iFADO Best Practice:
Co-development process with stakeholders.

Method of interaction with the stakeholders when developing a climate service in relation to Harmful Algal Blooms (HAB).

1. Engaging with stakeholders

I. Introduction

The Best Practice discusses the method to co-develop high-quality and transferable knowledge to understand and manage harmful algal bloom (HAB) risks as part of adaptation to changing aquatic ecosystems in Europe.

This research was carried out by the Marine Institute as project co-ordinator of the CoCliME (Co-development of Climate Services for adaptation to changing Marine Ecosystems) project, funded by the Irish Environmental Protection Agency (EPA), the European Commission and other European national funders.

The latest research has shown that the effects of climate change are already being felt in Irish marine waters, with patterns of harmful algal blooms changing in recent decades. The research, carried out by the Marine Institute, also suggests that the ocean off the southwest of Ireland is likely to become warmer and less salty by 2035.

Natural blooms of harmful microscopic algal species can cause significant damage to the shellfish industry, resulting in prolonged farm closures and loss of product. Ireland has a national monitoring programme to ensure that all Irish shellfish placed on the market are tested and fit for human consumption.

II. Study Area

In order to control and understand these proliferation phenomena, the CoClime project has been in contact with all the different stakeholders closely linked to this environmental health problem. A stakeholder engagement format (Table 1) needs to be established first. In the course of the CoCliME project there was a change in the end-user focus at EP3 upon discovery that the aquaculture industry only wanted a short-term HAB warning system. An alert service was already under development by another project called “PRIMROSE” that CoCliME regularly interacted with.

Table 1 : Summary of Engagement Point formats and targeted stakeholders, Irish Atlantic case study.

	Engagement Point (EP) Format	Targeted stakeholders
EP1	E-mail questionnaires; face-to-face interviews	Shellfish farmers, authorities, civil society
EP2	TRL assessment of existing services; Stakeholder influence/interest matrix	Scientists
EP3	One-to-one discussions; face-to-face meetings	Climate Adaptation Regional Offices (CARO; Atlantic Seaboard North and Atlantic Seaboard South), Government Department (DAFM - Department of Agriculture, Food and the Marine) and semistate agency (BIM - Bord Iascaigh Mhara), Irish marine scientists
EP4	One-to-one discussions; virtual meetings	CARO (NW Seaboard)
EP5	Virtual meeting; testimonial (video; text in joint deliverable 4.4/4.5). ERA4CS plans to seek feedback from the CARO at project end.	CARO (Atlantic Seaboard North), other regional and national stakeholders (government agencies and marine scientists)

Please note: While the Engagement Points (EPS) were official meetings, many ad-hoc online meetings, telephone calls and emails ensured a continuous line of communication with the co-developers/stakeholders/users.

III. Stakeholder influence/interest matrix

In order to determine who would benefit most from the CoCliME project, a stakeholder map was created to guide a more detailed assessment of stakeholder influence and interests (Figure 1).

From the stakeholder map, North Atlantic coastal policy makers, Climate Action Regional Office (CARO) and Irish marine scientists from government agencies such as the Irish Seafood Development Agency (BIM) and the Marine Institute (e.g. those focusing on the marine environment and food security) were identified as important stakeholders for the co-development of CoCliME climate services.

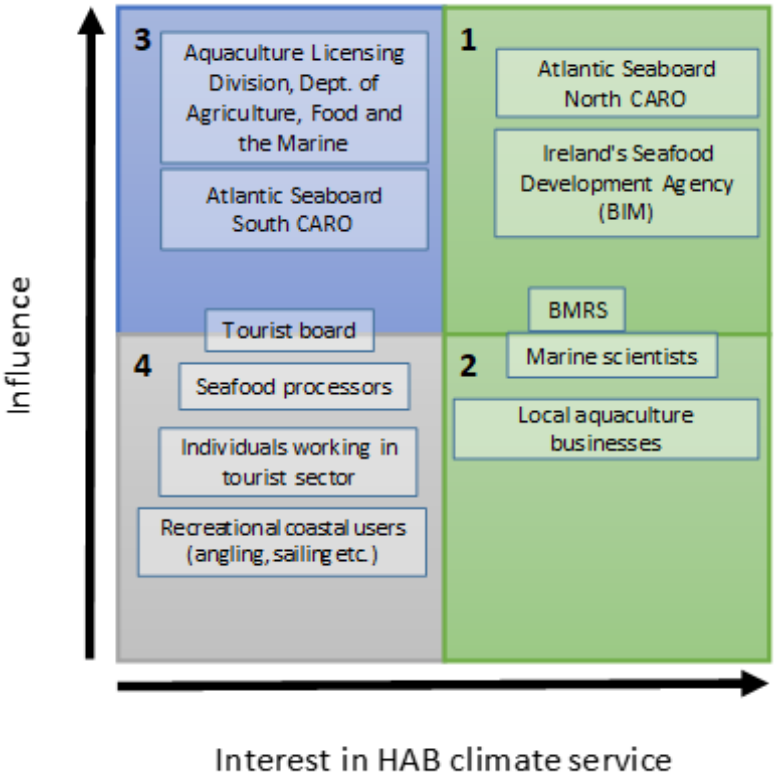

Figure 1 : Stakeholder matrix example from the Irish Use Case. Position of stakeholders in the matrix reflects the identified stakeholder group, their interest in the proposed climate service and their influencing power.

Caption:

1 = "High interest and High influence", Target stakeholders, important co-developers; "Key Player";
2 = "High interest and Low influence", Target stakeholders, important co-developers;
3 = "Low interest and High influence", Should be aware of benefits of climate service development;
4 = "Low interest and Low influence", Stakeholders who will be affected indirectly. "Interest in a service is currently low".

IV. Detailed engagement guide based on bottlenecks experienced / lessons learned:

All EPs (cross-cutting):

Stakeholder engagement takes time and social science expertise is essential to facilitate the process. Time is required to adequately comprehend the needs of a new

customer and to gain an insight into their institutional structure (governance; responsibilities) and processes (function; activities; culture; interactions; dependency). It is essential that priority is given to understand customer needs when developing climate services and this takes more time with new customers.

EP1:

- It is difficult to ensure responses to questionnaires at an early stage of engagement where there is no solid evidence to present.

- Face-to-face and one-to-one interactions work better than online surveys.

- Asking people to complete the questionnaire on their own was ineffective with a lower-than- expected return. The respondents suffered from on-line survey fatigue and were reluctant to share what they viewed as negative feedback in case this impacted existing services. Follow-up meetings helped identify any issues and facilitated open and honest discussions. It is recommended that all engagement exercises follow a small group and/or a one-on-one discussion format specifically focused on disseminating information tailored to the needs identified by each stakeholder group.

EP2:

Stakeholder diversity can be high. It is important to decide what to focus on.

EP2 & EP3:

As the project developed, information was received that the aquaculture industry wanted a short-term alert system and that another EU funded Interreg project called "PRIMROSE" already planned to deliver this service. This highlights an important "lesson learned" that projects, such as CoCliME, must be highly adaptable. CoCliME efforts were re-evaluated, and focus was redirected to the needs of Irish policy makers and scientists. Familiarity with many scientific stakeholders (mid-stream users) and good understanding of their needs is helpful.

EP3:

The scientists wanted a downscaled regional ocean hindcast and climate model to use in future projects. However, in the case of the policy makers, the customer that was identified as being most suitable, the Climate Action Regional Office (CARO) for the Atlantic Seaboard North, was unfamiliar to the project staff. The reason for this is that the CARO was only recently established by the Irish government (Action 8 National Adaptation Framework, 2018) to drive climate action at regional and local levels and coordinate engagement across the whole of government to build experience and expertise in climate change and climate action.

EP3 & EP4:

- Some stakeholders (downstream users) were uninterested in the CoCliME project services focusing on HABs and more interested in well-known topics such as sea level rise. The Atlantic Seaboard North CARO was interested in CoCliME products in contrast to the Atlantic Seaboard South CARO. Shellfish farmers were only interested in short term forecasts, and this is addressed by an Interreg project "PRIMROSE". CoCliME kept working with the co-developer who showed the most interest (CARO), and decided to extract added value from the ocean climate model to provide additional information on sea level rise.

- The CARO (downstream end users) asked CoCliME to translate and graphically depict key ocean related climate change messages for their customers (local authorities) responsible for the development of climate change adaptation plans. Luckily, the CARO embraced the co-development process and were thoroughly engaged in the co-creation process to develop the ocean-climate change related information and graphics.

- Online meetings (due to covid-19 government restrictions) were productive for the co-development process of the Irish CoCliME graphics.