Development and demonstration of an automated, modular and environmentally friendly multi-functional platform for open sea farm installations of the Blue Growth Industry

D8.4 – Final report on social licence and environmental governance of the Blue Growth Farm

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SUMMARY

The aim of the Blue Growth Farm (BGF) project was to design a fully integrated multipurpose offshore floating platform, hosting aquaculture and wind & wave energy production and services, and to deploy a small-scale prototype in the Strait of Messina.

Construction and deployment of the full-scale structure must overcome technical, economic, environmental and social challenges. The purpose of BGF WP8 was to investigate these social challenges, in relation to (1) community attitudes to development, and (2) EU maritime Directives and policy. The present document, D8.4, concerns the first topic, and in particular 'Social Licence to Operate' (SLO). SLO exists if there is a positive relationship between a developer and a community. It is the final report, summarizing the main results from engagement activities and reflecting on them. It provides some recommendations for developers.

This deliverable first provides an introduction to SLO and introduces some theoretical concepts in the social sciences of relevance to research into SLO. The concepts include those of polycentric governance, action situations, and community and stakeholder engagement.

Methods by which a developer might acquire SLO are then described and issues involved in combining SLO acquisition and research are discussed. The deliverable includes details of a specific plan for the 'social campaign' (including a community event and the formation of a Stakeholder Reference Group) deployed in Reggio Calabria, the site of the prototype deployment. Finally, it presents summaries of the Blue Growth Farm stakeholder workshops and the results of a social survey conducted with communities in Reggio Calabria and in Islay, Scotland.

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ANNEXES

LIST OF ACRONYMS AND ABBREVIATIONS

BGF	The Blue Growth Farm (project)
EC	European Commission (also, 1993-2008, the European Community)
EEA	European Economic Area
EIA	Environmental Impact Assessment (process and report)
EU	European Union (since 2009)
GA	Grant Agreement
MOI	Multifunction Offshore Installation – i.e. the type of floating, multi-use, platform that the Blue Growth Farm project is developing.
MSFD	Marine Strategy Framework Directive (2008/56/EC)
MSP	Marine/Maritime Spatial Planning – a process that might be partly regulated by national legislation that transposes the MSPFD, but which is also likely to be subject to a state's long-establish Town & Country Planning procedures
MSPFD	Maritime Spatial Planning Framework Directive (2014/89/EU)
SLO	Social Licence to Operate
T&CP	Town & Country Planning – a state's normal procedures for developing policies and consenting developments on land, which in some countries also apply to certain developments in near-shore waters
WFD	Water Framework Directive (2000/60/EC)

APPLICABLE DOCUMENTS

[AD1]   European Commission, Directorate-General for Research & Innovation, Grant Agreement Number 774426 The Blue Growth Farm (GA-2018-774426), 2018.

[AD2]   Technical Annex I to the Grant Agreement Number 774426: "Description of Work", April 2018, Part A and Part B.

1   INTRODUCTION

1.1   The Blue Growth Farm Project and WP8

The present report is an output of Task 8.1 (WP8) of the Blue Growth Farm (BGF) contract [AD1]. The BGF project responds to the EU H2020 call for enabling technologies for "multi-use of the ocean's marine space, offshore and near-shore". The main aims of the BGF project are to produce:

- a design assessment of a fully integrated multipurpose offshore floating platform, hosting aquaculture and wind & wave energy production and services;

- a detailed design, construction, commissioning and operation of a scaled physical prototype (~1:15) of the proposed integrated platform;

- a suitable business model and plan built on the BGF configuration and including Environmental Impact Assessments (EIA) and good practice guidelines.

We will use the acronym MOI – Multifunction Offshore Installation – as shorthand for the type of platform that will be designed, and in the protoype case, built and installed, by the BGF project.

WP8 of BGF deals with "Social Impact and Acceptance, Marine Strategies and Spatial Planning", and includes three tasks:

8.1. Social impact assessment, the topic of this document, which also provides guidance for task 8.3

8.2. Regulatory aspects related to the MSFD and compatibility with the MSPFD

8.3. Specific participatory process for marine users and stakeholders

1.2   Identification of the document

The present document is identified as Deliverable D8.4 "Final report on social licence and environmental governance of the Blue Growth Farm" of the Blue Growth Farm Contract [AD1]. According to the Contract, "the objective of Task 8.1 is to adapt and apply social license theory and methods to the development of MOI, by:

1. designing procedures to facilitate dialog amongst local and general stakeholders, and between them and project team, evaluate perceptions of risks and benefits of MOI, and co-produce knowledge about MOI social & environmental aspects;

2. using quantitative and qualitative methods to evaluate perceptions of benefits, costs and risks of MOI amongst society-at-large;

3. synthesise and report findings from this task and tasks 8.2 and 8.3 in relation to a theory of social license and make recommendations for MOI operating policy and governance aimed at securing social licence to operate (SLO) and optimising benefits to society."

This document relates to the first and third items. It provides a theoretical framework for social licence and practical guidance to investigating and encouraging social acceptability. It reports on the outcome of social licence research conducted as part of Blue Growth Farm, and is intended to provide information and advice for those engaged in a commercial deployment of a full-scale MOI. D8.4 builds on D8.1 "Methodology for

social licence application to the Blue Growth Farm project" which is the predecessor to this D8.4 report. D8.1 outlined the methods involved in SLO acquisition for MOI and outlined the plan for the Blue Growth Farm social campaign in Reggio Calabria, the site of the prototype development. D8.1 was disseminated at confidential level within the consortium only. This D8.4 is a final report for dissemination at public level. It contains the relevant theoretical findings presented in D8.1, alongside the processes and results of social engagement activities over the course of the BGF project.

In addition, this document relates to two other WP8 deliverables:

D4.1 – "Environmental impact assessment for the representative sites report" – D8.4 provides a societal context for EIA;

D8.2 – "Regulatory aspects related to MSFD and compatibility with MSP[F]D of MOI – D8.4 provides an introduction to theory of polycentric governance.

1.3   Structure of the document

The contents of the document are organized according to the following sections:

Section 1 (this section) provides an introduction to the document and to the BGF project;

Section 2 provides a theoretical framework, illustrated in Figure 1 and Figure 2;

Section 3 gives an empirical introduction to Social Licence to Operate (SLO);

Section 4 provides a practical guide to researching and negotiating SLO;

Section 5 exemplifies an SLO engagement plan for the BGF prototype MOI deployment in Reggio Calabria.

Section 6 presents the analysis of a community survey conducted in Reggio Calabria, Italy, and Islay, Scotland.

Section 7 summarises conclusions from sections 5 and 6.

Section 8 presents recommendations for developers seeking to gain SLO.

The Annex A includes tables containing detailed examples of data required for studies of SLO.

1.4   An introduction to Mobile Offshore Installations

The specifications for a full-scale MOI were as follows in March 2022.

The MOI will be a floating structure, 210 m long, by 162 m wide, made from concrete caissons, supporting 1 wind turbine at 6 m above sea-level, height 119 m, plus blade radius 89 m (DTU 10MW) and also capturing wave energy by air compression within the caissons. It will produce up to 5000 tonnes/year of salmon, sea-bass or sea-bream (depending on environment) in 6 nets extending to 35 m below sea-level. It will be kept in position in typical water depth of 100 m (max 200 m), by multiple sea-bed anchors, occupying approximately 0.9 x 0.9 km (80 ha). It will be ited at up to 10 nautical miles from the coastline, with a high level of automation on board and remote monitoring of generation and farming conditions. More information is available at https://www.thebluegrowthfarm.eu.

The BGF project has deployed a 1:15 scale prototype at the NOEL test site near Reggio Calabria in southern Italy. However, several WP (including WP8) have studied issues that might arise if full-scale MOI were to be deployed at typical sites. The BGF document **D2.2** reports a search for these typical sites in the

Mediterranean, northern Atlantic and subtropical Atlantic. Subsequent discussion in WP8 has begun to identify three specific sites: near Marseille (Mediterranean); near Islay in Scotland (North Atlantic); and near Gran Canaria (subtropical Atlantic).

1.5   Why are MOI needed?

Marine space close to much of the European coast is considered to be already nearly fully occupied for purposes such as fisheries and aquaculture [1]. In addition, objections to development are often based on the visual impact of wind turbines or fish farms. Deployments further offshore (out to 12 nm) opens up additional sea-area and reduces visual impact. In addition, wastes excreted by fish are likely to be dispersed more effectively by stronger offshore currents and turbulence.

However, permanent offshore structures are costly to build and also to remove at the end of their working life. Floating platforms should have lower costs. On site electricity, generated from wind and waves, can provide the operational needs of a fish farm with zero carbon emissions.

1.6   Why does the social acceptability of MOI need to be considered?

Most developments have an impact on the natural environment, and it has become accepted that consent to develop should rest in part on an Environmental Impact Assessment (EIA) and the demonstration that impact is minimal, or can be ameliorated, or is compensated by social-economic benefits. Most developments also have a social impact, and this is increasingly hard to ignore, because the communities close to the development may develop such strong objections that the development is either forbidden or becomes too costly for it to return a profit. Some examples of societal concerns, relative to a MOI deployment, are listed in Table 1. Some of these concerns can be ameliorated by good marine planning and good regulation of the development and its environmental impact. However, communities' views on what is an acceptable development depend on social as well as biophysical factors, and aquiring what we call **social licence to operate** is a useful and sometimes necessary precondition for any development and in the present case for deploying a MOI.

Table 1 : Societal benefits and concerns relating to a MOI deployment

GROUP OR COMMUNITY	POTENTIAL BENEFITS OF MOI	POTENTIAL CONCERNS ABOUT MOI
Other users of marine space, e.g. fishers, recreational sailors	Could provide 'artificial reef' effect with benefits to fisheries	Exclusion of their activities from area occupied by MOI
Environmentalists	Zero net carbon emissions	Impacts on sea-birds, marine mammals, wild fish, or the sea-bed and its communities of organisms; sources of feed for caged fish
People concerned with animal welfare	Better fish health in offshore waters	Conditions for fish in cages
Hospitality industry	Unique site of local interest/ activity [2]	Visual impact on tourism
Coastal dwellers and visitors	Unique site of local interest/ activity [3]	Visual impact, increased harbour traffic from maintenance vessels
Workers	Employment (installing, servicing and removing MOI)	Conditions of employment, particularly by non-local developer
Firms providing local services for the MOI	Income	Reduction of income from activities that previously occupied the space of the MOI

2   THEORETICAL FRAMEWORK

This section provides a theoretical framework for research into the social acceptability of offshore developments and for engagement with stakeholders and communities. The first subsection helps to define the scope of this D8.4 and the related D8.5.

2.1   Three licences

Developers of sites for marine industries are familiar with their obligations to prepare an Environmental Impact Assessment (EIA) report, which will be reviewed by pubic authorities prior to granting the legal permissions that a development requires. However, legal constraints are not the only way in which a society can help, hinder, permit or block developments such as the deployment of a MOI. Other requirements include the need for a commercial enterprise to be profitable, for the necessary techology to be available, for space to be allocated at sea, and for community and public attitudes to be favourable. Figure 1 suggests that the social, environmental, economic and technical pre-conditions can be seen as four switches controlling development. All need to be switched `on' for the development to proceed. MOI technical development is the subject of other BGF work-packages, so we describe here only the three switches that we call 'economic licence', 'environmental licence' and 'social licence'.

Figure 1 : Three licences for a 'Blue Growth' development,

such as that involving the deployment of MOI. SLO is 'Social Licence to Operate'; (MS)P is (Marine Spatial) Planning (developed from figure 5.3 , Tett et al. [4]).
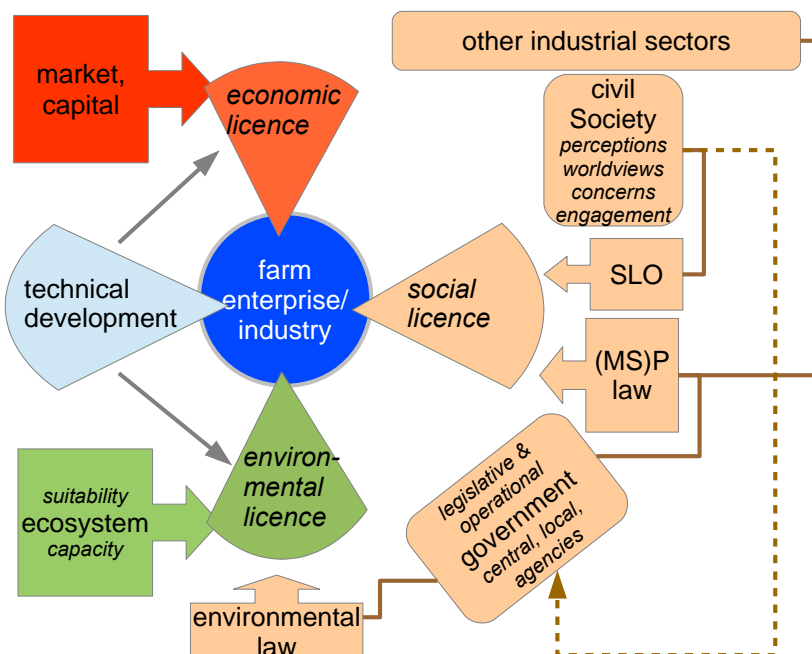
This description simplifies what are in reality many social processes and their biophysical correlates. It maps them to the disciplines of economics, environmental science, and social science, each of which provides a paradigm for understanding the relevant processes and a set of validity criteria for evaluating evidence about them. The metaphor of a licence as a switch, either on or off, comes from the suggestion by Luhmann [5] that societal institutions can be understood as programs with binary outputs ('codes'). To extend the metaphor, the software program or hardware circuit controlling the switch might be thought of as combining many inputs into a rising voltage until the switch is triggered.

In more detail, the three licences are:

Economic licence, which might correspond to an agreement by a bank or other funder to invest the capital needed for the development, after scrutiny of the developer's business plan to ensure that a profit is likely. More generally, the licence can be thought of as an agreement by society that the development is a good use of societal resources of people, skills, equipment, and space. The funder will usually employ economic criteria to determine viability, and academic analysis of the decision would take place using similar criteria.

Environmental licence might be a formal requirement of the public consenting process, acquired after preparation and review of an Environmental Impact Assessment (EIA) according to criteria that are normally those of the natural sciences. However, the full scope of the licence-as-switch must take account of environmental features that will contribute to or detract from the operation of MOIs, such as whether water temperatures are optimal for a particular species of farmed fish or extreme wave heights are within structural tolerances.

Social license has formal and informal components. The formal components involve, at the operational level, legal permissions, such as those needed to carry out a development according to planning and environmental protection regulations; and at higher levels of governance, the formation of policy favourable to an industry building and deploying MOI. The informal components are what we call *Social License to Operate* (SLO), which includes the consent of the local community to a specific development, and the tolerance by society-at-large (and communities of interest such as eNGOs and fishermens' organisations) of policies favouring MOI.

Economic licence will be the subject of the BGF Business Plan, and environmental licence is the subject of D4.1. Legal planning requirements will be dealt with in Deliverable D8.2. SLO is the main subject of this D8.4, and the remainder of this section introduces some of the sociological theory relevant to studying and encouraging social licence to operate.

2.2 Society

Human societies consist of people, artefacts and accompanying creatures, inhabiting settlements ranging in size from villages to cities. From a sociological perspective, however, the central feature of human societies is that of communication between *actors*. One definition of society is therefore that it is a dynamic system that that is repeatedly remade by exchanges of information in speech, writing or images. This definition favours a systems approach to understanding society, by investigating communicative networks and the rules that govern information flow and its translation into actions.

An alternative definition is that society is a grouping of social actors, which leads to attempts to understand the actors' behaviours. One of these attempts is grounded in the idea of human rationality, i.e. of actors' understanding both their own interests and the consequences of their actions. This provides the basis for

both classical market economics and for theories of collective rationality such as that of Communicative Action **[6]**. Other investigations do not assume conscious rationality but instead try to discover what people value and thus what is likely to motivate them to choose particular courses of action.

Neither the systems view of society as made up of communicative networks, nor the view that society is made up from individuals and their choices for action, claim exclusivity. Communicative networks are not hardwired links between computational nodes but 'soft' patterns of messages between individuals. Persons do not spring into existence fully informed for decision making; they grow up and live in a social world that provides them with language and meaning, and embeds in them patterns of behaviour governed by custom and law. Thus it is often necessary to view human actions within society in terms of both 'structure and agency' **[7]**. The structure is that of the communicative networks and the implicit and explicit rules that it transmits. The agency refers to the choices made by individuals concerning their actions. Structure and agency are to be thought of as 'two sides of a coin', each needing the other to exist. People intercommunicate, thus continuously remaking the networks, which in turn shape how people communicate and act.

2.3 Institutions and Organisations

Language is the basis of communication, and languages are sometimes taught in terms of 'the rules of grammer' and sometimes in terms of observable patterns. 'Rules' are *normative*: they specify how we ought to speak or write; 'patterns' are merely *descriptive*, a guide to usual ways of speaking. More generally, the term *institution* signifies a set of communicative patterns that have a normative component. Examples are: laws; the traditions of a religion; the context-dependent norms of appropriate behaviour; and the validity rules used by academic disciplines to evaluate evidence.

In some cases the institutions are so entangled in everyday life that, once learned in childhood, they are no longer recognized as rules. They form the *lifeworld* of language and domestic culture **[8]**. In other cases the institutions are embodied in the people and infrastructures of *organisations* such as law courts, police, churches and university departments. Particularly relevant in the present case are the laws for marine environmental protection and marine spatial planning, and the organisations that have been set up to implement these laws. Although mainly the topic of D8.5, these institutions and organisations can also effect SLO. Ostrom **[9]** concluded her Nobel lecture with the suggestion that "a core goal of public policy should be to facilitate the development of institutions that bring out the best in humans". Thus, we need to know how different institutions "help or hinder the innovativeness, learning, adapting, trustworthiness, levels of cooperation of participants, and the achievement of more effective, equitable, and sustainable outcomes".

2.4 Community

Whereas 'society' is a somewhat abstract and general concept, 'community' is a little more concrete, and often refers the inhabitants of a particular place. Nevertheless, the structure-agency duality leads to two contrasting definitions. The first is that

- *a community is "a group of people united by at least one common characteristic, including geography, identity or shared interests".*[1]

An example of a *community of place* would be of the inhabitants of a small town, used to meeting each other in the street or church. An ethnic minority could exemplify a *community of identity*, and a yachting association would exemplify a *community of interest*. A football fan, who supports the team of his home town and identifies with fellow supporters, would be seen as a member of all three kinds of community. Cohen **[10]** address the part played by collective, often ritualised, activities in maintaining a 'sense of community' in groups of people. He also points to the importance of community boundary rules (who can and who cannot be a member).

The second definition is based in systems theory, influenced by Luhmann **[5]**, and designed for relevance to the present work:

- *Community: a persistent communicative network that has the potential to be excited by particular action situations*

'Action situation' is a concept that will be examined later, but might for example concern the actual or proposed deployment of a MOI. The relevant networks are comprised of people and their communications, and include conversations over the garden fence, debates in meetings, and interactions through electronic media. Individuals may become members of a network as a consequence of inhabiting a particular place, or because (living elsewhere) they have an interest in that place. Their world-view is likely to be one that harmonises with the formal or informal norms (i.e. the institutions) that allow and constrain communication in that network. The rise of the social-electronic media allow several communities to exist in one settlement, and these might express very different opinions of MOI. Furthermore, a community may extend far outside the geographical locality that is actually or potentially impacted by a deployment, and this creates difficulties both for analysis and for engagement.

A community is more than a collection of individuals with varying opinions, because people share these opinions with their neighbours. A study of perceptions of environmental risk **[11]** refers to "socially viable combinations of cultural biases and social relations", implying that these combinations are finite in number and that communities tend to evolve towards one or other viable combinations and hence to something close to consensus. Those who do not share this consensus either leave the community or are expelled. They might move to a different settlement, or simply switch to a different social network using the 'new media'.

2.5 Action situations

The conceptual framework devised by Ostrom **[9,12,13]**, updated by McGinnis & Ostrom **[14]**, and further modified here, will be useful in understanding as well as analysing societal aspects of MOI deployment. The framework focuses on an **Action Situation** and its settings (Figure 2). The following definition is synthesised from McGinnis **[15]**, Tett & Sandberg **[16]**, Habermas **[6]** and Luhmann **[5]**:

- An Action Situation is a communicative network, finite in time and excited by an issue that requires collective action to resolve. Boundary rules determine who can join the network,

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[1] Definition from "National Standards for Community Engagement" **http://www.voicescotland.org.uk.** For further accounts, see Brint (2001) and Tett, L. (2010).

whether in their own right or as agents of organizations. The participants receive and transmit information through the network and use it to interact with each other in discussing biophysical or communicative actions and to realize outcomes from their interaction.

Figure 2 : Description of an action situation (AS),

Modified from Ostrom [9,12,13]. In the present case, the AS concerns an environmental or social licence for an offshore development.
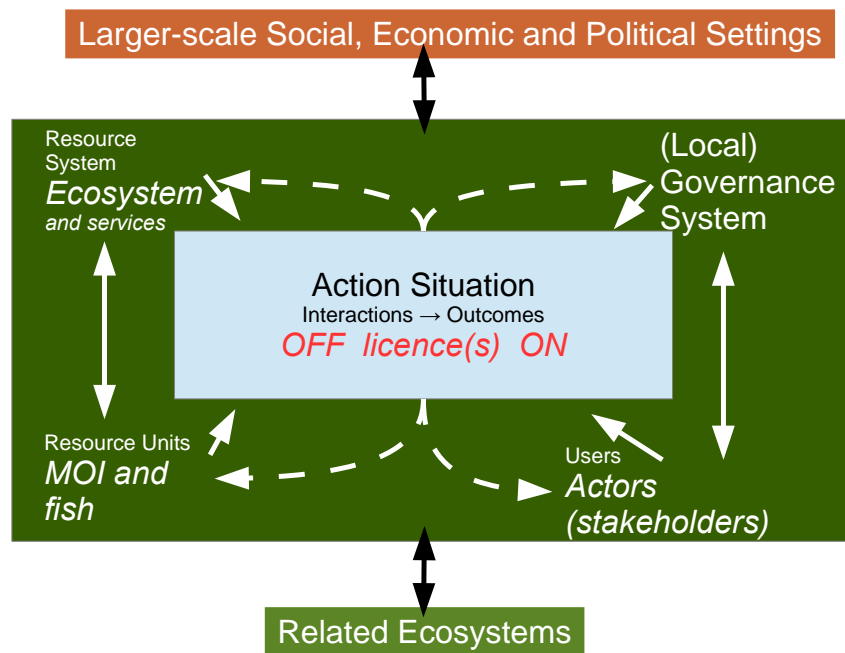
Ostrom's theory of Action Situations arose in the context of human uses of natural resources, or, to change the language somewhat, the context of human use of tangible ecosystem services such as the sea's capacity to assimilate wastes, and human use of intangible ecosystem services such as those provided by a sea-scape. An example of an action situation is that generated by an application for a licence to install a fish-farm in a Scottish coastal water. The minimum group of actors involved in this situation are the developers plus the public officials who examine their application. The officials include agents of: the County authority that has the power to approve the development; the Scottish environment protection organisation, which has to provide a consent to discharge wastes; and the Scottish nature conservation organisation, which comments in cases where the farm might impact on a marine protected area.

In addition, public awareness of the application may expand the network to include citizens and their representatives, plus judges and lawyers if a legal challenge is made to a licensing decision. In this example the potential *action* in the action situation is the operation of the social licence switch for farm development, and the situation concludes when a decision is reached to turn the switch on or off.

When an action Situation involves access to particular natural resources, Ostrom's framework identifies four main sets of components:

- The biophysical *resource system* – i.e. the ecosystem(s) either providing the resource units or in which the resource units are placed; in the language of environmental economics, these systems provide the natural capitals, and ecosystem services such as dispersing fish waste and supplying wind energy.

- The biophysical *resource units* – in the present case, the MOI and the farmed fish that it houses, representing the expenditure of financial capital and the use of intellectual capital; in other cases they might correspond more closely to Ostrom's **[13]** definition that they are "resource units generated by that system (e.g. fish, water, fodder)"; in either case the resource units must be indentifiable so that they can be associated with rights to use;

- The resource *users*, the people and private organisations involved with or concerned about the resource units, who are *actors* with parts to play in the action situation, and may be recognised as *stakeholders*;

- The local *governance system* - comprising the local institutions and organisations that regulate access to and use of marine resources; the institutions include legal and customary rules for identifying resource units and ascribing rights to them, and the organisations include local government, agencies of central government; traditional power structures and local market processes may also be important.

2.6 Polycentric Governance

These components of an Action Situation are in most cases embedded in larger-scale systems. On the biophysical side, these larger-scale systems include:

- the regional seas or the ocean with which the coastal waters exchange;

- populations of migratory animals (fish, marine mammals, sea-birds) which travel through the local coastal waters;

- the weather systems that generate wind and waves.

On the societal side they are the *larger-scale social, economic and political settings*, which include:

- public and community opinion about renewables and aquaculture, influenced by old and new media;

- national or international environmental Non-Governmental Organisations (eNGO), which can intervene in local situations;

- economic aspects of development (availability of funding, markets for product and insurance); proportion of community income provided externally;

- national government and its laws and policies relevant to MOI.

These settings can themselves be conceptualised as the outcome of larger-scale action situations, and this nesting of action situations is what is meant by **polycentric governance [12]**. Three levels may be usefully distinguished:

- *operational situations*, where outcomes directly affect the biophysical world as well as society; a relevant example would be the situation generated by a proposal to deploy a MOI in a specified coastal location;

- *collective-choice situations*, where outcomes affect rules that regulate or influence operational situations; a relevant example involves making of national policy or law that regulates maritime spatial planning for aquaculture;

- *constitutional situations*, where outcomes impact on the rules for collective-choice situations; (in the context of the EU and EAA) constitutional situations include the making and implementation of Directives such as the WFD, MSFD and MSPFD.

This report (D8.4) concerns action situations at the operational level. D8.5 will deal with collective-choice situations and constitutional situations.

2.7 Stakeholders and Communicative Action

Using the language of action situations, stakeholders are actors with a legitimate interest in the outcome of the situation, because they expect benefit or harm to come to them from it, or because they represent organisations that expect their members to experience benefit or harm. *Stakeholder mapping* is the process in which individual and corporate stakeholders are identified and their opinions typed in relation to an organisation, issue or an action situation [17]. Table 1 has already set out some of the social sectors that might consider themselves impacted by a MOI deployment.

Habermas [6] describes an 'ideal speech situation' called *communicative action*, in which a group of people discuss an issue in need of resolution, such as that at the heart of an action situation. The participants are supposed to be rational, with a good understanding of their own interests, and of roughly equal ability to speak and be heard. Communicative action should be seen as the ideal method for a stakeholder forum where the aim is to resolve an action situation. Each stakeholder gets to:

- explain their interest/stake;

- hear about and understand the interests/stakes of other participants;

and, in the best cases, the forum results in an outcome that is acceptable to all, perhaps including compensation for those who would otherwise lose because of the resolution of the issue. Communicative action is aimed at reaching understanding amongst participants, and includes the possibility of 'positive-sum' outcomes as a result of new ideas appearing during discussion.

However, there is an alternative mode for rational actors: *strategic action*, aimed at persuading a forum to agree a certain course of action that the strategic actor has planned in advance. A stakeholder representing an organisation might be mandated to seek a particular outcome, and if all stakeholders are so mandated, the outcome is likely to be (at best) 'zero-sum', where winners' gains are balanced by loosers' losses.

Furthermore, although communicative action is the ideal for governance of human societies through collective rationality, it may not be the main process shaping community reactions to proposed new developments. Not having a view is the most likely starting position for most people when told about a new idea: they do not consider themselves as stakeholders. Or if they do have a view, they may think it unprofitable to pursue it, as "no-one will listen". This is why community dynamics are important:

communicative networks may provide people with views and can empower them to action as part of a collective rather than in rational debate with those with differing interests.

2.8 Conclusions

The sustainable deployment of MOI depends on technical, economic, environmental and social factors. BGF WP8 concerned the social factors, and this section has introduced several ideas from the social sciences, including polycentric governance, action situations, and the duality of structure and agency. An action situation at the operational level of governance and with a formal licensing decision at its focus, might involve only technical environmental and planning considerations, or it might expand to involve communities of support or opposition. If an 'agency' perspective is adopted, social licence to operate (SLO) can be understood as the sum of stakeholder opinions about a development and the organisation promoting it, with some stakeholders holding stronger opinions than others, and some wielding more influence over the outcome than others. If a 'structure' perspective is used, SLO can be understood as a consent given by a community as a whole to a development. Thus, the social acceptability of MOI deployment might be studied in relation to the views of individuals or as a property of a communicative network which, once excited, evolves into a persistent state of support for, or opposition to, the development. An important part of any investigation will be the analysis of relevant action situations, including documentation of actors, governance, and settings.

3 SOCIAL LICENCE TO OPERATE

This section describes the origin of SLO and its utility to industries. It provides an overview of the conditions that favour the growth of SLO and discusses the specific challenges to BGF in combining research into the social acceptability of MOI whilst encouraging such acceptability.

3.1 The need for Social Licence to Operate

Social licence to operate (SLO) is an industry-coined term [18] identifying the positive relationship that an industry may seek to have with local communities [19,20]. It originated in the mining industry and has been used to explain how some mines have been able to operate unobstructed or supported by local communities, whereas others were met with opposition [21,22]. Mining has obvious social and environmental costs, which in the infamous case of copper mine development on the Pacific island of Bougainville led to a a revolt against the development and a civil war claiming thousands of lives [23]. This was an extreme case; nevertheless, evidence is emerging of increasing and well-co-ordinated opposition to many Blue Growth developments.

SLO is described as an on-going relationship between a host community and an organisation (industry, NGO, business) where the organisation is held to certain standards set by the community in exchange for the trust and support of the community [24]. Morrison [25] summarised it as involving (i) community acceptance that both the organisation and the proposed activity are legitimate, (ii) community trust in the organisation, preparing the ground for (iii) community consent to the development.

Recent years have seen the idea of SLO gain traction in the aquaculture industry, with it becoming a popular theory in trying to understand and improve relationships between host communities and aquacultural activities and operators [26,27]. For example, a study in New Zealand documented how transactional relationships (e.g. company pays for new roads in exchange for support) were not as successful at gaining the approval of local communities as relationships that were more emotional and immersive (workers live locally and become part of the community) [28].

The language of social license is now entering the vocabulary of renewable energy developers and regulators. For example, in Australia, geothermal, wind, and carbon capture and storage industries are increasingly using SLO to describe their relationships with local communities [29]. Within marine renewable energy research there is a call for exploring how social license to operate interacts with social legitimacy for innovative and new technologies [30].

Having or not having SLO can impact the viability of an operation through informal processes such as word of mouth or online petitions, and formal processes such as legislation and voluntary industry standards [19]. SLO can increase or decrease the reputational capital of an industry through e.g. campaigns, legislative action, or word of mouth. This can affect the base cost of producing the commodity, and/or the end price of the commodity for consumers.

SLO can be weaked by campaigns by communities or NGOs that make people more aware of the potential negative impacts of a development. For example, a local NGO in West Scotland ran a campaign against a proposal for a finfish farm. It involved distributing fliers, creating petitions, and creating and promoting a website through social media and word of mouth. The result was that over 800 people objected to the fish farm planning application [31].

Word of mouth is a grassroots level of communication within and between communities and is one of the ways that communities receive information about the activities of a company or organisation. Local staff can feed into these communicative networks; in their absence, speculation and feelings of mistrust can prevail **[28]**.

Legislative action can involve communities taking companies to court over their conduct. For example, a local community in Nigeria took oil and gas company Royal Dutch Shell to court in 2005 over gas flaring in the local area. Despite the community losing their hearing, Shell sold off some onshore Nigerian oil fields because of pressure from ongoing court cases involving communities, local hostility, and security issues **[32,33]**. Development of marine wind farms to the east of Scotland was delayed for several years by a court case mounted by the UK's Royal Society for the Protection of Birds (RSPB), claiming potential harm to sea-birds **[34]**.

The three examples given above – campaigns, word of mouth, and legislative action – can impact the formal regulation of industry by the state as well as by company policy. SLO interacts with the formal process of law in several ways. For example, companies can try to gain SLO as a strategy for managing 'social risk' – the risk of society campaigning against them. In other words, if they are able to gain SLO then environmental regulatory changes are more likely to be voluntary, less strict and/or cheaper to implement than the cost of enforced regulation **[18,35]**. From the perspective of communities, SLO is a way to push industries to better comply with environmental regulation, improve the social and environmental conditions in their localities, and to go beyond regulatory environmental and social compliance **[19]**. Thus, SLO is both a way for local communities to hold companies accountable for their actions, and a way for companies to make their operations legitimate and acceptable in the eyes of local communities **[18]**.

The basic case for SLO is to empower communities to engage with industry so that the social and environmental costs of the industrial activity are not solely born by local communities. However, we prefer to see SLO in the context of the evolution of social-ecological systems – where humans are seen as part of the natural environmental system rather than as isolated entity **[36]**. Industrial development is necessary to provide people with employment, income, goods and services, but it must take place in a way that is socially and environmentally sustainable.

3.2 Negotiating SLO – an overview

Negotiating SLO is not a simple process. Nor is it easy to describe, because some aspects are specific to a particular industry and the communities that are involved. Nevertheless, there are several factors that should be taken into account to help the development of SLO. In what follows*, (local) community* means the set of people who might be affected by MOI deployment, because they live, work or study in the locality, together with the communications networks to which they belong.

- *Context is key* – because outcomes are affected by a combination of local and externally imposed variables **[37]**, as understood in relation to the idea of an action situation.

- *Public participation, transparency of actions and information* – communities need to have access to information about what the industry is doing and why. This information needs to be provided in an easy to understand and timely manner **[37,38]**.

- *Early, ongoing and quality communication* – industry should aim to start a relationship with local communities at the very start of the development process. Good quality

communication that includes transparency around negative social and ecological interactions has been shown to lead to trust between host communities and industry and to grant legitimacy and credibility for the actions of the industry in the eyes of the community **[18,20,32,39]**.

- *SLO is built on relationships* – between individuals in the company and the community; these include, but should not be restricted to, leaders **[37]**.

- *Sustainability is an important concern for communities* – it must be possible to reconcile the activity with the community's own vision of sustainable development **[37]**.

- *There must be local benefits* – communities need to see equitably shared benefits as well as compensation for loss **[37]**.

- *External intervention can help or hinder* – intervention from government, company owners, or NGOs does not automatically improve SLO negotiations. It depends on the context of the relationship a company and a community **[37]**.

- *Adaptability is required* – when establishing and maintaining SLO, flexibility is required to adjust complex and changing social contexts **[37]**.

- *Fairness in decision-making procedures* – the way in which a company deals with issues related to its workers or the community, influences communities' levels of trust and therefore their likelihood to grant SLO. Interestingly, one study shows that communities do not require that the company always take their side – so long as the procedure for deciding not to give the community what it requested was transparent and fair **[35]**.

3.3 Researching SLO in BGF

As argued above, communicative engagement between developers and community can strengthen positive SLO, benefitting developers and favouring a positive outcome to an action situation concerned with formal licencing by public authorities. BGF wanted to study and increase SLO for MOI, but the only concrete action situation that we could study was that concerned with an experimental prototype at NOEL. It was deemed unlikely that deployment of the prototype would strongly excite the relevant communicative networks. Our task was thus, mainly, to use the NOEL experiment to (i) explore potential social licence issues for full-scale MOI deployment, and (ii) test methods for researching and gaining SLO. As set out in section 5, we did this by means of (a) engaging with a group of stakeholders representing local organisations, and (b) discovering community views through surveys.

Objectivity is generally thought to be an essential component of the paradigm of research in the natural sciences. The researcher should be outside the system to be investigated and should not be biased towards particular outcomes from their research. However, things can be more complicated in the social sciences **[40]**. In the type of study of community reaction to development that is part of the BGF project, the researcher does not merely observe the action situation from outside, but may be part of it, and have the goal of bringing about a particular outcome as well as studying the situation. As an actor in an action situation concerning the potential deployment of a MOI, a researcher therefore has two goals:

- Facilitate two-way engagement between the development project and the local community;

- Collect information that will help answer *research questions*, which should be posed within a theoretical framework such as that in section 2.

A facilitator of SLO who is working for a development organisation has a stronger version of the first goal, because they will be working to ensure that the development *is* accepted by the local community. In essence, they must gain social licence at the least cost to the developer. The requirement for getting social licence at least cost does not necessarily mean getting it cheap; it means that the community engagement exercise must be conducted efficiently, so that the benefits of acquiring SLO exceed the costs of its aquisition. As Morrison [25] remarks, enterprises often do not fully appreciate or prioritise the benefits of SLO.

Having a research goal changes the dynamics of interaction with the community, and may make it easier for the researcher to gain trust. However, the goal comes with an ethical requirement to have clearly defined questions (so as not to waste peoples' time with interviews and questionaires) and for transparency about the research purposes. Finally, the details of the research depend on whether it is understood as oriented towards stakeholders or towards communities. The choices open to a researcher of SLO are set out in Table 2. As already discussed, some of them are made for BGF researchers by the project's Description of Action.

<div align="center">**Table 2 : Choices for DO actors in relation to SLO**</div>

RELATING TO	CHOICE	BGF
Purpose of engagement	Are you researching SLO or developing it, or both?	*both*
Agency/structure	Are you focusing on stakeholders or communities, or both?	*both*
Real or hypothetical MOI	Are you considering a hypothetical or an actual deployment?	*Actual deployment of prototype; hypothetical deployments of full-scale MOI*
Type of MOI	Is the deployment of a prototype MOI or a full-scale MOI?	
Action situation	Are you dealing with an operational deployment or the policy-making (collective-choice) level of governance?	*Operational for purposes of D8.4; D8.5 considers policy-making*

4 PRACTICAL GUIDE TO SOCIAL LICENCE TO OPERATE

This chapter provides practical advice for researchers and negotiators of SLO in the context of Blue Growth and in particular the deployment of MOI.

4.1 Introduction

We see SLO ideally as a co-product of developer and community, and as an outcome of a process that has, for the developer, two phases: before engagement, and during engagement. As we hope is clear from section 3, there should be no 'after engagement' phase. Engagement should continue so long as a development remains in place. However, the BGF is a finite-duration research project, and its actual deployment of a MOI is limited to that of the prototype at the NOEL site, a deployment that has now been completed as the project approaches its end. Thus engagement included post-deployment consultation. Additionally, BGF is a research project aiming to study conditions relating to SLO as well as to negotiate SLO for MOI, and the NOEL deployment was used as an opportunity to study opinions about deployment of full-scale MOI. In the cases of the other Mediterranean site, and the two Atlantic sites, only pre-engagement tasks were undertaken. Bearing in mind that the advice given in this chapter is intended to deal with a variety of circumstances, including future commercial deployment of MOI, we have drawn on it to make the concrete plan, contained in Section 5, for engagement at the NOEL site.

4.2 Pre-engagement phase

The steps of this phase are set out in Table 3, and some are further explained in this subsection. DO refers to the 'Development Organisation', which might be commercial or the BGF project.

Table 3 : Steps of the pre-engagement phase

STEP	CONTENT
Identifying the development	What is proposed, where, and when?
Understand the DO	What is the DO, what are its values, and on what terms is it willing to engage with local society? See Figure 3.
Understand your role	In what capacity are you reading this? Consider the choices in Table 2.
Undertand the societal issues	What are the relevant publically available 'social facts' that provide the context for a campaign to acquire and maintain SLO? See Template and example in Annex A.
Anticipate local reactions	Anticipate how local communities and stakeholders might react to the development, as suggested in Table 1 or on the basis of their previous experience of fish-farming and renewable energy generation.
Make an engagement plan	Include the steps of informing, consulting, including and responding (Figure 4)
Prepare information	Develop a 'story' and a plan for communicating it (e.g. media campaign), and materials for use in consultations
Identify a contact point	A named person and an email address to respond to enquiries from media and citizens
Identify stakeholders and community contacts	In a GDPR compliant fashion, thus, initially, from public data, subsequently by 'snowballing'.

4.2.1   The Development Organisation and its commitment

The Development Organisation (DO) should aim to understand itself in relation to the communities at the deployment site. How does it view the potential relationship? As a part of image management, an aspect of Corporate Social Responsibility, or a part of a social contract between different sectors in society? Morrison [25] makes a strong case for developers to understand SLO as a contract between the DO and society.[2] Whatever the DO's conclusion it should prepare a clear statement of its commitment and aims in engaging to cultivate SLO.   Figure 3, proposed for offshore wind energy developments in Scotland, provides a model statement. Whether the BGF project considers itself a mini-developer or a research project, it needs its 'story' clear prior to engagement. See section 4.2.4.

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[2] Morrison's book, entitled "The Social Licence: How to keep your organisation legitimate", is recommended reading for developers.

Figure 3 : Example commitment and aims of community engagement

Adapted from: Good Practice Principals for Offshore Wind Energy **[41]**, Engaging Communities in Offshore Wind **[42]**, SSPO Community Engagement Charter **[43]**, Equinor **[42]** HS2 Community Engagement Strategy **[44]**.

4.2.2 Understanding potential societal issues

Before any involvement with people or communities, it is important to understand the local situation. There are several ways in which communities might react to a proposal to deploy a MOI. It will be easier to grow SLO in a community with an initial lack of interest than in one in which there is a history of opposition to fish-farming or wind turbines. Also relevant is the confidence that a community has in official processes to plan, consent and monitor new developments in coastal waters. It is thus important to assess the situation not only prior to a deployment but also prior to any active engagement with the community. Therefore, information will be needed to:

- Identify the people/communities potentially involved, and the appropriate levels of polycentric governance; also relevant to T8.2 and D8.2.

- Characterise these communities in terms of knowledge bases and skills, culture, history, place identity, and economic dependency on marine industrial (or other) activities.

- Characterise the local context of relevance to the development: for example, is there existing history of opposition to, or involvement in marine fish-farming or generation of marine renewable energy?

Annex A provides an example of a template that should be completed for each proposed or potential deployment site. It has been completed with BGF-relevant information for a site near Islay on the west coast of Scotland. Collecting the information required to fill this template will provide a basis for preparing an engagement plan and for the 'story' that will be used to communicate information about the DO and the MOI deployment to communities and stakeholders. In addition, the template requests information about

governance (for example, relevant national legislation) that will be useful in understanding what is needed for the formal part of social licence. Finally, and for research purposes, the template also asks for data that can be used to describe the features of an action situation focussed on the social licence switch for MOI deployment.

4.2.3 Components of an engagement plan

Examples of the informing, consulting, involving and responding components of stakeholder and community engagement are set out in Figure 4. A detailed example of engagement methods, for offshore wind energy, is given in Annex A.

Figure 4 : Methods for community engagement

Adapted from; Good Practice Principals for Offshore Wind Energy **[41]**, Engaging Communities in Offshore Wind **[42]**, SSPO Community Engagement Charter **[43]**, Equinor **[42]** HS2 Community Engagement Strategy **[44]**.
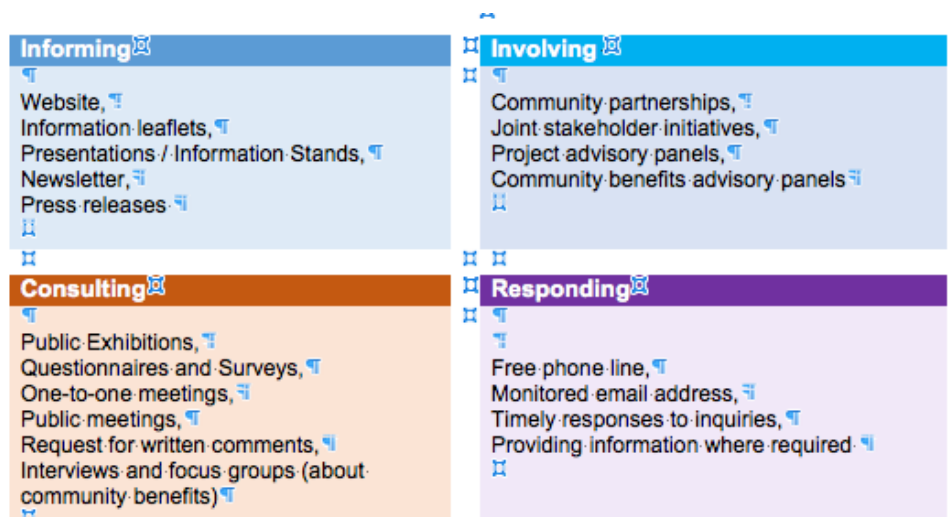
Consider how to inform: Having identified the local context and potential issues, and developed a 'story' (see next subsection), the planned engagement could start with the offer to local media of a short piece introducing the development project. The next step might be to make some initial contacts: for example, elected public representatives and leaders of stakeholder organisations, and explore with them how you might inform the local community about the development project. Plan also to give talks at community meetings.

Points of contact: Many companies choose to employ one or more *community engagement officers),* skilled in liaising and working with communities and stakeholders. Having a community engagement officer can increase trust between communities and companies as well as maintaining the efficacy and continuity of aims and values of community engagement strategies. A familiar and if possible local, single point of contact between communities and a company can provide a detailed overview of community-company relationships and areas for improvement and collaboration. Such a contact point can also aid effective communication including improving efficiency and transparency – a key part of gaining social licence and building reputational capital.

Practical measures for effectiveness: Community engagement should take into consideration the normal routines of the target communities. For example, engagement with communities of place should be geographical located in that place, at a village hall, or other accessible local venue at a time when people will be available (such as in the late afternoon and early evening, or at the weekend). For specific sectors who are engaged on a regular basis, such as fisheries, seeking information from knowledgeable persons in (for example) a Fishermen's Federation for their preference of location, time, and format of engagement is advisable. Where communities of interest have an official representative organisation, such as a Recreational Sailing Association, the organisation should be the first point of contact.

Engagement and research: Community engagement events and stakeholder forums provide venues for collecting information for research as well as for developing SLO. Other research methods include one-to-one interviews (in the street or by arrangement), on-line questionaires, and examination of public documents including: newspaper (or other open media) reports; accounts of meetings of local government; and citizens' objections to proposed developments.

Catch them young: Another way to interact with a section of the community is through collective activities. For example, in another H2020 project, we implemented a competition for school-children, in which they were invited to make short videos about fish-farming as a source of food. They were given briefing packs, help with filming, and prizes for the best results. There are special ethical and legal hurdles to overcome in these cases, and the children must be approached through their teachers, but in our view the outcomes were both educational for the children and informational for us.

4.2.4 Identifying the 'story'

'Story' is one way for humans to make sense of a complicated world in which a variety of things happen or are anticipated to happen; stories provide meaning for these things (which the philosopher Kant called *phenomena*). Response by individuals and communities to a proposal to introduce a new development into a landscape or seascape may depend on the stories told about that place and embedded in world-views. For example, on the remote west coast of Scotland, some people may regard a highly visible offshore structure as an distasteful and unwanted intrusion in a pristine landscape, whereas others may consider it favourably as a source of work and a productive use of local resources.

A DO needs to find out what stories are told in local communities about the places where MOI might be deployed, and it also need to prepare its own story about itself and the aims of the development. Table 4 provides two variants of a story that might be used to introduce a consultation about a MOI deployment. Notice that both stories tell something about the DO and its motives as well as about the proposed development. The account given may be simplified, but it must be honest, agreed within the DO and properly thought out in advance. The DO has to be clear about its commitment to the community, and about what it is offering as 'engagement' (Figure 3).

Table 4 : Two versions of a story about MOI

Given in the form of an introductory address to a stakeholder workshop or community consultation.

TOLD ON BEHALF OF	STORY
BGF PROJECT	*"I want to talk with you about a proposal to install large floating offshore structures in your coastal waters. These structures are multi-purpose: they will include a wind turbine and a fish farm. I am researching public attitudes to such developments on behalf of a European research & development project called Blue Growth Farm. We think the developments are needed to help in the switch from burning fossil fuels to using renewable sources of energy, such as wind and waves. In addition, many of us want to eat fish, and in the face of growing global demand, fish-farming is one way to satisfy that need. We know that people don't want more farms close to land, so using robust platforms a few kilometres out at sea may be more acceptable. But I'm here to find out what you think about this. Before I ask for your views, let me give a few assurances about how the information that I collect will be used in research. First, it will be stripped of anything that can identify individuals. Second, my analysis will be published as a scientific document. Third, I will come back to you towards the end of the Blue Growth Farm project and report what we've found and what will be done with the information."*
COMMERCIAL DEVELOPMENT	*"I want to talk with you about a proposal to install large floating offshore structures in your coastal waters. These structures are multi-purpose: they will include a wind turbine and a fish farm. I am speaking on behalf of a company called <NAME>, which is owned/financed by <NAME>. This is a commercial opportunity for us, of course, but we also think that developments of this sort are needed to help in the switch from burning fossil fuels to using renewable sources of energy, such as wind and waves. In addition, many people want to eat fish, and in the face of growing global demand, fish-farming is one way to satisfy that need. We know that people don't want more farms close to land, so using robust platforms a few kilometres out at sea may be more acceptable. The company wants to engage with your community, to find out what problems you forsee from such developments, to explore with you options that might minimize these problems, and to discuss ways in which your community might benefit from the development. If you want to find out more about company <NAME>, please visit our web-site, where you can also read our policy for ethical engagement with communities like yours."*

Finally, there is a related sense of 'story', which is that used by journalists. Most things that happen in the world do not get public attention. A journalist's story is crafted about 'news': a new and interesting thing has happened. We may need to write such stories to introduce communities to MOI, but need to take care that they do not set off a chain reaction that leads to social opposition to the new development.

4.2.5   Identifying stakeholders and community contacts

Identifying stakeholders and community contacts is best seen as an iterative process, starting by using publically available information to prepare lists of invitees to stakeholder workshops, attending community meetings to identify key stakeholders, or using publicity or street interviews to engage citizens in general. These initial contacts may provide suggestions for additional persons or organisations to contact: the process of 'snowballing'. However, before contact it is necessary to be aware of two sets of constraint. One

set is legal, arising from the recently implemented *General Data Protection Regulations* (GDPR); the other set concerns the ethics of engagement and research.

The GDPR concerns the protection of information that can be used to identify a person. Such information includes, but is not limited to, name, address, email address, photograph. Any contact request that will lead to the DO storing personal information must be accompanied by a **privacy notice** that includes the purpose for which contact is made, the legal basis on which engagement takes place, the way in which the resulting data will be stored, and a statement of the rights of the 'data subject'. The person contacted (or their parent or guardian) must give their informed consent to the collection and storage of their information, and the information must be held securely: very large fines can be imposed if the information enters the public domain, even if by way of criminal hacking.[3] Examples of privacy notices are contained in section 5.

Ethics of engagement and research. The first ethical principle is that of *benefit sharing*. As already discussed, a development should benefit the community as well as the developer; engagement has to be more than a 'tick-box' exercise that wastes peoples' time and leads to 'stakeholder fatigue', and research into SLO should be likely to provide social benefits as well as advancing the careers of researchers. The second ethical priniciple is that of *informed consent*. Those who take part in stakeholder forums or community events, or who agree to be interviewed, should do so willingly and with knowledge of what is involved. Most social scientists are trained in the ethical assessment of research plans, including their assessment by an independent Ethical Committee, and the Annex A includes an example of an approved research plan.

From organisations to individuals. The first step is to identify organisations that might have an interest in the development. Annex A lists organisations considered relevant to the development of offshore energy generation from wind in Scotland. The main categories are:

- Public executive bodies with responsibilities for planning, licensing or regulating maritime developments;

- Elected public bodies (i.e. local governments) that represent communities of place;

- Organisations that represent communities of interest, such as churches, associations of fishermen or shipping companies, environmental campaign groups (often called environmental Non-Governmental Organisations, eNGO).

Once identified, these organisations can be contacted by way of their public address, informed of the development, provided with a privacy notice, and asked if they wish to identify a representative to take part in a stakeholder forum, or to be interviewed about the views of their organisation. In addition, communities can be approached through public invitations to meetings or by means of public displays of information. GDPR and ethical issues arise as soon as personal contacts are made and recorded. If individual A, who has given their consent as a 'data subject', mentions individual B, it will be best if A asks B directly if B may be contacted by the DO. In this way, additional names can be added to lists of stakeholders.

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[3] It is the responsibility of an employer to ensure GDPR compliance. However, it does not seem that full responsibility can be transferred to a sub-contractor: the DO must assure itself that sub-contractors employed to negotiate social licence are compliant with the GDPR, and the BGF project co-ordinator must similarly assure themselves that project beneficiaries and sub-contractors are GDPR compliant.

4.3 Engagement

Table 5 sets out the components of engagement, which should have been forseen in the engagement plan and (if applicable) in a research plan. We maintain the distinction between stakeholders and communities that was introduced in section 2.

Table 5 : Components of engagement

STEP	CONTENT
Inform	Inform the community by appropriate means (as identified in the engagement plan)
Consult stakeholders	Consult identified stakeholders by appropriate means (as identified in the engagement plan), e.g. stakeholder forum, stakeholder reference group
Consult community	Consult community (-ies) by appropriate means (as identified in engagement plan), e.g. in-street interviews, web questionaires, educational out-reach activities
Involve	Give people and local organisations a role in the development or in sharing the benefits arising from the development
Respond	Respond promptly and honestly to enquiries
Record	Maintain records of engagement (in GDPR complant fashion)
Reflect and adapt	Consider the effectiveness of engagement (as a process and in the SLO it generates) and adapt the plan as necessary
Report	Report on the engagement to the DO and the community
Publish	(If part of a research project) analyse the outcome (as a process and a result) of the work and describe in a peer-reviewed, open-access, publication

4.3.1 Stakeholder reference group

A reminder: stakeholders are persons who have a legitimate interest in the development (and the action situation around the development), or representatives of organisations with such interests. Their views may be sought in a one-off workshop, but since the argument of this document is that SLO is aquired by engagement with a community, it is preferable to think of assembling a **Stakeholder Reference Group** (SRG) that can meet at several stages during a development. At each stage the group can be informed about proposed developments and what has been done so far, and members' views sought. It is thus a vehicle for information and consultation, and could include involvement if the DO is willing to respond to stakeholder opinions and requests. Ideally, meetings of the reference group should be organised to result in *communicative action*, although it is to be expected that some stakeholders, representing organisations, will be aiming at *strategic action* (see section 2.7).

Meetings of the SRG should be organised by the DO (i.e. by BGF in the present case), who provide the venue and appropriate refreshments. With the stakeholders' agreement, the DO should provide a record of the meeting, after discussion of how far this should be personalised. The first meeting of the SRG should be

run by the DO, starting with a presentation of the development project and followed by a session in which each stakeholder talks about their (or their organisations') interest and their preliminary opinion on the development. GDPR issues should be clarified. The meeting should be conducted in the local language, either by the local contact person or by a professional facilitator with local experience. Care should be taken in the seating and discussion arrangements not to present the DO as an alien organisation: for example all participants could be seated around a single large table. Consideration should be given to asking the stakeholders to elect one of their number to act as chair at subsequent meetings.

4.3.2   Community events

Understanding community dynamics is useful in anticipating or explaining changes in SLO, and these dynamics may be studied from the outside or inside of communities. Engagement is an attempt to get inside a community of place or interest to inform, consult, involve and influence in the direction of positive SLO. It can also provide insights into community dynamics. Community engagement events differ from stakeholder events in that the former are not directed at identified individuals; they are recruited by advertisment or from members of existing community organisations; and personally identifying information is not recorded. Examples include:

- Open consultations, which are publically advertised events held in central locations, providing information on the development through displays and interaction with representatives of the DO;

- Information-presentation and question-and-answer sessions arranged by existing community organisations.

Such events might include:

- Requests to complete anonymous questionaires either at the event or on line;

- Small-group discussion sessions whilst sitting around a chart of the sea-area proposed for development.

Another kind of community engagement explores citizens' attachements to their community and their views on activities in the coastal zone with non-directive methods. For example, the DO might offer a prize for the best video or photograph capturing the meaning (for the community) of the part of the sea where the development is proposed. Exploring this meaning with the prize-winner(s) and their communities, whilst showing a willingness to modify deployment plans, might bring about the harmonization of interests that is part of SLO.[4]

4.3.3   Recording, reflecting and reporting

Demonstration and communication of how community voices have been incorporated into decisions can provide evidence of good-practice, highlight how the company has met its engagement values and commitments, reveal the importance of the development to communities and increase reputational capital. This type of evidence base can provide support for future development proposals. Thus all

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[4] The 1983 movie, 'Local Hero', by Bill Forsyth, is a light-hearted drama that explores conflicting opinions on the value of unspoilt nature versus employment in a remote coastal village in Scotland.

community engagement activities should have a record of what the engagement aims and objectives were, whether and how they were accomplished or a reflection of why they were not.

In the case of the BGF, engagement was part of a publically-funded research project, and hence had to be reported to the EC as one or more deliverables. Additionally, an account of the engagement, and the light that it sheds on research questions, has been, or will be, incorporated into peer-reviewed scientific publications **[45]**.

5 ENGAGEMENT PLAN: 'SOCIAL CAMPAIGN' IN REGGIO CALABRIA

This section provides a specific engagement plan, for the BGF project in Reggio Calabria in advance of and after the deployment of the prototype at the NOEL site. It was first drafted in advance of the 2019 campaign, and has been updated to take account of 2020 and 2021 campaigns. Agendas, questionaires and privacy statements are presented in this section.

5.1 Introduction

According to the description of WP8, the project context for the campaign in Reggio Calabria is as follows:

> **Task 8.3: Specific participatory process for marine users and stakeholders** … The objective of this task is to engage with stakeholders at the NOEL site, following protocols derived from results of T8.1. In particular, three workshops will be organised at different steps of the prototype design & development & demonstration phase: i) at project concept and site characterisation (T0+15), ii) at detailed design completed (T0+23), iii) during the testing and validation phase (T0+32). In particular, this will involve: description of local context and historical issues, liaison with local stakeholders (including governance and community representatives), as well as EC level stakeholders; formation of a 'reference group', and their engagement in knowledge co-production relating to economic, environmental, and social impact; reporting on the process and its results.

This engagement plan mad specific recommendations for the work in Reggio Calabria in 2019, 2020 and 2021 – which had three components:

1. A local media campaign to alert the public to a BGF event (each year).
2. Formation of a reference committee including local stakeholders (who were then invited to the following workshops).
3. A public information and survey event (only in 2019 and 2021).

5.2 GDPR and ethical issues

There are no contentious GDPR or ethical issues in the case of the reference committee events. The invitation lists were built from publically available addresses, plus personal contacts and those who made contact following the media campaign. The invitation letter explained the purpose of the reference committee, the reason for keeping and publishing an anonymised record of its proceedings, the secure storage of participants email addresses, and participants rights to withdrawal etc.

In the case of the public events there were no GDPR issues because no data were taken that can personally identify interviewees. There were ethical issues: interviewees (or their parents, if minors) were required to give their free and informed consent to the interviewees and the use of the anonymized data we collected. A short consent statement was therefore included in the questionaire.

5.3 2019 Stakeholder event

The purpose of this event was to form a **Stakeholder Reference Group** (SRG) to provide a forum for information exchange between representatives of the local community and the BGF project. Representatives were identified and invited in advance; they included elected representatives, local officials involved in planning decisions, and representatives of those who might benefit from, or be harmed by, the deployment of an MOI. Potential beneficiaries included those who might get employment during

deployment or operation; those who might be harmed could include fishermen excluded from certain parts of the sea because of the presence of a MOI and its moorings. A 'stakeholder' is someone who has a personal or organisational interest in the outcome of - in this case - an MOI deployment; the challenge in recruiting the reference committee was of generating such interest for a marine structure without local precedent.

An event such as this should include a welcome, explanation of the purpose of the meeting and the reference committee, a briefing about BGF and MOI, with questions and answers, and a gathering of information about stakeholders' preliminary opinions about the MOI.

5.3.1   2019 Preparation of materials and media campaign

There was a need for an appropriate 'story' for the event, that is to say an account of the BGF project, the forthcoming deployment of a prototype MOI at the NOEL site, and the potential for full-scale MOI, that is relevant to people in Reggio Calabria, answering the 'why' questions: why are MOI needed? And why should people in Reggio Calabria be interested in them?

Once prepared, the story was used as the basis for a media campaign starting at the earliest stage possible, and again in the week before the event, with press releases to local newspapers, radio and TV and where possible interviews. The releases should identified a local contact (for the media and the public).

In addition, there was a visual presentation and briefing notes for the stakeholders, and a short explanation about MOI for use in the community event.

Table 6: 2019 Agenda for First Meeting of the Stakeholder Reference Group

TIME/ITEM	DETAILS
1. 09:45-10:00: Arrival	Register, coffee and pastries
2. 10:00 – 11:15: Introduction and information dissemination	a. 10:00-10:10 Welcome to the workshop and introduction of the programme including: what the workshop is about; what we hope to achieve; and how the information we collect will be used. b. 10:10-10:15 Participant introductions c. 10:15-10:30 Blue Growth Farm platform overview – the challenges we hope to address by developing this technology (e.g. sustainable sea-food and energy production). 10 min presentation with 5 min questions. d. 10:30-10:45 Blue Growth Farm platform engineering - how it will work – in simple terms. 10 min presentation with 5 min questions. e. 10:45-11:00 Preparing for round-table discussions: why are we concerned with the social aspects of marine technology development? 10 min presentation with 5 min questions. f. 11:00-11:10 Individual ranking exercise based on immediate perceptions: what do you see as the top three positive and negative social impacts relating to the Blue Growth Farm platform? g. 11:10 – 11:15 Explain what will happen in the next section of the workshop and organise breakout groups depending on number of participants.
3. 11:15 – 11:30: Coffee	Coffee break
4. 11:30 - 13:00: Round-table discussions	Round-table discussions in break-out groups, supported by facilitators a. 11:30 – 11:50 Breakout group discussion: What are the potential benefits, for people and organisations in Reggio Calabria, of the Blue Growth Farm platform? Facilitator will write them all down and then guide the group after 15mins to choose their top three. b. 11:50 – 12:10 Group discussion and ranking: a representative from each group states the top 3 local social benfits that they disucussed. c. 12:10 – 12:30 Breakout group discussion: What are the potential local challenges (to or from people and organisations in Reggio Calabria) of the Blue Growth Farm platform? Facilitator will write them all down and then guide the group after 15mins to choose their top three. d. 12:30 – 12:50 Group discussion: a representative from each group states the top 3 local social challenges that they discussed.
5. 12:50 – 13:00: Feedback	Participants will be asked to fill in a simple feedback form and to state their willingness to continue to participate in this Stakeholder Reference Group. The workshop will close with thanks to participants, and a reminder of how the information will be used and the expected date of any outputs
6. 13:00 - 14:00: Buffet lunch	Continuing informal discussions

5.4   2019 stakeholder event analysis and results

This event, and the associated community event, were reported in D8.3.

5.4.1   Method

This section details the methods used to analyse the data that were collected before, during and after the stakeholder workshop.

Three sets of data were collected by three different methods; 1) qualitative data from structured interviews with key stakeholders which were held prior to the workshop, recorded (with permission) and then shown during the workshop, 2) questions from workshop attendees during the workshop Q&A session; and, 3) a posterior semi-quantitative questionnaire that the workshop attendees were sent after the workshop was completed.

Method 1: the aim of this method was to explore opinions on the BGF MOI of fish farming operators. The interviews were held in Italian before being translated into English for analysis. The data was thematically analysed following the protocol set out in Braun and Clarke (2006) **[46]**.

Method 2: the aim of this method was to allow feedback between the stakeholders attending the workshop and the BGF WP8 team. The data was thematically analysed to identify the main areas of inquiry from the stakeholders.

Method 3: the aim of this method was to understand if the stakeholders attending the workshop changed their minds due to the content within the workshop, how the BGF consortium could improve its engagement with stakeholders, and the information that stakeholders would like to see on the BGF MOI going forward. This will help the BGF project target its information provision and understand whether the current engagement activities are effective. Due to the small number of attendees at the workshop, this data is analysed using descriptive statistics.

5.4.2   Activity 1: Individual ranking exercise

The first activity involved individuals writing comments, regarding the positive and negative aspects of the MOI deployment near Reggio Calabria, on post-it notes. The notes were placed on a board which was split into positive and negative sections. Each section contained three sub-sections, numbered 1-3, with 1 representing a high priority comment and 3 a low priority comment.   A total of 158 post-its were collected and organised in Excel, with summary categories created to classify the comments. Although the responses covered a wide range of topics, the main summary categories included opinions shared by numerous stakeholders.

- **Benefits**: energy production from a renewable source was seen as the greatest benefit from the development of a platform. Also rated highly were the benefits of boosting local jobs and businesses, and of increasing in local scientific research and prestige.

- **Concerns**: There was a wider range of concern, the most frequently cited being the visual and environmental impacts of a platform and turbine. Many responders felt that the platform would *'deface the natural landscape'*. Furthermore, stakeholders commented on another specific environmental concern, the waste produced by the platform from the farmed fish and workers, highlighting its potential negative effect from both an *'ecological and environmental'* perspective.

The remaining concerns were about the impact on vessel navigation in the area, the economic sustainability of a deployment, and its final decommissioning.

- **Positive responses** regarding the marine environment and socio-economic impacts had greater detail than responses classified under other headings. For example, it was held that the local deployment of a MOI would *'raise awareness'* about the marine environment, specifically about *'respecting and taking care'* of it. In relation to the *'prestige'* that a platform would bring to the area, the development was described as *'progress and innovation for the city of Reggio Calabria'*. It was also noted how the development could act as an *'incentive'* for younger generations to *'stay and work in Reggio Calabria'*, using their *'competencies and skills'* locally. Furthermore, there would be a *'strong contribution to the cultural and scientific growth of the local community'*.

- **Negative responses** were stronger when concerning the social impacts of a platform. It was thought to be difficult to *'persuade people about the quality of fish produced'* from the platform, and high levels of *'scepticism'* and *'disapproval'* from *'local communities'* and *'fishermen'* were anticipated. Responders thought that many in Reggio Calabria had *'scarce information'* about renewable energy and aquaculture developments. It was also often mentioned that a platform would impact on *'navigation'* and *'maritime traffic'*.

5.4.3   Activity 2: Facilitated breakout group dissussion

The second collective activity in the workshop involved discussions in three breakout groups. Each group comprised 9 or 10 stakeholders plus a facilitator provided by the BGF project. Each group was asked to discuss the positive and negative aspects of MOI deployment near Reggio Calabria, and the discussions were summarised by a member of the group. During the discussion the three groups remained separate, yet all the groups converged on similar points, which were similar to those made by individuals during the post-it exercise.

- The main **positive aspects or benefits** noted were that MOI deployment was likely to increase jobs in the area, as well as creating a community interest in the industry, and thus possibly leading to younger individuals working in the sector and remaining local. In addition, the development could benefit the image of Reggio Calabria, increasing the prestige of the region and attracting new scientific research to the area.

- Comments about the **negative aspects or challenges** focussed on the visual, environmental and social impacts of the platform, with the key environmental issues being the management of fish waste and disease and the prevention of fouling by the growth of marine life on the platform. It was thought that there was a need for more information about the renewable and aquaculture industries and for steps to avoid scepticism in local communities about how these industries were regulated. A further concern was the impact on other maritime users such as shipping and fisheries. The social issues were discussed in more detail here than in the post-it activity and groups noted that a way to reduce concerns and raise social acceptability of the platform would be to inform and educate locals on the development and relevant industries.

5.5   2020 stakeholder event

The overall aim of the second workshop was to keep the local stakeholders reference group engaged with the BGF project. It was delayed because of Covid restrictions and held on-line in September 2020, as reported in D8.6. At the time the deployment of the scaled prototype was scheduled for December 2020.

To enable this aim, the following objectives have been identified:

1. providing stakeholders with an overview of the project and the potential benefits of these multi-purpose offshore structures for communities such as those in Reggio Calabria;
2. describing the project advancements, focusing on the prototype development and on the trials that were to be carried out at the Natural Ocean Engineering Laboratory (NOEL) premises in Reggio Calabria;
3. promoting involvement, collaboration and knowledge sharing in order to optimise the implementation of the project in the Mediterranean Sea;
4. answering questions and obtaining feedback from stakeholders, both positive and negative aspects, added values, potential barriers, suggestions on how to improve;
5. to co-create knowledge on the social dynamics of the BGF multi-use platform in the local area;
6. stimulating the continuing engagement of the 'Stakeholder Reference Group' that, it was planned, would meet again in September 2021.

5.5.1   2020 preparation of materials and media campaign

The Workshop was promoted on the Blue Growth Farm Website:

https://www.thebluegrowthfarm.eu/index.php/2020/08/05/webinar-the-blue-growth-farm-and-sea-use/

Moreover, a massive social media campaign was launched to promote the event online: more than 15 social media posts were published just on BGF LinkedIn and Twitter pages.

To maximise the visibility of project posts, the following actions were implemented:

- Use of **strategic hashtags** such as #BlueGrowth, #H2020, #aquaculture;
- Use of emoticons and captivating images to get users' attention;
- **Mention of relevant accounts** such as "API - Associazione Piscicoltori Italiani", "UN Food & Agriculture Organization's Fisheries & Aquaculture", "@Legambiente", the "Official account of @EU_Commission Maritime Affairs & Fisheries DG MARE", "Official CORDIS account", "Official DG Research & Innovation account for EU's #H2020 & future #HorizonEU research & innovation prog", "The official account for @EU_Commission Directorate-General for Environment (DG ENV)", The Intergovernmental Oceanographic Commission (IOC) of @UNESCO is the UN Body for #ocean #science", the "the @EU_Commission 's Directorate-General for Energy", the "@EU_Commission's science & knowledge service - Joint Research Centre", Aquaculture Magazine,
- **Involvement of EU influencers in the campaign active in the Blue Growth sector;**
- Mention of all project partners' accounts;

Figure 5: 2020 workshop agenda

5.6   2020 stakeholders event, analysis and results

Because of Covid-related restrictions on travel and meeting, the event on September 11, 2020, was held on-line and because of this was kept short (2 hours). It was proceeded by a prior questionaire, and followed by a posterior questionaire. Completion of the posterior questionnaire was motivated by pro-rate donations to a local charity.

5.6.1   Analysis methods

The analysis methods were the same as those described in section 5.4.1, except for method 1, in which the pre-recorded opinions on the BGF MOI of three key Italian NGOs representing aquaculture, fisheries, and environment were explored.

5.6.2   Interviews with NGOs

Three interviews were conducted with representatives from Italian NGOs, and were recorded (with permission) for playback during the workshop and for analysis. A total of five themes emerged from the 56 codes assigned to the interviews during the thematic analysis. The themes are listed below, followed by a summary of the overall findings.

- Public perceptions and consumer confidence are contingent on effective, transparent information provision and stakeholder engagement.

- Room for expansion in local markets.

- Support for sustainable food and energy production.

- Fisheries and aquaculture interactions.

- Contingent support for the BGF MOI.

Overall, the interviewees were positive about the potential of the BGF MOI and in particular, of its capacity to fulfil the requirements of sustainable production of energy and food. These positive opinions hinged on transparent and effective communication, engagement and information provision, in addition to rigorous environmental monitoring and mitigation for any environmental and social impacts. Despite shared logic across all interviewees, that fisheries should be complementary with the BGF MOI, there was concern that in reality, this would not be the case. Measures to prevent conflict with fisheries included development of more effective regulation and enforcement and engagement with affected stakeholders in a participatory manner.

5.6.3   Questions asked during the 2020 workshop

In this section a summary of the results of the questionnaire sent out after the workshop is presented. There were 19 responses in total.

Q1: Which Workshop did you participate in?

64% of the respondents were new to the 2020 BGF workshop, with only 37% having attended the September 11th, 2019 workshop.

Q2: Which of the following aspects do you think can generate the best benefits for the development of communities in Southern Italy?

68% of respondents felt that the creation of new jobs and new business opportunities was the best potential benefit from the BGF platform of the three options provided.

Q3 provided respondents with the opportunity to further explain their answer to Q2.

There were four responses to this open question. All of the respondents advised that although they picked the option "create new jobs and new business opportunities" in Q2, they felt that the three options were interlinked. The reasoning was that more investment in business in the local area would lead to better jobs, which in turn would lead to better science and development of more sustainable forms of electricity generation (due to better science).

Q4: Which of the following aspects are you most concerned about today?

Of the three choices provided, 84% of participants were concerned about the economic sustainability of the proposed development.

Q5 provided respondents with the opportunity to explain their choice in Q4.

There were three responses, all relating to economics. One suggested than in Calabria, economic sustainability is always the main issue. The second predicted that the cost of a full-scale MOI would not be economically sustainable. The final respondent advised that until there are proper techno-economic evaluations available, it is not possible to know what the main concerns would be.

Q6: During Friday's webinar, questions were raised about the type of fish that could be farmed using the BGF platform …: what type of fish would you prefer to see raised in Italy using a BGF platform?

From a choice of four, 52% of participants would prefer the BGF platform to grow sea bream and 39% would prefer tuna. The choices of sea bass or red mullet, oysters and sea cucumbers were equally unpopular with just one vote each (5% respectively).

Q7: Also, during the webinar on Friday, a question was asked about the wave motion around the BGF platform and the length of stay on site … what period of time do you consider most acceptable for the installation and maintenance of such a platform on a site?

47% of participants would like the BGF platform to be installed for over 20 years. The second most popular option was 15-20 years with 26% of the responses. 5-10 years was the third most popular option with 15% of the votes. 10-15 years proved the least popular with only 10% of the votes.

Q8: Did you receive adequate information on the BGF project and on the implementation of the Reggio Calabria experimental prototype?

Over 94% of participants felt that they had received adequate information on the BGF prototype. This meant that only one participant felt the information provided was not adequate.

Q9: Would you like to know something more about the BGF project?

There were three responses to this question, all requested more detailed information. Two participants wanted more details on the schedule of activities and techno-economic evaluations for the BGF MOI over its lifecycle. One wanted to know how much public perceptions influence the implementation and development of this type of project, expressing a hope that opinions guide the development of these types of projects rather than hinder them. This participant also noted they did not want to receive periodic information or newsletters.

Q10: *The third and final meeting of the Stakeholders will be held next July 2021. Is there any particular topic that you would like to include in the agenda? If you wish, please describe your suggestions.*

There were six responses to this question. However, one has not been included as the answer was simply 'no'. The other responses ranged from requests about the business model, to the technical and experimental results of the project, to information on potential for job creation, transparency of the project and how it allocated its funds from the EU. One participant suggested technical videos could be a good way to convey technical results.

In summary, we can see from these results that the participants felt that: the best benefit from the BGF MOI would be job creation and business opportunities; the main concern was the economic sustainability of the full-scale platform; sea bream is the preferred fish for farming; and an MOI with a longer operational span is preferable to a shorter one (more than 20 years). The stakeholders requested the provision, during the next workshop of more technical information on the MOI (within the parameters of commercial sensitivity and BGF project focus).

5.7   2021 stakeholder event

The overall aim of the third and final workshop was to keep engaged the local stakeholders reference group with the BGF project at the conclusion of the consultation activity. The workshop was delayed because of Covid restrictions and held on-line in October 2021, as reported in D8.7. At the time the scaled prototype was in deployment at the NOEL site.

To enable this aim, the following objectives were identified:

1. to continue providing stakeholders with an overview of the BGF project and the potential benefits of these multi-purpose offshore structures for communities such as those in Reggio Calabria;
2. to describe the project advancements, focusing on the prototype development and on the trials that were being carried out at the Natural Ocean Engineering Laboratory (NOEL) premises in Reggio Calabria, starting in March 2021;
3. to promote involvement, collaboration and knowledge sharing in order to optimise the assessment of the potential implementation of the BGF project in the Mediterranean Sea;
4. to answer questions and obtain feedback from stakeholders, both positive and negative aspects, added values, potential barriers, suggestions on how to improve;
5. to co-create knowledge on the social dynamics of the BGF multi-use platform in the local area.

5.7.1   2021 preparation of materials and media campaign

These activites replicated those described in section 5.5.1.

Figure 6: 2021 workshop agenda

Agenda dello Webinar

15:05 *Obiettivi e contenuti dello webinar*
15:10 *Sezione Feedback: Presentazione dei risultati del 2° Workshop del Gruppo di Riferimento delle Parti Interessate*

15:30 *Sezione Interviste: : L'opinione dei professionisti dell'acquacoltura, video-intervista a Dott. Mario Giovannetti, professionista commerciale nel settore, consulente di primari operatori di acquacoltura*

15:40 *Sezione Sviluppo: Presentazione alle Parti Interessate dei risultati della campagna sperimentale in corso sul prototipo AURORA del progetto BGF presso NOEL (Reggio Calabria) (incluso video)*

Il presente progetto è stato finanziato nell'ambito del Programma Horizon 2020 Ricerca ed Innovazione della Commissione Europea mediante contratto n. 774426

Agenda dello Workshop

16:10 *Sezione Domande / Risposte*

16:40 *Sezione Conclusioni: Presentazione del questionario che i partecipanti riceveranno da completare il giorno successivo al webinar*

16:45 *Modalità di invio del feedback di questo 3° ed ultimo Workshop*

16:50 *Conclusioni sull'intero set di Workshop realizzati e chiusura dello webinar*

3

Il presente progetto è stato finanziato nell'ambito del Programma Horizon 2020 Ricerca ed Innovazione della Commissione Europea mediante contratto n. 774426

5.8   2021 stakeholder event, analysis and results

Because of Covid-related restrictions on travel and meeting, the event on October 15, 2021, was held on-line and because of this was kept short (2 hours). It was proceeded by a prior questionaire, and followed by a posterior questionaire. Completion of the posterior questionnaire was motivated by pro-rate donations to a local charity.

5.8.1   Method

Analaysis methods were those described in section 5.4.1.

5.8.2   Interviews with Fish Farming Operators

In the circustances arising fro the Covid pandemic, it had been possible to arrange only one interview. The interview was conducted with a professional consultant to Fish Farming industrial chain operators. Given the interviewee's long experience in the marine aquaculture sector, they are thought to fully represent the operators of this sector. A total of 5 themes emerged from the 12 codes assigned to the interview during the thematic analysis. The themes are listed below, followed by a summary of the findings.

- Environmental Benefits
- Conflict with Other Marine Uses
- Technical Feasibility
- Economic Viability
- Opportunity

The environmental benefits of integrated energy generation and aquaculture were alluded to at the very outset of the interview, with the fish farming consultant expressing their opinion of the multi-functionality concept through the statement that sustainability is currently "a keyword of aquaculture business." Later on, they elaborated that it would be a step forward to make aquaculture more eco-compatible and they identified the main opportunity posed from this type of platform as being on the environmental side by increasing the noble protein content and producing clean energy.

Nevertheless, the interviewee expressed concern on three occasions about potential conflict with other marines uses resulting from the deployment and operation of a multi-use platform. This included necessary consideration that it is not situated in passages used for naval traffic, or areas that are of significance for environmental reasons, or in places where it would conflict with other industries and activities. In contrast, one benefit of the off-shore platform emphasised is that it would reduce conflict between tourism operators and fish farmers as it would have less visual impact.

When it comes to technical feasibility of operating such a platform from the perspective of a fish farming operator, the interviewee drew attention to the novelty of the technology and highlighted that many sea farms have had difficulties caused by lack of design experience and lack of management experience that have been leading causes of the closure of several farms. They also pointed out that there are trade-offs involved in having an offshore structure, whereby the disadvantage of remoteness from on-land facilities is balanced against the advantage of optimal natural conditions. All of these key points indicate that technical feasibility is more than an engineering concern but also a human concern, related to the management of the farms and the experiences and willingness of the farmers to operate them despite technical difficulties. Furthermore, it is an environmental concern with respect to meteo-marine conditions, which the fish

farming consultant expected would pose a problem In Italy in terms of finding sites suitable for farming, and the extent to which a single, exceptional marine event could cause extensive damage or destruction. Despite potentially difficult marine conditions, the interviewee suggested that success is nevertheless formed on the basis of suitable project design rather than dictated by these conditions.

Economic viability is based on the future fish market as the system has a long payback period, however the interviewee described this as difficult to forecast, with the gradual progressive increase in farmed fish consumption in Italy set against the pressure of cheaper imports from abroad. Furthermore, the investment costs were not known, nor the annual management cost, including depreciation. As an indication, in their opinion, in order to be viable under the current market trend, the production cost per kilo of fish must not exceed 4,50€ before packaging and transport costs. The offshore farming of fish and environmental benefits may provide a commercial advantage, however, and convince the consumer to pay more for the guarantee of this production method despite competition from imported sources.

Finally, one of the enveloping themes of the interview was the opportunities posed by a platform such as that demonstrated through The Blue Growth Farm. The fish farming consultant's professional opinion was that the different activities of the platform could operate together and generate a combined economic flow. They viewed the platform as generating environmental opportunities for fish farming through the production of noble proteins and clean energy, and the opportunity for consumers to have confidence in the fish they buy and the method by which it is farmed.

5.8.3   Posterior questionair

In this section a summary of the results of the questionnaire sent out after the workshop is presented. There were 22 responses in total.

Q1: Which workshop(s) did you participate in?

Most participants (63%) had attended each of the three stakeholder workshops. For some participants (25%), the October 2021 workshop was their first.

Q2: Which of the following aspects do you think can generate the best benefits for the development of communities in Southern Italy?

Half of all participants felt that the opportunity to create new jobs and business was the best benefit of a MOI installation in Southern Italy. This was then followed by the development of local scientific research and prestige (33%), and then enhancing the energy production from renewable sources (17%). Q3 provided respondents with the opportunity to further explain their answer to Q2. There were three responses to this open question. All of the respondents advised that although they picked the option "create new jobs and new business opportunities" in Q2, they felt that the three options were interlinked. However, the priority should be to improve the current economic situation within Southern Italy.

Q4: Which of the following aspects are you most concerned about today?

Almost all participants (86%) felt that the economic sustainability of the proposed development was the aspect they were most concerned about. Q5 provided respondents with the opportunity to explain their choice in Q4. There were three responses mentioning the need for greater public attention to the environmental sustainability of the platform, and that if the development is not economical, then it would not go ahead.

Q7: Do you think a full-scale platform is suitable for Reggio Calabria and the surrounding maritime area? Feel free to explain your answer.

Both typed responses to question 7 support the idea of a MOI development within the Reggio Calabria maritime area, but only if the project had the right economic and city sustainable plans in place. It was also noted that the platform would be suited to any marine area *'characterized by satisfactory "environmental" and "energy" conditions',* and that *'the presence of pre-existing infrastructures, logistics, and the market favours its implementation even more.'*

Q8: Would you support a full-scale platform development off the coast of Reggio Calabria? Feel free to explain your answer.

Only one participant officially said yes to supporting a local platform development project, stating that the *'Reggio Calabria area needs innovative and productive opportunities.'*

Q10: Are there any particular topic(s) you feel left out of today's meeting that should have been mentioned? If so, please describe your suggestions below.

The only additional topic that one participant notes was that relating to the business model of the platform, along with its ownership and economic sustainability.

Q11: Did this final workshop meet your expectations? Please briefly describe your answer.

Each participant felt that they were satisfied with the final workshop of the BGF project and results were explained in a thorough and clear way. The main points highlighted here were that:

- It would be interesting to explore the business model of the platform, along with its ownership and economic sustainability as stated before;
- The project seems to be an interesting response to specific market demands, new businesses, new and greater job opportunities, and integrated energy production; and
- It was interesting to hear more on the experimental phase of the AURORA platform and the positive results achieved.

Q12: Considering the question raised during the today webinar: "Are you considering the use of vaccines on farmed fish? How do you plan to manage the classic "diseases", pests, parasites, etc.?", Are you satisfied with the answer? (Yes/No)

During the webinar, participants shared their concern regarding the management of diseases, pests/parasites for the fish element of the platform. All participants felt that the response from the webinar stakeholders effectively and clearly addressed these points.

Q13: Does the disease problem make you less likely to eat farmed fish? (lot/a little/no)

As a follow-up to the previous question, considering the issues of disease, participants felt that it would not affect their level of farmed fish consumption, with the caveat that consumers are fully informed of disease prevention methods and treatments. Another participant notes how communities are *'poorly informed on the subject'* and without addressing this, it could pose as *'an obstacle to product acceptance'*, and again highlights the importance of *'transparency, quality certifications, and scientific education'*.

6   COMMUNITY EVENT: REGGIO CALABRIA AND ISLAY SURVEYS

The purpose of the community events was to gather (mainly quantitative) information about opinions regarding MOI from members of the community. As far as possible, they were sited and scheduled so as to sample a wide range of types of people.

6.1   Community Event Questionnaire 2019

For the questionnaire used in the 2019 community events see Table 18 in Annex A.

6.1.1   Method

The survey in Reggio Calabria was conducted on the sea front on the 19th September 2019, taking advantage of the city's Patronal Feast, a public holiday during which many citizens and visitors were promenading past a staffed gazebo advertising the BGF project and the survey, and close to the NOEL concession where the small-scale prototype would be sited in 2021. A voucher for an ice-cream was offered to each respondent. BGF personnel read the questions to each participant and noted their responses. The survey on Islay was carried out by interviewing passers-by in the streets of the three main settlements from 18th-20th October 2019. The questions had been loaded onto a tablet computer, and participants given the choice of being talked through the items or themselves reading questions and inputting responses. The survey was also made available online for five weeks from the 9th October – 16th November 2019 and was shared across local forums through social media and email. The online survey was required to supplement the street surveys as the population base of Islay is dispersed, particularly in comparison to Reggio Calabria.

6.1.2   Analysis

Surveys were analysed via a Likert-type system. Questions had four options for the participants to choose: 'positive', 'mostly positive', 'mostly negative', and 'negative' or, 'very likely', 'likely', 'unlikely', 'very unlikely'. The responses were categorised into codes from one to four following the procedures set out in **[47]**. For example, question 1.1 was 'What is your opinion of wind turbines that are at sea and used for electricity generation?' and the responses were counted as 'positive' (code 1), 'mostly positive' (code 2), 'mostly negative' (code 3) or 'negative' (code 4). In some cases, categories (such as 'mostly positive' and 'positive') were combined to dichotomise data for further analysis.

Three non-parametric tests were used with the aid of the R statistical software package **[48]**. The chi-square test for difference and the chi-square test for correlation used the frequency of responses in different categories. Fisher's exact test was used when there were frequencies < 6 in a category **[49]**. The Wilcoxon matched-pairs signed-rank test was used to test the significance of the shift in each participant's response between pairs of questions. For example, a participant who answered 'mostly positive' to the wind-farm question 1.1 and 'negative' to question 2.1, 'What is your opinion of the farming of fish in the sea?', would have the change scored as +2. This pattern of change was compared with an expectation based on a null hypothesis of no change. Although the Wilcoxon test could only be used for pair-wise comparisons, it is more powerful than a chi-square test as it retains information about individual participants.

Statistical outcomes have mostly been reported as probabilities for the observed data on null hypotheses of no difference, or no correlation (as appropriate), with $p > 0.05$ given as 'not significant'. $p < 0.05$ has been taken as significant where the analysis was used to answer a specific research question. The difficulty arising in the case of multiple comparisons, when investigatory tests were used, was resolved by a Bonferroni correction, i.e., dividing the probability level of 0.05 by the number of comparisons.

6.1.3   Results

Table 7 provides information on survey participants. Of the 108 people responding in Reggio Calabria, 76% were locals, there was an equal balance of respondents between the sexes, and there were more responses in the lower age groups (44%), explicable by the relatively large number of university students (37%). Of the 126 respondents on Islay, 56% were locals, there was an equal balance of respondents between the sexes, and there was a slight skew in the distribution of ages with 52% above 50 years old. In contrast to the Italian sample, there were very few young people aged 15 – 24, reflecting that many in this age range leave the island for work or continuing education **[50]**.

Table 8 summarises the main questions asked during the interviews, and the percentage responses obtained, with, in most cases the 'positive' and 'mostly positive' categories combined. The pattern of response was roughly similar in both locations, despite their geographical separation and socio-economic differences.

The results of the Wilcoxon analysis of Likert-scale opinions (binary and three-way comparisons) are summarised in Table 9. The binary comparisons show that:

- respondents at both sites tended to have a more positive general opinion about devices to harness offshore wind energy (OWE) than about fish farming (FF);

- respondents in both sites tended to have a more negative opinion about the possibility of local OWE capture devices than they did about these devices in the abstract – that is, a proportion of people liked the idea of the technology but did not want them locally;

- respondents in both sites did not distinguish, in their opinions, between the abstract idea of fish-farming and its local implementation;

- respondents in Islay (but not in Reggio Calabria) disliked local FF more than local OWE.

Before these surveys, we hypothesised that opinions about MOI would be somewhere between those for FF and for OWE. The three-way comparisons investigated this. In Islay, opinion about MOI was indeed intermediate, although willingness to eat fish from MOI was similar to opinion about FF in general: i.e., not improved by association with OWE in the BGF platform. In Reggio Calabria, opinions about MOI tended to be more positive than that for either OWE or FF, but willingness to eat MOI fish was not improved by the association with OWE.

There was some indication that responses were associated with demographics, although in most cases numbers in some categories were too low for significant conclusions to be drawn using chi-square contingency tests. However, in Reggio Calabria, Italian nationals were correlated with more positive views of global OWE than were non-nationals, and in Islay, Scots were correlated with more positive views of global FF and more negative views of local FF, than non-nationals.

Finally, one of the most striking outcomes of the surveys were the frequent responses suggesting distrust in the capacity of public officials to regulate environmental impacts of MOI (Table 8, Q4.3). In Italy, this lack of trust was shown independent of place of residence; in Islay, people living locally were significantly less trustful than non-locals. It may be noted (Table 8, Q4.2) that people questioned in Islay had a strong preference for local ownership of the hypothetical MOI; opinion was more divided in Reggio Calabria.

Table 7: Information on survey participants

			Reggio Calabria	Islay
	maximum number of respondents		108	127
	number responding on-line			25
Q5.1	Where do you live? [implying primary habitation]			
		locally (province or county)	77%	56%
		nationally (Italy or Scotland) but outside local area	12%	24%
		internationally	11%	20%
Q5.3	How would you identify yourself?			
		female	51%	52%
		male	48%	47%
Q5.4	Which range includes your age?			
		15-24	44%	6%
		25-49	25%	42%
		50-64	19%	26%
		65-79	11%	23%
		80+	0	3%

Table 8: Summary of opinion questions and responses. 'Positive' includes 'somewhat positive'.

	maximum number of respondents	108	127
		Reggio Calabria	**Islay**
		positive	positive
Q1.1.	What is your opinion of wind turbines that are at sea and used for electricity generation?	76%	88%
Q1.2	What is your response to a proposal to install wind turbines in the sea [near here]	63%	79%
Q2.1	What is your opinion of the farming of fish in the sea?	63%	48%
Q2.2	What would your response be, to a proposal to place a fish farm in the sea [near here]?	57%	46%
Q3.3	[Having been shown a picture] What is your first reaction to [MOI]?	85%	68%
Q3.4	How likely are you to eat fish produced in one of these installations?	65%	56%
Q4.1	What would be your response to a hypothetical proposal to place a… MOI in the sea near [here]?	70%	61%
Q4.3	… how likely are you to trust public officials to regulate the environmental impacts of this MOI?	37%	39%
Q4.2	Suppose that this hypothetical MOI was going to be installed near [here]. Would you prefer that it was owned ..		
	locally	43%	76%
	by a large national company	30%	21%
	by an international company	27%	3%

Table 9: important comparative findings from the survey, restated as question and answer. OWE = Offshore Wind Energy (harvesting device), FF = fish-farm(ing); IL = Islay, RC = Reggio Calabria. 'Yes' answers are deduced from statistically significant pair-wise Wilcoxon tests (combined where multiple comparisons), which examined differences in individuals' responses to each question in the pair. 'Global' contrasts with 'local', the former labelling the general idea of particular technologies, or their distant implementation, the latter referring to concrete implementation in waters near to the places where the survey was carried out.

Survey questions compared	Comparison as question	Finding (as answer to comparison question)
Binary comparisons		
Q1.1 and Q2.1	Did respondents think better of global OWE than of global FF?	YES respondents expressed more strongly positive opinions of OWE (in general) than of FF (in general), although the difference was less strong in RC.
Q1.1 and Q1.2	Did respondents think less well of local OWE than of global OWE?	YES, respondents expressed less strongly positive opinions of potential OWE in their locality than of OWE in principle.
Q2.1 and Q2.2.	Did respondents think less well of local FF than of global FF?	NO: there was no significant difference between respondents' opinions of potential FF in their locality than of FF in general
Q1.2 and Q2.2	Did respondents think less well of local FF than of local OWE?	MIXED: IL participants' responses to potential local FF significantly more negative than to potential local OWE; no significant differences in the case of RC participants' responses
Three-way comparisons		
Q1.2, Q2,2, Q4.1	Were respondents' opinions about about potential local deployments of MOI intermediate between those for OWE and those for FF?	MIXED: IL participants' responses for local MOI were significantly less positive than those for local OWE but significantly more positive than those for local FF; no significant differences in the case of RC participants' responses

Q1.1/2, Q2.1/2, Q3.4	Were respondents' opinions about eating farmed fish improved by associating FF with OWE in MOI?	NO: respondents' opinions about eating fish from MOI were significantly less positive than opinions about OWE and close to opinions about FF, whether local or global

6.2 Community Event Questionnaire 2021

For the questionnaire used in the 2021 community events see Table 19 in Annex A.

6.2.1 Method

The survey in Reggio Calabria was conducted on the sea front on the 14th of December 2021 close to the NOEL concession where the small-scale prototype was sited. BGF personnel read the questions to each participant and noted their responses. Unlike the 2019 survey, there was no staffed gazebo advertising the BGF project as the survey was conducted past the date of the city's Patronal Feast. In addition, no incentive was used in the 2021 survey to encourage individuals to participate, compared to an ice-cream voucher in 2019. The survey on Islay was carried out by interviewing passers-by in the streets of two main settlements from 5th-8th November 2021. The questions had been loaded onto a tablet computer, and participants were talked through the questions and the surveyor inputted the responses. Before the in-person surveys, the survey was shared across local forums through social media and email to those on Islay and other surrounding islands, including Jura, Colonsay, and Gigha. The survey also remained available online for 8 weeks until the 31st of December 2021 to coincide with an article shared in the local Islay paper, The Ileach, released on the 11th of December that shared the details of the BGF project and survey.

6.2.2 Analysis

The methods of analysis were those described in section 6.1.2.

6.2.3 Results

Table 10 provides information on survey participants. Of the 98 people responding in Reggio Calabria, 85% were locals, there was a roughly equal balance of respondents between the sexes, and an expected spread of respondents between the age groups, with half of all responses in the 25-49 range and a skew towards people below 50. Of the 89 respondents on Islay, 69% were locals, there was a slight skew of male respondents, and an expected spread of respondents between the age groups, roughly equal responses from individuals above and below 50. In contrast to the Italian sample, there were four times fewer young people aged 15-24, reflecting that many in this age range leave the island for work or continuing education [50].

Table 11 summarises the main questions asked during the interviews, and the percentage responses obtained, with, in most cases the 'positive' and 'mostly positive' categories combined. The pattern of response was roughly similar in both locations (except questions 2 and 4), despite their geographical separation and socio-economic differences.

The results of the Wilcoxon analysis of Likert-scale opinions (binary and three-way comparisons) are summarised in Table 12. The binary comparisons show that

- respondents at both sites tended to have a more positive general opinion about devices to harness offshore wind energy (OWE) than about fish farming (FF);

- respondents in Reggio Calabria tended to have a more negative opinion about the possibility of local OWE capture devices than they did about these devices in the abstract (that is, a proportion of people liked the idea of the technology but did not want them locally), whereas in Islay there were no significant differences;

- respondents in both sites did not distinguish, in their opinions, between the abstract idea of fish-farming and its local implementation;

- respondents in both sites disliked local FF more than local OWE, with this difference much stronger in Islay.

Before these surveys, we hypothesised that opinions about MOI would be somewhere between those for FF and for OWE. The three-way comparisons investigated this. In Islay, opinion about MOI was indeed intermediate, and willingness to eat fish from MOI was higher than opinion about FF in general: i.e., improved by association with OWE in the BGF platform. In Reggio Calabria, opinions about MOI were also intermediate, and willingness to eat MOI fish was improved by the association with OWE.

There was some indication that responses were associated with demographics, although in most cases, numbers in some categories were too low for significant conclusions to be drawn using chi-square contingency tests. However, in Reggio Calabria, Italian nationals were correlated with more positive views of global and local OWE and MOI, as well as global FF and willingness to eat MOI fish than non-nationals. In Islay, demographics did not significantly influence responses in any way.

Finally, one of the most striking outcomes of the surveys were the frequent responses suggesting distrust in the capacity of public officials to act in the interest of the community and regulate environmental impacts of MOI (Table 11, Q4.3a/b). In Italy, this lack of trust was shown independent of place of residence; in Islay, people living locally were significantly less trustful of public officials in general than non-locals. It may be noted (Table 11, Q4.2) that people questioned in Islay had a strong preference for local ownership of the hypothetical MOI (69%); opinion was more divided in Reggio Calabria (48%).

Table 10: Information on survey participants.

		Reggio Calabria	Islay
	Maximum number of respondents	98	89
	Number responding on-line		16
Q5.1a	Where do you live? [implying primary habitation]		
	locally (province or county)	85%	69%
	nationally (Italy or Scotland) but outside local area	13%	28%
	internationally	2%	2%
Q5.3	How would you identify yourself?		
	female	44%	42%
	male	56%	58%
Q5.4	Which range includes your age?		
	15-24	21%	5%
	25-49	49%	44%
	50-64	20%	38%
	65-79	9%	14%
	80+	1%	0

Table 11: Summary of opinion questions and responses. 'Positive' includes 'somewhat positive'.

	Maximum number of respondents	98	89

		Reggio Calabria	Islay
		Positive	Positive
Q1.1	What is your opinion of wind turbines that are at sea and used for electricity generation?	96%	97%
Q1.2	What is your response to a proposal to install wind turbines in the sea [near here]	88%	97%
Q2.1	What is your opinion of the farming of fish in the sea?	78%	48%
Q2.2	What would your response be, to a proposal to place a fish farm in the sea [near here]?	70%	51%
Q3.3b	[Having been shown a picture] What is your first reaction to [MOI]?	91%	79%
Q3.4	How likely are you to eat fish produced in one of these installations?	71%	62%
Q4.1	What would be your response to a hypothetical proposal to place a… MOI in the sea near [here]?	76%	75%
Q4.2	Suppose that this hypothetical MOI was going to be installed near [here]. Would you prefer that it was owned …		
	locally	48%	69%
	by a large national company	34%	28%
	by an international company	18%	2%
Q4.3a	… how likely are you to trust public officials to act in the interests of the local area?	20%	61%
Q4.3b	… how likely are you to trust public officials to regulate the environmental impacts of this MOI?	22%	59%

Table 12: Important comparative findings from the survey, restated as question and answer. OWE = Offshore Wind Energy (harvesting device), FF = fish-farm(ing); IL = Islay, RC = Reggio Calabria. 'Yes' answers are deduced from statistically significant pair-wise W

Survey questions compared	Comparison as question	Finding (as answer to comparison question)

Binary comparisons

Q1.1 and Q2.1	Did respondents think better of global OWE than of global FF?	YES: respondents expressed more strongly positive opinions of OWE (in general) than of FF (in general), although the difference was less strong in RC.
Q1.1 and Q1.2	Did respondents think less well of local OWE than of global OWE?	MIXED: RC respondents expressed less strong positive opinions of potential OWE in their locality than of OWE in principle; no significant differences in the case of IL participants' responses.
Q2.1 and Q2.2.	Did respondents think less well of local FF than of global FF?	NO: there was no significant difference between respondents' opinions of potential FF in their locality than of FF in general.
Q1.2 and Q2.2	Did respondents think less well of local FF than of local OWE?	YES: participants' responses to potential local FF significantly more negative than to potential local OWE, although the difference was stronger in IL.

Three-way comparisons

Q1.2, Q2.2, Q4.1	Were respondents' opinions about potential local deployments of MOI intermediate between those for OWE and those for FF?	YES: participants' responses for local MOI were significantly less positive than those for local OWE but significantly more positive than those for local FF; the difference was stronger in IL than RC.
Q1.1/2, Q2.1/2, Q3.4	Were respondents' opinions about eating farmed fish improved by associating FF with OWE in MOI?	YES: respondents' opinions about eating fish from MOI were significantly more positive than opinions about OWE and FF, whether local or global; the difference was twice as strong in IL than RC.

Table 13 summaries the responses to the community questions. Of the two locations, respondents from Islay had an overall strong sense of community, as well as it being important to respondents to belong to this community. Also, in the opinion of the respondents, Islay is a place where people cooperate in work and social activities. However, in Reggio Calabria, respondents did not have an overall strong sense of community or did feel that belonging to this community was important to them. Finally, respondents strongly felt that Reggio Calabria is not a place where people particularly cooperate in work and social activities.

Table 13: Breakdown of the community questions and responses from the 2021 surveys

		Reggio Calabria	Islay
Question	Options	Response	
6.1: Do you agree that there is an overall sense of community on Islay?	Very strongly agree	1%	49%
	Strongly agree	8%	39%
	Somewhat agree	55%	11%
	Do not agree	36%	1%
6.2: To what extent is belonging to this community an important part of your identity?	Very much	7%	46%
	Somewhat	32%	36%
	Little	41%	4%
	Not at all	20%	14%
6.3: To what extent would you agree that this is a place where people cooperate in work and social activities?	Very strongly agree	7%	42%
	Strongly agree	6%	37%
	Somewhat agree	44%	20%
	Do not agree	44%	1%

6.3   Community Event Questionnaires 2019 and 2021: Comparison

In terms of the survey participants, roughly 10% and 30% fewer individuals took part in the Reggio Calabria and Islay 2021 surveys, respectively. Similar numbers for residency and gender were seen, with higher numbers of visitors seen in the 2019 survey, which is expected due to the time of year of the survey (late summer rather than late autumn, and timed with the Patronal Feast in Reggio Calabria). Age ranges were more spread out in the 2021 surveys, particularly in Reggio Calabria, where there was a lesser skew towards a younger audience (21% compared to 44% 15–24-year-olds).

Regarding the opinion summaries of the main questions, most seemed to mirror the 2019 survey. Table 14 shows that questions 1 and 2 followed similar trends, with the most noticeable increases in support for local OWE, and local and global FF in Reggio Calabria. Opinions remained positive for MOI technology, and seemed to increase by the 2021 survey, including willingness to eat fish produced in a MOI and the hypothetical proposal to instal a MOI in the local area. Ownership of a MOI remained the same, with a majority preference for a locally owned platform. Trust in public officials was only asked in the context of regulating environmental impacts in both surveys, and interestingly, there was a 15% decrease in trust in Reggio Calabria, but a 20% increase in trust in Islay.

Table 14: Summary of opinion questions and responses from the 2019 and 2021 surveys. 'Positive' includes 'somewhat positive'

	Maximum number of respondents	2019 Reggio Calabria Positive	2021 Reggio Calabria Positive	2019 Islay Positive	2021 Islay Positive
Q1.1	What is your opinion of wind turbines that are at sea and used for electricity generation?	76%	96%	88%	97%
Q1.2	What is your response to a proposal to install wind turbines in the sea [near here]	63%	88%	79%	97%
Q2.1	What is your opinion of the farming of fish in the sea?	63%	78%	48%	48%
Q2.2	What would your response be, to a proposal to place a fish farm in the sea [near here]?	57%	70%	46%	51%
Q3.3b	[Having been shown a picture] What is your first reaction to [MOI]?	85%	91%	68%	79%
Q3.4	How likely are you to eat fish produced in one of these installations?	65%	71%	56%	62%
Q4.1	What would be your response to a hypothetical proposal to place a… MOI in the sea near [here]?	70%	76%	61%	75%
Q4.2	Suppose that this hypothetical MOI was going to be installed near [here]. Would you prefer that it was owned …				
	locally	43%	48%	76%	69%
	by a large national company	30%	34%	21%	28%
	by an international company	27%	18%	3%	2%
Q4.3a	… how likely are you to trust public officials to act in the interests of the local area?	n/a	20%	n/a	61%
Q4.3b	… how likely are you to trust public officials to regulate the environmental impacts of this MOI?	37%	22%	39%	59%

Comparing the Wilcoxon analysis, respondents in both surveys in both locations tended to have a more positive general opinion about devices to harness OWE than about FF. In the 2021 survey, only respondents in Reggio Calabria had a more negative opinion about the possibility of local OWE capture devices than they did about these devices in the abstract, compared to both in 2019. Respondents in both surveys and

locations did not distinguish, in their opinions, between the abstract idea of fish-farming and its local implementation. In the 2021 survey, respondents in both sites disliked local FF more than local OWE, compared to only Islay in the 2019 survey. The three-way comparisons investigated the hypothesis that opinions about MOI would be somewhere between those for FF and for OWE. In the 2021 survey, opinion about MOI was intermediate, and willingness to eat fish from MOI was higher than opinion about FF in general or improved by its association with OWE in both locations. Although opinion about MOI remained intermediate, willingness to eat MOI fish has since improved since 2019, where previously association with OWE did not improve willingness to eat MOI fish at either location.

6.4 Privacy statements

The tables in Annex A (Table 20 and Table 21) include GDPR-compliant privacy notices. That for stakeholders accompanied the invitations to register for the SRG meeting. That for the public interviews was made available to interviewees at their request.

7 CONCLUSIONS

This deliverable, D8.4, has described the relevant social and the engagement activities carried out over the three years of the Blue Growth Farm project. Working with our local stakeholders, to identify and discuss the local social benefits and challenges helps us understand how these platforms can be developed in a way that provides the most benefits to those who will interact with it on a regular basis. Likewise, stakeholder opinions help us make improvements towards the social sustainability of these platforms, where possible.

Social attitudes towards the use of large offshore MOI were explored through three annual stakeholder workshops involving various actors as the scaled prototype was deployed at the NOEL site that have been described in Section 5. Through the community surveys, reported in Section 6, information about opinions regarding MOI were gathered from community members in Reggio Calabria and Islay. The combined purpose of these activities was to develop a baseline understanding of local knowledge and interest in the BGF multi-functional platform, including the information that stakeholders need to make decisions about how to develop this type of technology in a way that is socially acceptable. This document has described the main results from the workshops and surveys that comprise the interaction with with stakeholders during the BGF project and this section concludes this deliverable with some reflections on these.

At the first workshop, local stakeholders were invited in order to identify and capture adherence for the Stakeholder Reference Group. Due to the impacts of COVID-19, this was the only workshop held in person in Reggio Calabria. The aim of the Stakeholder Reference Group was to inform and involve relevant stakeholders, to ascertain their views, and to provide a mechanism to anticipate and avoid or resolve conflicts - i.e. to help acquire Social Licence to Operate for platforms such as that of BGF. Contrarily to what had been envisaged at GA level, Sea Users Associations were not invited until the 2nd Workshop. This decision was taken in order to have a "pure local content feedback", since no sea user's association were identified in Reggio Calabria. The level of information provided at the 1st Workshop was based on the conceptual architecture of the prototype based on completed site characterization, as well as the then-current version of the full-scale design. For the third workshop, the SRG was expanded to include representatives of national bodies.

Workshop 1 in 2019 was successful in relation to the aim. The COVID-19 pandemic then interfered not only with the local dynamics of Workshop 2 (2020) and Workshop 3 (2021), but also with the broadening of representation at these workshops. We held shorter virtual (Webinar) meetings with pre-recorded interviews with the national stakeholders. Nevertheless, decreasing numbers of participants and returns of posterior questionnaires shows a decline in stakeholder involvement. It is not possible to partition this decline into a 'COVID effect' and the often-encountered problem of 'stakeholder fatigue'.

An ideal stakeholder workshop involves three sorts of interaction: provision of information by the developers (in this case, the BGF team) to the stakeholders; stakeholder responses, including asking questions and raising issues; and interactions amongst the stakeholders themselves. All three can contribute to the development of Social Licence for the proposed activity (in this case the actual deployment of the aero-hydro prototype and the potential deployment of a full-scale BGF platform). Achieving the necessary types of interaction in a virtual workshop was a challenge. The first step, provision of information by the developers, was straightforward, with presentations and interviews

delivering short, informative packages. Questionnaires and a question and answer session provided the opportunity for the second type of interaction, stakeholder responses. The third, interactions amongst stakeholders themselves, was the most difficult to include, and it was conceded that this was best done by circulating a full list of stakeholder questions and BGF responses soon after the workshop.

The move to virtual workshops prompted some reflection on online engagement in relation to the traditional face-to-face meeings. Although online stakeholder engagement has been increasing over the past decade, and many planning authorities have online platforms to manage public comments, engagement best practice advise that these tools be accompanied by face-to-face workshops or community meetings where there is space for debates, discussion and feedback **[51]**. Although investigations into using virtual technologies to fulfil the role of stakeholder engagement are nascent, there is emerging literature showing that information technology can play a significant part in ensuring engagement continues, despite the requirement for physical distancing **[52]**. However, other thinkers advise that academic and research priorities should be re-assessed during this pandemic, where care, wellbeing and tasks that address "the diversity of needs and vulnerabilities during the crisis" should take precedence over "productivity" **[53]**. BGF researchers in WP8 also note that although 85% of Italian households have access to internet and 73% of individuals aged 16-74 use the internet at least once a quarter,[5] using platforms that require computers, internet and some technological understanding can discriminate against specific groups of society, especially those with less educational and economic opportunity. Workshop attendees also indicated via their questionnaires that the the majority would prefer engagement by face-to-face meetings, had this been possible.

It is nevertheless felt that the stakeholder and community engagement aspects of the Blue Growth Farm have been successful. Although community responses to a realistic proposal to deploy a full-scale MOI within a few nautical miles of Reggio Calabria are likely to more dynamic than those to the actual deployment of the BGF 'Aurora' prototype at the NOEL site close to the sea-front of Reggio Calabria in 2021, the latter appears to have provoked no oppositional response from the participants at the 3rd SRG. We conclude that we have followed best practice in relation to SLO for MOI, by informing and engaging the community through stakeholders, and this appears to have been effective in relation to deployment of the 'Aurora' prototype.

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[5] **ec.europa.eu/eurostat/statistics-explained/index.php/Digital_economy_and_society_statistics_-_households_and_individuals**, visited in October 2020.

8   RECOMMENDATIONS

Based on our work in the BGF project, and the theory, methods and results in this D8.4, we make the following broad recommendations for developers of MOI:

1. Understand, and appreciate importance, of Social Licence to Operate (SLO) in the context of engineering, financial, environmental and legislative requirements for construction and deployment of an MOI (sections 2, 3).

2. Apply procedures in section 4 for the development of SLO, as summarized in the scoping **Table 3**, and the engagement practice **Table 4**. They are exemplified in section 5 and 6 with specific relevance to MOI. We found that the combination of a Stakeholder Reference Group (SRG) and repeated community surveys was especially useful.

3. Be aware of the need for trust between community and developer. If (as we found especially in Reggio Calabria) regulators are not trusted, a developer should seek to ensure that their environmental impact practices are well controlled and transparent to local people. Furthermore, if a developer is multinational and thus seen as alien, it will be helpful to employ and empower local staff.

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Annex A.

Table 15: Societal information needed for MOI deployment sites: example

Please reference sources of information. In this example (for a site in Scotland, and about 90% complete) we have used parenthetical numbers/letters. Please include maps if available

N°	TOPIC	INFORMATION
1	Name and location (latitude, longitude) of the (proposed) MOI deployment site	Port Ellen, Islay (West Coast of Scotland, UK) 55.555°N, 6.019°W
2	What is proposed	Hypothetical deployment of full-scale MOI, a large moored floating platform with electricity generation from wind and wave, supporting a group of net-pens for salmon
3	State and local authorities that have jurisdiction over the site (summary only; details requested below)	UK government and agencies; devolved government of Scotland, and its agencies; the local authority, which is Argyll & Bute Council; the lowest tier is Islay Community Council, with few powers but rights to consultation.
4	Brief description of the natural and human geography of the water-body and adjacent land, including the economic status of the human community	Islay is the most Southern island in the Hebrides, the archipelago west of Scotland. It is generally low lying, at least in comparison to its neighboring island, Jura. Its highest point is Beinn Bheigeir at 491m, and it has extensive areas of dunes, and blown sand that extends well beyond its many beaches. Islay is also host to numerous small fresh water lochs [2], [3]. The proposed site is in the Sound of Jura, between the island chain that includes Islay and Jura and the Mull of Kintyre, a peninsula of mainland Argyll. Islay's human population was 3,228 in 2011, down from 3,457 in 2001, and below the 4,000 to 5,000 threshold for long-term sustainability [2]. The island is best known for its whisky distilleries, of which there are nine. It also relies on agriculture, fisheries, and tourism/ hospitality industries, the last of these with a seasonal pattern of employment. No official statistics are available for the island; at the level of Argyll & Bute unemployment was less than 2% (in 2018), average pay was only 85% of the Scottish mean and GVA per head was (2013) 75% of the Scottish mean [A].

| 5 | Summarise previous/existing use of the waters at/near the site for renewable energy and aquaculture | The waters off the west coast of Islay are within the Scottish National Marine Plan development zones for offshore wind and tidal energy. The Rhinns of Islay, the section of island jutting out on the West of the island, has already been host to the LIMPET wave energy test site, which was operational for 10 years during the 1990's and early 2000's [5]. There is also a tidal energy lease site off the west of the Rhinns owned by DP Marine Energy Ltd. The current projection for operationalization of the site is 2022 [6]. In the map, the yellow box indicates where the LIMPET wave energy device was previously installed, at 55°41'26"N 6°31'20"W, 1.5km from the nearest settlement, at Portnahaven.

Modify map to show (additionally) Port Ellen site, and NMP 9 (renewable energy zones) and active salt-water fish-farm licences.

Although areas to the south-west of Islay are provisionally zoned for marine renewable energy generation [4], this is not the case for the proposed Port Ellen site. There are currently no active seawater finfish sites associated with Islay or in the adjacent waters of the Sound of Jura. The nearest sites are on the eastern side of the island of Gigha, which lies on the other side of the Sound from Islay [D]. |
| 6 | List other existing and planned uses of the waters at/near the site | The Sound of Jura is crossed by ferries connecting the islands with the mainland. It is used for recreational sailing and for commercial fishing.

EXPAND, and add information about Port Ellen site from D2.2. |

7	Give the distance in km from the site to the nearest substantial human settlement	13 km (7.1 nm) to Port Ellen, which has a population of 810 [C]
8	What national laws and policies govern spatial planning of developments in these waters? Comment on formal MSP and T&CP.	The situation is complicated, because of overlaps between Town & Country Planning and Marine Planning, and between the jurisdictions of the UK, Scotland and the local authority. A multi-use platform at a site near Islay would fall within the remit of the Scottish Government's directorate, Marine Scotland, under the Marine (Scotland) Act 2010. Scotland's National Marine Plan integrates EU legislation with Scottish national objectives and informs planning for all salt waters between the high tide mark and 12 nm from the coastal baseline [1]. Regional Marine Plans are currently being developed, advised by the Scottish Coastal Forum, but the Argyll Marine Region Planning Partnership (which would be responsible for Islay) is yet to be formed. Shore based facilities and fish-farming out to 3 nm are within the remit of local authority (Argyll & Bute Council) planning (under the Town and Country Planning (Scotland) Act 2009 and the Water Environment and Water Service (Scotland) Act 2003 - WEWSSA). The UK Marine and Coastal Access Act 2009 covers waters from 12 to 200 nm from the coastal baseline, where Marine Scotland under powers delegated (but not devolved) to the Scottish Government issues licenses, has enforcement powers, and monitors all activities in Scottish waters out to 200nm. Scottish Ministers participate in the formulation of the UK Marine Policy Statement (>12 - 200 nm) [1]. A final complication is that leases for use of the sea-bed must be obtained from Crown Estate Scotland, a Scottish public body, which under the Scottish Crown Estate Act 2019 can assign powers to local authorities, harbour authorities and community organisations. Relevant policy documents are: UK Marine Policy Statement 2011 Scottish National Planning Framework 2014b and the subsequent Local Development Plans [8] Scotland's National Marine Plan 2015 (see: [4]) Scotland's Economic Strategy 2015

9	What public bodies operate these laws etc and can provide, or refuse, development consents	Marine Scotland
		Argyll and Bute Council
		Cabinet Secretary for Energy, Connectivity and the Islands, Scotland (Scottish Energy Infrastructure and Planning)
		Parliamentary Review (T&CP and Marine License)
		Secretary of State for Scotland, UK (UK Energy Infrastructure)
		Crown Estate Scotland
		When formed, RMPP will include all relevant statutory stakeholders (SNH, Marine Scotland, Northern Lighthouse Board, Fisheries Associations, Local Authorities, Community Councils) and should include the participation of non-statutory stakeholders (business operators, community representatives, individuals, schools, etc.).
		Statutory consultees to applications for Marine License for Offshore wind, wave, and tidal energy applications [9]:
		SNH: Scottish Natural Heritage, the public conservation body
		SEPA: Scottish Environment Protection Agency, issues licences under the 'Controlled Activities Regulations' (CAR)
		JNCC (>12-200nm): the (UK) Joint Nature Conservation Council
		Historic Environment Scotland
		Argyll and Bute Council
		Statutory consultees for T&CP [10]:
		SNH
		SEPA
		Historic Environment Scotland
		Marine Scotland
		Local Community Councils
10	What national laws, regulations and policies control environmental impact?	WEWSSA aims to protect water quality and control potentially polluting discharges out to 3 nm; a SEPA CAR licence is required for such discharges. Marine Scotland's 'Locational Guidelines' prevent fish-farm wastes exceeding local assimilative capacity.
		The installation of a MOI will require a Marine Licence under the Marine Scotland Act (2010). Applications for such a Licence include an Environmental Statement to be submitted on the basis of an EIA.

11	What public bodies operate these laws etc and can provide, or refuse, environmental consents	Marine Scotland for Marine Licence. SEPA for CAR Licence. The statutory consultee for Sustainability Appraisal are SNH, SEPA, Historic Environment Scotland and JNCC. The statutory consultees for Habitats Regulation Appraisal is SNH.
12	Are there other public or private bodies that will need to give consent for a MOI? If so, which? And on what grounds?	Inshore Fisheries Groups can lobby for their right to an area if it is historic and rich grounds.
		Scottish Fishermen's Federation can lobby for their right to an area if it is historic and rich grounds.
		National Park Authorities
		Maritime and Coastguard Agency can advise a change in the Marine License Application, terms, or recommend refusal based on UK Maritime Law (Health and Safety, Certification of vessels, crew etc.)
		Crown Estate Scotland can refuse a seabed lease.
13	Are there people or organisations exerting or likely to exert significant influence (relevant to MOIs) outside the normal constitutional routes?	Yes – Argyll and Bute has seen the development of many "local" 'environmental Non-Governmental Organisations' (eNGO) and has attracted the attention of international eNGO. The "local" eNGO are typically comprised of the 55+ age group, who have moved from metropolitan Scotland or England to retire from work, and are well-off and well educated. They perceive Argyll's coasts and waters as 'pristine' and often have the view of 'preservation' rather than 'use'. They also have the time, money, and education to launch large campaigns to reduce or stop economic activity that they feel is causing environmental harm, whilst disregarding alternative views about needs for employment. External eNGO include 'Flora and Fauna International', who are promoting the network of "local" eNGO (now called Coastal Communities Network Scotland) [11], provide a platform and voice for their opinions through a website and through Scottish Environment LINK – which has direct access to government agencies and Scottish Ministers [12]. The issues are those of (i) exclusion of some voices from local debates and arguments used to shape national policy, and (ii) and the distortion of both representation of opinion, and operationalisation of policy, by external private funding. The extent to which these issues might specifically influence policy and social licence regarding MOI in Islay waters, is currently unknown.

14	In your opinion, how do local people rate the trustworthiness and efficiency of the public bodies involved in consenting?	It depends what the parameters of comparison are and also on the agency. For example; Speak to fishers and they rate public agencies poorly, until you mention the local eNGO. Then they rate public agencies highly as they know they have rights protected in legislation and democracy. With the eNGO, they have no voice. SNH seems to be more trusted – postulation is that they are more visible/ present in local areas. SEPA is not trusted – they are less visible/ present in local areas [13]. Marine Scotland are generally seen as incompetent and "otherworldly" by people and companies operating on the West Coast of Scotland. Postulation is that they not visible/ present within the local area. Local Authorities are always given a hard time, and their difficulties have intensified as their public funding has been reduced. Local people seem to trust them, but often are not happy with their decisions.
15	Please summarise issues (in your opinion) that are likely to influence permissions and SLO for MOI deployment	(1) Issues relating to formal Marine Spatial Planning, including competing demands for sea-space and the jurisdictional complications relating to a combination of renewable energy and fish-farming; (2) issues relating to competing community visions of the use of the sea
16	Other relevant information	(can remain empty)
17	Name(s) of person(s) /organisations entering data into this document, and date of latest entry	Suzi Billing, Paul Tett (SAMS) 14 May 2019

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[C] Argyll & Bute Council: Population: Where we live [accessed 14.05.2019] https:// **www.argyll-bute.gov.uk/info/population-where-we-live**

[D] Scotland's Aquaculture: map page [accessed 14.05.2019] **http://aquaculture.scotland.gov.uk/map/map.aspx**

Table 16: Example engagement methods (for offshore wind in Scotland)

Informing methods	Suggested content/ format	Record example
Website	General information on the project including timescales, locations, and understandable technological and environmental information, and advertisements of opportunities for engagement (e.g. public meetings/ exhibitions)	Number of 'hits'
Information leaflets	General information on the project and opportunities for engagement (e.g. public meetings / exhibitions)	N/A
Presentations / Information Stands	Visual representations of the development and general information on timescales, locations, and technology	Number of visitors Number of conversations held
Newsletter	Updates on the development and upcoming opportunities for engagement.	Responses / comments resulting from the newsletter
Press releases	Updates on the development and upcoming opportunities for engagement. This is of particular importance for empowerment and consultation activities within remote regions.	Responses / comments resulting from the press release

Involving methods	Suggested content/ format	Record example
Community partnerships	Identify appropriate stakeholders for a community partnership. Provide information and objectives of the partnership so that expectations can be managed and met. Facilitate discussion around community benefits schemes.	Meeting minutes Actions and outcomes Community benefit schemes Successes and challenges
Joint stakeholder initiatives	Bringing together interested parties for a specific purpose. Includes measures for accountability such as published meeting minutes and actions.	Meeting minutes Actions and outcomes Changes made due to initiative
Project advisory panels	A selection of relevant individuals who are able to advise on certain aspects of the project – such as fisheries interactions or ancillary infrastructure planning.	Meeting minutes Actions and outcomes Changes made due to initiative
Community benefits advisory panels	A selection of relevant individuals who are able to advise on proportionate and	Meeting minutes

| | appropriate community benefit packages. | Actions and outcomes

Development of community benefits packages |
|---|---|---|

Consulting methods	Suggested content/ format	Record example
Public Exhibitions	Visual information panels

Promote conversation, discussions and questioning | Number of visitors

Number of conversations |
| Questionnaires and Surveys | Data collection for a specific question. Can be combined with public exhibitions and meetings. | Number of respondents
Content of responses (depending on questions) |
| One-to-one meetings | Meetings specifically designed to address a particular challenge. | Content of response

Action taken because of response |
| Public meetings and hearings | Visual information through presentations – non-technical and to the point. Q&A session where the public can voice ask their questions as well as voice concerns. Provide feedback of where decisions have changed due to community input. Can be facilitated by a third party, or a community council, for example. | Number of attendees

Content of the Q&A |
| Request for written comments | Planning process and during public meetings / exhibitions | Content of responses

Number of responses |
| Interviews and focus groups (about community benefits) | Targeting specific communities to hear their views on community benefits packages. Facilitated locally. | Content of responses

Actions required |

Responding methods	Suggested content/ format	Record example
Free phone line	Suggest availability during consultation and commissioning phases to ensure the full spectrum of community voices can be heard.	Number of calls

Content of calls |
| Monitored email address | Timely responses to inquiries providing tailored and relevant information | Number of emails

Content of the emails

Response rates

Time taken to respond |

Table 17: Example list of stakeholders (offshore wind development in Scotland)

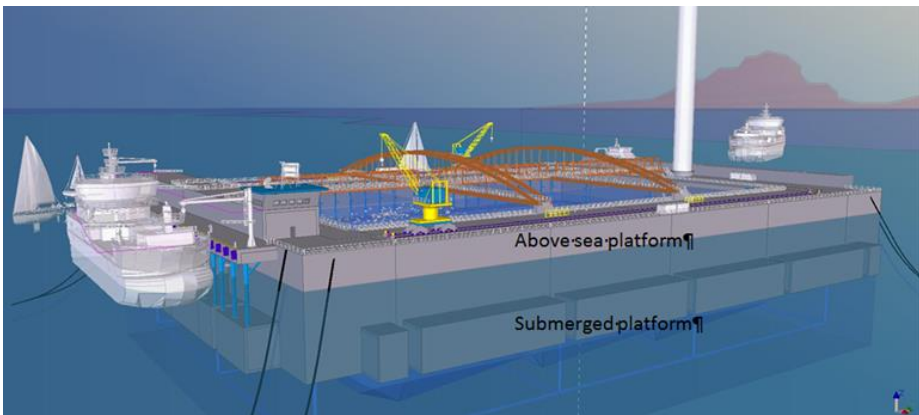| Stakeholder	Interest	Standard Engagement
Marine Scotland Licensing and Operations Team (MSLOT)	National authority and licensing body	MSLOT work with developers in developing their projects, and grant consents. They also ensure compliance to pre-application requirements.
Marine Scotland Science	Providing science to deliver the Scottish Government's vision of marine and coastal environments	Marine Scotland Science is the scientific division of Marine Scotland. It has been responsible for undertaking strategic planning for renewable energy projects in Scotland through constraints analysis. Their on-going development of planning processes relies on industry involvement in order to develop processes which are best suited to their needs.
Local Authority	Determine the onshore elements of an offshore development below MHWS.	Formal pre-application consultation processes in place for some LA, provide direct input regarding onshore planning constraints.
Scottish Natural Heritage (SNH)	Habitats and species of conservation importance	For activities within 12nm, it is formally required to engage with the SNH during project scoping (EIA), during EIA, and upon the outcomes of the EIA (and any required accompanying Habitats Regulations Appraisal (HRA). Like JNCC, SNH have a key interest in the data and understanding relating to environmental impacts and need to be in broad agreement of interpretation of risk.
Scottish Environmental Protection Agency (SEPA)	Environmental and human health	Statutory consultee and enforcement body for coastal areas, water bodies out to 3nm (for good ecological status) and certain waste disposal to 12nm.
Northern Lighthouse Board (NLB) and aviation authorities	Navigation and safety, at sea and air	Statutory consultee on proposed developments.
Regional Marine Planning Partnerships (RMPP)		For activities within 12nm, it is formally required to engage with the RMPP (if formed) during the pre-application, project scoping (EIA), during EIA, and upon the outcomes of the EIA. RMPP will consider applications against national and regional marine planning policy requirements.
Environmental NGOs e.g. Royal Society for the Protection of Birds (RSPB), Whale and Dolphin Conservation (WDC))	Environmental impacts and species of conservation importance	While not statutory consultees, NGOs may be usefully engaged throughout project scoping, due to the knowledge and advice they can provide. Some NGOs have been engaged with national planning work to identify areas of development potential for renewable energy according to ecological constraints e.g. RSPB
Other NGOs e.g. Royal Yachting Association (RYA)		Interest in specific activity or interest, representing a proportion of those undertaking a specific activity or with a specific interest.

| The Crown Estate Scotland	Seabed trustee who defines the process by which exclusivity for development is assigned for development (through Agreements for Lease).	The role of the Crown Estate Scotland is changing in Scotland, however, they have a strategic interest in planning, developing constraints mapping and funding activities relating to the advancement of renewable energy in Scotland.
Other users/ sectors with which the proposed activities may interact e.g. Oil&Gas, fishing, shipping, ports and harbours	Industry specific	Representatives of relevant sectors (non-statutory consultees) are notified by Marine Scotland when a licence application is submitted. However, most sectors are nationally active, and can be considered at an early stage in planning e.g. oil and gas activities and infrastructure, shipping and fishing activity. It should be noted that within some sectors (e.g. fishing) there are several representative organisations which operate nationally and regionally as well as some companies/ vessels that will not be members of any organisation. It will therefore often be necessary for a developer to conduct further consultation with some sectors/ interest groups.

Table 18: 2019 Questionaire for use in interviewing members of public

Section 1. Offshore wind turbines
1.1 What is your opinion of wind turbines that are at sea and used for electricity generation? (please circle)   Positive Mostly positive Negative Mostly negative
1.2 What is your response to a proposal to install for few months wind turbines in the sea near Reggio Calabria for experimental acrivities? (please circle)   Positive Mostly positive Negative Mostly negative
Section 2. Fish farming at sea
2.1 What is your opinion of the farming of fish in the sea? (please circle)   Positive Mostly positive Negative Mostly negative
2.2 What would your response be, to a proposal to place for few months a fish farm in the sea near Reggio Calabria to carry out experimental activities? (please circle)   Positive Mostly positive Negative Mostly negative
Section 3. Blue Growth Farm platform
3.1 Have you heard about the NOEL site in Reggio Calabria? (please circle)   Yes No
3.2 Are you aware of the Blue Growth Farm project? (please circle)   Yes No
3.3 If yes, how did you hear about it? (please describe source): we are part of the consortium ☺
Please have a look at this information about 'Multifunctional Offshore Installations' (show brochure if not seen before)
3.5 What is your first reaction to this type of technology? (please circle)   Positive Mostly positive Mostly negative Negative
3.6 How likely are you to eat fish produced in one of these installations? (please circle)   Very likely Likely Unlikely Very unlikely
Section 4. The Blue Growth Farm platform and the local area
4.1 What would be your response to a proposal to place a MOI in the sea near Reggio Calabria? (please circle)   Positive Mostly positive Negative Mostly negative
4.2 Suppose that an MOI was going to be installed near Reggio Calabria. Would you prefer that it was owned by? (please circle)   Locally By a large Italian company By an international company
4.3 In your opinion, how likely are you to trust public officials regulate the environmental impacts of this MOI?

(please circle)
Very likely   Likely   Unlikely   Very unlikely
Section 5. Demographic data *(With your permission, we would like to record some information about you.)*
5.1 Where do you live? (please circle)
Reggio Calabria   Somewhere else in Italy   Outside of Italy
5.2 What is your profession/occupation/main work?
5.2 How would you identify yourself? (please circle)
Female   Male   Gender variant   Other   Prefer not to say
5.3 Which range includes your age? (please circle)
15-24   25-49   50-64   65-79   80+
Thank you for your time – we hope you enjoy the rest of the day!

Table 19: 2021 Questionaire for use in interviewing members of public

Section 1. Offshore wind turbines			
1.1 What is your opinion of wind turbines that are at sea and used for electricity generation?			
Positive	Mostly positive	Mostly negative	Negative
1.2 What would be your response if there was a proposal to install wind turbines in the Islay sea area? (within territorial waters, 12 nautical miles from coast)			
Positive	Mostly positive	Mostly negative	Negative
Section 2. Fish farming at sea			
2.1 What is your opinion of the farming of fish in the sea?			
Positive	Mostly positive	Mostly negative	Negative
2.2 What would be your response if there was a proposal to install a fish farm in the Islay sea area? (within territorial waters, 12 nautical miles from coast)			
Positive	Mostly positive	Mostly negative	Negative
Section 3. Blue Growth Farm platform			
3.1 Are you aware of the Blue Growth Farm project?			
Yes		No	
3.2 If yes, how did you hear about it? (please describe source):			
Please have a look at this information about 'Multifunctional Offshore Installations' (image montage of the platform). *The prototype deployed in the sea near Reggio Calabria is a smaller version of this and does not include fish farming.*			
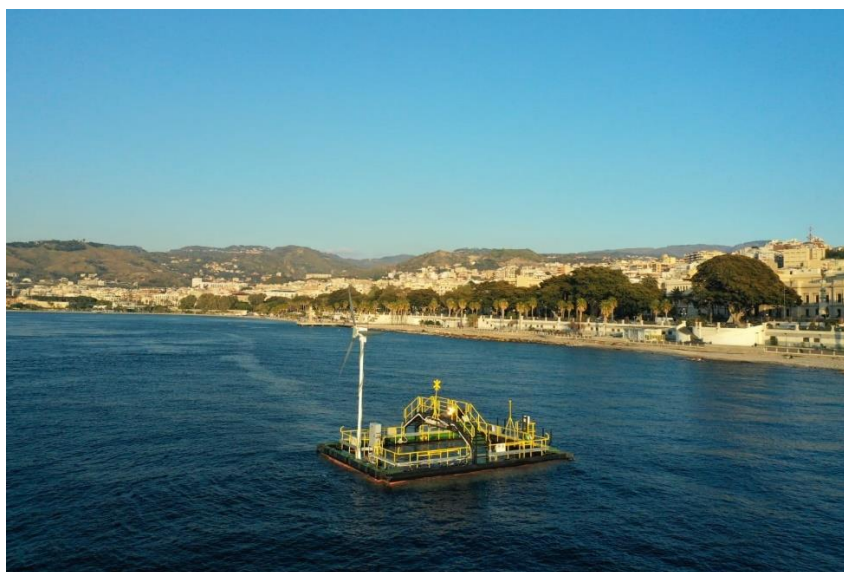
3.3b What is your first reaction to this type of technology?

| Positive | Mostly positive | Mostly negative | Negative |

3.4 How likely are you to eat fish produced in one of these installations?

| Very likely | Likely | Unlikely | Very unlikely |

3.5 If so, are there any reasons for your answer?

Section 4. The Blue Growth Farm platform and the local area

4.1 What would be your response if there was a proposal to install a full-scale MOI in the Islay sea area? (within territorial waters, 12 nautical miles from coast)

| Positive | Mostly positive | Mostly negative | Negative |

4.2 Suppose that this hypothetical full-scale MOI was going to be installed in the Reggio Calabria sea area. Would you prefer that it was owned…?

| Locally | By a large Scottish company | By an international company |

4.3a In your opinion, how likely are you to trust public officials to act in the interests of the local area?

| Very likely | Likely | Unlikely | Very unlikely |

4.3b More specifically, how likely are you to trust public officials to regulate the environmental impacts of this MOI?

| Very likely | Likely | Unlikely | Very unlikely |

Section 5. Demographic data *(With your permission, we would like to record some information about yourself).*

5.1a Where do you live?

Islay	Somewhere else in Scotland	Outside of Scotland		
5.1b How many years have you lived on Islay?				
<5 years	5-10 years	>10 years	N/A (visitor)	
5.2 What is your profession/occupation/main work?				
5.3 How would you identify yourself?				
Female	Male	Gender variant	Other	Prefer not to say
5.4 Which range includes your age?				
15-24	25-49	50-64	65-79	80+
Section 6. You and your community				
6.1 Do you agree that there is an overall sense of community on Islay?				
Very strongly agree	Strongly agree	Somewhat agree	Do not agree	
6.2 To what extent is belonging to this community an important part of your identity?				
Very much	Somewhat	Little	Not at all	
6.3 To what extent would you agree that this is a place where people cooperate in work and social activities?				
Very strongly agree	Strongly agree	Somewhat agree	Do not agree	
6.4 If you have any additional comments please feel free to leave them here.				
Thank you for your time – we hope you enjoy the rest of the day!				

Table 20: Privacy statement for stakeholders

A longer version (in Italian) of this statement will accompany invitations to the SRG workshop.

Privacy Notice – Participation in a Stakeholder Reference Group in Reggio Calabria (Italy) concerning 'Multipurpose Offshore Installations'
The Blue Growth Farm (BGF) Consortium is holding this public event (Workshop) as part of its own activities, in accordance to European Commission Grant Agreement n. 774426.   Registration to the Workshop by interested persons has been managed through the BGF project web-site and using the EventBrite informatic technology.   EventBrite processes Personal Data of persons registered to Workshop on behalf of the Workshop organizer (The Blue Growth Farm Consortium).

Pursuant to art 13 of Regulation (EU) 2016/679 (hereinafter, the "GDPR") and in relation to data provided or obtained, the Controller is hereby informing that personal data will be processed by the following means and for the following purposes:

1. DATA CONTROLLER

The **Data Controller** of the information being collected is: The Blue Growth Farm Consortium, represented in the person of Mr. Fabrizio Lagasco, as BGF project Coordinator and Privacy Officer of the BGF project for RINA Consulting S.p.A., reachable at the following address: **fabrizio.lagasco@rina.org** and telephone number: 0039 3196441.

2. PURPOSE OF PROCESSING

This privacy statement relates to the following process: **Voluntary participation in the Stakeholder Reference Group.**

Your information will be used for the following purposes: Personal data (name, surname) and contact details (e-mail address) that you have communicated by registering to this event will be used to manage the operation of the Stakeholder Reference Group.

Anonymous information derived by your participation to this event and other future events of the Stakeholder Reference Group you will be invited to be part of will be shared with beneficiaries of the Blue Growth Farm project. Summaries of this anonymous information will be published in scientific articles and project reports and in reports to the European Commission.

Moreover, eventual photographs of your image, or of the group taken during this event will be processed in the context of the BGF process activities, as limited to what contractually due, in full compliance with the GDPR rules.

This personal information will be held until 6 months after the end of the Blue Growth Farm project on 30 September 2021, and after that date securely destroyed.

3. LEGAL BASIS

Our legal reason for using the data is:

You have consented to provide the data by agreeing to join the Stakeholder Reference Group.

4. RECIPIENTS OF THE DATA

Your data will be shared with the following recipients:

Anonymous information derived from the above cited events will be shared with beneficiaries of the Blue Growth Farm project. Summaries of this anonymous information will be published in scientific articles and project reports and in reports to the European Commission.

TRANSFERS OF DATA

Personal data are stored on servers located within the European Union. In any case, it is understood that, should this be necessary, the Controller will have the right to move the servers even outside the EU or to use contractors from third countries helping to deliver the action In such a case, the Controller hereby guarantees that transfers of data outside the EU will be done in accordance with the applicable laws, also by means of including standard contractual clauses provided for by the European Commission, and adopting binding

corporate rules for intra-group transfers.

6. RIGHTS OF THE DATA SUBJECT

The following rights are rights of data subjects:

- The right to withdraw consent at any time if consent is our lawful basis for processing your data

- The right to access your personal data

- The right to rectification if the personal data we hold about you is incorrect

- The right to restrict processing of your personal data

- The right to request erasure (deletion) of your personal data

The following rights apply only in certain circumstances:

- The right to data portability

- The right to object to our processing of your personal data

7. PROCEDURE FOR EXERCISING RIGHTS AND COMMUNICATIONS

The Controller has appointed its Privacy Officer (Fabrizio Lagasco), who can be contacted for all matters related to processing of your personal data and the exercising of related rights.

Therefore, you may contact the Privacy Officer at any time, using the following procedure:

- by sending a registered letter with notification of receipt to RINA S.p.A., via Corsica 12, 16128 Genova, for the attention of the Data Protection Officer, or to Rina Consulting S.p.A., via S. Nazaro 19, 16145, Genova, for the attention of the Privacy Officer;

- by sending an e-mail message to: rina.dpo@rina.org, fabrizio.lagasco@rina.org

We confirm you have the right to withdraw the consent given at any time by writing to rina.dpo@rina.org

Table 21: Privacy statement for (anonymous) public interviews

This information should be made available on request (and in Italian) to interviewees.

Privacy Notice – Survey of Public Opinion in Reggio Calabria (Italy) concerning 'Multipurpose Offshore Installations'.
The Data Controller of the information being collected is: The Scottish Association for Marine Science, Scottish Marine Institute, Oban, Argyll, PA37 1QA, Scotland. Phone: +44 1631 559000 For any queries or concerns about how your personal data is being processed you can contact the Data Privacy Manager at **DPE@sams.ac.uk**
This privacy statement relates to the following process: Voluntary completion of research survey.
Your information will be used for the following purposes: The data provided will be used by the Blue Growth Farm project, to complete analysis and obtain findings to include in scientific articles and reports about public attitudes to Multipurpose Offshore Installations
Our legal reason for using the data is: You have consented to provide the data, by completing the survey.
Your data will be shared with the following recipients: Data are held securely, no data are shared with other organisations, data included in scientific articles and reports will be anonymous. No information that can be used to identify you will be stored electronically. The paper records will be held for 3 years, before being securely destroyed.
The following rights are rights of data subjects: • *The right to withdraw consent at any time if consent is our lawful basis for processing your data* • *The right to access your personal data* • *The right to rectification if the personal data we hold about you is incorrect* • *The right to restrict processing of your personal data* • *The right to request erasure (deletion) of your personal data* *However, no personal data that can identify you are being taken*
You have the right to lodge a complaint with the UK Information Commissioner's Office about our handling of your data.