a pilot interview as part of Task 3.1.

Stakeholder	Type	Relevance
		This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.
Karls Fisk og Skalldyr	Producers	Local seafood company specializing in the processing and distribution of fish and shellfish products. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**
Lerøy Seafood AS	Producers	One of the largest seafood companies in Norway specialising in aquaculture, wild-caught fish, and seafood processing. Operates in Northern Norway – but headquarters are in Bergen. **They will be informed and consulted on MGF3.0 initiative results.**
Nergård AS	Producers	Local fishing company specializing in deep-sea fishing and seafood processing. **A representative of Nergård AS participated in a pilot interview as part of Task 3.1.**
Lorentzen Fisk	Producers	Family-operated processing and distribution of fish near Tromsø. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**
Ecofang AS	Producers	Harvesting and export of wild sea urchins. Member of "Smak av Kysten" (i.e. Taste of the Coast) - a national gastronomic seafood network. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**

Stakeholder	Type	Relevance
Bondens marked Arktis	Non-profits & Programmes	Part of the Bondens Marked (Farmers' Market) initiative in Norway. It operates within the Arctic promoting locally produced, high-quality food directly from farmers to consumers. **This organisation aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation workshops.**
Innovation Norway	Non-profits & Programmes	Norwegian government's primary tool for promoting innovation and economic development across various industries. **This organisation will be invited to participate in the co-creation of business models.**
Godfisk.no	Non-profits & Programmes	Norwegian platform aimed at promoting seafood consumption, managed by the Norwegian Seafood Council. **This programme aims to support the reframing of socio-cultural and socio-economic challenges and will be invited to participate in co-creation and exploitation workshops.**
Norsk Tradisjons-mat.no	Non-profits & Programmes	Website dedicated to preserving and sharing traditional Norwegian recipes and food culture. It is operated by the Norges Bygdekvinnelag (Norwegian Rural Women's Association). **This platform be invited to participate in co-creation and exploitation workshops.**
Arctic Frontiers & Arctic Frontiers Young	Non-profits & Programmes	Preeminent conference series is held annually in Tromsø focusing on the challenges and opportunities in the Arctic region. NNV has an ongoing collaborative relationship with Arctic Frontiers.

Stakeholder	Type	Relevance
		Arctic Frontiers Young will be invited to participate in dissemination activities built around the new version of the app.
Blått kompass havkonferansen	Non-profits & Programmes	Annual maritime conference held in Tromsø, Norway, organized by the Center for Ocean and Arctic Studies at UiT. **Conference participants will be invited to participate in dissemination activities built around the new version of the app.**
Visit Tromsø	Non-profits & Programmes	Official tourism organisation for Tromsø, Norway, promoting the city as a premier destination for both adventure and cultural experiences. NNV has an ongoing collaborative relationship with Visit Tromsø. **Visit Tromsø will be invited to participate in the co-development of business models and dissemination activities.**
Smak av Kysten	Non-profits & Programmes	Norway's largest gastronomic seafood network, comprising over 160 members that span the entire seafood value chain. **Representatives will be invited to participate in co-creation workshops.**
Fiskepsrell	Non-profits & Programmes	Initiative focused on promoting seafood consumption among children and young people. The program emphasises making seafood appealing and accessible, especially in schools and kindergartens. **Representatives will be invited to participate in co-creation workshops.**
ONE OCEAN Conference	Non-profits & Programmes	Maritime conference focusing on the sustainable development and management of ocean industries. **They will be informed and consulted on MGF3.0 initiative results.**

Stakeholder	Type	Relevance
Students	Consumers	Target audience of NNV. The science centre is located on the UiT - Arctic University of Norway campus.
Families	Consumers	Main target audience of NNV.
Tourists	Consumers	Target audience of the science centre. NNV has an ongoing collaborative relationship with Visit Tromsø.
Rural households	Consumers	Target audience of NNV – supported through programmes like "Vitensenter på hjul" (Science centre on wheels).
Immigrants	Consumers	Target audience of NNV – possibility for collaboration with Nordnorsk Kunstmuseum on their inclusion initiatives like "Lørdag kl 2" (Saturday at 2).
Pensioners & elderly	Consumers	Possibility for collaboration through UiT Pensjonistforeninga (Pensioners' Association).
Toddlers & young children	Consumers	Target audience of the science centre.
Low-income households	Consumers	Support and engagement through "Opplevelse kort" (i.e. culture card).

Early engagement strategy

The early engagement strategy is a starting point for establishing collaborations in the pilot sites. For each stakeholder category identified, it outlines the key message addressed to them to bring their attention to the project, formats for engagement, and potential nudges.

In the case of Norway, the early engagement strategy for professionals in the fishing and aquaculture sector focuses on making the MGF3.0 initiative known through interviews, workshops, and direct contact. In particular, the pilot team will highlight the project's European scope (and thus business opportunity), presenting it as complementary to national efforts such as Godfisk. In the co-creation process, we will enable participants to develop a sense of ownership over the pilot, so that through its adaptation to the local context, it does not feel like a top-down imposition from abroad. A similar approach will be

used with policymakers, who will also be sensitised on the educational and public health dimension of MGF3.0 through the same means.

The scientific and research community, non-profits, and formal and informal education organisations will be partners in disseminating the project results and carrying out activities targeting civil society. They will be involved in co-creation workshops, bringing their scientific expertise and knowledge in engaging with the public.
Finally, consumers will be critical in co-creation, especially for enhancing the app's functionalities and appeal, as well as for testing it. They are also the main target of the awareness campaign, which in Norway, based on the initial inputs gathered, will surely put the spotlight on reducing the scepticism towards labels by insisting on the local provenance of products, sensitising to seafood cooking, and conducting outdoor education to foster connection with local nature under the sustainable fishing lens.

In the following text, initial ideas for stakeholder engagement are outlined that will be considered and aligned with WP5 objectives and planned activities:

Producers

- **Key messages:** "Adopt sustainable fishing practices for long-term productivity and competitiveness, while contributing to healthier ecosystems." "Network with other professionals."
- **Format:** guidance on sustainable methods (through encounters, the app); guidance on branding and promoting their existing sustainable practices
- **Nudges:** develop mentor system; provide Mr GoodFish label; access MGF3.0 community and database; network with potential partnership/business leads.

Distributors/processors & retailers

- **Key messages:** "Sustainable sourcing is a branding key asset." "Network with other professionals."
- **Format:** self-assessment of status quo and identification of improvements (workshop? Online quiz through the app?).
- **Nudges:** provide Mr GoodFish label; provide promotional material to present affiliation to MGF3.0; access MGF3.0 community and database; network with potential partnership/business leads.

Scientific and research community, non-profit & programmes, & formal and informal education organisations

- **Key message:** "Team up with our European partners to support local engagement and European awareness about the science behind sustainable seafood"
- **Format:** partnerships to host workshops and educational activities.
- **Nudges:** bring them in as experts; provide visibility in workshops with local stakeholders; provide visibility in EU campaign and EU reporting.

Policymakers and regulators

- **Key message:** "Support sustainable seafood production and consumption through policies and awareness campaigns"
- **Format:** Create moments of exchange and discussion with professionals (best practices, awareness on legislation…) during co-creation phase
- **Nudges:** offer collaboration for joint awareness campaign; provide data from the app.

Consumers

- **Key message(s):** "Eat local and sustainable seafood to improve your health and the Planet's"; "Learn to select and cook sustainable seafood with this new app"
- **Format:** workshops; recipes with local seafood on the app.
- **Nudges:** recipe competition; information on nutritional values of underexploited local fish; bringing traditional dishes to younger generation through cultural history.

3.3.4 Potential risks and mitigation measures for local/national engagement

Table 10 addresses the potential risks associated with local and national engagement efforts specifically within the Norwegian pilot of the MGF3.0 initiative. Engaging local communities and national stakeholders is critical for the success of the pilots, but it also presents various challenges.

Table 10. Risks and mitigation measures in Norwegian pilot

Risks	Mitigation measures
Lack of understanding and interest in MGF3.0 initiative from fishing and aquaculture professionals	Showcase level of commitment and reach by other Norwegian and European stakeholders and actors
Little consumer interest for changing habits towards local and sustainable consumption	Involve local and credible individuals and professionals who have capacity to reach people's hearts and minds (social media influences, famous restaurants and chefs, local public figures from research, education or policy sector) and raise awareness by exposing invasive sea species and other key environmental issues that are created through local and national seafood consumption
Language barriers occurred during co-creation activities	Pilot leads are trained in facilitation, stakeholder engagement and co-creation journeys (i.e. service design)

4. Scalability and replication strategy

The scalability and replication approach within the MGF3.0 focuses on ensuring the growth and impact of sustainable seafood consumption and production practices across Europe. This strategy involves expanding the initial initiatives at pilot sites and replicating the success in additional regions or contexts. The preliminary plan presented here will be expanded in Deliverable 3.3 (M32) which focuses on impact assessment and roadmap for scalability.

4.1 Scalability strategy

Scalability refers to expanding the reach of MGF3.0 by adding new tools, features, and stakeholder collaborations at the existing pilot sites. This involves enhancing the Mr.Goodfish app with additional functionalities tailored to the local context thanks to the inputs received through the co-creation process, such as broader seafood recommendations, seasonal insights, and health information, as well as incorporating further local and scientific data. In parallel with adapting the app to local contexts, the project must establish partnerships with actors across the local value chain.

Scalability activities take place between M18 and M32 and close the co-creation process. The following phases will build up the expansion of the project local reach and impact:

1) Testing of prototyped solutions: from M18, the co-creation outputs will be tested with at least 30 end-users per pilot site, who will be selected from the network of the stakeholders involved in co-creation. According to the solutions developed, the composition of the testing group may vary for instance, educational activities may require reaching out for schools, knowledge exchange may involve actors from the value-chain, upskilling may concern fishermen.
2) Feedback collection: a feedback collection template will be set and distributed to testers and if needed will be complemented with short interviews. Data collected will concern aspects such as usability, usefulness, benefits and gaps.
3) Fine-tuning and consolidation of an "offer": the feedback received will inform final conclusions on the use and replication of solutions by M21. A local co-creation workshop will develop strategies by M23 for scaling in, out, and deep, including capacity-building, systemic innovation, and nudging plans to embed and validate new solutions. A catalogue of solutions will be formalised, with the objective of making them available,

understandable and appealing to stakeholders who have not been involved in the co-creation process.

4) Reaching out to further stakeholders: the network of project partners and co-creation stakeholders will be leveraged to reach potential adopters of the solutions by M32.
5) Implementation of activities and app scalability: although not foreseen in the project work plan, we will consider an element of success knowing by the end of the project that solutions will be replicated in further local contexts. In parallel, the application's ability to handle increasing amounts of load, users and data will be monitored.

4.2 Replication strategy

Replication extends the proven Mr.Goodfish model—featuring digital tools, awareness strategies, and stakeholder engagement activities—to new sites or regions beyond the original pilot areas. Two initial replication sites, encompassing the Black Sea, Baltic Sea, and Danube River, are integrated into the project consortium from the outset, allowing them to observe and learn from the pilot activities. These sites, in Bulgaria and Poland, specifically seek knowledge transfer for awareness-raising efforts.

Further reach across additional sites will be achieved through a European awareness campaign developed in WP5, supported by the pilots and complementary EU-funded projects. The goal is to scale the project's impact by implementing co-created solutions in both the identified replication sites and additional target areas. The replication process unfolds in several phases:

1) Regular engagement of replication sites: the project partners are involved in the project progress and contribute with feedback and supporting actions, such as translating and disseminating the survey through their own channels.
2) Knowledge transfer with replication sites: at least two workshops (T5.3) between pilot and replication sites will be facilitated to ensure knowledge transfer and support replication sites in developing their scalability roadmap and actions.
3) Linking with exploitation strategy: an internal workshop will be organised in M12 with project partners to define the exploitation and IPR strategy, including the associated business models. A target survey directed to relevant European stakeholders in M18 will collect information about affordability, accessibility and use to refine the strategy.
4) Adoption of solutions in replication sites: a selection of solutions will be adapted and implemented in Poland and Bulgaria by M32.
5) Advertising of solutions in the awareness campaign: a part of the campaign will put under the spotlight the solutions that are more feasible in terms of replication outside of the project boundaries. Instructions and guidance will be made available to all interested parties.

4.3 Necessary conditions for scalability and replication

Successful scalability and replication of the MGF3.0 initiative hinge on several key conditions. First, stakeholder involvement is crucial; broad engagement across the value chain ensures that solutions are tailored to local needs and expectations, fostering ownership that supports wider adoption. Second, public participation plays a vital role in building trust, raising awareness, and securing community support for new practices, with education and feedback channels reinforcing this process. Third, the availability of reliable data is essential for informed decision-making, enhancing the credibility of solutions and enabling continuous monitoring and adaptation. Lastly, legitimation or support from local influencers, such as community leaders, value-chain professionals, or political institutions, is important for endorsing solutions, thereby gaining credibility and encouraging broader acceptance and adoption. Together, these conditions create a robust framework for the effective scalability and replication of sustainable seafood practices.

5. Monitoring and evaluation

The monitoring of co-creation and its impact assessment will be covered under Task 3.3 and reported in D3.3. Continuous monitoring and evaluation of the co-creation framework proposed in this deliverable will be conducted through regular meetings and reporting by pilots.

For effective communication and exchange among project partners, there will be three means of progress assessment:

- Monthly project meetings – They provide an occasion to align and inform the whole consortium about stakeholder engagement and co-creation.
- Monthly WP3 meetings – regular exchanges among task leader 3OC, pilots, ECISTE and EUFIC to give updates and discuss each other's advancements and complementary work. They also allow 3OC to outline upcoming activities, actions, and monitoring needs.
- Bilateral meetings with pilot team/representative – occasional check-ins when there is a request from the pilot or when the WP lead considers necessary discussing an identified matter of concern.

An extra support will be provided by the Advisory Board, which will be solicited for assessing the replicability and scalability of solutions, for instance evaluating their scope, their key promotional messages and structure.

The assessment tool below (**Table 11**) will allow to track co-creation-related key performance indicators connected to the three Key Exploitable Results (KERs) developed in WP3:

- KER3 – Co-creation methodology,
- KER4 – Consumer behaviour change models and nudging plans and
- KER6 - At least 10 co-created solutions for sustainable seafood and aquaculture consumption.

Table 11. Key performance indicators

Key Performance Indicator	Related co-creation activities	Means of verification
>10,000 app users who reported positive sustainable production/consumption choices	Co-creation workshop in M12 and M18, as well as scalability workshop	Co-creation proceedings, Scalability workshop minutes
>5 new app functionalities enhanced in direct	Co-creation workshops in M12 and M18	Co-creation proceedings

Key Performance Indicator	Related co-creation activities	Means of verification
collaboration with consumers		
>100 recipes based on sustainable consumption and reuse generated by users and uploaded onto the app	Prototyping workshops M18	Presence in the app
>20 chefs and food influencers who contribute with their recipes and stories about sustainable seafood consumption onto the app	Prototyping workshops M18	Presence in the app
>300 participants in the assessment of consumer behaviour and drivers, and identification of most suitable engagement formats per stakeholder type	EU awareness raising campaign (WP5), Exploitation survey at M18 (WP5)	# of survey respondents
>15 educational workshops/tasting sessions at schools with teachers and pupils in basic education to raise awareness and inform about seafood sustainable production and consumption	Scalability, Multiplier events	Occurrence, proceedings
>100 stakeholder-participants in the 3 pilots (co-creation journeys)	Co-creation workshops, online interviews	Workshops proceedings, interview recordings
>60% app users self-document and self-report in app their seafood waste	Co-creation workshop in M18 and follow-up exchanges with users	Workshops proceedings, interview recordings
>50% app users (individuals, businesses) do not generate seafood waste according to the analytics of their self-reporting	Co-creation workshop in M18 and follow-up exchanges with users	Workshops proceedings, User interaction feedback on the app
>10 new solutions to reduce food waste and carbon footprint	Co-creation workshops in M18, scalability and exploitation workshops	Workshops proceedings, Exploitation strategy for solutions

Key Performance Indicator	Related co-creation activities	Means of verification
>100 schools involved in educational activities	Co-creation workshops in M12 and M18, scalability workshop	Workshops proceedings, interview recordings
>25% app users who self-reported opted their choice to consume locally sourced seafood, supporting sustainable fishing practices and local communities.	Stakeholder engagement activities and local multiplier events	Participation reports by pilots, Presence in the app
120 Participation in local food or farmers' markets and supermarkets	Stakeholder engagement activities and local multiplier events	Participation reports by pilots

6. Conclusion

This document provides a structured approach for fostering collaboration among seafood stakeholders and consumers, ensuring their voices are integrated into the design and development process of the local activities, the new version of the app and the European awareness campaign. In the context of a project like MGF3.0, co-creation is vital under many respects:

Allowing solutions to better adapt to local needs: although all located in Europe, the MGF3.0 three pilots and two replication sites present substantial cultural, biological and economical differences that would be run over by a top-down solution ideation process. Instead, co-creation builds the foundation for solution adoption by gathering feedback, experiences, and data from local representatives and using this input to guide the idea generation process.

Increasing acceptance and support for proposed measures: the fishing and aquaculture industry are increasingly under the spotlight for their environmental impact, and professionals struggle with keeping up with the costs and ever-evolving regulations of sustainability. By contributing in first-person to elaborating sustainability pathways, they can integrate both their concerns and best practices in the MGF3.0. Similarly, consumers are bombed with contrasting information about fishing and aquaculture, making it difficult to assess the best way to consume. By sharing their everyday habits and being able to have their say on the feasibility of the solutions, consumers can appropriate them effectively.

Encouraging shared responsibility and community empowerment: top-down measures are highly individualising, leaving stakeholders on their own in implementing them. Co-creation instead creates a sense of community and a common purpose, putting participants at the centre of the process. This collaborative approach distributes ownership across the community, empowering individuals by giving them a voice and influence over the results. By integrating diverse perspectives, co-creation strengthens the community's capacity to address challenges collectively, promoting long-term commitment to the success of the initiative.

Promoting awareness and commitment to sustainability: the collaborative process educates participants on the environmental and social impacts of their choices, at business and individual level, fostering a deeper understanding of sustainability issues. By actively involving individuals and communities in shaping sustainable practices, co-creation builds a sense of ownership and responsibility, encouraging long-term commitment to sustainable actions and policies. The general co-creation framework outlined in this document is a living methodology that over time, thanks to interactions with stakeholders in pilots, will be further tailored to the local culture, economy and biological ecosystem.

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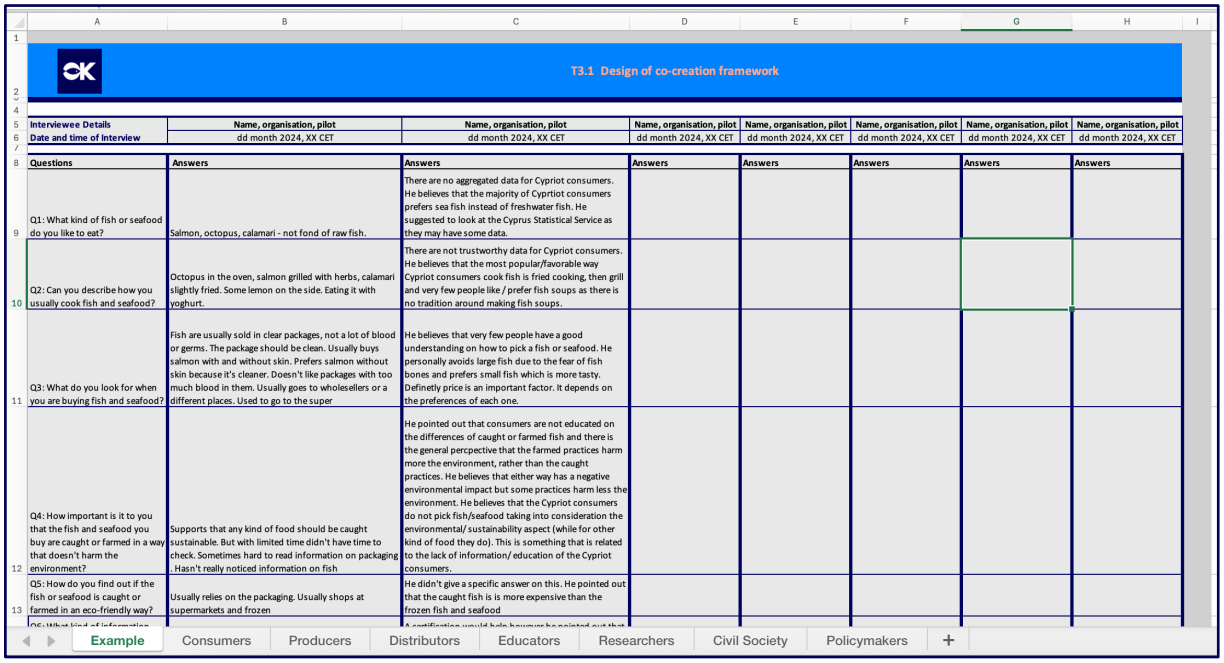
8. Annexes

8.1 Annex 1 – Interview Grid

Figure 11 illustrates an interview grid used to collect data from interviews. Below, you'll find categorised lists of questions tailored for each stakeholder type.



T3.1 Design of co-creation framework

Interviewee Details	Name, organisation, pilot	Name, organisation, pilot	Name, organisation, pilot	Name, organisation, pilot	Name, organisation, pilot	Name, organisation, pilot	Name, organisation, pilot
Date and time of Interview	dd month 2024, XX CET	dd month 2024, XX CET	dd month 2024, XX CET	dd month 2024, XX CET	dd month 2024, XX CET	dd month 2024, XX CET	dd month 2024, XX CET
Questions	Answers	Answers	Answers	Answers	Answers	Answers	Answers
Q1: What kind of fish or seafood do you like to eat?	Salmon, octopus, calamari - not fond of raw fish.	There are no aggregated data for Cypriot consumers. He believes that the majority of Cyprtiot consumers prefers sea fish instead of freshwater fish. He suggested to look at the Cyprus Statistical Service as they may have some data.					
Q2: Can you describe how you usually cook fish and seafood?	Octopus in the oven, salmon grilled with herbs, calamari slightly fried. Some lemon on the side. Eating it with yoghurt.	There are not trustworthy data for Cypriot consumers. He believes that the most popular/favorable way Cypriot consumers cook fish is fried cooking, then grill and very few people like / prefer fish soups as there is no tradition around making fish soups.					
Q3: What do you look for when you are buying fish and seafood?	Fish are usually sold in clear packages, not a lot of blood or germs. The package should be clean. Usually buys salmon with and without skin. Prefers salmon without skin because it's cleaner. Doesn't like packages with too much blood in them. Usually goes to wholesellers or a different places. Used to go to the super	He believes that very few people have a good understanding on how to pick a fish or seafood. He personally avoids large fish due to the fear of fish bones and prefers small fish which is more tasty. Definetly price is an important factor. It depends on the preferences of each one.					
Q4: How important is it to you that the fish and seafood you buy are caught or farmed in a way that doesn't harm the environment?	Supports that any kind of food should be caught sustainable. But with limited time didn't have time to check. Sometimes hard to read information on packaging . Hasn't really noticed information on fish	He pointed out that consumers are not educated on the differences of caught or farmed fish and there is the general percpective that the farmed practices harm more the environment, rather than the caught practices. He believes that either way has a negative environmental impact but some practices harm less the environment. He believes that the Cypriot consumers do not pick fish/seafood taking into consideration the environmental/ sustainability aspect (while for other kind of food they do). This is something that is related to the lack of information/ education of the Cypriot consumers.					
Q5: How do you find out if the fish or seafood is caught or farmed in an eco-friendly way?	Usually relies on the packaging. Usually shops at supermarkets and frozen	He didn't give a specific answer on this. He pointed out that the caught fish is is more expensive than the frozen fish and seafood					

Example | Consumers | Producers | Distributors | Educators | Researchers | Civil Society | Policymakers

Figure 11. Interview grid

9.1.1 Consumers

Q1: What kind of fish or seafood do you enjoy eating?
Q2: Can you describe your typical cooking methods for fish and seafood?
Q3: What factors do you consider when purchasing fish and seafood?
Q4: How important is it to you that the fish and seafood you buy are sourced in a way that doesn't harm the environment?
Q5: How do you verify whether the fish or seafood is sourced in an eco-friendly manner?
Q6: What type of information would help you choose fish and seafood that are more environmentally friendly?
Q7: In what ways would this information assist you in your purchasing decisions?
Q8: Have you encountered any challenges when buying and preparing eco-friendly fish

and seafood?
Q9: How do you perceive the price and availability of eco-friendly fish and seafood compared to conventional options?
Q10: How important are labels and certifications (such as MSC or ASC) to you when selecting fish and seafood?
Q11: How do you balance taste, convenience, cost, and eco-friendliness when purchasing fish and seafood?
Q12: Can you share any specific experiences or stories that have influenced your views on sustainable fish and seafood?

Closing question: Thank you for sharing such valuable insights! Is there anything else you would like to add before we conclude?

9.1.2 Producers

Q1: Can you describe your process for producing fish and seafood?
Q2: What criteria do you use to determine which fish and seafood to harvest?
Q3: How important is it to you that your production methods are environmentally friendly?
Q4: What type of information would assist you in making your fish and seafood production more eco-friendly?
Q5: In what ways would this information be beneficial for your production practices?
Q6: What challenges have you encountered in producing fish and seafood sustainably?
Q7: Can you share any specific techniques or methods you use to enhance the eco-friendliness of your fishing practices?
Q8: How do you balance financial considerations with environmental protection in your fishing operations?
Q9: How do you gather insights about consumer preferences, and how do these insights influence your eco-friendly production decisions?

Closing question: Thank you for sharing such valuable information! Is there anything else you would like to add before we conclude?

9.1.3 Distributors

Q1: What criteria do you consider when sourcing fish and seafood?
Q2: What factors influence your selection of fish and seafood for your business?
Q3: How important is it to you that the fish and seafood you choose are caught or farmed in an environmentally responsible manner?
Q4: What type of information would assist you in promoting and selling more eco-friendly

fish and seafood?
Q5: How would having this information benefit your business operations?
Q6: What specific challenges have you faced in marketing and selling eco-friendly fish and seafood?
Q7: How do you manage fluctuations in the supply and demand for eco-friendly fish and seafood?
Q8: How do pricing and profitability considerations affect your decision to stock eco-friendly fish and seafood compared to conventional options?
Q9: What strategies do you employ to educate your customers about the benefits of eco-friendly fish and seafood?
Q10: How do partnerships with eco-friendly fisheries or certification organizations influence your motivation to distribute sustainable fish and seafood?

Closing question: Thank you for sharing your insights! Is there anything else you would like to add before we conclude?

9.1.4 Educators

Q1: What is your target audience (including age bracket) and the context in which you typically teach or educate?
Q2: How do you approach teaching about selecting fish and seafood that are environmentally friendly?
Q3: What criteria do you consider when choosing teaching materials related to eco-friendly fish and seafood?
Q4: What type of information or resources would enhance your effectiveness in teaching about sustainable fish and seafood?
Q5: What challenges have you encountered in educating students about eco-friendly fish consumption, and how have you addressed them?

Closing question: Thank you for your valuable insights! Is there anything else you would like to add before we conclude?

9.1.5 Researchers

Q1: What are the primary environmental challenges you have identified in the context of sustainable fishing in [location]?
Q2: What recent trends or changes have you observed in sustainable fishing practices or consumer behavior in [location]?
Q3: How do you evaluate the availability and accessibility of information on sustainable

fishing practices for both local producers and consumers?
Q4: What gaps do you see in current research or data concerning sustainable fishing in [location]?
Q5: What key factors do you believe influence sustainable fish consumption patterns among people in [location]?
Q6: What main production issues have you observed that affect the sustainability of fishing practices in [location]?
Q7: What recommendations do you have for improving the dissemination of information on sustainable fishing to enhance both environmental protection and consumer awareness?
Q8: How do you see technological advancements contributing to the sustainability of fishing practices?

Closing question: Thank you for your valuable insights! Is there anything else you would like to add before we conclude?

9.1.6 Civil Society

Q1: What are the main environmental problems related to fishing that your organization has noticed in [location]?
Q2: How does your organization ensure that information about environmentally friendly fishing practices is available to local fishers, consumers, and distributors?
Q3: What do you think affects people's decisions about eating fish that's better for the environment, and how does your organization address these issues?
Q4: What difficulties have you seen in adopting environmentally friendly fishing practices, and how is your organization working to overcome these challenges?
Q5: What methods does your organization use to spread information about fishing practices that are better for the environment to help protect nature and inform the public?

Closing question: Thank you for all the helpful information you provided. Is there anything you might want to add before we end?

9.1.7 Policymakers

Q1: What are the main environmental problems related to fishing that you've noticed, and how are these being addressed through policies?
Q2: What policy obstacles make it hard to adopt environmentally friendly fishing practices?
Q3: What steps are being taken to overcome these obstacles?

Q4: What production issues have you observed that affect the eco-friendliness of fishing practices?
Q5: What challenges do you see in promoting eco-friendly fishing practices throughout the entire value chain, from production to consumption?
Q6: How are current policies supporting consumer education about choosing environmentally friendly fish and seafood?
Q7: What improvements would you suggest for policies to better protect the environment, support eco-friendly fishing practices, and educate consumers?
Q8: How can digital tools and apps be used to support the implementation of policies and improve education for consumers, fishmongers, and distributors?
Q9: Are there any specific digital solutions or technologies you believe could help in better operationalizing policies related to sustainable fishing?

Closing question: Thank you for all the helpful information you provided. Is there anything you might want to add before we end?

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