Engaging Citizens with Mission Ocean and Waters: A toolbox of approaches

Guidance on methods for facilitating, monitoring and assessing citizen participation levels and for rolling out a European wide network of assemblies of citizens

DOCUMENT INFORMATION

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Contents

1. Introduction

Public mobilization and engagement are crucial elements in the European Commission's 'EU Mission: Restore Our Ocean and Waters'[1] by 2030 (here under referred to as "Mission Ocean" or "the Mission"). There is a wealth of approaches that facilitate this engagement, be it through co-production of knowledge, citizen participation, activation and training, hackathons, citizen science initiatives and others. Among this variety, it can be challenging to acquire an overview of the alternatives available, not to mention to choose a method among the many possibilities. In this document, we offer a toolbox that maps the different ways in which participation can be facilitated, and that offers guidance concerning which approaches are adequate for each context's specificities and purposes. The ultimate goal is to provide guidance that supports the citizen participation goals of Mission Ocean, as illustrated below in table 1.

NOTE: This is an evolving document and will be added to as PREP4BLUE progresses, making use of feedback from Mission Ocean project participants and other users, until final delivery in 2025 (2022-2025 'development and piloting' phase 1), when the toolbox ought to be available for deployment in the second phase of the Mission (2026-2030 'deployment and upscaling' phase 2).

Table 1: Expected outcomes by 2025 (1st phase) and by 2030 (2nd phase) of Mission Ocean and Waters with respect to citizen participation. (Source: European Commission. Implementation Plan for Mission Ocean and Waters.)

Expected outcomes by 2025	Tried and applied deliberative democracy mechanisms and social innovation practices for the co-design and co-implementation of solutions for the restoration of the aquatic environment.
	Developed and piloted frameworks and processes for participatory governance and deliberative democracy, including an EU-wide network of assemblies to enable effective citizen and stakeholder involvement in the lighthouses.
	Up-scaled the European Research Area funded pilot citizen science campaign "Plastic Pirates – Go Europe" together with further Member States.
	Involved the European solidarity corps in restoration projects.
	Promoted apps allowing citizens to collect data and observations and will promote (digital) data collection and participatory research involving citizens for the monitoring and restoration of ocean and waters; the collected data will be harmonised and made publicly available through the Digital Twin Ocean, EMODnet and/or the Copernicus Marine Service.
	Provided knowledge and methodological frameworks to support the revision of the International Ocean Governance agenda.
Expected outcomes by 2030	All European citizens have the opportunity to engage in the preservation and restoration of oceans and waters through participative means, volunteering and citizen science.
	All European citizens are empowered to be actors in the preservation and restoration of oceans and waters through social innovation, awareness raising, education and training.
	Promoted EU-wide annual ocean literacy campaigns, in cooperation with the EU4Ocean Coalition to strengthen public awareness and overcome the emotional disconnect with the ocean and waters.
	Launched regular citizen science campaigns as a part of novel participatory research initiatives to increase the reach, quality and impact of scientific initiatives and boost the environmental awareness of the participants.

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[1] EU Mission: Restore our Ocean and Waters: https://tinyurl.com/4my7axab

1.1. Target audience

The targeted audience of this toolbox are:

1) **The European Commission:** This guide will be delivered to the European Commission and, where appropriate, will hopefully influence the shape of future calls in line with the best practices outlined herein.
2) **Current/Upcoming CSA, IA and other project consortia** under future Mission Ocean calls: This guide and engagement work that PREP4BLUE undertakes will develop the structure and best practice that following projects will build on to advance the Mission.
3) **Practitioners:** Anyone (individual, organisation, institution, initiative) working on citizen engagement in marine and freshwater matters across Europe 2022-2030 (and beyond).
4) **Wider R&I Community:** This guide sets a foundation for further research into participatory methods, direct democracy and bottom-up governance for marine and freshwater matters.

1.2. How to use this toolbox

This document proposes a framework that will support citizen participation with Mission Ocean. Among other things, the framework will support the design and application of deliberative democratic mechanisms to organize and manage the process of citizen mobilization and engagement, as well as provide practical advice and case studies useable by project teams tasked with supporting such participation.

This toolbox consists of 8 sections. Readers may refer directly to sections fitted to their needs or read the document from beginning to end to gain a more comprehensive knowledge of the various tools for citizen participation described in the toolbox.

Section 1, introduction to this toolbox.

Section 2, Theory and terminology, explains the scholarly underpinnings of citizen participation and the theoretical framework on which the elaboration of this toolbox is grounded. This section is recommended for all intending to co-create with citizens. While it can seem dense, it is important to understand the rationale and potential pitfalls for citizen engagement.

Section 3, Typology for citizen participation, introduces a diagnostic tool for when, who and how to include citizens. This is a rough guide to support a range of processes and does not attempt to provide fixed answers for every case.

Section 4, Engaging citizens step by step, contains a three-step framework for managing citizen engagement: (i) preparing for citizen engagement; (ii) implementing citizen engagement; and (iii) monitoring and assessing participation. In each step, readers will find questions that will guide them throughout the process and support their choices on specific tools that can be applied to engage citizens with Mission Ocean. This allows for the toolbox's versatility and applicability in different contexts. The structure of the toolbox is summarized in a flow diagram (see Figure 33 on page 16) that clearly presents the progression of steps and the specific tools associated with each step. This section is meant to be a practical guide for readers with immediate needs.

Section 5, Examples of specific engagement tools, contains substantive information on different tools for engaging citizens that require different levels of participation in line with the typology presented in this toolbox.

Section 6, provides examples and advice on aligning with some of the requirements of the Mission Ocean [Implementation Plan](#)[2] (see Table 1) and the Horizon Europe Mission Work Programme call topics. This includes how to engage the European Solidarity Corps and how ocean literacy networks and campaigns can be a tool for citizen engagement. Section 6 may therefore be useful to those working on citizen engagement in Mission Ocean-funded/related projects.

Section 7, list of references, collects all references in footnotes as a traditional reference list.

Section 8, Appendix, provides some examples of how to map actors/stakeholders that are included in Mission initiatives.

2. Theory and terminology

This guide is based on a theoretical approach called "post-normal science" and has been developed using the expertise of the PREP4BLUE project team, a review of previous participatory projects, literature and handbooks on the subject. Below, we make a short introduction to what "post-normal" science is and some key terminology to understand why participation has become important in the Mission Ocean agenda, and how to do it in practice.

2.1. Post-normal science

In the traditional view, knowledge is synonymous with research or science. Since science is often perceived as objective and autonomous from politics, scientific experts are useful for legitimizing advice and action – for instance in relation to achieving the objectives of Mission Ocean[3] This is based on the belief that a strict and formal separation between science and society is both possible and necessary[4]. In this view, science must be "pure" and autonomous in order to function as an objective source of advice on controversial issues. As such, engaging citizens can be problematic, as this would allow different agendas to influence "pure science". Accordingly, it is necessary to look for other theoretical foundations as Mission Ocean is aiming to including citizens in order to solve challenges: The theoretical foundation of this toolbox is loosely based on the theory of post-normal science.

The insight of post-normal science goes beyond the traditional idea that science is both certain and value-free[5]. Post-normal science was originally proposed by Silvio Funtowicz and Jerome Ravetz [6] and represent a form of science for policy that address issues where "*where 'facts are uncertain, values in dispute, stakes high and decisions urgent'*[7]. The philosophy of post-normal science[8] states that for conflict-ridden and complex societal challenges where scientific knowledge is uncertain, democratic approaches are needed to assess what knowledge is relevant, and who manages the validity and relevance of this knowledge. This resonates with the challenges that the Mission aims to tackle,

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[2] Implementation Plans for the EU Missions: https://tinyurl.com/46fnkfcc
[3] Jasanoff, S., et al. (1995).
[4] Gieryn, T. F. (1983).
[5] Ravetz, I. (1999).
[6] Funtowicz & Ravetz (1993).
[7] Funtowicz, S.O., Ravetz, J.R., 1993. Science for the post-normal age. Futures 25, 739–755. https://doi.org/10.1016/0016-3287(93)90022-L
[8] Funtowicz, S.O., Ravetz, J.R., 1993. Science for the post-normal age. Futures 25, 739–755. https://doi.org/10.1016/0016-3287(93)90022-L

including climate change and environmental pollution: what to do, and how to cope with multiple opinions and uncertainties while being under pressure by the public, market forces and political goals?

Post-normal science acknowledges that uncertainty is more than a technical number or a methodological issue. There are of course several ways to distinguish between different types of uncertainty[9], including **1)** uncertainty that can be controlled through quantification, and **2)** uncertainty that cannot be controlled because these specific problems are sufficiently complex and involve so many competing interests that "more" knowledge will not necessarily reduce the uncertainty in the problem. Uncertainty that cannot be controlled makes the premises for risk analysis unclear and can thus be an additional source of conflict. In particular, this may be relevant when the uncertainty cannot be sufficiently reduced with new knowledge. Note that even quantifiable uncertainty can be a subject of conflict. For example, decisions based on quantifiable risk can be fraught with conflict because interest groups can have different preferences for which risk one is willing to take. The way uncertainty is related to two types of problems is central to this toolbox, and is defined as follows:

1) **Controllable problem:** reducible uncertainty where agreement and consensus on norms are settled. The uncertainty at hand can be described through quantitative measures. Here, normal scientific risk analysis can be sufficient, e.g., forecasting for waves and levels of toxins in mussels. See section 3.1 for a more detailed example.

2) **Uncontrollable problem**: irreducible uncertainty with no consensus and little agreement on norms and standards. Context were simple probabilistic risk analysis or standard statistical methods are not able to fill all knowledge gaps, and we lack knowledge about what we do not know, e.g., climate change impacts such as sea level rise and associated consequences including coastal erosion. See section 3.1 for a more detailed example.

The Mission aims to solve a large number of complex problems that have different types of uncertainties related to them. For the challenges that needs to be tackled to achieve the Mission, we argue that it is useful to distinguish between controllable problems, related to 1) above, and uncontrollable problems, related to 2) above. A concept related to uncontrollable problems that is used in the Mission, is wicked problems – problems in which high stakes, risks and/or high uncertainty are involved in a policy-relevant issue (see section 2.4). Wicked problems are a characteristic of the "post-normal" condition—that is, a circumstance in which scientific facts and social values are difficult to untangle[10].

Risks are an intrinsic part of human life. In modern times, many risks that society faces are the unintended consequences of the development and application of new technologies such as global warming and pollution[11]. Other issues are beyond our understanding and control, and uncertainty cannot necessarily be reduced. There are many ways to conceptualize risks. We suggest to categorize different risk phenomena as **linear**, **complex**, **uncertain** and **ambiguous** risks. These exist on a continuum and should be understood as such also for the Mission-related initiatives. Our knowledge about systems or technologies varies. *Linear risks* can be described as those that are better understood and easier to model than others and can therefore be better risk managed (if the

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[9] E.g., Funtowicz & Ravetz, 1993; Strand & Oughton, 2009

[10] Funtowicz, S.O., Ravetz, J.R., 1993. Science for the post-normal age. Futures 25, 739–755. https://doi.org/10.1016/0016-3287(93)90022-L

[11] Beck, U. (1992).

resources are available). For these issues, one can calculate risks on the basis of established scientific models and historical patterns of performance, e.g., weather patterns, sea currents and so on. Other issues are more *complex* or even *uncertain* e.g., new technology or tightly coupled systems that increases complexity and non-linearity and hence risk. For instance, the effects of new fisheries gear technology on the eco-system can cause effects that were impossible to predict. With *ambiguity*, we here refer to the plurality of legitimate viewpoints for evaluating decision outcomes and justifying judgements about their tolerability and acceptability.[12] Note that with new knowledge, methods and experience, a risk may change from ambiguous to any of the other categories. The Covid-19 pandemic is an example of an ambiguous risk which is (better) controlled with new knowledge, experience and methods. How to judge the different types of risk are culturally contingent – they are cultural products since they depend on perceptions about what is probably, unlikely, serious or absurd. Accordingly, there is no one correct answer or interpretation of risks, nor solutions[13].

To summarize: different scopes of risk can be related to the concepts of controllable and uncontrollable problems. Here, controllable problems are related to simple risk (see figure 3). **Uncontrollable problems incorporate the three categories of complex, uncertain and ambiguous risk on a continuum** (see figure 3). We assume that different types of risks acquire different types of participatory approaches, as described in section 3, where we suggest a typology for when, who and how to ensure participations based on different types of risks.

2.2. Citizens and citizen participation

From the very beginning, the EU Missions have been designed with the underlying principle that their success will depend on the participation of citizens, appropriate to the issue at hand[14,15]. This goes hand in hand with the philosophy of post-normal science. There are several reasons why a more participatory approach including citizens can be understood as necessary. One reason is a normative one, often referred to as the "**deliberative turn**"[16]. The deliberative turn argues that we should democratize knowledge and expertise, not only regarding who consumes it, but also who produces it. Hence, participatory approaches are needed to assess what knowledge is relevant and who manages the validity and relevance of that knowledge. In this view, all (not just scientists) can have relevant knowledge and experience that can be useful for the Mission.

The term **"citizen"** can be quite vague and is used differently across different fields (legal, political), projects, and policy areas. In general, when used in this toolbox, "citizen" emphasises the non-specialist, non-elite nature of the individuals in question[17]. This creates some distinction from the sometimes-overlapping term stakeholder (also often used throughout Mission Ocean literature). **Stakeholders,** by contrast, may be either specialist, elite, have access to Mission Ocean activities due to their employment, or some other form of contextual privilege. They also tend to be represented as organisations or interest groups, while citizens tend to be engaged as individuals. That said, the two concepts often overlap and, of course, individual stakeholders can also be citizens, and citizens may be stakeholders.

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[12] Wachinger & Renn (2010).
[13] Burns & Machado (2010).
[14] Mazzucato, M. (2018).
[15] Mazzucato, M. (2019).
[16] Dryzek & Niemeyer (2019).
[17] Chwalisz, C. (2020)

A number of loosely linked research approaches to what participation entails has developed in recent decades. Here, we understand **Citizen participation** to occur when individuals from diverse backgrounds and expertise engage with knowledge-production and/or decision making in a collective endeavour. This can be a range of activities, including knowledge-production initiatives, political events in which decisions are to be made, or the conception, development and implementation of a societal Mission. Citizen engagement and citizen participation is used interchangeably in this guide. It may also be referred to as community engagement, citizen involvement, public engagement or civic engagement.

Note that citizen participation does not necessarily require formal citizenship, but refers to the general public, or residents, in a specific area. Citizen participation is crucial not only to grant legitimacy, credibility and salience[18] to a Mission, but also to realize democratic values and social justice[19]. Moreover, citizen participation allows for a wider and more diversified knowledge base, which is important to cope with the uncertainty and ambiguity inherent to addressing the Missions, and to ensuring the salience of the solutions proposed.

Participation may entail a range of involvement, e.g., from differing levels of communication (i.e., receiving information or voicing opinions), to directly impacting how a research process unfolds or what the outcomes are. While the avenues for participation vary in function and intensity, it is a widespread agreement that participation should grant a greater degree of power to citizens. The principles of participation are typically illustrated as a ladder[20] which describe a spectrum of engagement depths and their corresponding levels of citizen power (**Error! Reference source not found.**). In the ladder, increasing levels of engagement means greater citizen power. At the top of the ladder, citizens have the power to define the problem, develop the solution and the process to get there. Different type of ladders has served as a basis for informing processes of citizen participation and as inspiration for further developing guides for participation[21].

The ladder can be used to "diagnose" the level of engagement for different participatory processes. While there may be good reasons to include citizen, it is important to underline that not all problems require the greatest levels of involvement – this depends on the type of problem at hand (controllable or uncontrollable, see also section 3.1). In theory however, higher engagement levels and more decision-making power delegated to citizens should lead to greater perceptions of legitimacy and public trust in the decision-making process. Since high levels of engagement requires a substantial commitment by citizens, ensuring the relevance of the problem to be solved is key. Inviting citizens to participate in defining the problem, may thus enhance the success of your citizen engagement initiative.

At the same time, there are both benefits and limitations to participatory approaches[22]. For instance, sharing of responsibility (e.g., to ensure that participation is more than lip service[23]), classification of who relevant actors are, as well as addressing the vested interests and power differences implicated in a given process[24]. In reality, multiple challenges often arise with participatory approaches: who to

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[18] Cash & Belloy (2020).
[19] Bennett et al (2021).
[20] Arnstein (1965).
[21] International association for public participation. (2014): https://tinyurl.com/3pe8pdvf
[22] Wachinger & Renn (2010)
[23] Linke et al. (2011)
[24] Buanes et al. (2004)

include and how to include citizens in different processes; are they interested in participating at all? This is often referred to as **"stakeholder" or "engagement" fatigue** in participatory processes. Reasons for this type of fatigue varies, but is typically related to time constraints, language barriers, different priorities, poor personal reward or little capacity/power to influence decisions[25].

In general, it is important to address and discuss the choices of who and what knowledge to include when faced with uncontrollable problems, and the ways these choices affect uncertainty[26]. These reflections may be relevant throughout the process from problem formulation to decision, including how to map and handle uncertainty. These issues may also be important for the legitimacy of the outcome and for the experience of justice. In situations with uncontrollable problems and irreducible uncertainty, and lack of consensus as well as little agreement on norms and standards, it is necessary to include public debate[27]. A good example of this is the Covid-19 pandemic and what measures to take.

DEGREE OF CITIZEN DECISION-MAKING POWER				
INFORM	**CONSULT**	**INVOLVE**	**COLLABORATE**	**EMPOWER**
To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with citizens throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with citizens in each aspect of the decision, including the development of alternatives and the identification of the preferred solutions or activities.	To place final decision-making in the hands of citizens.
The Mission initiative will keep citizens informed.	The Mission initative will keep citizens informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	The Mission initiative will work with citizens to ensure that their concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	The Mission initiative will look to citizens for advice and innovation in formulating solutions and incorporate advice and recommendations into the decisions to the maximum extent possible.	The Mission initiative will implement what citizens decide and/or co-implement and co-lead initiative.

(Left axis labels: CITIZEN PARTICIPATION GOAL; PROMISE TO THE PUBLIC)

Figure 1: Citizen participation spectrum. Adapted from AP2 International Federation (2014). https://iap2.org.au/wp-content/uploads/2019/07/IAP2_Public_Participation_Spectrum.pdf.

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[25] See for instance Jönsson & Swartling (2014).
[26] See Bjørkan & Rybråten (2018); Wachinger & Renn (2010) for more detail on this.
[27] Funtowicz & Ravetz (1993)

2.3. Managing expectations of citizen participation

Two of the expected outcomes of Mission Ocean and Waters with respect to citizen participation includes the application and development of **deliberative democracy** mechanisms – that is, the inclusion of citizens in processes (Table 1). In this section we will briefly address[28] common expectations of what can be achieved by participatory processes and the already mentioned deliberative turn (see section 2.2).

In general, deliberative democracy has faith in consensus and that "public reason-giving is the best way to uncover what is good and true"[29]. The deliberative turn[30] has been criticized by many[31,32] and it is important to maintain realistic expectations of what can be achieved and what challenges can arise. One assumption of deliberative democracy is that broad participation in decision-making will bring about more legitimate and effective policy outcomes[33]. For example, ensuring citizen participation in Mission Ocean initiatives should lead to increased legitimacy. But legitimacy is difficult to measure since it is not directly observable; and even if something is perceived as legitimate, it can be both inefficient and inequitable. Another assumption is that broad participation will ensure consensus. But failing to acknowledge dissensus can lead to shallow or disappointing outcomes[34,35], especially in the post-normal context (see 2.1), and when the end-result creates winners and losers[36,37]. Hence, we warn against holding consensus as the "holy grail" of success. Still, one can aim for consensus as an elusive target but create a space in which there is high tolerance for respectful conflict. Such an approach involves making explicit the multiple values underlying the conflict, as well as generating an atmosphere of respectful disagreement. As such, arenas for participation should be organized in line with the *ideals* of deliberative democracy, even if they may be hard to put to work in real life. For instance, it is an ideal that that the deliberation process between citizens should take place in a space free from manipulation and the exercise of power[38]. However, people will have different relations to each other and the authorities no matter where you are and who you place together – some will have formal power, and some will have informal power.

2.4. Understanding citizen participation in service of Missions

Modelled on the Apollo 11 Mission that landed people on the Moon, the 5 EU Missions (Cancer, Soil, Climate, Smart Cities, and Ocean) are designed to be ambitious, inspirational, and require a whole of society approach to engage key societal challenges. Missions are about transitioning from sector-

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[28] For a more detailed discussion on the issue, see Nogueria et al (2022)

[29] Lövbrand et al. (2011).

[30] The deliberative turn is defined as follows in Dryzek (2002: 00): *"The deliberative turn represents a renewed concern with the authenticity of democracy: the degree to which democratic control is substantive rather than symbolic, and engaged by competent citizens."*

[31] Mouffe (2000).

[32] Pløger (2004).

[33] Bäckstrand (2010).

[34] Hillier (2003).

[35] Barry & Ellis (2010).

[36] Bjørkan & Rybråten (2019)

[37] Bjørkan & Veland. (2019).

[38] Lövbrand & Beck (2011).

based to problem-based policymaking, mobilizing resources and citizens in the service of bold objectives that address the "wicked problems" of our time[39].

As described in section 2, science is not enough to answer uncontrollable wicked problems and enforce required policy, organizational and institutional changes. As a result, the way to go about addressing these type problems and advancing the Missions involves engaging a wider range of social actors, especially of civil society. Climate change, biodiversity loss and food insecurity are typical examples of wicked problems that are global in scope, have contested understandings, and require collective action.

The transformation that is needed to achieve the Mission(s) will affect people's lives both directly and indirectly, and the Mission success requires people's engagement – they must be active agents of change rather than passive recipients. Put differently, the Missions' objectives must be translated into relevant and actionable tasks that engage and motivate people. To make the objectives of Mission Ocean actionable, they must be both known and supported at different levels (government, regional and local contexts). Key to improve knowledge-action in line with the Mission(s) is to ensure processes that are perceived as credible, salient and legitimate. This entails opening up the processes in which challenges and solutions are framed and the inclusion of forms of knowledge other than science. For example, by having local authorities use data collected by coastal citizen science groups for monitoring on an ongoing basis[40].

The highest level of citizen participation is in theory out of scope for Mission objective projects (**Error! Reference source not found.**). The starting point for this toolbox is *how to advance Mission Ocean,* not what the Mission should be about. This means that the framing stage of the problem definition is already done (see Section 2.2). For instance, Mission Ocean has defined an overarching goal (restoration), with different European sea/river basins (lighthouses) taking the lead and emphasising one Mission objective each (although each objective will also be pursued in each basin, see **Error! Reference source not found.**). The primary objective of a basin may not be perceived as the most urgent or relevant problem for all communities pertaining to that basin. In a local context, this could lead to difficulties in recruiting citizens at higher levels of engagement. It is crucial that all activities take this into consideration when using this toolbox. However, we believe that increasing citizen knowledge and understanding on the challenges/objectives may lead to bottom-up initiatives in line with Mission Ocean at the "Empowered" level (**Error! Reference source not found.**). The solution may lie in localizing the top-down Mission objectives, increasing their relevance, and transferring power[41,42].

In the context of Mission Ocean and its related environmental policies and decision-making processes, it is probable that participatory processes will be more effective if they are linked to institutions or organizations to have an impact on the relevant issue at hand.

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[39] Mazzucato, M. (2021).

[40] A successful example of data collection by stakeholders is the Norwegian Reference Fleet, where fishers collect data on a regular basis for fisheries management purposes. For more information, see: https://tinyurl.com/mshvf7ua

[41] Cash & Belloy (2020).

[42] Bennett et al. (2021).

Figure 22: overview of the primary Mission Ocean objectives in each river and sea basins.

Highlights

- Two types of problems – uncontrollable and controllable problems – requires different levels of participation.
- Citizen participation occurs when individuals from diverse backgrounds and expertise engage with knowledge-production and/or decision making in a collective endeavour.
- Citizen participation allows Missions to tap into a wider knowledge base, democratizes knowledge and decision-making, and improves the quality and saliency of the decisions made and facilitates social justice.

3. Typology for citizen participation: when, who and why

This chapter will guide the reader in deciding when to include, who to involve and why involvement is important (or not) in a Mission Ocean initiative or decision-making process.

As addressed in section 2, there are many good reasons for supporting citizen participation. But it is also important to think critically about which level of participation is necessary and what expectations will come along with each concrete case. Citizen participation has some practical and analytical weaknesses which are important to consider (see Section 2). For instance, it is practically impossible for all citizens to participate directly in workshops or meetings; most people have little time and no desire to participate in technical decision making such as wave forecasts. Warren (quoted by Brown) points out that people want safe food and aeroplanes, not the opportunity to participate in meat inspection and air traffic control[43].

In order to support the process of choosing what type of involvement is necessary for different Mission-related problems, we will use the two types of problems introduced in section 2.1, controllable and uncontrollable problems, as a rough diagnostic tool. It is in particular for uncontrollable problems we recommend that participation is necessary. However, due to real-life complexities it is difficult to know exactly what type of problem a societal challenge may fall under, and when and how to include citizens. This must be evaluated from case to case. Below, we provide a typology (see Figure 3) to support the process.

3.1. Different types of risks/problems – guide for multi-actor engagement

Below, we provide a typology to support the process of knowing when it is most suitable to include different types of actors, depending on the type of problem at hand. This is meant as a guide for multi-actor (including citizen) engagement, based on post-normal science theory (see 2.1). Recall that we assume that there are two main types of problem that need different levels of engagement and different types of actors (see 2.1 and Figure 33).
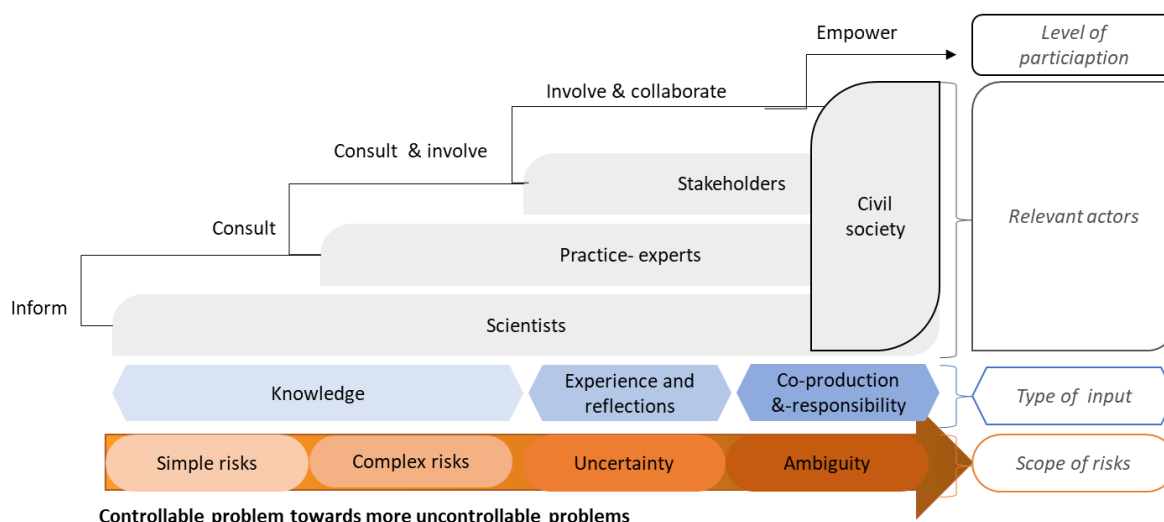
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[43] Warren (1996)

Figure 33: Recommended ladder of actor engagement according to scope of risks and expectations for participation. Note that it is always possible to open up for citizen participation at all levels of risk[44]. The controllable problem goes down a continuum to uncontrollable problems from the left to right; while the expected level or type of participation is illustrated going from the bottom up. If the expected participation is knowledge input as one-way information (inform) it suffices to include scientists in the participatory processes. Moving further to the right towards uncontrollable problems, the expectations for type of participation changes and involves consultations with civil society with feedback to the process to scientists/policy makers. This depends on the problem at hand, however, as practice experts such as fishers, farmers etc, may have relevant knowledge input; See next section for real life examples to illustrate how to use the typology.

3.1.1.   Real life examples to illustrate how to use the typology

Controllable problem: blue mussel toxins

We will start at the far left of the figure with an example of a **controllable problem**, which means that there is little conflict regarding the issue at hand and the **scope of risk** is simple. Take the issue of food safety, like the toxin levels in blue mussels. Arguably, most people agree that they want to be able to eat mussels without toxins, and the science in this matter is settled (the level of toxins safe for human consumption for instance). Moving along the orange arrow, this is categorized as a **controllable problem**. Next, move up the figure to check the **type of input** needed. It can be assumed that scientists are **relevant actors** involved in knowledge production for the advice of toxins in blue mussels. Looking at **the levels of citizen participation**, it is reasonable to assume that it suffices to **inform** citizens about the toxin levels. Summing up, if you have a controllable problem with little risk and a general consensus (e.g., what toxin levels in blue mussels are safe), one can assume that this is a a) controllable problem with simple risk; b) the type of input needed is knowledge input from scientists as relevant actors; and c) informing citizens is a sufficient level of participation.

Uncontrollable problem: coastal erosion due to sea level rise

Moving right on the continuum of the orange arrow towards **uncontrollable problems,** the complexity increases when looking up towards the **scope of risk** (complex, uncertain and ambiguous risk), the **type of input** and who the **relevant actors** are. Knowledge input is not enough for these problems;

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[44] Source: Adapted from Bjørkan, M. (2011)

you will also need **experience and reflections** and potentially even **co-production and -responsibility** from a broader set of stakeholders, including citizens.

Take the example of a coastal community where coastal erosion is threatening the safety of those living there, as the beaches are eroding. So, you know this is an **uncontrollable problem**, but what is the **scope of risk** (moving up the figure), and consequently, the **type of input** needed? If the scope of risk is **ambiguous**, the figure suggests co-production and -responsibility, involving scientists, practice experts, stakeholders and civil society. Will the participatory process require involvement, collaboration or even empowerment? What actors are relevant to include in the process?

In this example, we suggest the following: **Knowledge input** from science, but also from practice experts such as people **with experience-based knowledge** about e.g., how this case compares to other coastal areas, or how coastal erosion has developed over time. In addition, **stakeholders** such as house owners should be included in the decision-making process: what type of actions do they prefer as this impacts them directly? E.g., would they prefer to be reallocated? Would they prefer to build a concrete barrier protecting their house? Also, **civil society** should be included in the process, since this will impact them in different ways, e.g., access to the coast or economic cost of the process. Importantly, all of these actors are also civil society, including scientists.

Highlights

- Citizen participation is not necessary for all type of problems, and precautions should be taken for when, why and how to engage them.
- Knowledge and interest among citizens about Mission Ocean must be created through processes that are perceived as credible, salient and legitimate in order to be translated into action.
- A Typology of Citizen Participation is presented – when is citizen participation needed and not, and which level of participation is appropriate?

4. Engaging citizens step by step

In this section we describe the process to be taken after deciding what level of participation is needed. The advice provided here is based on experiences from participatory processes realized in a number of projects.

When it is decided whether the participatory process will focus on civil society in general or target specific stakeholders, there are three steps that follows: preparation, implementations and monitoring/assessment. The three steps (preparation, implementation and monitoring/assessment) represent a process. Hence, they are not independent steps, but a continuum of connected activities, where citizens/stakeholders might participate and contribute on all levels.

Step 1: Preparing for citizen engagement

Thorough preparation in advance of actual instances of citizen engagement is crucial for successful implementation. The complexity of socio-environmental-economic challenges of our times have led to increased demands for citizens to participate in decision making, policy production, governance, and research. While this is positive from a democratic and social justice perspective, demands for time and engagement from citizens are increasing[45]. Therefore, it is essential to carefully consider the reasons for calling citizens to participate, as well as how their engagement will unfold. This mitigates "engagement fatigue"[46](see section 2.2) and lays the ground for a more productive and successful process. The guiding reflection questions in Table 2 are meant to support in the preparations and considerations for citizen participation initiatives.

A key aspect of preparation is relationship building and communication with the target community/stakeholders. This is essential to ensure that the future process is understood and requires more than sending periodic email updates, invites and reminders. For example, community leaders and key stakeholders could be identified, sought out, and engaged in some preparatory activities like stakeholder mapping or communication strategies to the general civil society. Trust is built through such interactions as well as (perhaps especially) the informal chatting that takes place around such activities. Such an approach creates partnerships with key stakeholders, community leaders, or local figureheads that can be tasked with promoting the future engagement process themselves. This generally leads to much deeper engagement from the target community, a better understanding of the issues as people themselves verbalise them, and generally a more successful process.

Mapping participants (see the appendix for a suggested mapping template) is important in order to get an overview of who you aim to include, and who you actually manage to include. Given the principle of leaving no-one behind, effort should be taken to ensure gender and equality issues are reflected upon. For instance, if you are alone with small children, it can be difficult to participate in meetings during the afternoon; and if you don't have a car, you may not travel far, and there may be identity/religious/historical reasons for avoiding buildings such as churches.

Recall that citizens are all those living in, for instance, a coastal community, while stakeholders are all those who have a stake in a project or a process. This includes individuals, organizations and

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[45] Attree et al (2011).
[46] Clark, T. (2008).

professional bodies. By the term "stake" we mean that some actors can influence, impact or be affected by the project. However, all people living in coastal communities can be both stakeholders and citizens. If the aim is to ensure that all citizens are included, we recommend an intersectional perspective and hence a focus on gender, youth, immigrants and other groups that often are overlooked.

Examples of typical stakeholders in coastal communities:

- Traditional or primary sector stakeholders: fishers, salt producers, water owners

- Emerging blue sector stakeholders: aquaculture firms, tourism companies

- Representatives of nature interests: environmental NGOs, e.g., WWF

- Municipal and regional authorities: coastal zone planners

- Recreational users: recreational fishers, boating/sailing enthusiasts, kayakers, swimmers, beach combers, recreational home dwellers

- Subsistence users: fishers, hunters, shellfish gathers/farmers, fish farmers

It is important to consider several aspects including a) **power**, focusing on who is in a position to influence in the given context and including different forms of power (utilitarian, normative, coercive) *and also lack of power*; b) **legitimacy**, focusing on who has a legitimate right to influence. This can be based on tradition (fishers, for instance) or employment (aquaculture, for instance), how representative they are (formal vs informal); c) **urgency/need** for immediate attention d) **economic status**. Stakeholders can have an urgent need to influence with problems that have an irreversible element (life threatening, reduce quality of life, threaten economic security, threaten biodiversity, or destruction of cultural heritage). This aspect also includes vulnerable groups; and e) **practicalities**: in general, practicalities cannot be ignored since budget, time and practical consideration will limit the selection of stakeholders. This includes issues such as: what is realistic? Do we have easy access to stakeholders? Are stakeholders willing to participate? Are there any risks?

Below is a table with guiding reflection questions to help prepare step 1. It is not meant to lead to a final answer, rather to open up for reflections and guide the process of defining your goals for citizen participation.

Table 2. Guiding reflection questions for step 1 – preparing for citizen engagement. (Source: Question adapted from Zimmermann and Maennling (2007)[47])

	Guiding questions/suggestions	Comments
Step 1: preparing	What is the focus area of the project?	For instance, coastal zone planning or waste disposal?
	What type of problem are you dealing with?	Controllable/ Uncontrollable See Figure 33
	What is the scope of risk?	Simple/complex/ uncertainty/ambiguity See Figure 3 and section 2.

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[47] Zimmermann & Maennling. (2007).

	What do you hope to obtain by including citizens in your project?	Define your goals, objectives and expected results. See Figure 33.
	Define what type of input you will need in order to succeed	Knowledge/experience & reflection/ co-production & -responsibility. See Figure 3.
	Who are the relevant actors?	Scientists/ practice-experts/ stakeholders/ civil society See Figure 3 & Appendix for mapping actors.
	What level of participation do you aim for?	See Figure 1, Figure 3, Section 2.
	If activities have a high level of complexity in terms of engagement, you may divide into sub-problems with corresponding sub-activities	This will allow stakeholder identification and engagement at sub-activity level.
	Place activities in a timeline. Do some activities depend on the implementation of other activities?	At what stage should citizens be engaged in my project? See **Error! Reference source not found.**, Figure 3, Section 2. Consider eg. time efforts.

Step 2: Implementing citizen engagement

A wide range of methods and strategies is available to implement citizen engagement (see section 5). Citizen engagement is both a range of activities and a process that aims to enhance participation in achieving the Mission goal. As explained in section 2.2, engagement can be a part of every level of the Mission and can be organized in a variety of ways. In developing an engagement strategy, several key questions need to be addressed – a list of questions that can be useful for choosing the specific tools is provided in Table 2. Table 3 may also guide you in choosing a tool, depending on the type of problem you are dealing with, and the level of participation you are aiming for. This toolbox is not exhaustive and the description of different methods is provided to demonstrate the different participation levels that different tools afford. For a wider range of methods, we suggest looking at other toolboxes available online[48,49].

Table 3: The participation level depends on how your project decides to involve the citizens in the process and the level of decision-making power delegated to them. That means that how your Mission Ocean initiative decides to incorporate citizen input, will determine the level of participation pertaining to each tool. For instance, if you decide to implement a citizens' assembly, you may also delegate decision-making power in the form of voting, to the participants (Empower).

Problem type/participation level	Controllable problem	Uncontrollable problem
Inform	Newsletters, flyers, campaigns, websites, social media etc.	
Consult	5.1, 5.2	5.3, 5.4, 5.5, 5.6
Involve	5.2	5.3, 5.6
Collaborate		5.2, 5.3, 5.6
Empower		5.2, 5.3

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[48] http://actioncatalogue.eu/search
[49] http://gap2.eu/methodological-toolbox/

Step 3: Monitoring and evaluating citizen engagement

Evaluating the effectiveness and type of the engagement in some way is an important part of the engagement process. Monitoring and evaluating citizen engagement will provide important results, including help planning, learning from the experience, evidence to demonstrate to participants how their effort matters and evidence of value of the research process and research output[50] [51]. Which can, in turn, improve the engagement process.

Recall that in theory, civil society can be included in all type of projects/issues (e.g., defining project goals, knowledge production, advisory processes, and with different degrees of responsibility) with different levels of involvement (e.g., ownership, responsible, collaboration, exclusion). The point of monitoring and assessing citizen engagement is to illustrate how different methods will result in different levels of participation, and that critical reflection about the purpose of participation in any given project is useful. It is key to any participatory project to be explicit about what the aim of the participation is in order to avoid accusations of lip-service rather than real participation.

Monitoring and assessing the engagement processes for the Mission can take various forms. Inclusive and transparent practices are essential. The purpose of the monitoring and assessment exercise should be taken into consideration when choosing the monitoring design. Note that this is also a step that can be a matter of co-creation, reflecting relevant, recognizable, achievable and tangible results[52]. In initiatives which seek to collaborate with or empower citizens (according to the typology), participatory monitoring and evaluation may be most suitable. It is important to consider whether it is the outcomes/impact of the engagement process or the process itself that ought to be evaluated, or both.

Accordingly, two main **categories of evaluation** can be highlighted:

> 1) Summative approaches that focus more on the *outcomes* than on the process. For example, to demonstrate to participants how their contributions have been adopted in a Mission perspective. For this purpose, both quantitative and qualitative data can be useful;

> 2) Formative approaches that focus on learning from the engagement *process*. For example, to describe and illustrate why and how the engagement process did/did not work. In addition, it is important to consider participants perspectives and how they view the outcomes and process.

There are different stages of evaluation: from the outset, throughout the process and final evaluations[53]. Exactly when evaluation should take place is hard to define on general terms, but overall it is important to consider and plan for monitoring and evaluation early. There is no one-size-fits-all solution, but in the following we describe some important aspects and provide some tools to monitor and evaluate citizens engagement.

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[50] Nogueira et al. (2021).
[51] Durham et al (2014).
[52] Durham et al (2014).
[53] A guide to evaluating public particiaption: https://tinyurl.com/92emrytz

Table 4 provides guiding reflection questions to support this process.

Table 4: Guiding reflection questions for step 3 – Monitoring and assessing citizen engagement. (Source: inspired by Durham E., Baker H., Smith M., Moore E. & Morgan V. (2014). The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA, Paris (108 pp).)

	Questions before and during start of project	**Comments**
	What type of participation is our aim?	Before start of project. See Table 2. For evaluating, see tables 5-8.
	What depth of participation do we want?	Before start of the project. Related to the level or responsibility
	How can we pinpoint exactly type and level of participation?	Before project start – several examples below
	Are the methods selected appropriate?	After project start – make changes if necessary
	What is working well/not working well and why?	During project. For each citizen/stakeholder engagement activity, make detailed minutes that describes the process.
	What is the actual impact of the process on the results?	During project and after the project end
	What is the actual impact of the process on the participants? (do they feel empowered?)	During project and after the project end
Step 3: Monitoring and assessing citizen engagement	**Questions to evaluate outcome of your initiative**	**Comments**
	Did we meet our aims and objectives?	Refer to your answers in Table 2
	Questions to evaluate the process of your initiative	**Comments**
	Were the methods selected appropriate?	During project and after the project end
	What worked well and why?	During project and after the project end
	What did not work well and why?	During project and after the project end
	What are the lessons learned?	After the project end. To inform the general debate on Missions and participatory processes
	Questions to include participants perspectives	**Comment**
	Did we meet their aims and expectations?	You can use different types of tools to gather this information e.g., an e-mail, survey or workshop.
	What are the participants' views on the outcome, process and impact?	You can use different types of tools to gather this information e.g., an e-mail, survey or workshop.

Tables for monitoring and evaluation

Below, we provide four different mechanisms (tables) that can be used to monitor and assess citizen engagement processes:

- Table 5: A simple citizen/stakeholder engagement evaluation table[54] - useful at the outset to plan a strategy[55].
- Table 6: Example of a table for evaluating outcomes in Mission Ocean initiatives (adapted from Warburton et al.[56]). This table is filled out as an example of use.
- Table 7: Evaluating *degree of involvement* and *type of involvement* in Mission Ocean initiatives stages for a knowledge-based policy making process. At the end of this section, an example of its use is provided.
- Table 8: Evaluating *degree of involvement* and *type of involvement* in Mission Ocean initiatives in a context outside policy-making.

These are suggestions and should be tailored to the specific engagement process. Recall that as different Mission initiatives will aim to solve a variety of problems, they will require different levels of participation and will relate to different contexts. Using the same tables before, during and after project start can be useful to reflect on your aims, and to better be able to evaluate whether those aims are met during and after the project start.

Table 5. A citizen/stakeholder engagement evaluation table that is useful at the outset to plan a strategy for a project/initiative.

	What do you want to know?	What evaluation methods will you use?	How will the evaluation be conducted?
Planning process			
Engagement			
Benefits/outcomes			

Table 6. Example of a table for evaluating outcomes in Mission Ocean initiatives (adapted from Warburton et al.).

Goals/purpose of your Mission initiative	Possible Indicators for your initiative	How to obtain data for your initiative	Important assumptions for your initiative
To better inform stakeholders and the general public	Increased understanding and awareness	Questionnaires and interviews with participants before and after the process	That both the awareness and willingness to engage are as a result of the engagement activity, rather than any other factors.
	Willingness to participate in the future	Questionnaires and interviews after the process, and follow-up interviews at a later date	

*Table 7: Table for evaluating citizen engagement at different stages for a knowledge-based policy making process, e.g., advice on Total Allowable Catch. The axis should be adapted according to your needs. Here, the horizontal axis is related to the stages, and for each of these you should reflect on the depth of engagement. This should be compared to the aims of engagement at the outset of your initiative. The vertical axis is related to **Error! Reference source not found.**, modified ladder of participation.*
(Source: Adapted from Bjørkan, M. (2011)).

How are citizens involved in your initiative?		Stages in your Mission Ocean initiative				
		Planning /design	Data collection	Data analysis	Advice	Management
Depth of citizen involvement	Active (involve, collaborate, empower)					
	Responsive (consult)					
	Passive (inform)					

*Table 8: Table for evaluating citizen engagement at different stages adapted to a context outside policy-making, such as non-governmental projects including river restoration projects. The axis should be adapted according to your needs. Here, the horizontal axis is related to the stages, and for each of these you should reflect on the depth of engagement. This should be compared to the aims of engagement at the outset of your initiative. The vertical axis is related to **Error! Reference source not found.**, modified ladder of participation. (Source: Adapted from Bjørkan, M. (2011).).*

How are citizens involved in your Mission Ocean project?		Stages in Mission Ocean initiative			
		Design/creation	Development	Implementation	Monitoring
Depth of citizen involvement	Active (involve, collaborate, empower)				
	Responsive (consult)				
	Passive (inform)				

A practical example: Monitoring how & whether fishers are included in stock assessment for cod

Fish stock assessment is vital for sustainable fisheries. But when the process relies solely on scientific data this has had negative consequences, such as the collapse of the Canadian cod fishery. Including fishers in knowledge production is argued to be beneficial since fishers possess valuable practical knowledge that complements scientific perspectives. Many argues that integrating fishers' knowledge enhances strategies and accuracy in assessing and managing marine environments for sustainable fisheries. In line with this idea, the Institute of Marine Research in Norway started a project called the Norwegian Reference Fleet. The project was introduced as a ground-breaking initiative to include fishers' knowledge in fisheries management. The Norwegian Reference Fleet consists of selected fishing vessels that serve as a benchmark for scientific research and data collection in Norway.

As shown in figure 1 (citizen participation spectrum), fishers can be involved at different levels of participation with varying degree of decision-making power. They can also play a role in various stages of knowledge production, here divided into data collection, assessment, and advice. This is illustrated in Table 9 below, where the vertical axis represents the level of responsibility given to different stakeholders and the horizontal axis represent the different stages of knowledge production.

To encourage fishers' participation, a cooperative approach "**working with science**" is suggested as the easiest and least demanding way to get involved in table 9. This involves fishers and scientists working together, which can take different forms and levels of cooperation (including effective communication efforts that build trust and cooperation, as well as research activities). Another way fishers can be involved is by providing knowledge that is independent of scientists – "**in addition to science**". This means fishers can contribute their own assessments and advice, which may differ from the scientists' perspective. This creates competing sources of knowledge and advice. Another way fishers can be involved is by taking **responsibility for** knowledge provision in fisheries management. This means they would be accountable for providing the necessary information instead of relying

solely on scientists. Examples exist, like in New Zealand. It doesn't necessarily mean fishers perform all tasks themselves, but they oversee and are accountable for the knowledge functions in the advisory process.

Table 9 provides a framework to monitor and analyse different ways fishers can be involved in knowledge provision for fisheries management. It consists of nine broad categories representing the space of fishers' inclusion. This table acts as a basic diagnostic tool to evaluate how the Reference Fleet involves fishers in knowledge production. Moreover, the more functions and levels of commitment we can tick off horizontally and vertically, the greater the responsibility and participation fishers have.

As mentioned, the Norwegian Reference Fleet aims to involve fishers in knowledge production for fish stock advice. However, if it is important to know how exactly they are achieving this goal, this can be explores using the table:

- The establishment of the RF has brought about a significant change by involving fishers in **data collection** for stock assessment and advice. The collected data, including species composition, length, and age information, are used by the IMR and International Council of the Sea for their assessments. However, it's important to note that the fishers' **level of responsibility** in data collection is limited. They follow standardized procedures and have little influence over the data collection process. Their role is comparable to that of a technician or research assistant, with minimal responsibility in deciding what data to collect and how to interpret it. The transformation of collected samples into age data is also done without their participation. In summary, **while fishers work with science, the decision-making power remains primarily with the scientists**.
- Moving on to the **assessment stage**, it appears that the fishers are not involved. It's a highly specialized and traditionally exclusive scientific process where only designated scientists from various national marine laboratories, like the IMR, are allowed to participate.
- Lastly, the RF does not provide an opportunity for fishers to participate in the **advice stage** of knowledge production. This is because the current management system reserves the advisory function for International Council for the Exploration of the Sea, and the establishment of the RF does not change that.

Although the Reference Fleets achievements may appear modest compared to the grand claims made about it as a ground-breaking initiative, it is important not to rush to judgment. Considering the initial exclusion of fishers and other stakeholders from knowledge production in the management system, the progress made by the Reference Fleet has required significant and ongoing efforts. What may seem like a minor advancement on a larger scale can be seen as a significant leap forward for the fishing community.

If the aim is to include fishers or other actors at more stages of stock assessment or at a deeper level of responsibility, a structured approach using a table to track what is done is helpful.

Table 9: Example of a table used to monitor and analyze how fishers (stakeholders) has been included in stock assessment through the establishment of The Norwegian Reference Fleet. For more details, see Bjørkan (2011).

How fishers' are knowledge included		Stages of Stock assessment		
		Data collection	Assessment	Advice
Level of Responsibility	Working with science	X	0	0
	In addition to science	0	0	0
	Responsibility for	0	0	0

Highlights

- Citizens can be mobilized to participate in Mission Ocean in three steps that can be separated analytically but not necessarily in practice: preparation, implementation and monitoring/assessment.
- Note that all steps are interrelated and are likely to take place simultaneously.
- Who to engage and why will vary depending on the context – there is no single solution and engagement demands preparation.
- The implementation of different engagement methods will vary depending on the context and citizens may be called upon for a variety of reasons such as their knowledge, for their input on data, methods or results.
- It is important to monitor how citizens are engaged and the outcomes of the engagements to enable shared learnings on the process, to inform the direction of the research or the initiative, to improve accountability, and ultimately to inform policy and practice in the space. .

5. Examples of specific citizen engagement tools

This section covers a range of different citizen engagement tools with explanations of the step-by-step process of implementing them (preparation, during and after). Many of the tools may apply to both stakeholder and citizen engagement, as these terms often overlap (see Section 2.2). According to your Mission Ocean initiative and the problem you are to solve, some tools are more appropriate than others, and this toolbox is not exhaustive. Therefore, we recommend reflecting on the guiding questions of Section 4 before deciding on your chosen method. We also suggest exploring the wide range of stakeholder engagement methods guides that are available online[57,58].

When implementing a tool, it is important to consider the power relations between organizer/researcher and participants, and between participants (when using tools that involve several citizens) (see stakeholder mapping in Appendix). When inviting citizens to participate, think about the location that you choose for your activity. Aim for a place where participants feel comfortable. For each tool, it is encouraged to reflect on the principle of "*leaving no one behind*" and aim for inclusion and diversity in your informants[59].

Tools included in this toolbox:

- Survey (See Section 5.1)
- Citizen's assemblies (See Section 5.2)
- Future scenario workshop (See Section 5.3)
- Semi-structured interviews (See Section 5.4)
- Walking interviews (See Section 5.5)
- Participatory mapping (See Section 5.6)

5.1. Survey

Participation level: consult.
Problem type: controllable and uncontrollable problems.

Description: Conducting surveys is a way of obtaining information from citizens which requires minimal time commitment by informants (and by you). With surveys, you may reach a greater number of informants than with other methods and, ideally, get a large representation of opinions, needs or knowledge from the respondents. Additionally, surveying requires little training, in comparison to interviewing or other methods.

Preparations:

- Decide on your objective with the survey. Are you capturing quantitative or qualitative data (or both)? What it will the data be used for? How will it be analysed? Is a survey the best method to obtain the desired information? Will you have open-ended, closed-ended, multiple choice, likert scale questions, or a combination?

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[57] http://actioncatalogue.eu/search
[58] http://gap2.eu/methodological-toolbox/
[59] United Nation on leaving no-one behind: https://tinyurl.com/bdf4rc8s

- Decide on who will be your informants and the size of your sample. If you are aiming for wide representation, you might also need a strategy for surveying similar proportions of groups as the population as a whole. Alternatively, include questions on demographic characteristics so that you later may analyse responses with proportions similar to that of the general population.
- Depending on who you want to reach, decide on the format of your survey. Is it more appropriate to conduct it online or to print for manual use? An online survey may be an easier way to reach more people, but you might also have less control over the reach of your survey. It will also depend on how "digital" your informants are. E.g., If you are asking elderly to respond, a printed form may be more appropriate. If you decide on a printed survey, have a strategy for collecting responses.
- Prepare an appropriate number of questions. Try to balance the time commitment and the amount of information you need. Many will refrain from answering surveys that look very time consuming and complicated.
- Depending on which citizens you are seeking consultation from, it could be important to include questions that will give you information on residency or affiliation to the area or region you are exploring. Consider whether your survey will be anonymous or not, and the ethical requirements that follow.
- Test your survey with someone to get feedback before distributing it to your audience.
- Include questions from which you may identify whether you are following the "*leave no one behind*" principle[60].
- Write an information sheet or a paragraph that goes with the survey to describe its aims and the rights that the respondent has in terms of ethical considerations. Include your contact information in case of questions.

During:

- If conducting an online survey: share on the communication channels you find will reach the most representative group of citizens. Share on many platforms if you require large amounts of data. If you are seeking responses from a specific group, share it directly with the group or find out where best to reach its members.
- If conducting a manual survey, investigate how and where you may reach the informants you aim to reach and how to make sure all have the same chance of responding.

After:

- If you shared an open online survey, close the survey at the deadline. If manual, collect the survey responses as planned.
- For citizens to be informed about the outcome of their participation, share the results of your analysis and the impact of it on the platforms where the survey was distributed. If their contact information was shared in the survey, this information can also be directly shared with them. If you are open for it, give participants a chance to give feedback.

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[60] United Nations on leaving no-one behind: https://tinyurl.com/bdf4rc8s

5.2. Citizens' Assemblies

Participation level: Involving, collaborating or empowering, depending on how it is set up and who has responsibility and decision-making power.
Problem type: controllable and uncontrollable problems.

Description:

Citizens' Assemblies (also called mini-publics) are often used to illustrate a method of direct deliberative democracy in a decision-making process[61]. In a citizens' assembly, citizens can come together to discuss values, concerns, opinions regarding complex challenges, such as environmental issues and climate change. Although it is argued that not all aspects of how citizens' assemblies are run can be defined as a deliberative decision-making procedure (e.g., voting), there are some issues which are so value-laden that reaching consensus is an impossible goal, so there needs to be a strategy to establish recommendations. Many versions of citizens' assemblies exist, but it could generally be described as a body of randomly selected citizens that deliberate, and in some cases vote, on one or several issues that have implications at the citizen level [62,63.] Usually, it is a value based political problem.

Citizens' assemblies may be established to improve legitimacy and public support of new and ambitious policies in line with Mission Ocean[64,65]. This would create opportunities for the general citizen to participate in a decision-making process, e.g., policymaking, and hopefully make for solutions that are more easily accepted by the public. Note that because of its relatively deep and long-term commitment, it may be challenging to get people to participate in citizens' assemblies and stay committed.

Characteristics of a Citizens' Assembly:
- Large (can be several hundred people, usually 100-200)
- Can be local, regional, national
- Requires a time commitment of up to one year with frequent meetings
- May be organized and sponsored by government or parliament, or civil society organisations. The Danish Citizens' Assembly on Climate Issues recommends that the assembly is established by political decision-makers who pledge to consider the recommendations in policy making.[66]

Preparation:

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[61] Pal (2012).

[62] Kuntze & Fesenfeld (2021).

[63] Danish Ministry of Climate, Energy and Utilities. (2021).
https://kefm.dk/Media/637647201779892262/Borgertingets%20anbefalinger_ENG.pdf

[64] Kuntze, L., & Fesenfeld, L. (2021). Citizen assemblies can enhance political feasibility of ambitious climate policies. *SSRN Electronic Journal.* doi:10.2139/ssrn.3918532

[65] Dryzek, J. S., & Niemeyer, S. (2019). Deliberative democracy and climate governance. *Nature Human Behaviour, 3*(5), 411-413. doi:10.1038/s41562-019-0591-9

[66] Danish Ministry of Climate, Energy and Utilities. (2021). The Citizens' Assembly's Recommendations. The Citizens' Assembly on Climate Issues.
https://kefm.dk/Media/637647201779892262/Borgertingets%20anbefalinger_ENG.pdf

- Firstly, decide on the purpose of arranging a Citizens' Assembly. What will the results be used for? Normally, citizens' assemblies are set up to influence policy making. What is the scale of your citizens assembly – is it local, regional, national? See also sections 3 and 4 in this guide for reflection questions. It is important to decide on the expected power of influence that the assembly will have on your Mission Ocean initiative or policy. It is advisable that the sponsor of the assembly (eg. Government) makes an official, formal commitment to the ways in which the recommendations/proposals will be influencing politics or other objectives of the assembly[67].

- Set up an organizing team/overall facilitator or select an institution that will be responsible for the practical aspects of the citizens' assembly. This team should be impartial to the greatest extent possible. Facilitators could also be recruited through the European Solidarity Corps portal (See Appendix, Section 8), but make sure they have the necessary training for supporting citizens through the assemblies and taking notes.

- The facilitator entity will plan the meetings (potentially together with members of the assembly), send out information to the members, plan presentations and invite experts, set up a voting system, and afterwards inform the members about the influence of the assembly recommendations on the policy process at hand. This team could also be responsible for reporting throughout the assembly process and publishing results. The organizers should also inform the public about the citizens' assembly and how it is set up, as well as ensuring its transparency[68].

- Select participants. The members of the citizens' assembly should be selected randomly, and be representative of the general population with regards to various demographic parameters. It could be a good idea to make the national statistics bureau responsible for the selection process, especially if the assembly is on the regional or national scale[69]. A first step could be to survey the population on who would be interested to take part in a citizens' assembly and then have a selection process. Advertise in the communication channels relevant to your target public.

- Find a suitable location for an assembly of >50 participants (depending on the scale of your targeted region). Alternatively, set up digital meetings in a suitable and accessible platform.

- Prepare presentations or other forms of teaching (eg. workshops) about the Mission Ocean topic, policy or project to be deliberated on, including different alternatives to be discussed. Learning materials may also be sent out before the first meeting. This is for all participants to have a knowledge base as a starting point for deliberating and advising decision-making processes. The learning material should include "all" perspectives on the topic to be discussed in order for the assembly to understand the various viewpoints on the issue.

- Set up an expert group tasked with quality checking the education materials, balance of views in stakeholder and expert presentations etc.

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[67] Kuntze, L., & Fesenfeld, L. (2021). Citizen assemblies can enhance political feasibility of ambitious climate policies. *SSRN Electronic Journal*. doi:10.2139/ssrn.3918532

[68] Ibid.

[69] Danish Ministry of Climate, Energy and Utilities. (2021). The Citizens' Assembly's Recommendations. The Citizens' Assembly on Climate Issues.
https://kefm.dk/Media/637647201779892262/Borgertingets%20anbefalinger_ENG.pdf

During:

- The citizens' assembly meetings could include a series of events for the Mission Ocean issue(s) to be discussed[70]:
    - Phase 1: Readings, expert and stakeholder presentations and debates, and discussions on topics and dilemmas, as a learning phase. Develop themes for the next phase. In the case of a large number of issues, consider a voting for prioritising themes.
    - Phase 2: Working groups for each theme to develop recommendations on theme and sub-themes. These are run through a peer-review process within the assembly groups. Recommendations could also be fact checked by experts if desired.
    - Phase 3: Referendum on recommendations and compile into a report for policy makers.

After:

- The organizing team or members of the citizens' assembly compile the recommendations into a report. This report could serve as an influence on a policy process or management strategy, depending on the purpose of the citizens' assembly. The results could for instance inform the decision-making process of the issue discussed, or be part of a policy process etc.

Example:

The Danish Citizens' Assembly on Climate Issues made recommendations on a range of issues, including land use, transport, popular education and agriculture, as input to the political process of Denmark's national climate action policies[71]. Detailed descriptions of the process can be found in their report: Danish Ministry of Climate, Energy and Utilities. (2021). The Citizens' Assembly's Recommendations. The Citizens' Assembly on Climate Issues. https://kefm.dk/Media/637647201779892262/Borgertingets%20anbefalinger_ENG.pdf

5.3. Scenario workshops

Participation level: Involving or partnership, depending on how it is set up and who has decision making power.
Problem type: Uncontrollable problems.

Description:

Scenario planning[72] is a methodology with a range of processes that provide the opportunity to challenge our mental models about the external landscape that we operate within so as to inform and enhance decision-making. The methodology assists us to identify key factors in the operating landscape that are uncertain/will create uncertainty, and to understand how those factors can interplay with each other to describe plausible alternate descriptions of the operating landscape in the future. When facilitated with the intent to shape and challenge mental models, scenario planning is a powerful methodology for generating new ideas and insights that enhance decision-making. The process is not about prediction. It is about preparing us to understand and be accepting of uncertainty

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[70] Danish Ministry of Climate, Energy and Utilities. (2021). The Citizens' Assembly's Recommendations. The Citizens' Assembly on Climate Issues. https://kefm.dk/Media/637647201779892262/Borgertingets%20anbefalinger_ENG.pdf
[71] Ibid.
[72] Saliba, G. (2009).

and complexity and to build these into our decision-making processes. The process is about developing our capacity to be able to navigate the external operating landscape in a responsive fashion.

In practice: Workshops for exploratory scenarios to co-produce knowledge with citizens/stakeholders and engage researchers. It is an inspiring way to get locally relevant narratives of change/about potential futures, to map uncertainty and to get a base for selecting robust management options.

Preparations[73]:

- Decide on the objective of the workshop and make a detailed program. It is useful to have a scoping phase to explore the context in which the workshop will be held. This could be done through, for example, semi-structured interviews (see section 5.4)
- Select time and location for workshop
- Identify and invite participants (see Appendix). Focus on diversity of voices. Be aware of power dynamics. Invite through direct contact if available. A great way to get people to come is if you already have established contact with key people you want to invite. This could for example be through conducting semi-structured interviews ahead of the workshop (see below for how-to on semi-structured interviews).
- For reaching the general public: posters, newspapers, social media platforms. Posters may include QR codes linked with more info about the project/activity. It is useful to include a digital sign-up sheet in order to better plan for number of facilitators needed, and to know how much food to order. If you are restricted in terms of space and food budget, you might need to find an appropriate way to select participants and aim for a representative selection.
- Prepare introductions. Eg. Powerpoint presentation with an introduction of your organisation and your project. Additionally, it is useful to go through a slide with the schedule of the workshop.
- Formulate focus questions for the discussions and group work (based on objective and context)
- Prepare a draft conceptual model – to inspire revisions from workshop participants
- Prepare "what if"-questions and "wildcards"/jokers (literature, scoping) to spark discussion in groups that struggle to get started with discussions
- Prepare registration and consent forms
- Prepare recommended equipment/material: Large papers/magic sheets, post-it notes, pens and markers.

During:

- Introduction by facilitators (include meeting "ground rules")
- Facilitated brainstorming about locally relevant drivers of change (or other topic relevant to your objective) – remember to take photos of written ideas (post-its) or record them in some other way
- Sort the ideas into categories
- Have the participants vote on for example the importance and uncertainty level of the categories from the previous steps

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[73] Nilsson et al (2017).

- Have a group work session on a topic relevant to your objective. For example: Synthesize previous steps to make a "model" of local social-ecological system
- Introduce wildcards/what if-questions to spark discussion in groups that struggle to get started with discussions
- Make someone from each group report on their discussion in plenary
- Wrap-up and inform participants on the next steps of your project/initiative – invite participants to take part in writing the narratives/outcome report of the workshop
- Evaluation

After:

- Synthesize: Put brainstorm insights into context of your project/initiative (eg. basin-wide changes/marine and freshwater challenges in region)
- Revise conceptual model
- Write narratives of potential futures based on results and other relevant input
- Get comments from participants on synthesis, revised model, and narratives. Send out draft through email or other relevant communication platform.
- Evaluate workshop process and outcome (See section 4)

Steps of overall tool process:

- Scoping visits
- Identify citizens/stakeholders and concerns
- Interviews and workshop to identify relevant drivers of change
- Develop first outlook of different potential futures
- Interviews to refine narratives of potential futures
- Analysis of local input and insights from studies of changes (eg. changes in marine/freshwater systems and biodiversity)
- Synthesize insights locally and across field sites if you are doing it several places

Example:

Nilsson et al (2017): Towards extended shared socioeconomic pathways: A combined participatory bottom-up and top-down methodology with results from the Barents region. *Global Environmental Change,* 45, 124-132. doi:https://doi.org/10.1016/j.gloenvcha.2017.06.001

5.4. Semi-structured interviews

Participation level: consultation, involve
Problem type: controllable and uncontrollable

Description:

Semi-structured interviews are guided conversations/two-way dialogues with an open framework, often in an informal setting. It is a qualitative research method that is information rich, both in that the interviewer provides and receives information. It is a suitable method for understanding

informants' perspectives, experiences and situations from their point of view. It is also a useful method to use at the planning or beginning phases of a project or initiative[74].

A semi-structured interview may be conducted with one informant or with a group of informants. Semi-structured interviews are more time consuming and requires more facilitation skills than a one-way, structured interview does, but can be more engaging and result in information relevant to the interviewee that may widen the scope of the investigation.

Remember:

- Superfluous information may surface.
- It takes practice to find a balance between an open and a guided conversation. The interviewer needs skills or training, especially when it comes to asking non-leading questions.
- During group interviews, interruptions may occur, and the conversation may go off topic

Preparations[75,76]:

- Develop an interview guide with framework, topics and/or questions for conversation that covers the information you are seeking. Make sure to create open-ended questions that are not leading. Run the topics through your team and with someone who can check on the relevancy of the questions/topics.
- Make an overview of relevant informants and a procedure for selection of informants
- Practice interviews to get feedback on communication and listening skills
- Ask informants where and when they feel comfortable meeting for an interview (See also if section 5.5 may be more appropriate)
- Prepare the interview with precise information about the topic and other related information that might be needed during the interview
- Prepare relevant props to inspire conversation, for example maps.

During:

- Greet your informant and introduce yourself in a friendly way. Be aware of your body language throughout the session.
- Assure that informants are aware of how the data will be used. Get permission to record the interview on tape or video if you will do so. Using a recorder may allow for a more natural conversation instead of the interviewer always having to look at their interview guide and appear unfocused on listening.
- Start with general questions/topics. Listen carefully and ask clear questions that may not be perceived as insensitive.
- Take brief notes to be elaborated on immediately after interview. Include notes on the atmosphere, the reactions to various questions etc.
- Interviewer obtains answers and can adapt their following questions accordingly. Questions from the informant will also arise during the interview – be open for questions, it is a dialogue.

After:

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[74] Annex 1 of: Durhamet al. (2014).
[75] Annex 1 of: Durhamet al (2014).
[76] Holm, P. (n.d.). Collecting Knowledge: Semi-structured interviews. http://gap2.eu/methodological-toolbox/

- Analyze info at end of interviewing day. Could do this together with interview team.
- Transcribe audio recordings if you recorded the interview.
- Fact-check the interview notes with other sources or stakeholders
- Evaluate your interview guide and method to see if anything can be improved before new interviews
- Circulate results with informants for quality check, comments and feedback
- Share the impacts of interview results with your informants

Examples:

Gómez-Ballesteros et al (2021). Transboundary cooperation and mechanisms for Maritime Spatial Planning implementation. SIMNORAT project. Marine Policy, 127, 104434. https://doi.org/10.1016/j.marpol.2021.104434.

Likhacheva et al (2019). *SIMNORAT - Potential approaches for stakeholder engagement on Marine Spatial Planning and outcomes of pilot testing (D14)*. https://doi.org/10.5281/ZENODO.2597520

Nys et al(2018). *Methodology guide for semi-structured interviews* (p. 20). https://doi.org/10.13140/RG.2.2.25111.68002

5.5. Walking interview/"go-along"

Participation level: consultation, involve
Problem type: controllable and uncontrollable

Description:

A qualitative research method which involves interviewing "in-situ" and in-depth, connecting the informant's responses with the spaces where they practice their work or recreational activities (in a context familiar and comfortable to them)[77,78]. This method has similarities to that of semi-structured interviews.

Not strictly following an interview guide, but rather having some topics to discuss in mind, the information shared by the interviewee will be a result of where the conversation "takes you"[79]. The spaces in which you walk could also be topics of conversation[80]. In this method it may not be appropriate or "natural" to get out an interview guide and take notes while walking, because the interviewer will likely take part in an activity (such as mushroom or berry picking, fishing etc.) or have a more informal conversation along the walk.

Walking interviews are useful for understanding citizens' connection to space and cultural heritage[81,82]. It adds a spatial component to the interviewing and may be a basis for coastal or marine planning purposes, as it shows how citizens use and experience the areas in question, or potentially what they wish for those areas to be in the future. It is a useful method to use for spatial planning and

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[77] Jones, P., & Evans, J. (2012).
[78] Jones et al (2008)
[79] Risvoll, C. (2023). Personal communication.
[80] Evans, J., & Jones, P. (2011)
[81] Evans, & Jones (2011)
[82] Jones, & Evans. (2012)

development, citizen science, ethnographic research, ecosystem service issues connected to space and historical and cultural projects, among others.

Preparations [83]:

- Reflect on what kinds of data you will generate and record.
- If you wish to obtain precise location-based data, remember to bring a GPS device. Reflect on how precise the spatial data needs to be, depending on how important it is in your project/initiative. GPS may be problematic and complex in terms of "surveillance" and power relations[84]. Ask participant for permission to register precise GPS location either throughout the interview or at some specific locations.
- If you will be audio recording the interview, bring a recorder. Remember to ask for permission to record/include it in your interview information/consent form according to ethical regulations.
- Prepare a few topics for conversation rather than a bunch of specific questions.
- Decide on whether the interviewees are to decide on the route walked, or whether the interviewer wishes to obtain information on interviewees' various uses of spaces along a set route[85]. If interviewee is allowed to choose, decide on whether there is any boundary to the area to be walked. Address power dynamics with regards to where interviews take place.
- Prepare recommended equipment: depending on what data you want to obtain; a GPS device could be needed for registering spatial location. Audio recorder may be useful.

During:

- Take photos along the walk.
- Mark specific spots in the GPS when relevant (if consented by participant).
- If audio recording, mention locations you walk on along the way as another way of mapping the information.

After:

- Write down your notes from the interview, preferably immediately post-walk, in order to record information while fresh in memory.
- Give the interviewees the opportunity to read through and confirm the accuracy of the data you have transcribed to be used in your report or initiative
- The amount of information retrieved from the interviewee may vary according to your interviewee and their talkativeness. Getting the information, you are seeking will also depend on how much the interviewee will stick to the topic. It may become necessary to contact the informants for further, more focused, and formal interviews to fill in the gaps after the walking interview.

Example:

Jones et al (2008). Exploring Space and Place With Walking Interviews. *Journal of Research Practice, 4.*

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[83] Evans, & Jones (2011)
[84] Propen (2006)
[85] Jones et al (2008)

5.6. Participatory mapping

Participation level: involve, consult, partnership, potentially empower
Problem type: controllable and uncontrollable

Description:

Participatory mapping is an inclusive and collaborative process in which citizens/stakeholders map out information and knowledge about space and the use of spaces, for example in a land-use planning process [86], coastal or Marine spatial planning.

In this method, citizens/stakeholders can illustrate their uses of space and their stories connected to those areas through a map. This can bring up land uses that may typically be "forgotten" when categorizing land use in formal spatial planning processes – the use that cannot be categorized or the activities/ecosystem services that cannot be measured in monetary value, but are central to the everyday life or wellbeing of communities[87]. It can also reveal what areas are accessible and not for different groups, as well as citizens' perceptions of areas that are not necessarily in "use" by them[88]. This may be useful for exploring what areas have an associated risk of conflict and can inform decision-making in spatial planning process[89]. Participatory mapping can also bring about new and alternative solutions to spatial challenges. It may be used as a tool for co-production of knowledge.

Furthermore, story mapping may be a great tool in a Mission Ocean initiative that entails historic use and local, cultural knowledge about space[90].

Preparations:

Multiple methods exist, some include digital mapping software (GIS platforms), others involve printed maps and markers, stickers, and post-its.

- Decide on which stage in the mapping process citizens are to be involved. What level of engagement are you seeking from them? This may be from the planning stage or it could be only for data collection or confirmation of land use registered in existing maps[91,92]. Who has decision-making power throughout the process? (see Figure 1 and Section 4)
- Decide on the format. Is it most appropriate to print out maps for analog mapping or to make a digital platform for participation? A combination? This will likely depend on the scale of the project and the number of citizens expected to be involved, as well as their access to digital platforms and/or distance to the area of interest.
- Consider the spatial resolution of printed maps in case of non-digital mapping workshop. A digital GIS tool generally allows for zooming in and out.
- Find a suitable location for mapping workshop. Attention to accessibility, distance. ("leave no one behind").

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[86] Cochrane et al (2014).
[87] Greg, B. and H. Vera Helene (2017).
[88] Cochrane et al (2014)..
[89] Cochrane et al (2014).
[90] Cochrane et al (2014).
[91] Cochrane et al (2014).
[92] Saija et al (2017).

- Consider using household sampling as a method of recruitment. Passive recruitment/volunteer sampling may not be representative (Brown, 2017; Greg et al., 2018). Greg et al. recommends having as many participants as possible to improve representativeness and quantity of data to be analyzed.
- Prepare recommended equipment: Printed maps, post-its, transparent plastic sheets, pens and markers. Technical equipment: ArcGIS or open-source map, eg. QGIS, Geojson.io.

During:

- Briefing – introduce the concept of story mapping as well as the topics for discussion/area in question/issues to be explored
- Facilitate the use of maps and info in maps for participants to contextualize their stories/experiences/knowledge

After:

- Summarize and digitalize map(s) based on information from the process
- If relevant, write a report on information and knowledge input from the participatory mapping process
- Share maps and/or report with participants for feedback before finalizing and sharing with relevant stakeholders/institutions/policy makers or publishing

Examples:

CCAT Closure Event (2023). Tools for engaging with local authorities. Coastal Communities Adapting Together. https://tinyurl.com/vaxkyp84

Figueiredo et al (2020). Community and participatory mapping in planning. https://tinyurl.com/y2a4z4ex

Greg et al. (2018). "Using public participatory mapping to inform general land use planning and zoning." Landscape and Urban Planning 177: 64-74.

Greg & Vera Helene (2017). "An empirical analysis of cultural ecosystem values in coastal landscapes." Ocean & Coastal Management 142: 49-60.

Larzilliere et al (2013). Interactive scale models, a novel way of prompting constructive participation. Bois et Forets des Tropiques. 67. 21-28.

6. Engaging with the citizen participation targets of Mission Ocean: some examples

The European Commission's ambition in relation to citizen engagement with Mission Ocean falls under a handful of clear themes – working with citizen science initiatives, or engaging the European Solidarity Corps, for example (see Table 1). This section has been written to provide examples and advice on achieving these citizen participation aims, and aligning with the requirements of the Mission Ocean Implementation Plan and the Horizon Europe Mission Work Programme call topics (2021-2022, and 2023-2024).

NOTE: This is a living document. This section will be expanded through the lifetime of the project as more case studies that engage with the citizen engagement target outcomes of Mission Ocean (see Table 1) are collected.

6.1. Leveraging the European Solidarity Corps to achieve the aims of your Mission Ocean initiative

What is the European Solidarity Corps?

The European Solidarity Corps (ESC) is a European Commission initiative that provides opportunities for youth to contribute to a range of solidarity projects around Europe through voluntary action[93]. A range of topics are covered by ESC projects, including disaster risk reduction and preparedness, migrant community work, and nature protection[94].

Organisations can register their project with the ESC portal and apply for funding. These projects may be short term (2 weeks – 2 months) or long-term (2-12 months). If successfully funded, projects are then matched with volunteers through the ESC portal.

Youth between 18 and 30 years old can register to be part of the pool of volunteers by creating a profile in the ESC portal, where they can find projects to join. An individual can only take part in a maximum of 12 months of total volunteering. Their travel and living costs are funded by the EU[95].

The ESC programme focuses on sustainable development, social inclusion, and equal opportunities, and one of their priority areas is "Environmental Protection, Sustainable development and Climate Action"[96]. Examples of European Solidarity Corps-funded projects related to the marine and freshwater environments are:

- Make it Blue – European Solidarity Corps in Action
- MarSius Blanca
- Proyecto CETUS
- Save the Nature Save Our Future
- Ochrancovia riečnej krajiny
- Costa degli Dei Clean up
- ECO Superheroes – Keep Costa Tropical Clean

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[93] Associazione Joint Milano. (2019, March 1)
[94] European Union. (n.d.). *About*. European Youth Portal.
[95] Erasmus+ Project. (2021, June 4). *European Solidarity Corps*.
[96] European Solidarity Corps. (2022, February 4).

- [EcoSmart](#)

To get an overview of all the types of projects that the ESC is involved in, have a look at ongoing and completed projects here: https://youth.europa.eu/solidarity/projects/.

Why involve the European Solidarity Corps in your Mission Ocean initiative?

First of all, including the ESC in Mission-related activities is one of six expected outcomes in terms of citizen engagement that the Mission requires by 2025. It has also been reflected in multiple calls in the Horizon Europe Work Programmes for the Mission in 2021-2022, and 2023-2024**. Engaging with the ESC, then, is a key way of aligning a project with Mission aims,** and a funding application with call requirements.

By registering your organisation with the ESC programme, you will be able to apply for funding to develop your Mission Ocean initiative, and if accepted, get access to volunteers who are ready to contribute their skills and efforts around Europe. If you are not a local organisation, working with young locals through the ESC can also be a way to better connect and cooperate with local communities in which you want to work. Additionally, it is possible to apply to become a partner in an already existing project through the ESC portal. Given that the ESC programme is funded by the European Commission, projects that align with the EU Missions, including Mission Ocean, should be well oriented for support by the ESC.

Mission-funded projects may also find value in reaching out to ESC projects that are already up and running, or to volunteers/organisations from those that recently finished. Doing so can produce learnings and recommendations that will help in the design of future projects, and help optimally align the ESC with the EU's new Mission framework.

Whether you want to involve youth as volunteer facilitators in your citizen engagement activity, as helping hands in a restoration project, as citizen scientists, or as co-managers of a community led project, the ESC portal is a great resource for reaching them.

How to involve the EU Solidarity Corps in your Mission Ocean initiative?

In order to apply for funding from the European Solidarity Corps and involve volunteers in your Mission Ocean project, read the [European Solidarity Corps Guide](#) and follow the 8 preparation steps listed on their website: https://youth.europa.eu/solidarity/organisations/before-you-apply_en.

Note: The EC also provides guidelines for beneficiaries of the European Solidarity Corps on how to communicate and promote their project achievements from the planning phase through the evaluation phase. The guide is open access, and provides useful communications tips, even for projects that are not funded by the Solidarity Corps. The guidelines can be found here: https://youth.europa.eu/news/new-communication-guidelines-project-beneficiaries-released_en

Example of ESC project: MarSÍus Blanca, Catalonia, Spain

Start date: 01-06-2022

End Date: 31-05-2023

MarSÍus is a European Solidarity Corps project carried out by young locals with the support of Globers, youth organisation around Comarruga, in the south of Barcelona. This project was created to cultivate the sense of responsibility and love for the coastal ecosystem among the local community and the

tourists that come to the area during summer. Due to the ecological importance of the area – home to Catalonia's only marine reserve, called Masía Blanca – MarSÍus has been a project to raise awareness about the importance of protecting our coast and sea, involving different organisations and public institutions who have been working together with the Globers team to support participation, active citizenship, and grow community through marine protection projects.

Project Activities:

Together with the collaboration of Anellines and Goven 2.0, Onada Foundation, University of Barcelona and Globers, activities include:

- Diving to map the seafloor in search of Posidonia oceanica meadows
- Support to the study of marine micro plastics for the University of Barcelona
- Cleaning beaches of garbage and plastics
- Cleaning of dunes, taking off invasive plants and repopulating with native plants

Some key achievements of the project have been:

- Improvements to the marine environment
- The collection of knowledge concerning the local marine environment
- The generation of significant engagement of the local community
- The bonds created among different organizations that work for the protection of the sea and public institutions.

'MarSÍus has given to me the opportunity to experience that when you feel love for the sea, there is hope for a blue future. It is a matter of transmitting this love' – Paula García Rodríguez, ESC volunteer and ESC Coach with Globers.

About Globers: Globers is a youth organization that puts all their energy and love in giving opportunities to young people, mostly through Erasmus+ and ESC programs, and supports the local community with many different activities. Their mission is to inspire, educate and mobilize young people to raise their voices while creating real change through volunteering, non-formal education and active citizenship. For more information, you can contact: globers.paula@gmail.com

Website: http://www.globers.net/

www.facebook.com/globers.net

www.instagram.com/we_are_globers

https://www.youtube.com/c/Globers

6.2. Ocean Literacy networks and campaigns as a tool for citizen engagement

What is Ocean Literacy?

Ocean Literacy refers to a movement that started in the United States and then has been spread around the globe with the purpose of enhancing Ocean knowledge. One of the first and most accepted definitions of Ocean Literacy is "Understanding the ocean's influence on you, and your influence on the ocean". There are 7 principles of Ocean Literacy that scientists and educators agree everyone should understand about the ocean (**Error! Reference source not found.**).

Essential principles of Ocean Sciences
The Earth has one big ocean with many features
The ocean and life in the ocean shape the feature of Earth
The ocean is a major influence on weather and climate
The ocean makes Earth habitable
The ocean supports a great diversity of life and ecosystems
The ocean and humans are inextricably interconnected
The ocean is largely unexplored

Figure 4: 7 essential principles of ocean sciences. (Source: Ocean Literacy: The Essential Principles and Fundamental Concepts of Ocean Sciences for Learners of All Ages (2020). Available at: https://oceanliteracy.unesco.org/resource/ocean-literacy-the-essential-principles-and-fundamental-concepts-of-ocean-sciences-for-learners-of-all-ages-2020/).

An ocean-literate person understands the importance of the ocean to humankind; can communicate about the ocean in a meaningful way; and is able to make informed and responsible decisions regarding the ocean and its resources.

While education and traditional advertising can be effective in creating awareness, numerous studies document that behaviour change rarely occurs as a result of simply providing information, but through initiatives delivered at the community level focusing on removing barriers to an activity and therefore enhancing the activity's benefits.

Ocean literacy is more than just educating or informing the public and the marine and maritime stakeholders about the importance of oceans. Ocean literacy, through the use of behavioural change methods and by adopting a system approach, aims at facilitating the creation of an ocean literate society. Educators should use cultural knowledge and language adapted to their target group. Traditional knowledge should also be taken into account.

Why use Ocean Literacy as a tool for citizen engagement with the Mission?

Increasing knowledge of importance of ocean to whole planet and ways of life, bridging the divide that exists between many people and the ocean, providing positive experience of physically interacting with the sea (mental and physical health, and fun!), way to target social exclusion in education and opportunity for activities. Ocean Literacy initiatives provide a way to advance sustainable practices, develop policy, promote responsible citizenship and encourage young people to be involved in the future.

We should promote best practices, empowering people to become ocean advocates, or   help to transform knowledge into actions, in line with objectives of the Mission Ocean.

The Ocean is one and is a good vector to connect people from around the world. Each of us has some connection to the ocean, the aim is to use Ocean Literacy to find these connections.

To create these connections, knowledge is essential of course, but emotion is also crucial. So ocean literacy has to be targeted to different public. Art can be a way, sport another, interaction between territories, workshops… In any event, Ocean literacy has to be based on the interest of the target public to be efficient.

A special effort has to be made in the direction of stakeholders such as public agents, administrations, harbours, blue economy actors.

In fact, Ocean literacy is a fundamental means to enhance Ocean knowledge, build connections in people's lives and support and encourage citizens and stakeholders to act in a positive way for our Ocean.

How to integrate Ocean Literacy into Mission Ocean projects and related activities?

Brennan et al. (2019) defined the following six dimensions of Ocean Literacy:

- awareness
- knowledge
- attitudes
- communication
- behaviour
- activism

Knowledge is fundamental to motivate positive attitude and respect to Ocean. So one should adequately use a combination of some of these six dimensions to find the perfect receipt to the desired target.

Many activities exist and are sometimes redundant. The work of Prep4Blue is thus crucial in networking in the countries and among countries. But as it is such a transversal subject, new kind of networks or assemblies should be also created. For example, networks around people linked to the sea through responsible sport activities, or young activists (see the emerging Blue Genes).

A big effort should be made in having a good classified repository of initiatives or activities depending on the target public, expertise and length.

Ocean Literacy should be a pillar to any ocean related action to ensure not only a concrete action but its R.R.I component, i.e. that it leads to a long-lasting change of behaviour.

Part of the work should also be focused in detecting new target public and adapt activities to them. Creation of these activities should be thought as much as possible as an exchange between the target public and the expert instead of a single direction exercise.

[Ocean literacy for all: a toolkit](#) IOC. Manuals and guides;

[Ocean Literacy: The Essential Principles and Fundamental Concepts of Ocean Sciences for Learners of All Ages](#)

[Ocean Literacy Framework](#)

[Ocean Literacy Scope & Sequence for Grades K-12](#)

Case Study: The Irish Ocean Literacy Network and supporting cross-border collaboration through ocean literacy

The Irish Ocean Literacy Network (IOLN) is the working name of an informal network established in 2016, aimed at bringing together individuals and organisations who are currently involved in, or would like to become involved in, working towards the IOLN vision, which is to achieve an Ocean Literate society across the Island of Ireland. Galway Atlantaquaria (GAA), National Aquarium of Ireland, is the current Secretariat of the IOLN, and in this role it acts as a central contact and dissemination point for the Network supporting initiatives and collaboration opportunities between the IOLN members and providing a platform for engagement with relevant stakeholders.

Since its inception, the IOLN has hosted many networking events, workshops, etc., including the 'We are islanders' national campaign. The Network has also become recognised internationally as an advocate of ocean literacy and is involved in large scale initiatives like the UNESCO Ocean Literacy With All, the EU4Ocean Platform, the EuroGOOS Ocean Literacy Working Group, and is part of both the All-Atlantic and the European Blue Schools Network. As part of these initiatives, in June 2022 the IOLN was one of the ten organisations to sign the Charter for Blue Education in Europe developed within the frame of the EU4Ocean Coalition and its Network of Blue schools, whereas in October 2022 the IOLN participated to the 2nd Ocean Literacy Dialogues event held in Brazil.

The IOLN is one of the ocean literacy networks involved in the Horizon Europe project PREP4BLUE with the aim to contribute to the project's work focused on enabling stakeholders to empower citizen and community-led action in support of the 'EU Mission: Restore Our Ocean and Waters'. To facilitate this, the IOLN is currently organising a series of regional members meetings in the four provinces of the Island of Ireland, i. e. Connacht, Leinster, Munster and Ulster, the aim of which is to give the Network members the opportunity to come together in person to exchange ideas and discuss future plans for common ocean literacy initiatives after the long break caused by Covid. The first of these meetings was held in Belfast on the 29th of March 2023, and it gave the attendees the opportunity to reflect on the value of the all-Island nature of the Network and to discuss how to best proceed in order to foster the establishment of new cross-border ocean literacy-focused collaborations. Also, the IOLN is supporting the first specific objective of the Mission 'protect and restore marine and freshwater ecosystems and biodiversity' via the establishment of a working group within the Network itself focused on key marine ecosystems under threat, like e. g. seagrass meadows and coastal dunes. The role of this working group will be to bring together the different community groups active across the

Island on conservation projects focused on these special environments to promote dialogue among them and facilitate an exchange of information, resources and opportunities.

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8. Appendix

Table A1: Guiding questions for stakeholder mapping.

What is the purpose of including citizens/stakeholders in my project?	Focus on antecedents
Do they represent a knowledge position?	Yes/No
Will citizens/stakeholders be affected by activities/the initiative/the project outcomes?	Yes/No
Is citizen/stakeholder involvement necessary for goal obtainment because of their power position?	Yes/No
Is citizen/stakeholder involvement necessary for goal obtainment of legitimations reasons?	Yes/No
Is citizen/stakeholder involvement necessary because they represent means that contribute to solutions?	Yes/No
Who defines the rules in relation to the given issue?	
May some citizens/stakeholders obstruct the activity to be implemented?	Yes/No
What is the citizens/stakeholder authority in terms of allocating rewards, recognition and sanctions?	
Will some groups of citizens/stakeholders experience disadvantage if excluded from the engagement?	Yes/No
Who can represent "the voiceless"?	
Guiding questions power	
Which relationships exist between the selected citizen/stakeholders?	Alliances
What is the actor's authority in terms of setting objectives and norms?	
What is the actor's authority in terms of allocating or denying resources to other actors?	
What is the actor's authority in terms of defining others' tasks and responsibilities?	
What is the actor's authority in terms of controlling access to knowledge/information?	
What is the actor's authority in terms of allocating rewards, recognition and sanctions?	
What is the actor's authority in terms of structuring the participation in decision-making processes?	
Guiding questions Legitimations	**Comments**
To what degree is the actor's influence acquired through institutional position?	
To what degree is the actor's formal influence acquired by law and regulations?	
To what degree is the actor's Influence acquired through media/social media	
To what degree are the actor's interests coherent or conflictive with other actors' interests?	

What potential benefits and risks arise for him/her if the issue is addressed/the problem is solved?	
What prior experience does the actor have on the problem/issue to be addressed?	
Guiding questions Resources	
Material and nonmaterial resources different actors possess or have control over: Knowledge, expertise, skills effectively address the issue/solve the problem?	
Material and nonmaterial resources different actors possess or have control over: arises from learned skills and experience and is expressed in the ability to solve practical problems	
Material and nonmaterial resources different actors possess or have control over: technology, effectively address the issue/solve the problem?	
Material and nonmaterial resources different actors possess or have control over economy effectively address the issue/solve the problem?	
Resources from communication and negotiating skills to grasp the crux of the issue and to communicate clearly and concisely, conveying a coherent message, persuading others and thereby asserting one's own interests.	
What options exist to increase the actor's interest and engagement, or to dismantle obstacles?	
What resources relate to social categories of age?	
What resources relate to social categories of gender?	

Table A2: Stakeholder mapping template. (Source: EmpowerUs project: https://empowerus-project.eu/)

Stakeholder	Name	Organization, network or interest	Contact details (email)	Brief summary of their stake or agenda	Decision leader	Influence decisionmaker	Active decisionmaker	Connected to decisionmaker	No power
Intergovernmental									
Public National									
Public Regional									
Public Local government									
Sub-local									
Private sector									

Non-local NGOs					54				
Citizen									