RESPONSE

Building Response Frameworks under existing & new Marine Pollution Challenges in the Black Sea

D2.2

Report on Monitoring and Evaluation Framework

Co-funded by the European Union

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Document information and version control

Project Acronym	RESPONSE
Project Title	Building Response Frameworks under existing & new Marine Pollution Challenges in the Black Sea
Grant Agreement Number	EU grant agreement No 101124661
Work Package	WP2
Related Task(s)	T 2.2
Deliverable Number	D 2.2
Deliverable Name	Report on Monitoring and Evaluation Framework
Due Date	20.09.2025
Date Delivered	30.09.2025
Dissemination Level	Public — fully open (automatically posted online on the Project Results platforms)

Version control

Revision-N°	Date	Description	Prepared By	Reviewed By
1	13.06.2025	1st Draft	Oleg RUBEL	Anastasia Tsavdaridou
2	29.08.2025	2nd Draft	Anastasiia Snigirova, Oleg Rubel	Anastasia Tsavdaridou, Emma Gileva
3	10.09.2025	3rd Draft	Anastasiia Snigirova, Oleg Rubel	Anastasia Tsavdaridou, Emma Gileva
4	20.09.2025	4rd Draft	Anastasiia Snigirova, Oleg Rubel, Emma Gileva	Anastasia Tsavdaridou, Emma Gileva
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Project background and context

The RESPONSE, supported by the European Union EMFAF, under Grant Agreement no 101124661 has duration of 36 months, starting from 01.10.2023. The project consortium involves six partners from five different countries: Greece, Bulgaria, Romania, Ukraine and Georgia. Five of the participants are based in countries bordering on the Black Sea, and the lead beneficiary, the Aristotle University of Thessaloniki (AUTH), has a long history of working with the region and with members of the consortium. The partnership includes one university, two research institutes and three environmental NGOs: the Black Sea NGO Network (BSNN) regional NGO network based in Varna, Bulgaria; the National Institute of Marine Research and Development (NIMRD), based in Constanta, Romania, leading research institute for the Black Sea; the Institute of Market Problems and Economic-Ecological Research (IMPEER), Odesa, a public institution, part of the National Academy of Sciences of Ukraine; the Black Sea Branch of Ukrainian Environmental Academy of Sciences (BSB UEAS) is Odesa-based NGO with a team of professional researchers; and the Greens Movement of Georgia / Friends of the Earth (GMG/FoE) – Georgia, an NGO, part of the international environmental network. All three beneficiaries from EU Member States have extensive experience in marine pollution projects under the Horizon 2020 and Horizon Europe programmes.

RESPONSE aims to identify and promote the development and establishment of new-generation advanced training schemes and curricula to support early warning, region-wide mechanisms for monitoring natural and man-made disasters. Various training programs, platforms and curriculum have been implemented to monitor marine pollution and ensure knowledge integration and dissemination. Still, training material, best practices, standards and protocols often differ among platforms and programs, hindering progress towards implementing an integrated, transdisciplinary and multidisciplinary marine pollution training system. Peculiar events, such as armed conflicts, create new environmental and societal challenges that call for international, coordinated responses.

RESPONSE acknowledges the importance of deeper understanding of marine ecosystems and river-delta-sea connections, the need for development of harmonized procedures, standards and methodologies in marine monitoring across the Black Sea countries to support healthy and resilient seas and foster integrated marine governance. The sustainable changes that are required for the establishment of efficient, advanced training schemes that would be integrated with the challenges, goals and specificities of the scientific and social context and make the most of the untapped capacity of stakeholders to promote regional awareness in the field.

In view of the background and context described above, the four overarching objectives of RESPONSE are: 1) IDENTIFY and UNDERSTAND the institutional and societal gaps and needs for effective, integrated, transdisciplinary and multidisciplinary marine pollution training systems; 2) DEVELOP effective training programs by assembling, integrating, and improving the most promising approaches and results into a comprehensive framework that consists of a set of methodological training tools, databases, policy recommendations, and background information; 3) SUPPORT the implementation of the EU and Regional Strategies, by developing operational guidelines for effective application, updating, monitoring and management of training programs on marine pollution; 4) EMPOWER marine pollution training, monitoring and mitigation by involving, inspiring and influencing stakeholders through *a broader vision of co-design, co-creation, co-establishment, co-implementation and co-assessment of the training programs*.

Summary

This document outlines a comprehensive framework for the task of develop the framework to monitor, evaluate and assess the progress performed during the project towards grounding advanced training courses for marine pollution in the BS region.

Project monitoring and evaluation (M&E) is an essential aspect of project management that helps organizations and stakeholders assess the effectiveness and progress of their initiatives. Whether you're working on a community development project, a business expansion, or a non-profit program, understanding how M&E works is crucial for achieving your project goals.

The co-designed framework will measure the reliability, accuracy and continuity, through the contribution to achievement of the relevant goals. M&I framework aims to develop and apply an integrated framework for effectively identifying, monitoring and assessing the performance of existing and new training curricula. It contributes to adequately response to marine pollution sources, including those of armed conflicts. M&E framework defines evaluation tools and provides an adapted data management plan, developed as a decision support system.

A set of outcome indicators was co-developed with a help of partners` and stakeholders` feedback during interactive sessions. Overall, at least 20-30 participants were introduced to our ideas and concepts and along with them we co-created and concluded on the indicators, considering a set of criteria such as Stakeholder confidence, institutional integration, relevance, collaboration, guidelines adoption and improvement, community empowerment and awareness, regional networking and cross-border collaboration. The developed outcome and impact indicators for the new training courses and curriculum will provide a common scientific ground for standardized, joint, compatible training ecosystems, data and information towards addressing marine pollution threats including those induced from accidental, peculiar origins such as armed conflicts.

The assessment methodology for the RESPONSE project is a comprehensive, three-tiered framework designed to systematically measure progress, short-term success, and long-term societal and scientific change. The first tier, Achievement Indicators, directly reflects the project's implementation phase. These indicators are practical measures linked to specific Work Packages and their corresponding Deliverables. The Achievement Indicators and their Sub-Achievement Indicators use quantitative metrics (e.g., number of organizations analyzed, number of co-created training curricula) with defined baselines and targets to track whether tasks and outputs have been completed as planned. This framework ensures that immediate project accomplishments are systematically verified and reported, forming the essential groundwork for evaluating deeper impacts later on.

The second tier focuses on Outcome Indicators, which measure the more immediate effects on the stakeholders involved, aligning with the project's overarching objectives. The eight suggested Outcome Indicators, developed according to the SMART concept, cover critical aspects like improved stakeholder knowledge, successful co-development of the training framework, and digital tool use. Other outcomes measure collaboration, training satisfaction, and the refinement of operational plans. The ultimate goal of this tier is to assess the participants' capacity to design and implement their own training programs and formulate policy recommendations.

Finally, the third tier consists of Impact Indicators, designed to capture the broader, long-term changes that extend beyond the project's duration and scope. These impacts are categorized across short-term (1–2 years), medium-term (2–5 years), and long-term (5–10 years) timeframes in scientific, societal, and technological/economic domains.

Glossary

Achievement indicators: Tangible and intangible products that result from program activities.

Activity: The action of staff members and stakeholders to meet the program's objective

Baseline Data: Before a project begins, it's important to collect baseline data to provide a point of reference for future evaluations. This data helps in comparing the project's impact over time.

Baseline: The status of the indicator at the beginning of a program that acts as a reference point against which progress, or achievements can be assessed.

Continuous Improvement: M&E is not a one-time task but an ongoing process. Project managers should use the findings to improve project delivery and impact continuously.

Evaluation: Objective assessment of an ongoing or completed program.

Goals: An ultimate result that the program intends to derive.

Impact Assessment: Beyond tracking outputs and outcomes, M&E aims to assess the project's broader impact on its target audience and community. This often requires a longer-term view.

Impact: Changes happened due to the program.

Logical Framework or Logframe: A tool for summarizing the program's intended results by showing the pathways that the program deals with.

M&E Plans: Developing an M&E plan is crucial to establish the framework for data collection, analysis, and reporting throughout the project lifecycle.

Measurable data points: Data expressed in numerical form and descriptive in nature.

Monitoring: A continuing function that uses the systematic collection of data on program parameters (participation, expenditure, events, etc).

Outcome indicators: Qualitative and quantitative variables to measure the phenomena.

Project monitoring and evaluation (M&E) is an essential aspect of project management that helps organizations and stakeholders assess the effectiveness and progress of their initiatives.

Qualitative indicators: People's judgments or perceptions about a subject- measures.

Quantitative indicators: Measures of quantities or amounts- the rate of involvement of the students.

Stakeholder Engagement: Engaging key stakeholders, including beneficiaries, donors, and partners, is vital for M&E. Their input ensures a more comprehensive and accurate assessment.

Target Data refers to the specific, measurable values or outcomes that a project aimed to achieve. This data is crucial for assessing a project effectiveness by providing a benchmark against which actual results are compared.

Training curricula is a detailed, structured plan for a course or program, outlining the learning objectives, content, activities, methods, and assessments necessary to develop specific skills or competencies in participants.

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Introduction

Project monitoring and evaluation (M&E) is an essential aspect of project management that helps partners and stakeholders assess the effectiveness and progress of project`s initiatives. Here we would like to provide some key components to understand how M&E works, which is crucial for achieving the project goals (reference).

Project monitoring and evaluation are systematic processes that involve collecting, analysing, and using data based on developed indicators to track a project's progress, assess its performance, and determine its impact. These processes help project managers ensure that their initiatives are on track, identify areas for improvement, and demonstrate accountability to stakeholders, including funders, donors, and the community.

Monitoring is the systematic and routine collection of information from projects and programmes. The M&E framework underpin four main purposes:

1) to learn from experiences to improve practices and activities in the future;
2) to have internal and external accountability of the resources used and the results obtained;
3) to take informed decisions on the project future impacts;
4) to promote empowerment of beneficiaries of the project.

Monitoring is a periodically recurring task already beginning in the planning stage of a project or programme. Monitoring allows results, processes and experiences to be documented and used as a basis to steer decision-making and learning processes. Monitoring implied the development of various types of indicators, cush as outcomes indicators, indicators of achievements, impacts indicators, etc. Based on collected data monitoring provides the foundation for the project progress` check. The data acquired through monitoring is used to evaluate the efficiency of the project.

Evaluation is assessing, as systematically and objectively as possible, a completed project (or a phase of an ongoing project or programme that has been completed). Evaluations appraise data and information that inform strategic decisions, thus improving the project or programme in the future.

Evaluations should help to draw conclusions about five main aspects of the project:

- relevance
- effectiveness
- efficiency
- impact
- sustainability

Information gathered in relation to these aspects during the monitoring process provides the basis for the evaluative analysis.

M&E is an embedded concept and constitutive part of every project or programme design ("must be"). M&E is not an imposed control instrument by the donor or an optional accessory ("nice to have") of any project or programme. M&E is ideally understood as dialogue on development and its progress between all stakeholders.

Setting Clear Objectives and Indicators: The first step in M&E is establishing clear project objectives and defining specific, measurable, and time-bound indicators. These indicators act as benchmarks to measure progress and success.

Data Collection: Data is the backbone of M&E. During project implementation, data is collected through various methods, such as surveys, interviews, focus groups, observations, and document reviews. This data includes both quantitative (numbers) and qualitative (descriptive) information.

Data Analysis: Once data is collected, it's analysed to assess the project's performance and impact. Data analysis can involve statistical techniques, qualitative coding, and comparative assessments.

Reporting and Feedback: The results of the data analysis are used to create M&E reports. These reports provide insights into what's working and what isn't. Feedback from M&E reports can inform decision-making and future project adjustments.

Learning and Adaptation: M&E isn't just about assessing past performance but also about using that knowledge to make improvements. Project managers and stakeholders should be ready to adapt their strategies based on M&E findings.

The present M&E Framework aims to:

1. develop and apply an integrated framework for effectively identifying, monitoring and assessing the performance of existing and new training curricula to adequately respond to marine pollution sources, including those of armed conflicts;

2. define evaluation tools and to provide an adapted data management plan, developed as a decision support system.

Part I. Project M&E methodology

1.1. Experimental impact assessment methodologies

The variety of methods complement one another and are normally used in various combinations to support a project's M&E activities[1] (Fig. 1).

1. Documentary research and use of secondary data, which can be obtained, for example, from government documents, academic research, research and analysis by others in the field or other projects, online sources such as social media, blogs, or conversations among users.

2. Direct observation, obtained by directly surveying data related to the project in various ways (e.g., number of media produced, number of participants in a training event, attendance lists, traces and feedback recorded on the IT/digital tools created by the project, feedback obtained directly during project activities, observations recorded by practitioners during the execution of activities, etc.).

3. Surveys, used to collect data from a substantial number of people through online tools, telephone/zoom surveys, or paper questionnaires, including those administered during project activities (e.g., at the end of an event). They can allow the collection of quantitative responses, qualitative responses organized into categories, and qualitative feedback in free format (open-ended responses).

4. Interviews, i.e., face-to-face conversations between a researcher and a participant, with a question-and-answer system that can be free-form, semi-structured (with fixed questions and answers that can range) or structured (questions with shorter or predefined answers) as appropriate.

5. Focus groups, which are moderated group discussions in which participants are invited to share opinions and ideas on a given topic. It allows deeper analysis and integration of various viewpoints. It can follow a more or less structured path (such as an interview), depending on the needs and dynamics in the group of participants.

6. Crowdsourcing, which is a system (usually supported by special digital platforms) in which users of a service or beneficiaries of a project collectively contribute to the collection of data, information and feedback.

7. Case studies, used to gain an in-depth understanding of a particular phenomenon and subject. It involves the collection and analysis of multiple sources, such as interviews, surveys and direct observations to reconstruct in detail the context, factors and dynamics behind the phenomenon, which is useful for deriving trends, dynamics, example patterns, solutions, recommendations and lessons learned.

[1] Guida all'Europrogettazione. (2025). *Handbook: The basics, the structure, the method for working on European projects*. Retrieved August 15, 2025, from https://www.guidaeuroprogettazione.eu/en/handbook/

8. Narrative inquiry, qualitative approach that uses interviews, field notes, and other forms of data collection to uncover the stories of groups or individuals and analyse their experiences, perspectives, dynamics, and lessons for future action.

9. Audio and video collection. The widespread use of digital video and photography, and the growing habit of users to share them by developing their own "narrative" with them, can be used to tell the story of a project's activities and highlights. While this is a highly narrative, participatory and qualitative mode of data collection, it can be effective in terms of the richness of the information gathered and its communicative impact.

10. "Most significant change" a more structured variant of the previous approaches, which consists of asking each participant to describe the most significant change that has occurred in his or her experience with regard to a particular area or parameter, and to explain its significance. The collected "stories" can be deepened, further selected and commented on as a group.

11. Benchmarking (or comparative analysis), a method used to compare and contrast two or more different cases by identifying similarities and differences between two or more actors or phenomena. Data collection should be done in parallel with the same parameters and methods in the two cases to be compared to ensure full comparability.

12. Data mining, which involve online data collection using document sets and large databases, from which useful information, trends, and patterns can be extracted through specific computer tools, algorithms, and applications of Artificial Intelligence.

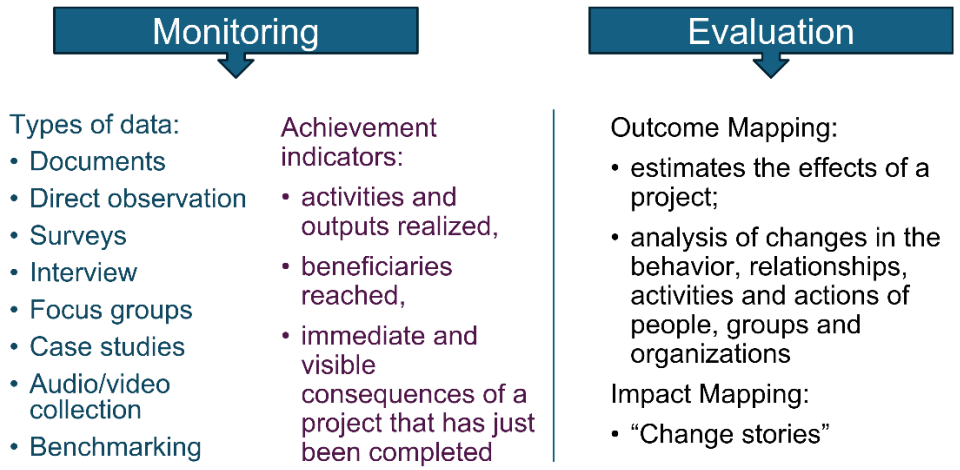

Fig.1. Monitoring & Evaluation Framework methods overview

1.2. NON-EXPERIMENTAL IMPACT ASSESSMENT METHODOLOGIES

There are various methodologies that are not strictly quantitative for measuring the impact of a project from its intervention logic, or its theory of change. These are non-experimental methods, which thus have less ambition for "scientificity" than counterfactual methods, but are aimed at formalizing the process of attributing change or observed outcomes to a given project or intervention. We mention in particular:

1. Contribution Analysis. This methodology starts with a reasoned and plausible causal theory of how change is believed to occur (intervention logic or theory of change). It then focuses on gathering evidence that validates that theory: looking for other factors that may have contributed to the observed outcomes, identifying and excluding (where possible) alternative or complementary explanations that may have led to those outcomes. To do so, it embraces different perspectives (e.g., context, other interventions, actors' narratives, beneficiary feedback) designed to suggest different factors or "causal pathways" that may have led to or contributed to the outcome;

2. The Global Elimination Methodology (GEM) is based on the systematic identification of possible alternative explanations that may have led to the observed outcomes by drawing up lists of causes and the "modus operandi" linked to them, for each outcome of interest. It is then determined which of the causes occurred and which of the "modus operandi" were observed. Causes for which the relevant "modus operandi" was not observed are discarded, leaving only those causal explanations that have a genuine causal link. From this, the true effectiveness of the intervention can be more accurately contextualized and evaluated;

3. Realist Evaluation starts from the consideration that the effectiveness of an intervention depends not only on the cause-effect relationships of what a project or intervention produces, but on a plurality of mechanisms related to the context, the set of actors and a community, their historical, cultural, economic, human and social interactions and dynamics. In different settings and in different communities an intervention will indeed have different outcomes and effectiveness. Evaluation (which draws from quantitative and qualitative sources) thus seeks to map a set of hypothetical "mini-theories of change" that can capture the different dynamics and contextualize in this the intervention and its effectiveness;

4. Qualitative Comparative Analysis (QCA) compares different cases (configurations of possible different causal conditions), but which produced a similar outcome. It therefore analyzes clusters of factors present in different cases, but which produced the outcomes and impacts of interest, to define the degree of significance of each condition in achieving the desired impact, and to identify the simplest set of conditions that can explain all the observed outcomes, as well as their absence;

5. Process Tracing is a methodology for examining and testing a specific causal link, to assess whether the evidence is sufficient to draw a conclusion about the cause. It applies four types of tests of increasing "power": the "straw-in-the-

wind" test, which allows one to define whether or not there are conditions to exclude a priori a causal link; the "circle" test, which allows one to exclude a causal link, when the condition analyzed is present, but the expected result is not present; the "smoking gun" test, which, on the contrary, confirms the co-presence (and tendentially, the causal link) of the analyzed condition and the expected outcome; the "doubly conclusive" test allows (in very rare cases) to exclude the existence of other causal links besides the one identified.

The assessment methodology for the RESPONSE project is a comprehensive, three-tiered framework designed to systematically measure progress, short-term success, and long-term societal and scientific change.

The first tier, Achievement Indicators (AI) (Table 1), directly reflects the project's implementation phase. These indicators are practical measures linked to specific Work Packages (WPs) and their corresponding Deliverables (D), such as a Stakeholder analysis (D1.1) or the Digital Toolkit (D2.3). The AIs and their Sub-Achievement Indicators (SAI) use quantitative metrics (e.g., number of organizations analyzed, number of co-created training curricula) with defined baselines and targets to track whether tasks and outputs have been completed as planned. This framework ensures that immediate project accomplishments are systematically verified and reported, forming the essential groundwork for evaluating deeper impacts later on.

The second tier focuses on Outcome Indicators (OI) (Table 2), which measure the more immediate effects on the stakeholders involved, aligning with the project's overarching objectives. The eight suggested OIs, developed according to the SMART concept, cover critical aspects like improved stakeholder knowledge (OI-1), successful co-development of the training framework (OI-2), and digital literacy and tool use (OI-3). Other outcomes measure collaboration (OI-4), training satisfaction (OI-5), and the refinement of operational plans (OI-6). The ultimate goal of this tier is to assess the participants' capacity to design and implement their own training programs (OI-7) and formulate policy recommendations (OI-8). Evidence for these outcomes is drawn from surveys, workshop records, and documented use of project materials, indicating a successful transition from project activities to tangible changes in stakeholder behavior and capacity.

Finally, the third tier consists of Impact Indicators (II) (Table 3), designed to capture the broader, long-term changes that extend beyond the project's duration and scope. These impacts are categorized across short-term (1–2 years), medium-term (2–5 years), and long-term (5–10 years) timeframes in scientific, societal, and technological/economic domains. Scientific impacts track the institutionalization of training through academic recognition and licensed education programs (II1, II2). Societal impacts are monitored through the inclusion of project guidelines in policy papers and the harmonization of national legislation with EU standards (II3, II5). Technological and economic impacts assess the official adoption of project guidelines as national references and the demonstrable effect of trained professionals on national resilience (II6, II7). By tracking these multifaceted indicators, the methodology aims to prove that the project has catalyzed lasting institutional, policy, and systemic transformation.

1.3. OUTCOMES AND IMPACTS OF RESPONSE PROJECT

RESPONSE project is expected to bring benefits to environment, society, the economy and science, first through their outputs and then, through their expected Overarching Objectives, outcomes/results and impacts (Fig. 2):

- ✓ Overarching Objectives are its broad, strategic goals that define the project's overall purpose and guide all activities. These objectives provide a framework for success by outlining what the project aims to achieve in the long term and what value it will deliver. They are typically higher-level than specific tasks or deliverables and often relate to the project's impact on the organization, stakeholders, or beneficiaries.

- ✓ Outcomes are mid-term effects of RESPONSE projects such as uptake, diffusion, use and deployment of the project's results by direct target groups. They are directly linked to the actions supported and allow observing direct outcomes during implementation and not only at the end of a project. Thus, they provide a strong basis for later evaluation activities.

- ✓ Expected impacts are longer-term effects on environment, society, the economy and science enabled by the outcomes.

Aims	Overarching Objectives	Tasks	Deliverables	Outcomes
IDENTIFY AND PROMOTE THE SUSTAINABLE CHANGES	IDENTIFY and UNDERSTAND the institutional and societal gaps and needs for marine pollution training systems.	T 1.1, T 1.2, T 1.3	D 1.1, D 1.2, D 1.3	Marine pollution preparedness and response institutional, societal, training, and scientific background identified and understood by stakeholders.
INTEGRATE ADVANCED TRAINING SCHEMES WITH THE CHALLENGES, GOALS AND SPECIFICITIES OF THE SCIENTIFIC AND SOCIAL CONTEXT	DEVELOP effective training programs by assembling, integrating, and improving the most promising approaches and results SUPPORT the implementation of the EU and Regional Strategies, by developing operational guidelines for effective application and management of training programs	T 2.1, T 2.2, T 2.3, T 2.4 T 3.1, T 3.2, T 3.3	D 2.1, D 2.2, D 2.3, D 2.4 D 3.1, D 3.2, D 3.3	An effective and comprehensive framework of concepts for training programmes on marine pollution preparedness and response, co-created and operationalized by stakeholders and the project. Stakeholders enabled to support the regional strategies for marine pollution preparedness and response by co-developing, co-applying, co-evaluating operational training plans for marine pollution preparedness and response.
UNLOCK STAKEHOLDER POTENTIAL TO ENHANCE REGIONAL AWARENESS IN MARINE POLLUTION PREPAREDNESS AND RESPONSE.	EMPOWER marine pollution training, monitoring, and mitigation by involving, inspiring, and influencing stakeholders	T 4.1, T 4.2, T 4.3, T 4.4	D 1.5	Key stakeholders are actively involved in regional activities for engaging institutions in action plans on marine pollution preparedness and response training and networking and integrating scientific findings about the Black Sea into the wider socio-economic, environmental and cultural concerns.

Fig.2. Intercourse between aims, objectives and outcomes of RESPONSE

Part II. Monitoring Plan

2.1. Approaches to define indicators

This chapter outlines a structured approach to developing indicators for M&E[2,3] and established best practices, including the SMART methodology[4]. The framework covers outcome indicators (tracking changes) and impact indicators, with guidance on developing and applying SMART indicators. It is important to note that Achievement indicators (AI) presented later in this report (table 1) was designed on the stage of the project proposal, and were the keystones for indicators development for this present framework.

Outcome indicators (OI) measure the change or difference resulting from project activities, providing evidence of whether intended outcomes are being achieved. When designing outcome indicators, the following principles should be considered:

(1) Use neutral phrasing – indicators should describe what will be measured (e.g., "level of…," "number of…," "type of…," or "frequency of…") without presupposing the direction of change. Words such as "increased" or "improved" should be avoided until results confirm whether such changes have occurred.
(2) Tailor indicators to the specific context – while online indicator banks can provide inspiration, the chosen measures must reflect the type of work undertaken, the target population, and the nature of the desired changes. Strong indicators often emerge from asking: What will success look like? How will we know progress has been made?
(3) Combine quantitative and qualitative measures – using both numerical data and descriptive information can provide a richer understanding of change.
(4) Incorporate multiple perspectives – for example, assessing participants' self-reported experiences alongside independent observations from facilitators or stakeholders.
(5) Balance subjective and objective measures – self-assessments can reveal perceptions of change, while objective measures (such as success rates, completion rates, or other performance metrics) can strengthen the validity of findings.

By applying these principles, outcome indicators can offer a reliable and nuanced picture of the change achieved, supporting both accountability and learning processes.

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[2] *Developing a monitoring and evaluation framework*. 2019. NCVO. https://www.ncvo.org.uk/help-and-guidance/strategy-and-impact/impact-evaluation/planning-your-impact-and-evaluation/monitoring-and-evaluation-frameworks/developing-a-monitoring-and-evaluation-framework/

[3] Guida Europrogettazione. (n.d.). *Handbook: The basics, the structure, the method for working on European projects*. Retrieved on 18.09.2025, from https://www.guidaeuroprogettazione.eu/en/handbook/

[4] Luli, F. (2025). SMART indicators in monitoring and evaluation (M&E). *EvalCommunity.* https://www.evalcommunity.com/career-center/smart-indicators/

To enhance clarity, precision, and measurability, we recommend adopting the SMART approach for both achievement and outcome indicators (Fig. 3). SMART indicators are:

Specific – clearly defined and focused on a distinct aspect of the project.

Measurable – quantifiable using units such as numbers, percentages, or rates.

Achievable – realistic given resources, capacity, and context.

Relevant – directly aligned with programme objectives and intended outcomes.

Time-bound – measurable within a defined timeframe.

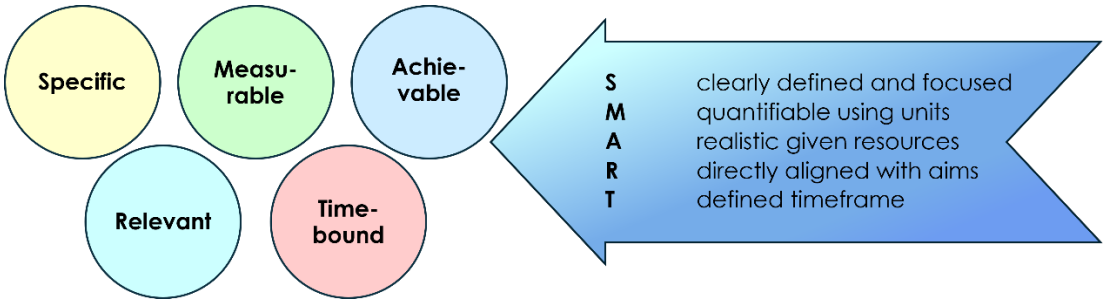


Fig. 3. SMART indicators

Steps to develop indicators based on SMART approach:

(1) Define goals and objectives – clarify the overarching goals and specific objectives of the project.
(2) Identify outputs and outcomes – determine which outputs and outcomes require monitoring.
(3) Draft indicator statements – for each output or outcome, define the data to be collected, target population, and measurement timeframe.
(4) Review and refine – consult stakeholders (program staff, beneficiaries, funders) to ensure indicators are relevant, feasible, and context-appropriate.
(5) Establish baselines – collect initial data for each indicator prior to programme implementation.
(6) Collect and analyse data – systematically gather and assess data against baselines and targets.
(7) Report and adjust – communicate findings to stakeholders, identify areas for improvement, and adjust strategies or indicators as necessary.
(8) Continuous monitoring – regularly review indicators and progress to ensure they remain effective and aligned with project goals.

Adopting SMART indicators offers multiple benefits for monitoring and evaluation. They provide clarity about programme goals and objectives, allowing all stakeholders to understand exactly what the project aims to achieve and how progress will be measured. By establishing measurable and time-bound indicators,

accountability is strengthened, as project staff and funders can objectively track performance. SMART indicators also support continuous improvement by highlighting areas where interventions may require adjustment or refinement. Furthermore, they facilitate evidence-based decision-making and more effective resource allocation, ensuring that efforts and funding are focused on activities that directly contribute to the intended outcomes. Overall, SMART indicators enhance the quality and utility of monitoring and evaluation, promoting both transparency and informed programme management.

Impact Indicators (II) capture the broader and longer-term changes that result from project activities, going beyond outputs and outcomes to demonstrate the programme's contribution to scientific advancement, societal benefit, and technological or economic development. Unlike achievement or outcome indicators, impacts often take longer to materialise and may extend beyond the duration of the project.

To account for this, impact indicators should be structured along impact pathways that reflect the non-linear nature of research and innovation investments. These pathways can be grouped into three complementary categories:

- **Scientific impacts** – contributions to knowledge, methods, data, and research capacity.
- **Societal impacts** – changes in awareness, behaviour, policies, or wellbeing within communities and populations.
- **Technological or economic impacts** – development of new products, services, business models, or measurable contributions to economic growth and competitiveness.

Timeframes for Impact Indicators

Impact indicators should be time-sensitive and designed to capture effects across different stages. Immediate impacts (proximal/early signals) imply the early uptake of knowledge, skills, or practices by direct participants. It includes initial dissemination of project results, such as trainings and new curriculums, as well as strengthening of networks, collaborations, and institutional capacity.

Short-term impacts demonstrable changes in professional practice, community engagement; policy or organisational shifts influenced by project evidence or recommendations; emerging pilot training and curricula.

Long-term impacts endure contributions to institutional fields (e.g., widely adopted curricula, introduced trainings); provide tangible improvements in societal outcomes (e.g., environmental quality, community wellbeing improvement; marine pollution monitoring strengthening); indicate measurable economic benefits (e.g., ecosystem services reinforcement).

To design impact indicators, the following principles are suggested:

1. Use proxy measures where direct impacts may take many years to manifest (e.g., new types of pollution measured, stakeholders introduce the trainings, new multidisciplinary specialised programs are developed in marine pollution sphere).
2. Apply mixed methods – combine quantitative data (e.g., number of trainees and organisations involved) with qualitative evidence (e.g., better understanding of marine pollution challenges, stakeholder testimonies; operational plans developed).
3. Enable comparability while allowing contextualisation – core indicators should be harmonised across the programme, but additional indicators may be tailored to individual project components.
4. Minimise reporting burden – data should be collected using existing administrative systems, external datasets, and strategically chosen surveys.
5. Incorporate multiple perspectives – evidence should be drawn from beneficiaries, implementers, independent experts, and secondary sources.

By embedding immediate, short-term, and long-term perspectives into impact indicators, projects can demonstrate not only accountability but also how their work contributes to broader transformations. These indicators ensure that the monitoring framework captures both the incremental steps and the ultimate legacy of the programme.

In the following sections below, we provide the achievement indicators that are part of Grant Agreement and new indicators that were developed for the M&E Framework.

2.2. "RESPONSE" ACHIEVEMENT INDICATORS

The achievement indicators (Table 1) were developed in RESPONSE project proposal to directly reflect the activities outlined in each work package (WP) and the associated deliverables. They serve as practical measures of progress within the project's implementation phase, capturing whether specific tasks, outputs, and milestones have been completed as planned. By linking indicators to concrete activities, the framework ensures that project achievements can be systematically tracked, verified, and reported, providing an essential foundation for assessing subsequent outcomes and impacts.

Table 1. M&E Achievement Indicators (AI) matrix

Deliverables	Achievement indicators (AI)	Sub-AI	baseline	target
WP1				
D1.1 – Stakeholder analysis	1 – Improved level of understanding of competent stakeholders, their roles, networks and coordination mechanisms	SAI 1.1 Organizations analysed in terms of needs, institutional structure and training capacity	20	30
		SAI 1.2 Number of most important/influential stakeholders in decision-making response activities	10	15
D1.2 – Needs assessment report on current training plans, curricula and capacity	2 – Improved access on current training plans and curricula, gaps and improved evaluation of good practices and success or failure stories	SAI 2.1 Number of current training plans and curricula	5	15

		SAI 2.2 Number of case studies of good practices in training courses in national stakeholders	3	5
D1.3 – Assessment report of types and impacts of marine pollution	3 – Improved knowledge on a) prioritization of types and impacts of marine pollution, according to their impact including those from armed-conflicts, and b) on the tools that are being used to address them	SAI 3.1 Number of national reports on types of marine pollution in the BS	4	4
		SAI 3.2. Number of emergent types of pollution linked to armed conflicts	1	5
		SAI 3.3 Catalogue of tools to respond to their impact	3	6
WP2				
D2.1 – Report on co-creation process of advanced training curricula	4 – Improved level of contribution in co-creating training curricula and increased number of training curricula per BS country	SAI 4.1 Number of participants in the workshops	60	120
		SAI 4.2 Number of co-created training curricula	2	5
D2.2 – Monitoring and Evaluation Framework	5 – Increased number of monitoring indicators for the effective performance of existing and new training curricula	SAI 5.1 Monitoring and evaluation framework	1	1

		SAI 5.1 Survey on key stakeholders for the improvement of the Monitoring and Evaluation framework		200
		SAI 5.2. III Survey on key stakeholders in Bulgaria on the improvement of the Monitoring and Evaluation framework	1	1
D2.3 – The RESPONSE Digital Toolkit	6 – Increased number of ICT tools to contribute in both training and operation stages of preparedness and response actions	SAI 6.1 Digital Toolkit	1	1
D2.4 – Replication guide	7 – Increased number of replication guides of training programs	SAI 7.1. Methodology on building training capacity	1	1
		SAI 7.2. Replication Guide	1	1
WP3				
D3.1 – National operation plans	8 – Increased number of operation plans per BS country	SAI 8.1 Tailored training operational plans	3	4
D3.2 – Report and material of the advanced training courses	9 – Increased number of participants in training and operational activities per BS country	SAI 9.1 Number of trained experts during the National workshops	60	120
		SAI 9.2 Number of informed experts during the Regional workshops	20	30

D3.3 – Report on the training courses performance	10 – Increased number of successful use cases of training curricula	SAI 10.1 Case studies of good practices in training courses in national stakeholders	6	10
		SAI 10.2 Operating pilot training curricula	3	4
WP4				
D4.1 – Communication and exploitation plan	11 – Increased number of participants in dissemination events, such as info-days OR number of dissemination material	SAI 11.1Number of informed stakeholders, scientists and consultancies	600	800
		SAI 11.2 Number of info-days	4	8
		SAI 11.3 Citizen Guideline Sheets	3	5
		SAI 11.4 Stakeholder engagement, Dissemination and Communication Plan	1	1
D4.2 – Project's website				
D4.3 – Progress report on communication activities				
D4.4 – Final communication report				

D4.5 – Report on networking and transferability activities	13 – Increased number of entities that envision to encompass RESPONSE outputs in their operational agenda	SAI 13.1 Number of networking events in which the consortium has taken part	5	10
		SAI 13.2 Coordination with relevant initiatives	3	6
D4.6 – Regional Action Plan	12 – Increased number of institutions per BS country participating in formulating strategic action plans	SAI 12.1 Regional Action Plan	1	1
WP5				
D5.4 – Interim Policy Brief	14 – Increased number of policy-related recommendations in the final stages of the project	SAI 14.1 Number of consulted policymakers	10	15
D5.2 – Data Management Plan		Data Management Plan	1	1
D5.3 – Project Factsheet		Project Factsheet	1	1
D5.1 – KoM minutes		KoM minutes	1	1

3.3. "RESPONSE" OUTCOME INDICATORS

The 8 outcome immediate indicators, presented in Table 2, are suggested according to SMART concept. Each indicator cover the following aspects and underlines how indicator corresponds to project objectives and core mission:

OI-1 corresponds to stakeholders` knowledge and understanding. This indicator corresponds to individual stakeholders (e.g., trainees, practitioners, and researchers) who engage in the programme. Improved knowledge of institutional, societal, training, and scientific aspects of marine pollution preparedness and response (MPPR) ensures participants are confident that they can contextualize and apply new learning in their professional roles.

Evidence: baseline and endline surveys, knowledge tests, self-assessments, and documented improvements in technical and contextual understanding.

OI-2 corresponds to training framework co-development. This indicator relates to stakeholders' active participation in shaping the training framework. Joint design and assessment foster ownership, alignment with regional needs, and higher sustainability of outcomes.

Evidence: co-development workshop records, drafts and final versions of the framework, stakeholder feedback reports, and formal endorsements by institutions.

OI-3 corresponds to digital literacy and practical tools. This indicator measures stakeholders' improved knowledge and capacity to use Digital tool and best-practice guidance for MPPR.

Evidence: user statistics of digital platforms/tools, participant surveys, follow-up interviews, and examples of tool use in practice.

OI-4 corresponds to collaboration and peer support. This indicator focuses on stakeholders' willingness to support each other and exchange expertise on training methodologies, theoretical aspects, and practical approaches. Sustained collaboration is critical for building a resilient and adaptive knowledge-sharing community.

Evidence: records of peer exchanges, joint initiatives, co-hosted events, and documented feedback on collaborative sessions.

OI-5 corresponds to training satisfaction and relevance. This indicator assesses participants' satisfaction with training content, digital tools, and events, which reflects the relevance and perceived usefulness of the programme. High satisfaction is an early sign for uptake and application.

Evidence: post-event surveys, qualitative reflections, trainer evaluations, and feedback from trainees and institutions.

OI-6 corresponds to guidelines and operational plan improvement. This indicator corresponds to stakeholders' evaluation and refinement of operational plans and

integration processes. Continuous feedback strengthens guidelines and ensures responsiveness to emerging challenges.

Evidence: updated plans with documented revisions, meeting minutes, stakeholder surveys, and institutional reports incorporating improvements.

OI-7 corresponds to institutional capacity for adoption and training Implementation. This indicator relates to institutional uptake, whereby stakeholder organisations design and roll out their own training programmes in MPPR, or at least estimate the potential to do so. Institutionalisation ensures long-term sustainability and embedding of practices.

Evidence: official adoption documents, training curricula, reports of implemented training sessions, and national/regional strategies citing the adopted modules.

OI-8 corresponds to policy recommendations and regional integration capacity. This indicator measures stakeholders' capacity to translate project results into policy-oriented outputs and future initiatives. Policy recommendations reinforce the relevance of MPPR at decision-making levels and stimulate integration into broader regional frameworks.

Evidence: published policy briefs, references to recommendations in government or agency reports, incorporation into regional projects, and records of dissemination events targeting policymakers.

The detailed numerical parameters to measure suggested indicators are provided in the Tables 5-12.

Table 2. M&E Outcome Indicators (OI) matrix

Overarching Objectives		Outcomes	Outcome indicators
IDENTIFY and UNDERSTAND	institutional and societal gaps and needs for effective, integrated, transdisciplinary and multidisciplinary marine pollution training systems.	Marine pollution preparedness and response (MPPR) institutional, societal, training, and scientific background identified and understood by stakeholders	OI-1. Improved level of knowledge and understanding of the MPPR institutional, societal, training, and scientific background in the BS countries
DEVELOP	effective training programs by assembling, integrating, and improving the most promising approaches and results	Effective and comprehensive framework of concepts for training programmes on MPPR co-created and operationalized by stakeholders and project	OI-2. Stakeholders successfully co-develop and assess a comprehensive training framework on MPPR
			OI-3. Stakeholders are more knowledgeable on the digital data and tools

			of MPPR and the practical guidance on implementing best practices
SUPPORT	implementation of the EU and Regional Strategies, by developing operational guidelines for effective application, updating, monitoring and management of training programs on marine pollution.	Stakeholders enabled to support the regional strategies for MPPR by co-developing, co-applying, co-evaluating operational training plans for MPPR	OI-4. Stakeholders offer support and exchange experience with each other on training/theoretical issues, methodology, etc OI-5. Stakeholders express satisfaction with training programme/ events, digital tool OI-6. Stakeholders evaluate operational plans and offer improvements for integration
EMPOWER	marine pollution training, monitoring, and mitigation by involving, inspiring, and influencing stakeholders	Key stakeholders actively involved in regional activities for engaging institutions in action plans on MPPR training and networking and integrating scientific findings about the Black Sea into the wider socio-economic, environmental and cultural concerns	OI-7. Stakeholder institutions design and implement their training programmes of MPPR OI-8. Stakeholders suggestions formulate policy recommendations for improvement of preparedness and response, and integration in further projects and activities

3.4. "RESPONSE" IMPACT INDICATORS

Impact indicators were developed to capture the broader and longer-term changes that extend beyond immediate project outcomes (Table 3). Unlike achievement or outcome indicators, which measure direct results of training and operation plans, impact indicators trace the ripple effects on institutions, policies, and society. Structuring them across short-, medium-, and long-term timeframes allows us to document not only early signs of uptake but also the institutionalisation of practices and, eventually, systemic transformation.

Scientific impacts are central drivers of this framework, as the project aims to build lasting academic and research capacity in the field of marine pollution. In the short term, impact indicators focus on the pilot accreditation of training modules and

initial recognition by educational institutions (ministries, universities), showing early acceptance of the project's scientific contributions. In the medium term, the influence on development of new bachelor's and master's programmes and the employment of trained alumni within relevant institutions provide tangible evidence of a growing professional workforce. Over the long term, the sustained existence of licensed education programmes and a recognised regional cadre of marine pollution experts demonstrates an enduring contribution to knowledge and capacity building. These indicators are important as they capture how the project shifts from piloting curricula to transforming the scientific landscape by institutionalising training and research capacity.

Societal impacts represent another key pathway, as marine pollution is not only a scientific challenge but also a societal risk that demands policy, governance, and behavioural change. Short-term indicators capture the inclusion of project guidelines in institutional policy papers and the formation of regional working groups, early signs that stakeholders are engaging with project outputs. In the medium term, impacts are reflected in policy updates that address emerging pollution challenges (e.g., oil and chemical pollution, nano- and microplastics, per- and polyfluoroalkyl substances (PFAS), military-related pollutants) and the adaptation of national legislation to align with EU standards. Over the long term, this pathway culminates in legal harmonisation and compliance reporting, showing that the project's influence has contributed to stronger governance and accountability frameworks. These indicators are important because they link scientific advances to real-world changes in governance, ensuring that new knowledge informs policies that protect communities and ecosystems.

Technological and economic impacts focus on how the project contributes to professional services, market adoption, and long-term sustainability. In the short term, these impacts are reflected in new service contracts awarded to trained specialists and early operational adoption of guidelines by institutions. Medium-term indicators highlight the employment of trainees in government, NGOs, and industry, as well as the official adoption of project-developed operational guidelines as national reference tools. In the long term, impacts extend to the establishment of sustainable funding mechanisms and measurable improvements in institutional and national resilience to marine pollution emergencies. These indicators are important because they demonstrate how scientific and societal advances are translated into economic value, sustainable job creation, and the operational capacity required to mitigate pollution challenges.

Table 3. M&E Impact Indicators (II) matrix

Short-term (1–2 years) – Early signals of systemic uptake	II1. Number of pilot training modules recognised by involved organizations, professional associations or universities. II2. Evidence of ministries of education or higher education councils initiating approval processes for certified/licensed programmes in marine pollution. II3. References to project-developed guidelines or training content in institutional policy papers, strategic plans, or national environmental programmes.
Medium-term (2–5 years) – Institutional and policy embedding	II4. Number of national or regional policies updated to explicitly include new or emerging types of marine pollution (e.g., microplastics, military-related pollutants). II5. Instances of national legislation aligned or harmonised with EU directives and international conventions on marine pollution.
Long-term (5–10 years) – Systemic transformation and sustainability	II6. Project-developed operational guidelines adoption by national agencies or regional organisations as a standard reference for preparedness and response. II7. Demonstrable impact of trained professionals on national or regional resilience measured by e.g. faster response to emergencies, improved monitoring, or reduced pollution damages.

Part III. Evaluation Plan

3.1. Evaluation of the outcomes

The evaluation framework is designed to ensure five criteria:

The evaluation framework for the project Response is designed around five criteria that ensure systematic measurement of progress and achievements. Each criterion is linked to specific outcome indicators (OI-1 to OI-8) and supported by appropriate evidence sources.

1. Appropriateness

The framework evaluates whether project activities and outputs are relevant to stakeholder needs, institutional priorities, and societal challenges in the Black Sea region. Indicators such as improved stakeholder knowledge and understanding of MPPR contexts (OI-1), strengthened digital and practical competencies (OI-3), and relevance of training events and tools (OI-5) demonstrate that interventions are well-aligned with participants' requirements. Evidence will be collected through pre- and post-training surveys, digital tool usage statistics, feedback forms, and consultations with community stakeholders.

2. Effectiveness

Effectiveness is measured by the extent to which outcomes are achieved and translated into practice. This includes co-development of the comprehensive training framework (OI-2), exchange of expertise and peer support (OI-4), refinement of operational plans (OI-6), and institutional implementation of training programmes (OI-7). Evaluation methods will include monitoring adoption of frameworks, documenting collaborative initiatives, and analysing institutional reports to verify integration of project outputs into practice.

3. Efficiency

Efficiency focuses on the optimal use of time, expertise, and resources to deliver project outcomes. Indicators such as stakeholder satisfaction (OI-5), co-development processes (OI-2), and collaborative peer exchanges (OI-4) help assess whether resources were used effectively to achieve intended results. Both quantitative data (e.g., number of stakeholders trained, number of exchanges held, tool adoption rates) and qualitative evidence (e.g., testimonials, satisfaction levels) will be used to ensure a balanced assessment of efficiency.

4. Impact

The framework captures structural, institutional, and behavioural changes resulting from the project. Examples include improved institutional knowledge and training design capacity (OI-1, OI-7), strengthened regional collaboration and mutual support (OI-4), and integration of operational improvements into preparedness plans (OI-6). Policy recommendations formulated by stakeholders (OI-8) also illustrate the project's contribution to higher-level impacts by influencing decision-making and regional cooperation. Impact assessment will combine proxy indicators (adoption rates, frequency of exchanges) with qualitative narratives gathered through follow-up consultations and institutional case studies.

5. Sustainability

Sustainability is assessed by the extent to which outcomes continue to deliver benefits beyond the project's lifetime. Evidence of long-term uptake includes institutional adoption of training programmes (OI-7), continued evaluation and updating of operational plans (OI-6), and stakeholder-driven policy recommendations that guide future activities and regional integration (OI-8). Monitoring will rely on institutional documentation, follow-up surveys, and records of new initiatives or policies emerging after the project ends.

In Table 4 we suggest the types of sources where the data may be obtained in accordance with the evaluation criteria.

Table 4. Data sources for the evaluation

Evaluation criteria	Examples of Data sources
Appropriateness Assesses whether project activities and outputs are relevant to stakeholder needs, institutional priorities, and societal challenges.	– Stakeholder consultations and interviews – Baseline surveys of participants – Workshop reports and feedback forms
Effectiveness Measures the extent to which project outcomes are achieved and translated into practice.	– Project progress and final reports – Participant and institutional surveys – Case studies of training framework adoption or collaborative initiatives
Efficiency Examines the optimal use of resources in delivering project outcomes.	– Analysis of project management and implementation data – Stakeholder satisfaction surveys – Interviews with trainers and partner institutions

Impact Captures structural, institutional, and behavioural changes resulting from the project.	– Follow-up interviews with beneficiaries and institutions – Policy or institutional documents reflecting changes – Records of adoption of tools, curricula, or guidelines
Sustainability Assesses the likelihood that project outputs will deliver benefits beyond project completion.	– Institutional adoption records (e.g., curricula, operational plans) – Follow-up surveys with institutions or stakeholders – Evidence of continued community or network engagement

3.2. Evaluation Plan

The evaluation plan builds on the five criteria outlined above (appropriateness, effectiveness, efficiency, impact, and sustainability) and translates them into a structured process for monitoring the project's outcome indicators. This process specifies clear evaluation questions, areas of focus, measurable indicators, targets, data sources, responsibilities, and timelines. In practice, the framework provides both a quantitative and qualitative basis for assessing progress, ensuring that outcomes are systematically measured against project objectives and stakeholder expectations. As illustrated in Tables 5-12, the evaluation process offers a practical template for organising outcome monitoring, linking evaluation criteria to operational activities and enabling evidence-based adjustments throughout the project cycle. All partners are involved in the M&E Frameworks under the leadership of responsible partners.

A more specific criterion has been formulated by us as a SMART indicator[5] and is reflected for each Outcome Indicator and is presented in Tables 5-12 and also in the corresponding appendix.

[5] Developed by Anastasia Tsavdaridou

Table 5. Structure of evaluation process based on outcome indicator OI-1.

Indicator	**OI-1. Improved level of knowledge and understanding** of the marine pollution preparedness and response institutional, societal, training, and scientific background in the BS countries
SMART Indicator	SI-1. Number of stakeholders demonstrating increased knowledge (≥20% improvement in post-training assessment scores) on MPPR aspects.
Baseline	5 responses per country – 20 on project level
Target	5/6 responses per country – 20/22 on project level
Data Collection	M 24
Deadline	M 28
Tool	Questionnaire (to reveal knowledge, understanding, pollution types, regional process; short semi-structured interview with key stakeholders, in person or by phone – questions to be elaborated and included in annex)
Responsible	BSNN ; IMEER NASU; INCDM – NIMRD
Corresponding deliverable	D1.1, D1.2, D1.3
Reporting	Short summary report

Table 6. Structure of evaluation process based on outcome indicator OI-2.

Indicator	OI-2. Stakeholders successfully co-develop and assess a comprehensive **training framework** on marine pollution preparedness and response
SMART Indicator	SI-2. Number of stakeholders actively participating in the co-development and evaluation of the MPPR training framework
Baseline	20 stakeholders involved in co-development and evaluation of the MPPR training framework
Target	30 stakeholders involved in co-development and evaluation of the MPPR training framework
Data Collection	M 27
Deadline	M 30
Tool	Workshops summary, observations, analysis
Responsible	INCDM – NIMRD
Corresponding deliverable	D2.1; D.3.3
Reporting	Short summary report

Table 7. Structure of evaluation process based on outcome indicator OI-3.

Indicator	OI-3. Stakeholders are **more knowledgeable** on the digital data and tools of marine pollution preparedness and response and the practical guidance on implementing best practices
SMART Indicator	SI-3. Number of stakeholders expressing the intention to use the Digital Toolkit
Baseline	20 stakeholders use/comment on the use of the Digital toolkit
Target	30 stakeholders use/comment on the use of the Digital toolkit
Data Collection	M 30
Deadline	M 36
Tool	Survey during the presentation of the toolkit; website visitor counter
Responsible	AUTH
Corresponding deliverable	D2.1
Reporting	Automatised counts on the website, which is visible all the time; Final report

Table 8. Structure of evaluation process based on outcome indicator OI-4.

Indicator	OI-4. Stakeholders offer support and **exchange experience** with each other on training/theoretical issues, methodology
SMART Indicator	SI-4. Number of cross-country or inter-institutional exchanges, meetings, or collaborative activities between stakeholders on MPPR training and methodology.
Baseline	10 cross-country or inter-institutional exchanges
Target	12 cross-country or inter-institutional exchanges
Data Collection	M 24
Deadline	M 28
Tool	Questions asked by project team members in short surveys (ex., how often stakeholders share experience? how often they meet? how often they communicate? what topics attract most significant interest?); interviews, partner reports on project events, deliverables
Responsible	All Project Partners
Corresponding deliverable	D2.1; D3.3
Reporting	D3.3

Table 9. Structure of evaluation process based on outcome indicator OI-5.

Indicator	OI-5. Stakeholders express **satisfaction with training programme**/events, digital tool
SMART Indicator	SI -5. Number of participants rating satisfaction ≥4 on a 5-point Likert scale for RESPONSE events.
Baseline	20 stakeholders rating satisfaction ≥4
Target	30 stakeholders rating satisfaction ≥4
Data Collection	M 25
Deadline	M 31
Tool	Mentimeter survey during workshops and pilot events; communication with stakeholders/key stakeholders, interviews in media, publications
Responsible	All Project Partners
Corresponding deliverable	D2.1, D2.2., D 2.3., D 2.4
Reporting	D3.3

Table 10. Structure of evaluation process based on outcome indicator OI-6.

Indicator	OI-6. Stakeholders **evaluate operational plans** and offer improvements for integration
SMART Indicator	SI-6. Number of recommendations (suggestions) received from stakeholders on operational plans.
Baseline	3 suggestions
Target	5 suggestions
Data Collection	M 27
Deadline	M 30
Tool	Suggestions provided via partner teams, in writing, communicated on behalf of institutions/organisations
Responsible	INCDM – NIMRD; BSNN
Corresponding deliverable	D 3.1, 3.2
Reporting	Short report and presentation on the project assembly/workshop (D3.3), other project meetings.

Table 11. Structure of evaluation process based on outcome indicator OI-7.

Indicator	OI-7. Stakeholder institutions **design and implement their training programmes** of marine pollution preparedness and response
SMART Indicator	SI -7 Number of stakeholders institutions implement their training programmes
Baseline	4 on project level
Target	5 on project level
Data Collection	M 32
Deadline	M 36
Tool	Programmes openly available, presented by stakeholders, reports/interviews, publications
Responsible	GMG/FoE-GE
Corresponding deliverable	D 3.3
Reporting	Presentation on the final project event

Table 12. Structure of evaluation process based on outcome indicator OI-8.

Indicator	OI-8. Stakeholders` suggestions formulate **policy recommendations** for improvement of preparedness and response and integration in further projects and activities
SMART Indicator	SI-8. Number of stakeholder that formulate policy recommendations
Baseline	3 suggestions on project level
Target	5 suggestions on project level
Data Collection	M 30
Deadline	M 36
Tool	Suggestions provided via partner teams, in writing, communicated on behalf of institutions/organisations, outlined in open sources, analyses etc.
Responsible	GMG/FoE-GE
Corresponding deliverable	D3.3
Reporting	Presentation on the final project event

The timeframe for M&E framework across all the outcome indicators is shown on the Figure 4.

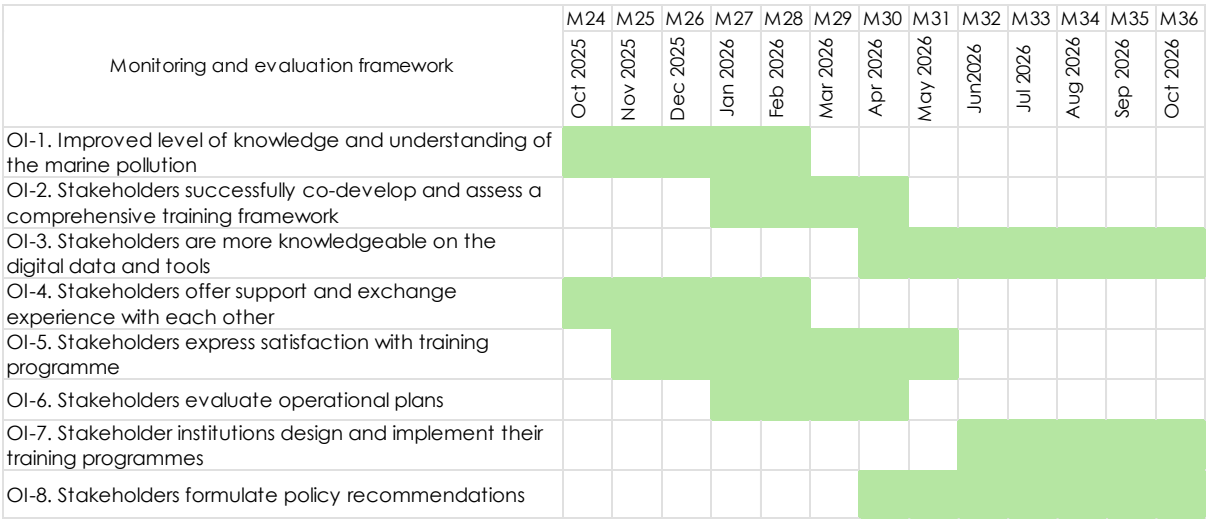


Fig.4. Gantt Chart showing the outcome indicators of RESPONSE M&E Framework with their time duration

3.3. Evidence to improve: Methods to Evidence and Measure Impacts

There are several recognised approaches[6] to demonstrate that an intervention has produced meaningful change:

1. Statistical approaches use quantitative data to identify patterns that link an intervention to its expected outcomes. Techniques such as before-and-after comparisons, correlation, regression analysis, and other statistical models can provide evidence that desired effects occur consistently following the delivery of a programme or service.
2. Experimental approaches compare outcomes between those who participate in an intervention (the "intervention group") and those who do not (the "control group"). The most rigorous form of this design is the randomised controlled trial (RCT), where participants are randomly assigned to groups. Differences in outcomes can then be attributed to the intervention or to chance with statistical confidence. While RCTs are considered highly robust, they can be costly and raise ethical issues when access to services must be withheld.
3. Case-based approaches examine and compare individual cases – such as people, groups, organisations, or locations – within or across programmes. By analysing similarities and differences, evaluators can identify plausible links between interventions and observed outcomes. This method acknowledges that

[6] Developing an Impact Measurement Framework. A short guide. Investment Impact Index. 2019. Renaicance Consultants CC. https://investmentimpactindex.org/wp-content/uploads/2020/05/III-A-short-guide-How-to-develop-an-impact-measurement-framework-Digital.pdf

social outcomes are typically influenced by multiple factors and that programme impacts must be interpreted within that complexity.

4. Theory-based approaches map and explain how and why an intervention produces change, drawing on observations from staff, evaluators, and stakeholders, alongside the perspectives of beneficiaries. Rather than relying on large datasets or control groups, this approach builds a detailed narrative of impact that shows how effects emerge in different contexts, populations, and stages of implementation.

Evidence collection in the M&E framework should not only track progress against indicators but also demonstrate how and why meaningful impacts have occurred. The framework combines various approaches mentioned above ensuring that both quantitative and qualitative evidence is captured. To operationalise this, Table 13 illustrates how evidence can be systematically collected, analysed, and assessed against impact indicators. The example provided uses Impact Indicator to demonstrate how such evidence can be recorded and interpreted.

Table 13. Workflow to measure and evidence impacts

Impact Indicator	Evidence Questions	Methods of Evidence Collection	Types of Data
II1. Number of pilot training modules recognised by involved organizations, professional associations or universities	Have pilot training modules been recognised?	Review accreditation records of universities/associations	Accreditation certificates, institutional letters
II2. Evidence stakeholders initiating approval processes for certified/licensed programmes in marine pollution	Are project-developed guidelines cited in institutional/national documents?	Document review of strategies, action plans, and reports	Citations, references in official documents
II3. References to project-developed guidelines or training content in strategic plans or national environmental programmes.	Has stakeholders` strategies been revised to align with EU directives or conventions?	Consultations, surveys with stakeholders	Amended acts, legal harmonisation reports
II4. Number of national or regional policies updated to explicitly include new or emerging types of marine pollution (e.g., microplastics, military-related pollutants).	Which jurisdictions have adopted the updated policies?	Stakeholder consultation (government agencies, NGOs, regional bodies) and public announcements	Meeting records, stakeholder interviews, press releases
II5. Instances of national legislation aligned or harmonised with EU directives and international conventions on marine pollution.	Has national legislation been revised to align with EU directives or conventions?	Legislative review, legal analysis, policy tracking	Amended acts, legal harmonisation reports
II6. Project-developed operational guidelines by national agencies or regional	Have agencies/organisations adopted project	Review of official operating procedures;	Training manuals; guidelines procedures

organisations as a reference for preparedness and response.	guidelines?	interviews with agency staff	
II7. Demonstrable impact of trained professionals on national or regional resilience – e.g., faster response to emergencies, improved monitoring, or reduced pollution damages.	Have trained professionals improved response/resilience?	Case studies, after-action reviews, performance data	Incident reports, monitoring results, testimonials

The essence of the method for improving Monitoring and Evaluation (M&E) presented in the table is to establish a «structured, evidence-based workflow» for «measuring and evidencing the impacts» of a project, particularly in the context of marine pollution mitigation and capacity building.

The workflow moves beyond simply tracking activities and outputs to focus on substantive changes in institutional practices, policy, and observable resilience.

It is also natural that the numerical indicators of the basic and desired levels can be adjusted in the process of refining the Monitoring and Evaluation system.

Part IV. Management plan for data collected in M&E framework

The data collected for the purpose of M&E framework corresponds to data management plan of the project and is essential to ensure that all M&E data are handled securely, ethically, and in full compliance with EU legislation. As an EU-funded project under CINEA, the plan must follow the General Data Protection Regulation[7], which defines requirements for lawfulness, fairness, transparency, data minimisation, storage limitation, integrity, confidentiality, and accountability. For processing operations that could present higher privacy risks, a Data Protection Impact Assessment (DPIA), as outlined in Article 35 of the GDPR, will be applied to ensure systematic identification and mitigation of risks[8]. All personal and sensitive M&E data will be pseudonymised or anonymised where possible, securely encrypted, and access restricted to authorised project staff only.

All evaluation data will be stored and managed using the project's Digital Toolkit, a secure, cloud-based repository compliant with EU data handling standards and CINEA's data management requirements. The plan is aligned with the Horizon Europe Programme Guidelines on Data Management Plans, which require data to follow the FAIR principles (Findable, Accessible, Interoperable, Reusable)[9]. During implementation, data backups, access controls, and version tracking will guarantee integrity and continuity. The DMP will also cover the post-project period, ensuring that aggregated datasets, evaluation results, and impact indicators are retained for at least five years after project closure, in line with EU archival and transparency rules. After this period, any personal or confidential information will be securely anonymised or deleted in accordance with GDPR's storage limitation principle.

4.1 Data Collection Plan

The following section outlines the data collection plan within the Monitoring and Evaluation (M&E) framework. To ensure consistency and transparency, a structured approach is applied across all data collection activities. This structure considers the purpose, focus, sampling, implementation, ethical considerations, and areas requiring development for each tool. The table 14 below provides an example of how this framework can be organised and used as a reference when designing and implementing data collection activities throughout the project.

[7] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) https://gdpr-info.eu/

[8] Rules for the protection of personal data inside and outside the EU https://commission.europa.eu/law/law-topic/data-protection_en?utm_source=chatgpt.com

[9] https://www.go-fair.org/fair-principles/

Table 14. The workflow to collect the data for the M&E framework

Data Collection Tools	Surveys (online / paper)	Interviews / Focus Groups	Document Review	Case Studies
Purpose	Capture stakeholder feedback on training relevance, confidence, and satisfaction	In-depth insights into integration of training into institutional practice and policy	Verify institutional uptake, accreditation, and new collaborations	Provide narrative evidence of joint initiatives, preparedness actions, or regional collaborations
Focus/ outcomes	OI-1, OI-2, OI-3	OI-6, OI-8	OI-5, OI-6	OI-4, OI-7, OI-8
Sampling	Random and purposive samples from training participants and institutions	Selected institutional representatives, trainers, policymakers, community stakeholders	Not applicable (all available documents included)	Purposive selection of 3–5 illustrative cases
Implementation	Administered post-training and at mid-/end-line project phases	Semi-structured interviews, focus groups with facilitators	Continuous collection, cross-check with external records	Compiled by WP leaders with stakeholder input
Potential Ethical Issues	Protection of personal data (GDPR), informed consent, anonymity	Confidentiality, potential bias in responses	Sensitivity of unpublished documents	Need for consent to use institutional or personal stories
Requiring Development	Standardised questionnaire formats, multilingual versions	Interview protocols, training for moderators	Development of a central repository in Digital Toolkit	Template for documenting case studies

4.2 DATA BASE STRUCTURE

The following table provides a structured approach for organizing and managing Monitoring and Evaluation (M&E) data for this project. Each column represents a key component in the data collection and analysis process, ensuring consistency and clarity for all partners responsible for tracking project outcomes. The table serves as a practical guideline to support systematic recording, analysis, and reporting of project performance:

M&E Data Sources: Specifies the type of monitoring method, based on which data will be collected, such as reports, surveys, interviews, feedback, etc.

Who is Responsible: Identifies the partner or team responsible for collecting, verifying, and entering the data.

Time of M&E: Indicates when the data should be collected (e.g., quarterly, annually, or at specific project milestones).

Period Assessed: Defines the time frame the data represents, such as the month, quarter, or year being evaluated.

Data Analysis Type: Describes how the data will be processed or presented, whether through graphics, narrative text, or statistical summaries.

Database location: Specifies the location or system where the data will be stored and managed for ease of access and reporting.

Short Reports: Provides short summary of the data collected and main results.

Outcome Indicator Measure: Summarizes key findings and links data to the specific outcome indicators being monitored, supporting timely and evidence-based decision-making.

This framework ensures that all partners follow a consistent method for data collection and reporting, enabling accurate assessment of project outcomes and facilitating effective communication of results.

Table 15. Data base structure

M&E Data Sources	Who is Responsible	Time of M&E	Period assessed	Data Analysis type (figures; text; statistics)	Database	Short reports	Outcome indicator measure

This database structure can be used not only to systematically collect and store data for monitoring and evaluating project outcome indicators during the project implementation, but also to support the assessment of short-, medium-, and long-term impacts after the project has concluded. Data for outcomes and impacts should be collected and stored separately to clearly track the progress of project results and the realization of impacts over time. To ensure effective post-project evaluation, additional discussions with the leading partner are required to clarify responsibilities and to develop a clear strategy for conducting this work. This will help define roles, methods, and timelines for capturing and analyzing longer-term impacts, ensuring the sustainability and usefulness of the evaluation beyond the project's lifetime.

4.3 Potential Ethical Issues

Potential ethical issues may arise during data collection because tools such as surveys, interviews, and digital monitoring platforms often involve gathering personal opinions, sensitive information, or identifiable data. Even when the purpose is strictly professional or technical, participants may feel exposed or misrepresented if confidentiality is not guaranteed. Past evaluations and research projects have shown that participants sometimes hesitate to share openly due to fear of repercussions or misuse of their data, while digital systems carry additional risks of unauthorised access or accidental disclosure. Although not always frequent, such challenges are well-recognised in monitoring and evaluation practice, which is why ethical safeguards—such as informed consent, anonymisation, and secure storage—are considered essential. These issues are addressed under the European Commission's Ethics Guidelines for EU-funded research and innovation projects, which require compliance with data protection legislation (notably the GDPR) and ethical review standards to safeguard participants' rights and dignity.

Table 16. Potential Ethical Issues

Data Collection Tools	Potential Ethical Issues
Surveys / Questionnaires	Risk of collecting personally identifiable information (PII) without explicit consent; respondents may feel pressured to provide socially desirable answers rather than honest feedback.
Interviews / Focus Groups	Potential disclosure of sensitive information; difficulty ensuring anonymity in group discussions; imbalance of power between interviewer and participant influencing responses.
Digital Monitoring Tools (e.g., online platforms, feedback apps)	Risk of privacy breaches, misuse of digital data, or exclusion of participants with limited access to technology.

4.4 Risks of M&E Framework

Implementing a M&E framework is essential for tracking project outcomes and impacts, but it carries several potential risks that must be carefully managed. These risks relate to data quality, regional differences, geopolitical factors, stakeholder engagement, and institutional and financial challenges.

Risk 1. Quality of Information. A major risk is the reliability of the information collected. Subjective responses may reflect personal opinions or biases rather than factual outcomes. Respondents may also overstate performance to show better results, and statistical errors during data collection or analysis can further reduce accuracy. Incomplete data, missing responses, or inconsistent reporting timelines can also compromise the robustness of evaluation findings.

To mitigate: Clear data collection guidelines, training for responsible partners, and quality control procedures – including data verification and cross-checking – are essential.

Risk 2. Risks related to regional background

Regional differences can affect the comparability and consistency of collected data. Cultural norms may influence how respondents answer surveys or participate in interviews, with some reluctant to provide negative feedback. Differences in environmental legislation and institutional frameworks can also affect reporting standards and the definition of outcome indicators.

To mitigate: Harmonizing data collection methods and providing tailored guidance to partners in different regions is crucial to address these challenges.

3. Risks Related to Military Aggression and Geopolitical Factors

Military conflicts or geopolitical tensions can disrupt access to reliable information. Restrictions on movement, limited communication, or lack of cooperation from local institutions may prevent data collection in certain regions, resulting in gaps.

To mitigate: Contingency planning, including alternative or remote data collection methods and the use of secondary data, is necessary to ensure continuity of M&E activities in such contexts.

4. Low Response from Stakeholders

Low participation by stakeholders can compromise the representativeness and completeness of the data. Reasons for low response include lack of time, insufficient understanding of M&E processes, or low perceived relevance of the project.

To mitigate: Clear communication of the purpose and benefits of M&E, stakeholder engagement early in the project, and simplified reporting processes can help increase participation. Follow-ups, reminders, and incentives may also improve response rates.

5. Institutional and Financial Risks

Unclear management responsibilities after the project may affect the sustainability of results and the ability to conduct post-project evaluations. Financial limitations can also hinder comprehensive M&E activities, including post-project assessment of short-, medium-, and long-term impacts.

To mitigate: Ensuring clear roles, institutional arrangements, and adequate funding for both project-period monitoring and post-project evaluation is essential for long-term success.

In summary, M&E implementation involves risks related to data quality, regional and cultural differences, geopolitical challenges, stakeholder engagement, and institutional and financial constraints. Recognizing and addressing these risks through clear procedures, guidance, and contingency planning is critical to ensuring credible, accurate, and sustainable evaluation results that support evidence-based decision-making and long-term project impacts.

Conclusion

The Monitoring and Evaluation (M&E) framework developed for the RESPONSE project provides a comprehensive and structured approach to tracking project performance and assessing outcomes and impacts. The framework integrates both experimental and non-experimental methodologies, ensuring that the evaluation captures robust and reliable evidence across multiple dimensions. By defining clear outcomes and impacts, and developing seven outcome indicators, the framework offers practical tools to measure project success and demonstrate results effectively.

A particular emphasis has been placed on assessing impacts beyond immediate project outcomes. Short-, medium-, and long-term impact indicators have been proposed to capture the sustainability and broader significance of the project's interventions over time. Feedback from regional stakeholder meetings has been incorporated to ensure that the indicators are relevant, practical, and aligned with the priorities and expectations of the project's partners.

To support systematic data collection and analysis, a clear and straightforward database structure has been developed. This structure ensures both information security and data reliability while enabling partners to track outcomes and impacts effectively. Additionally, potential risks to the M&E process – including data quality, regional differences, stakeholder engagement, and institutional and financial constraints – have been identified, along with mitigation strategies to address them.

The basis of the proposed indicator system is made up of the following 8 indicators:

- Improved level of knowledge and understanding of the marine pollution preparedness and response institutional, societal, training, and scientific background in the Black Sea countries;
- Stakeholders successfully co-develop and assess a comprehensive training framework on marine pollution preparedness and response;
- stakeholders are more knowledgeable on the digital data and tools of MPPR and the practical guidance on implementing best practices;
- Stakeholders offer support and exchange experience with each other on training/theoretical issues, methodology, etc;
- Stakeholders express satisfaction with training programme/ events, digital tool;
- Stakeholders evaluate operational plans and offer improvements for integration;
- Stakeholder institutions design and implement their training programmes of marine pollution preparedness and response;
- Stakeholders formulate policy recommendations for improvement of preparedness and response and integration in further projects and activities.

These indicators relates to improving the knowledge and skills of stakeholders. The goal is to ensure participants gain a better understanding of the existing framework for marine pollution response, including its institutional, societal, training, and scientific aspects. This includes successful co-development of a comprehensive training framework and making stakeholders more knowledgeable about digital data and tools, along with best practices.

These indicators collectively demonstrate that the project is effectively building the capacity of individuals and organizations to respond to marine pollution incidents.

Another key role of these indicators is to show that the project has fostered a sustainable network of stakeholders. By measuring if stakeholders offer support and exchange experience with each other, the project can assess whether it has created a community of practice that will continue to operate after the project's completion. This collaboration ensures that knowledge and expertise are shared and updated continuously, which is crucial for long-term sustainability. To complement immediate indicators, we also suggested seven impact indicators (II) for measurement of longer impact (up to 10 years) of the project.

Finally, these indicators measure the practical and policy-level impact of the project. They assess whether stakeholders are not only more knowledgeable but are also actively evaluating operational plans, offering improvements, and formulating policy recommendations. The ultimate goal is for stakeholder institutions to design and implement their own training programs based on the project's framework. This demonstrates a transition from project-driven activities to self-sustaining practices, showing that the project's outcomes have been fully integrated into the ongoing work of the participating institutions and will have a lasting effect on regional marine pollution preparedness.

Overall, M&E framework provides a solid foundation for evidence-based decision-making, adaptive project management, and transparent reporting of results. By combining rigorous methodologies, stakeholder engagement, and practical data management tools, it ensures that the RESPONSE project can measure its success, demonstrate its impact, and inform future initiatives in a credible and sustainable manner.

Annex 1. Monitoring and Evaluation Framework Tools

Annex 1A. Tool to assess the Outcome: Marine pollution preparedness and response institutional, societal, training, and scientific background identified and understood by stakeholders

Outcome indicator OI-1: Improved level of knowledge and understanding of the marine pollution preparedness and response institutional, societal, training, and scientific background in the BS countries.

Integrated Stakeholder Questionnaire Draft on Marine Environmental Management, Safety, and Training

1. What are your institution's primary responsibilities related to the marine environment and marine pollution? Please specify your role in routine monitoring, emergency response, and civil defence.
2. Over the past two years, what significant transformations or challenges have your institution faced in its environmental management system or operational procedures, especially concerning marine pollution preparedness?
3. Does your institution provide or receive training related to marine pollution preparedness and response? If so, what specific pollution sources and aspects (e.g., technical, legal, environmental, military) are addressed?
4. Has your training curriculum been updated in the past year to include new or emerging threats, such as pollution from armed conflicts? If so, please describe how.
5. Does your training program incorporate specific modules on safety provisions, risk assessment, and forecasting models for marine pollution incidents?
6. Has your institution been involved in real-life emergency situations related to marine pollution? Please describe one of these experiences, the key challenges faced, and how your training prepared you.
7. How does your institution integrate scientific research and monitoring data into its training programs and operational activities? Please specify the sources of this data.
8. Is data and information from your training and monitoring activities openly available to the public or to other institutions? Please describe the procedure for accessing this information.
9. How has your institution's level of collaboration with other regional, national, and international partners changed over the past two years in the context of marine pollution and emergency response?
10. Over the past year, have you adopted any new technologies or tools (e.g., IT support, advanced equipment) to enhance your organization's capacity for marine pollution response?

11. In your opinion, what are the three most significant challenges currently facing marine pollution preparedness and response in the Black Sea region?

12. What key action or strategic initiative would you recommend to improve the overall effectiveness of marine pollution preparedness and response in the region over the next five years?

Annex 1B: Tool to assess Outcome: Effective and comprehensive framework of concepts for training programmes on MPPR co-created and operationalized by stakeholders and project

Outcome indicator OI-3: stakeholders are more knowledgeable on the digital tool of MPPR and the practical guidance on implementing best practices

Stakeholder Questionnaire draft of Effectiveness of RESPONCE Digital tool

1. How effective is the digital tool in providing free access to a comprehensive range of products like guides, training materials, and risk assessment reports?
    - (Scale: 1-5, where 1 = Not effective, 5 = Very effective)
    - Comments:
2. How well does the tool assist with mapping and interpreting collected data by providing full access to datasets and forecasting products (e.g., maps, raw data, graphs)?
    - (Scale: 1-5, where 1 = Poorly, 5 = Excellently)
    - Comments:
3. How effectively does the tool provide basic to advanced information on marine pollution, including Environmental Impact Assessment protocols and monitoring guides, to help users update their knowledge?
    - (Scale: 1-5, where 1 = Ineffectively, 5 = Very effectively)
    - Comments:
4. To what extent does the tool serve as a citizen-science-policy interface that facilitates effective dialogue and links with other databases for knowledge exchange?
    - (Scale: 1-5, where 1 = Not at all, 5 = To a great extent)
    - Comments:
5. How well does the tool translate scientific findings into simple recommendations for practical environmental protection and cross-border mitigation, especially for emergent armed conflict incidents?
    - (Scale: 1-5, where 1 = Poorly, 5 = Excellently)
    - Comments:
6. How useful is the tool's forum in stimulating mutual learning and knowledge exchange among key stakeholders?
    - (Scale: 1-5, where 1 = Not useful, 5 = Very useful)
    - Comments:
7. Considering all its features, what is your overall assessment of the tool's value in improving joint, standardized, and transparent data sharing for effective cross-border monitoring and decision-making?
    - (Scale: 1-5, where 1 = Low value, 5 = Exceptional value)
    - Comments:

Annex 1C. Tool to assess Outcome: Stakeholders enabled to support the regional strategies for MPPR by co-developing, co-applying, co-evaluating operational training plans for MPPR

Outcome indicator OI-4. Stakeholders offer support and exchange experience with each other on training/theoretical issues, methodology, etc.

Example of the **topics for discussions** between stakeholders and Project Partners

Topics for discussions	Brief description
Data Sharing and Integration of Scientific Findings	This topic focuses on establishing a common platform for sharing real-time data on marine pollution. It's crucial to discuss how to integrate scientific findings—such as data on eutrophication, plastic waste concentrations, and toxic hotspots—into a format that is accessible and useful for policymakers, businesses, and civil society. This conversation should cover the standardization of monitoring methods and the establishment of a regional data hub to inform decision-making.
Harmonizing Regional Action Plans, Legal Frameworks and Education Tools	Discussions should address the current patchwork of national and regional action plans. Stakeholders need to find ways to harmonize their legal and institutional frameworks to create a unified approach to pollution control. This includes aligning policies for wastewater treatment, land-based pollution, and waste management to ensure consistent standards across all coastal countries. A key goal is to strengthen the implementation of existing conventions, such as the Bucharest Convention.
Capacity Building and Training for First Responders	A critical topic is developing a comprehensive and coordinated regional training program. Stakeholders should discuss the needs of first responders, port authorities, and environmental agencies in dealing with pollution incidents, such as oil spills and chemical leaks. The focus should be on practical training, joint emergency drills, and the creation of a regional network of trained experts to ensure a rapid and effective response to any disaster.
Integrating the Blue Economy with Environmental Protection	This topic links economic development with environmental sustainability. Stakeholders need to discuss how to promote a "Blue Economy" that supports sustainable sectors like ecotourism, responsible fisheries, and renewable energy, while minimizing their environmental footprint. The conversation should focus on creating incentives for businesses to adopt eco-friendly practices and using scientific data to guide sustainable investment decisions.
Public Awareness, Education, and Environmental Cultural Integration	For any action plan to succeed, it must have public support. This discussion should cover strategies for raising awareness among the general population about the importance of the Black Sea's ecosystem. Stakeholders can explore educational campaigns in schools, public outreach programs, and initiatives that integrate the findings about marine pollution into the cultural narratives and traditions of coastal communities, fostering a sense of shared responsibility.

Outcome indicator OI-5. Stakeholders express satisfaction with training programme/ events, digital tool

Evaluation Form Template - training programme

Please indicate your impressions of the training programme listed below.
(5 – Excellent; 0 - Very poor)

	5	4	3	1	0
1. Overall, my satisfaction with training programme was..	❍	❍	❍	❍	❍
2. The relevance of the training programme to my current work was...	❍	❍	❍	❍	❍
3. The usefulness of the exchange on marine pollution training programs is...	❍	❍	❍	❍	❍
4. The benefit of training programme and exchanging information in an international context was…	❍	❍	❍	❍	❍
5. The materials of training programme were pertinent and useful.	❍	❍	❍	❍	❍
6. The trainer was knowledgeable.	❍	❍	❍	❍	❍
7. The duration of the training programme was...	❍	❍	❍	❍	❍
8. The training programme met the training objectives.	❍	❍	❍	❍	❍
9. Class participation and interaction were encouraged.	❍	❍	❍	❍	❍

10. What could be improved in training programme?

11. How do you rate the training programme overall?

Excellent	Good	Average	Poor	Very poor
❍	❍	❍	❍	❍

12. Other comments?

Evaluation Form Template - event

I am a: ❍ Area Supervisor ❍ Data collector ❍ Data entry personnel

Please indicate your impressions of the items listed below.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The training met my expectations.	❍	❍	❍	❍	❍
2. I will be able to apply the knowledge learned.	❍	❍	❍	❍	❍
3. The training objectives for each topic were identified and followed.	❍	❍	❍	❍	❍
4. The content was organized and easy to follow.	❍	❍	❍	❍	❍
5. The materials distributed were pertinent and useful.	❍	❍	❍	❍	❍
6. The trainer was knowledgeable.	❍	❍	❍	❍	❍
7. The quality of instruction was good.	❍	❍	❍	❍	❍
8. The trainer met the training objectives.	❍	❍	❍	❍	❍
9. Class participation and interaction were encouraged.	❍	❍	❍	❍	❍
10. Adequate time was provided for questions and discussion.	❍	❍	❍	❍	❍

11. How do you rate the training overall?

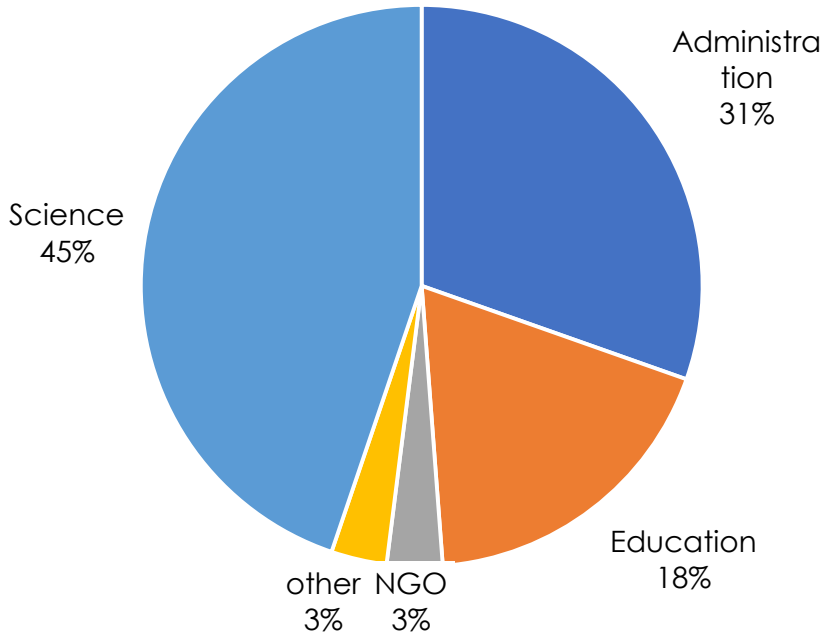
Excellent (5)	Good (4)	Average (3)	Poor (2)	Very poor (1)
❍	❍	❍	❍	❍

12. What aspects of the training could be improved?

- ☐ exchange of data and information of new technologies for monitoring and response
- ☐ capacity building on regional marine pollution preparedness and response
- ☐ participation in joint emergency response exercises
- ☐ capacity building on pollution from armed conflicts
- ☐ coordination for regional networking between institutions
- ☐ Other _____

Annex 2. Stakeholders feedback on M&E Framework

The survey of **monitoring and evaluation framework** from stakeholders who participated at the Regional workshop "Developing operational plans for marine pollution training programs" that was held on 11 September 2025. It total 76 participants were involved with the most representative group from scientific community (45%). Administration and educational sectors were also well performed, as per 31 % and 18% correspondingly.

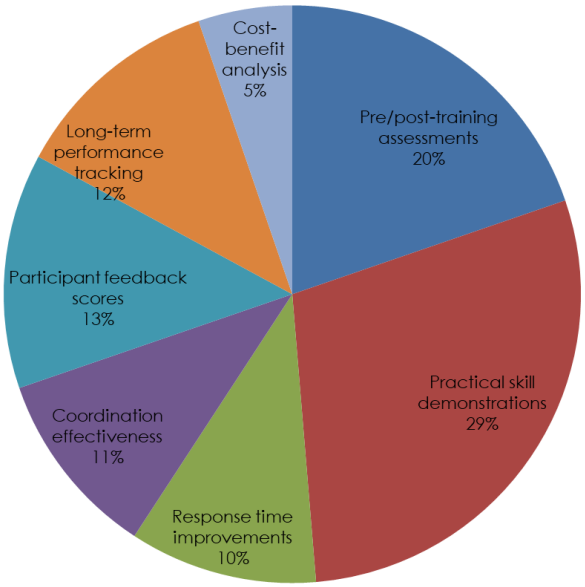


The questions included the following:

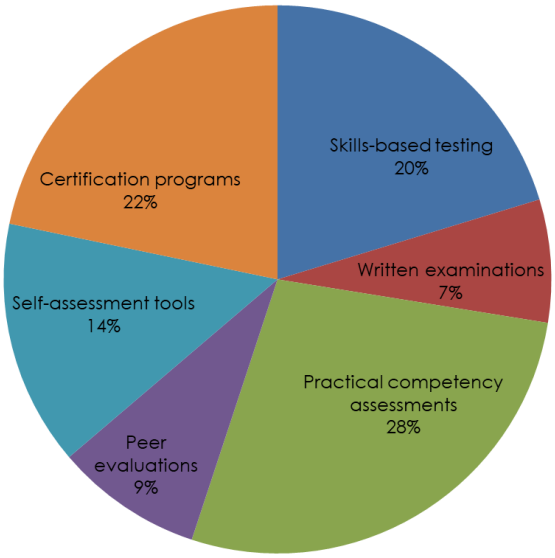
- How will you measure the success of the training program?
- Select the most appropriate types of the assessment of the trainees for your organisation: Skills-based testing; Written examinations; Practical competency assessments; Peer evaluations; Self-assessment tools; Certification programs;
- How will you measure the potential to implementation of training program in your region;
- Which of the following indicators do you consider most effective for assessing the impact of a training program?
- What is probability that the training modules or operational guidelines will be introduced to at your institution?
- How likely you would start joint initiative on implementation of new trainings with other partners in the regions?
- What type of initiative is it likely that your organisation introduces?
- How likely your organisation will become a member of the regional network for cross-border exchanges or collaborations?

On the figures below we provide the responses from the stakeholders.

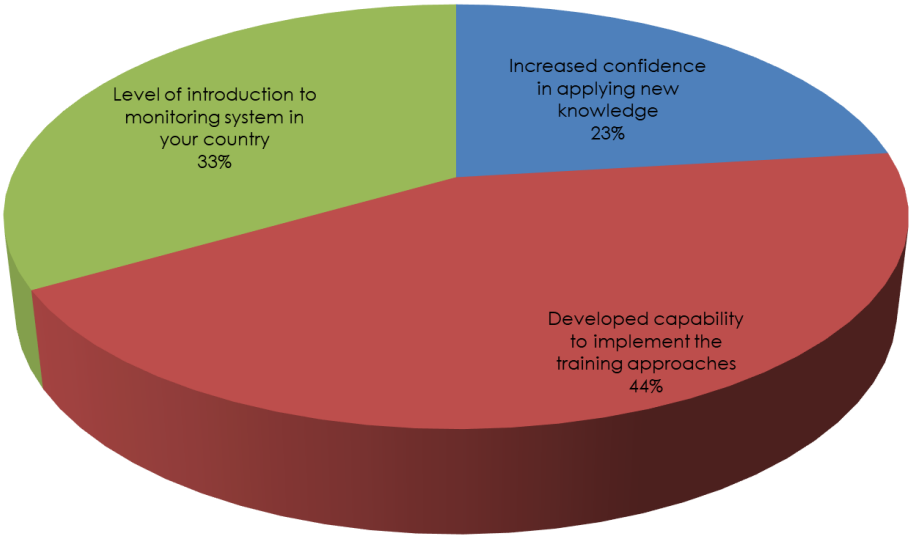
How will you measure the success of the training program?



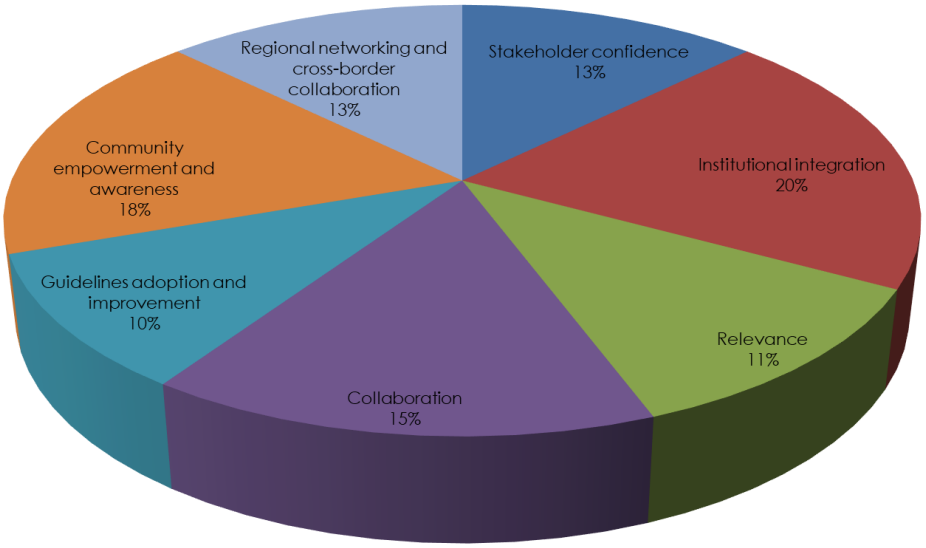
Select the most appropriate types of the assessment of the trainees for your organisation

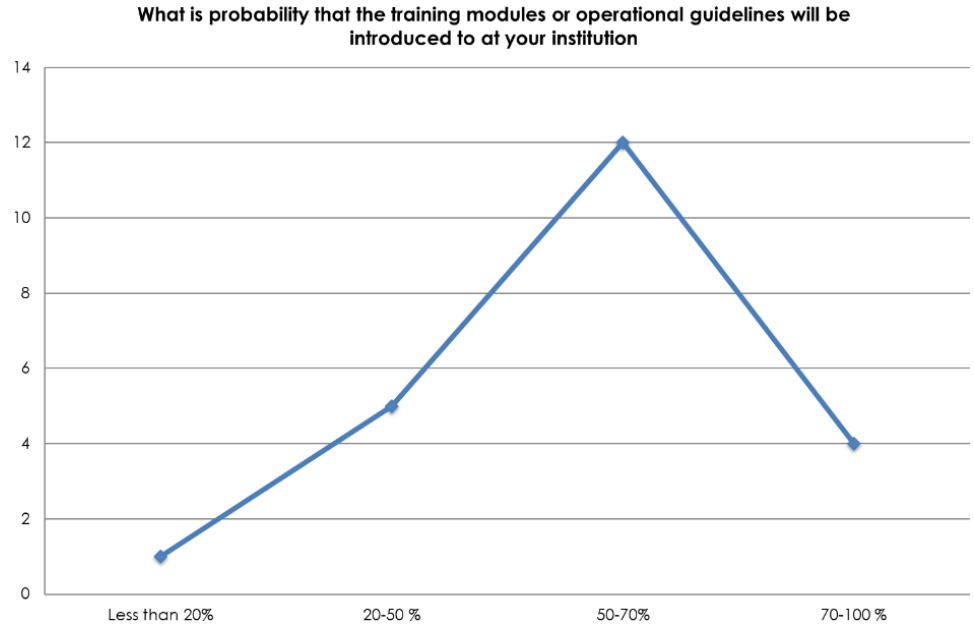


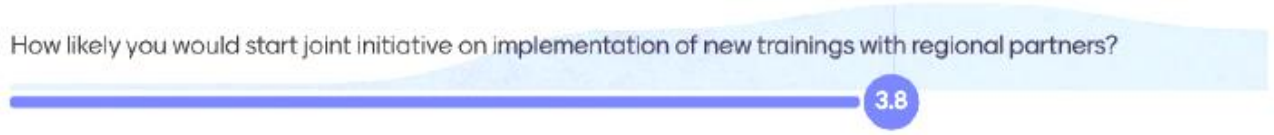
How will you measure the potential to implementation of training program in your region:



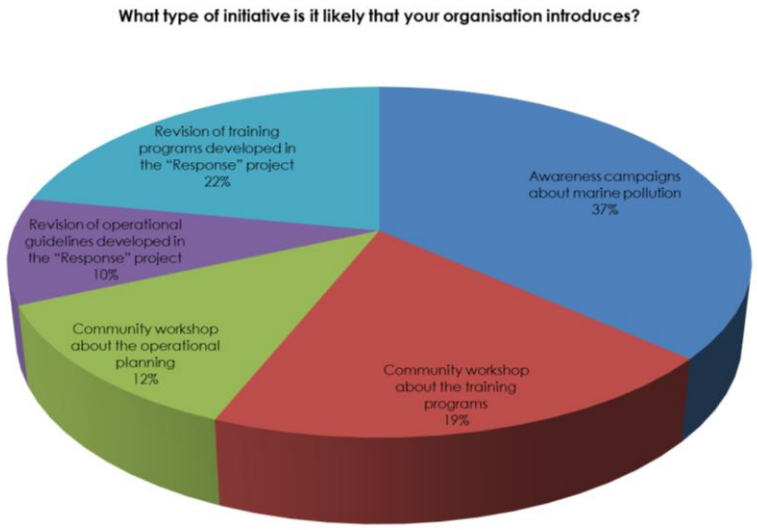
Which of the following indicators do you consider most effective for assessing the impact of a training program?

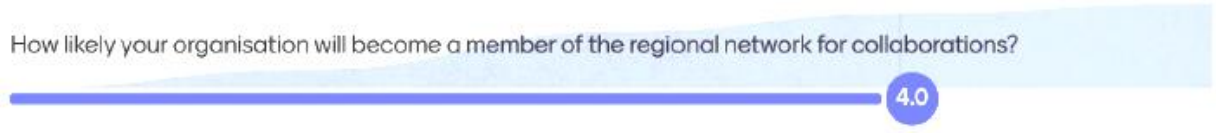






3,8 points out of 5 possible





4 points out of 5 possible

Annex 3. Monitoring and Evaluation Framework Matrix

Overarching Objective	Outcome	Monitoring (Outcome) indicator	SMART Indicator Baseline/target	Information collection methods	When and by whom	Reporting and use
IDENTIFY and UNDERSTAND the institutional and societal gaps and needs for effective, integrated, transdisciplinary and multidisciplinary marine pollution training systems	Marine pollution preparedness and response institutional, societal, training, and scientific background identified and understood by stakeholders	OI-1: Improved level of knowledge and understanding of the marine pollution preparedness and response institutional, societal, training, and scientific background in the BS countries	Number of stakeholders demonstrating increased knowledge (≥20% improvement in post-training assessment scores) on MPPR aspects. Stakeholders interviewed (20/22 project level) show improved level of knowledge (1 - 5 scale)	Questionnaire, interview/s, project records	M 28; BSNN ; IMEER NASU; INCDM – NIMRD; Project team	Internal reporting m 28, Final report
DEVELOP effective training programs by assembling, integrating, and improving the most promising approaches and results	Effective and comprehensive framework of concepts for training programmes on MPPR co-created and operationalized by stakeholders and project	OI-2. Stakeholders successfully co-develop and assess a comprehensive training framework on marine pollution preparedness and response	Number of stakeholders actively participating in the co-development and evaluation of the MPPR training framework 20/30 stakeholders involved in co-development and evaluation of the MPPR training framework	Workshops summary, observations, analysis	M 30; INCDM – NIMRD; Project team	Internal reporting m 30, Final report

		OI-3. Stakeholders are more knowledgeable on the digital data and tools of marine pollution preparedness and response and the practical guidance on implementing best practices	Number of stakeholders expressing the intention to use the Digital Toolkit 20/30 stakeholders use/comment on the use of the Digital toolkit	Survey during the presentation of the toolkit; website visitor counter	M 30; AUTH; Project team	Internal reporting m 30, Final report
SUPPORT implementation of the EU and Regional Strategies, by developing operational guidelines for effective application, updating, monitoring and management of training programs on marine pollution.	Stakeholders enabled to support the regional strategies for MPPR by co-developing, co-applying, co-evaluating operational training plans for MPPR	OI-4. Stakeholders offer support and exchange experience with each other on training/theoretical issues, methodology	Number of cross-country or inter-institutional exchanges, meetings, or collaborative activities between stakeholders on MPPR training and methodology. 10/12 cross-country or inter-institutional exchanges	Questions asked by project team members in short surveys (ex., how often stakeholders share experience? how often they meet? how often they communicate? what topics attract most significant interest?); interviews, partner reports on project events, deliverables	M 28; Project team	Internal reporting m 28, D. 3.3; Final report
		OI-5. Stakeholders express satisfaction with training programme/events, digital tool	Number of participants rating satisfaction ≥4 on a 5-point Likert scale for RESPONSE events. 20/30 stakeholders rating satisfaction ≥4	Mentimeter survey during workshop; communication with stakeholders/key stakeholders, interviews in media, publications	M 31; Project team	Internal reporting m 31, D3.3
		OI-6. Stakeholders evaluate operational plans and offer	Number of recommendations (suggestions)	Suggestions provided via partner teams, in writing, communicated	M 30; INCDM – NIMRD;	Internal reporting m 30,

		improvements for integration	received from stakeholders on operational plans. 3/5 suggestions	on behalf of institutions/organisations	BSNN; Project team	D3.3; Final report
EMPOWER marine pollution training, monitoring, and mitigation by involving, inspiring, and influencing stakeholders	Key stakeholders actively involved in regional activities for engaging institutions in action plans on MPPR training and networking and integrating scientific findings about the Black Sea into the wider socio-economic, environmental and cultural concerns	OI-7. Stakeholder institutions design and implement their training programmes of marine pollution preparedness and response	Number of stakeholders institutions implement their training programmes 4/5 stakeholders	Programmes openly available, presented by stakeholders, reports/interviews, publications	M 36; GMG/FoE-GE; Project team	Internal reporting m 36; D.3.3; Final report
		OI-8. Stakeholders formulate policy recommendations for improvement of preparedness and response and integration in further projects and activities	Number of stakeholder that formulate policy recommendations 3/5 suggestions on project level	Suggestions provided via partner teams, in writing, communicated on behalf of institutions/organisations, outlined in open sources, analyses etc	M 36; GMG/FoE-GE; Project team	Internal reporting m 36; D.3.3; Final report
Groups of activities/Overarching Objectives	Related Specific objective	Achievement indicator	Baseline/target values	Information collection methods	When and by whom	Reporting and use
OO1-GA1	Specific objective 1 - Map the legislative, institutional and operational context established across BS	SAI 1.1 Organizations analysed in terms of needs, institutional structure and training capacity	20/30	Observations, quotations from interviews, responses to online questionnaire	M 12, M30 by national coordinators and staff, responsible	Include in mid-term and annual

	countries				partner team	progress reports.
OO1-GA1	Specific objective 1 - Map the legislative, institutional and operational context established across BS countries	SAI 1.2 Number of most important/influential stakeholders in decision-making response activities	10/15	Observations, quotations from interviews, responses to online questionnaire	M 12, M30 by national coordinators and staff, responsible partner team	Include in mid-term and annual progress reports.
OO1-GA1	Specific objective 2 - Identify and assess current training plans and curricula, gaps and detect good practices and success stories	SAI 2.1 Number of current training plans and curricula	5/15	Observations, quotations from interviews, responses to online questionnaire	M 12, M30 by national coordinators and staff, responsible partner team	Include in mid-term and annual progress reports.
OO1-GA1	Specific objective 2 - Identify and assess current training plans and curricula, gaps and detect good practices and success stories	SAI 2.2 Number of case studies of good practices in training courses in national stakeholders	3/5	Observations, quotations from interviews, responses to online questionnaire	M 12, M30 by national coordinators and staff, responsible partner team	Include in mid-term and annual progress reports.
OO1-GA1	Specific objective 3 - Identify and evaluate types and impacts of marine pollution, including those from armed-conflicts, and recognize tools that are being used to address these impacts	SAI 3.1 I. Number of national reports on types of marine pollution in the BS	5/5	Observations, quotations from interviews, responses to online questionnaire	M 12, M30 by national coordinators and staff, responsible partner team	Include in mid-term and annual progress reports.
OO1-GA1	Specific objective 3 - Identify and evaluate	SAI 3.2. Number of emergent types of	1/5	Observations, quotations from	M 12, M30 by national	Include in mid-

	types and impacts of marine pollution, including those from armed-conflicts, and recognize tools that are being used to address these impacts	pollution linked to armed conflicts		interviews, responses to online questionnaire	coordinators and staff, responsible partner team	term and annual progress reports.
OO1-GA1	Specific objective 3 - Identify and evaluate types and impacts of marine pollution, including those from armed-conflicts, and recognize tools that are being used to address these impacts	SAI 3.3 Catalogue of tools to respond to their impact	3/6	Observations, quotations from interviews, responses to online questionnaire	M 12, M30 by national coordinators and staff, responsible partner team	Include in mid-term and annual progress reports.
OO2-GA2	Specific objective 4 - Co-create with identified stakeholders training curricula that enable active and effective responses to pollution and environmental safety challenges	SAI 4.1 Number of participants in the workshops	60/120	training reports	M18, PPs	Include in mid-term and annual progress reports.
OO2-GA2	Specific objective 4 - Co-create with identified stakeholders training curricula that enable active and effective responses to pollution and environmental	SAI 4.2 Number of co-created training curricula	2/5	training reports	M18, PPs	Include in mid-term and annual progress reports.

	safety challenges					
OO2-GA2	Specific objective 5 - Develop and apply an integrated framework for effectively identifying, monitoring and assessing the performance of existing and new training curricula	SAI 5.1 Monitoring and evaluation framework	1/1	Framework report	M24, M&E Team/PPs	Include in mid-term and annual progress reports.
OO2-GA2	Specific objective 5 - Develop and apply an integrated framework for effectively identifying, monitoring and assessing the performance of existing and new training curricula	SAI 5.2. III Survey on key stakeholders in Bulgaria on the improvement of the Monitoring and Evaluation framework	1/1 No of stakeholders 20/20	Personal communication, interviews, discussions.	M30, M&E Team/PPs	Internal reporting m 30, Final report
OO2-GA2	Specific objective 6 - Define requirements and specifications for training on marine pollution and share background data, tools and information on risk monitoring and mitigation and provide an adapted digital toolset, developed as a	SAI 6.1 Digital Toolkit	1/1	Survey of stakeholder impressions from use of the Digital Toolkit (numbers, approval rates, assessment periods)	M30, M&E Team/PPs	Internal reporting m 30, Final report

	decision support system					
OO2-GA2	Specific objective 7 - Provide detailed guidance for replication of new training curricula to rapidly intervene in emergency situations and adapt to new environmental and societal needs	SAI 7.1. Methodology on building training capacity	1/1	Feedback forms	M30, M&E Team/PPs	Internal reporting m 30, Final report
OO2-GA2	Specific objective 7 - Provide detailed guidance for replication of new training curricula to rapidly intervene in emergency situations and adapt to new environmental and societal needs	SAI 7.2. Replication Guide	1/1	Report analysis	M30, M&E Team/PPs	Internal reporting m 30, Final report
OO3-GA2	Specific objective 8 - Develop comprehensive operational planning to solidify the application and effectiveness of marine pollution training	SAI 8.1 Tailored training operational plans	3/4	Interviews with training coordinators/partisipants	M36, M&E Team/PPs	Final report
OO3-GA2	Specific objective 9 - Empower the set-up and operation of activities towards	SAI 9.1 Number of trained experts during the National workshops	60/120	Report analisis	M36, M&E Team/PPs	Final report

	marine pollution management					
OO3-GA2	Specific objective 9 - Empower the set-up and operation of activities towards marine pollution management	SAI 9.2 Number of informed experts during the Regional workshops	20/30	Report analisis	M36, M&E Team/PPs	Final report
OO3-GA2	Specific objective 10 - Monitor the performance of training curricula and highlight new perspectives	SAI 10.1 I. Case studies of good practices in training courses in national stakeholders	6/10	Report analisis, Interviews with training coordinators/partisipants	M36, M&E Team/PPs	Final report
OO3-GA2	Specific objective 10 - Monitor the performance of training curricula and highlight new perspectives	SAI 10.2 II. Operating pilot training curricula	3/4	Interviews with training coordinators/partisipants	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 11 - Communicate and disseminate RESPONSE training outputs to key stakeholder groups and the wider public in the BS countries	SAI 11.1 Number of informed stakeholders, scientists and consultancies	600/800	Activity reports, media/social media monitoring, partner self-reporting	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 11 - Communicate and disseminate RESPONSE training outputs to key stakeholder groups and the wider public	SAI 11.2 Number of info-days	4/8	Activity reports, partner self-reporting	M36, M&E Team/PPs	Final report

	in the BS countries					
OO4-GA3	Specific objective 11 - Communicate and disseminate RESPONSE training outputs to key stakeholder groups and the wider public in the BS countries	SAI 11.3 Citizen Guideline Sheets	3/5	Activity reports	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 11 - Communicate and disseminate RESPONSE training outputs to key stakeholder groups and the wider public in the BS countries	SAI 11.4. Stakeholder engagement, Dissemination and Communication Plan	1/1	Pre- and post-engagement surveys, focus groups, interviews	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 12 - Establish regional strategic action plans for driving institutional participation	SAI 12.1 Number of networking events in which the consortium has taken part	5/10	Event documentation, partners reports	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 12 - Establish regional strategic action plans for driving institutional participation	SAI 12.2 Coordination with relevant initiatives	3/6	Document review, feedback from local partners	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 13 - Build networks and transferability potential of the project results to other BS countries	SAI 13.1 Regional Action Plan	1/1	Document review, feedback from local partners	M36, M&E Team/PPs	Final report
OO4-GA3	Specific objective 14 - Streamline policy	SAI 14.1 Policy brief on future RESPONSE	5/6	Policy brief review, feedback from local	M36, M&E Team/PPs	Final report

	recommendations that keep pace with scientific and technological advances and reinforce interaction between training, research and policy	issues supported by 5-6 policy makers		partners and policy makers		