



INTELLECTUAL OUTPUT 1

OUR MEDITERRANEAN

BLUE CHALLENGE FRAMEWORK

August 2023



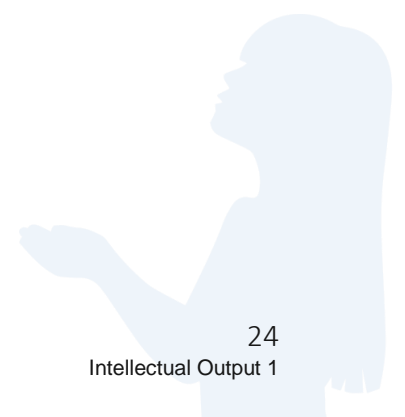


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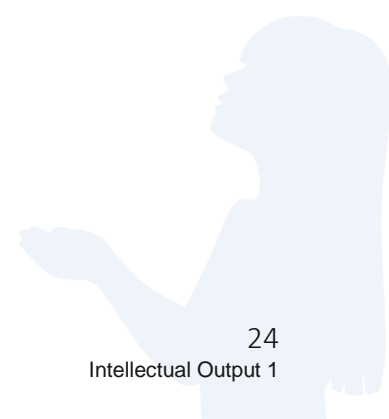


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ACRONYMS

CCT	Coordination Committee Team
CSET	Core Services Exploitation Team
CT	Consortium Coordination Team
EC	European Commission
IPR	Intellectual Property Right
PA	Partner Assembly
PM	Project Management
SAB	Stakeholder Advisory Board
WP	Work package



1. INTRODUCTION

The Erasmus+ project entitled "Supporting the development of socially-inclusive Blue Challenges in schools in the Mediterranean Sea basin" (BlueS_Med) aims at developing, implementing, and evaluating innovative approaches to integrate ocean/marine issues and challenges in the curriculum and the educational activities of schools in different Mediterranean countries.

Combining expertise in education, marine science, and policy, together with strong experience in developing Ocean Literacy (OL) initiatives for one target group with several grade bands, the project will be implemented in four phases. This deliverable will describe and summarize the results of Phase I, which consists of a conception phase, focused on the development of the Blue Challenge framework that guides the development and implementation of Blue Challenges at schools. It also helps to consolidate the consortium and share experiences and practice among partners and Med countries.

The core principles of the BlueS_Med project, namely co-construction and co-design of the Blue Challenges, interaction and proactivity, inclusiveness, and sustainability, guided the drafting of the first Intellectual Output (IO1).

In fact, this deliverable represents the framework and guidance for the process of defining the Mediterranean Blue Challenges. It is based in particular on the collection and validation of existing experiences and practices in "bringing the sea" to school (see SECTION 3, Annex 4a) by taking into consideration priorities, resources, and initiatives already available at EU and international level (see SECTION 3, Annex 4b), and proposes criteria for monitoring and evaluating the Blue Challenges (see SECTION 3, Annex 4c) in order to bring out their added value and benefits.

Additionally, this is also an opportunity to critically reflect on the pros and cons that teachers/schools face before choosing whether to join the EU Blue School Network (EUBSN). This allowed us to identify the main obstacles that should be removed to facilitate the process of schools joining this network, and to give some advice on how to eliminate them. At the same time, a first analysis of the resources and tools currently available at European level has been made, on which this project, and the EUBSN during and after the end of it, can count on to encourage and help schools to join the network, and to build/consolidate a stable educational path on ocean issues in the next 10 years.

To achieve the goal of bringing OL into the European school system on the short and long run, **teacher involvement is necessary**. To get EU teachers to engage and keep engaging on this in the coming years, we, as the EU society through the DG MARE, have to give them something in return. Incentives, resources, and recognition are needed since EU schools in general, and in some Mediterranean countries in particular, are overwhelmed by society's requests, commitments and educational activities about several old and new issues often without adequate investment in human and economic resources, as well as without enough time to cope with all these new challenges.



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Since we have just entered the Decade for the Education for Sustainable Development (ESD) dedicated to Ocean Sciences, within all the European funds planned from now on (e.g., Recovery Fund, Green Deal, Next Generation EU, etc.) there should be funds dedicated directly to schools that want to join the EU Blue Schools Network.

Some suggestions about possible EU incentives, among others, are:

- ➔ An annual funding scheme to schools that have undertaken the Blue School pathway, commensurate with their commitment (e.g., n° of involved classes/pupils/teachers).
- ➔ An annual/biennial/triennial recognition (economic and/or academic) to teachers who have undertaken this path, commensurate with their commitment.
- ➔ A one-time award to the country/European Marine Regional Area that has the highest number of Blue Schools.

2. FRAMEWORK AND GUIDANCE

2.1. Meaning of the Blue Challenge

The meaning of the (Blue) Challenge is to:

- ▶ Identify an ocean topic, such as a good or a service that the ocean provides for our daily life (i.e., fishery/aquaculture, tourism/leisure, chemical/pharmaceutical, biotechnology, energy, climate/water cycle regulator, etc.), or a human activity that affects the ocean (i.e., sand/mineral/oil extraction, overfishing and intensive aquaculture, pollution, eutrophication, transport, etc.);
- ▶ Develop a school project from it, together with a local partnership (i.e., marine scientist, stakeholder, decision maker, etc.); c) communicate and share with the society about the school project.

The ocean is a fascinating world to discover, especially for children and young people. Together with pupils and the local or global ocean community, teachers are welcomed to embark on a journey to help pupils become responsible citizens who care for the sea's health and have the capacity to act on real-life issues. Through the finding of the "Blue Challenge" at school, pupils are expected to build a stronger connection to the ocean, the seas and all other aquatic ecosystems. People who live far from the sea may fail to see these connections to the ocean, but this does not mean that they cannot learn about them and develop a positive attitude toward the ocean sustainable use. It does not matter where the pupils live, they can always contribute to keeping the ocean healthy and clean. Whether a school is located by the sea or hundreds of kilometres inland, teachers can always find a blue connection to the ocean or the sea.

The Blue Challenge should be designed to increase the pupils understanding of the ocean and the issues, impacts, challenges, and threats it is facing, plus to develop a sense of responsibility to take action to protect it and manage it wisely. Through the Blue Challenge, the pupils, together with the school community, will explore how they are connected to the ocean or the sea, whether they live close by or far away.

2.2. Monitoring and evaluation: methods and tools

The second issue was about the definition of methods and criteria that the BlueS_Med consortium has, in order to monitor and evaluate the Blue Challenges at the schools and to identify best practices to be passed through the EUBSN at the end the project.



Since a [Handbook for Teachers](#) has recently been published by the EUBSN (Copejans et al., 2020)¹, it will be the starting point used to make a coherent step forward. In the Handbook, it is stated that teachers are free to choose the theme of their Blue Challenge and how to bring it to school. Now, if EUBSN gives teachers this absolute freedom, it will be more challenging to monitor and evaluate what they do at school, especially since teachers have, among their roles, the job and the skills of evaluating their pupils. In addition, national education systems in EU member states have their own rules and criteria for evaluating pupils, teachers, and principals. As such, the BlueS_Med consortium cannot/ should not have the role/the legitimacy to do it neither during the BlueS_Med project as a consortium nor in the future as EUBSN.

Therefore, we believe that BlueS_Med partners, with each its own specific expertise, are called with this project to help DG MARE define what strategy is most effective to bring OL at schools, what can be the useful/needful steps for a teacher to do so, explain to them why these steps are useful/needful, and help them do them.

To this end, we plan to create, during the second phase of the project, a list of PROs and CONS (i.e., advantages and obstacles) for each country involved in the project (and possibly for all other MED countries) for teachers' participation in the EU Blue School network. The second step will be the elaboration of a common Med shared list.

With this in mind, we then ask to the teachers from the pilot school involved in the BlueS_Med project what they need to set up their own blue pathways at school. From a first survey, we have verified that many teachers, especially those who want to undertake a blue path at school for the first time, would prefer to have a **pre-set reference scheme**, with rules of participation and evaluation that are certain, defined, transparent and clear from the beginning.

¹ Copejans E., Besançon M., Lourenço C., Batista V., Soares S., Noronha A., European Commission (2020). A wave of European Blue Schools. Handbook for teachers. European Commission, Directorate-General Maritime Affairs and Fisheries, Brussels, 104 pp.

Bearing in mind the general objective of the project, namely bringing OL into school curricula, we propose a path that would consider a number of specific objectives such as:

- ➔ Create shared OL resources and materials to be used by teachers at school at Med, EU and international levels.
- ➔ Train Blue School teachers (and science animators) on OL principles and concepts in general, and specifically on Mediterranean issues.
- ➔ Develop a critical approach and the scientific method as well as citizenship/transversal skills (i.e., problem solving, team building, argumentation skills, confrontational skills, authentic learning, constructivist approaches, discovery learning).
- ➔ Promote the multi- and interdisciplinarity approach.
- ➔ Foster multi-level networks within the school, the local community and among Med schools.
- ➔ Promote the participation of the whole school community (i.e., teachers, pupils, principals, and families/parents).
- ➔ Build a local learning “blue” community.
- ➔ Empower the pupils and develop a sense of community.
- ➔ Visualize the "big picture" (i.e., the spatial-temporal context) in which the chosen Blue Challenge fits.
- ➔ Align the educational pathways with the Agenda2030 of the UNESCO Sustainable Development Goals.

2.3. Roadmap for development, implementation, and evaluation

The last issue concerns the conceptual framework we proposed to bring the Blue Challenges at the pilot schools of the BlueS_Med project. Based on the results of this testing period, the final version of the framework will be delivered at the end of the project.

We identified 5 main steps to be set and implemented:

- ➔ The EUBSN to propose for the schools a unique path (i.e., defined in IO1 - Part 2.3.1 to 2.3.3) to be followed based on the objectives and results that EUBSN/DG MARE want to achieve in the next 3-5 years, but progressive, with evaluation criteria that are certain, transparent and defined since the beginning (i.e., those defined in IO1 - SECTION 3, Annex 4c).
- ➔ The EUBSN/DG MARE evaluate what has been achieved and how, on the basis of the steps they have done with respect to the planned path (e.g., with the evaluation grid provided in IO1 – SECTION 3.2). Then, DG MARE awards at the end of the year the progressive recognition of Blue School (e.g., bronze, silver or gold medal) on the occasion of an official annual European event dedicated to the sea/ocean (e.g., European Maritime Day, MED Coast Day, etc.);
- ➔ Each year the school can improve, take another step, expand the internal participation, etc., with progressive, but clear and defined recognition from the beginning, decided in agreement with EUBSN/DG MARE (e.g., money to build an OL lab at school, and/or to participate in a summer camp dedicated to pupils and/or teachers, and/or to buy consumables for the toolkits, and/or to participate in EU and MED events, and/or to help to organize the Open Day at school, etc.);
- ➔ EUBSN has to create its own scientific committee composed of people with suitable knowledge and skills such as scientific from various disciplines, educational, popular, etc. in order to guarantee this path at the end of the BlueS_Med project. The committee will be in charge of evaluating Blue School projects and achievements; supervising the teacher training about marine science and related topics; advising on paths and priorities; bringing innovation in the marine science teaching, etc. in the European school system;
- ➔ We propose to DG MARE, or to other EU or intergovernmental dedicated institutions, to organize the Ocean (Literacy) Olympics, in order to stimulate EU and MED teachers and their pupils to learn more about ocean issues in order to be able to compete with their peers in Europe and around the world, and to bring home awards, equipment, tools, etc. to further implement their “Blue” lab.

In the following section, the roadmap that partners of the project and their selected schools will experiment, and test will be described in details, within the framework of the BlueS_Med project: namely the framework to develop, to implement and to evaluate the Blue Challenges in the Mediterranean Schools.

2.3.1. Development

→ Knowing the state of the art and priorities

To better focus on the possible interactions between the different school subjects and the eventual Blue Challenge to be addressed, it is necessary for the school community to have more details about what connects us to the sea/ocean, and what connects the ocean/sea to us, both in our everyday lives and in our past and recent history.

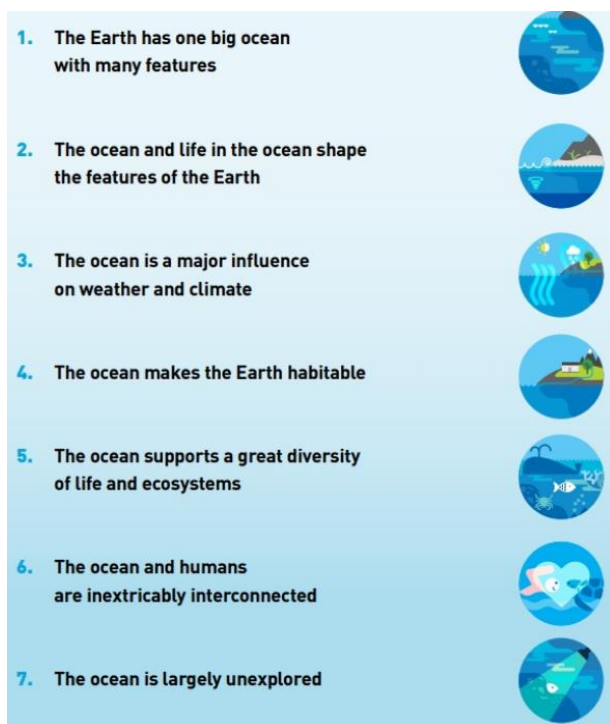


Figure 1 the 7 principles of Ocean Literacy (UNESCO-IOC, 2017)

Teachers are therefore requested to read and share the **7 Principles of OL**, as well as the Scope and Sequences related to their level of teaching (e.g., K-2, 3-5, 6-8, 9-12) in their classroom before embarking on the blue journey.

The class or interclass group must create a poster to hang in school that tells the school community about the 7 principles of the OL and witnesses the beginning of the Blue Challenge journey undertaken by their classmates.

It can use any graphic/presentation form. It is critical that the poster be scientifically correct, visible, and enjoyable to read.

We also recommend teachers to read/consult/share the EU publications (i.e., EU legislation, white papers, reports, etc.) and other reference material from intergovernmental organizations (i.e., UNESCO-IOC, etc.), as well as international scientific initiatives (i.e., IODP, GEBCO, Seabed2030, etc.) dealing with EU ocean/sea regulation, socio-economic agenda and priorities, and environmental research and challenges.

They can be a source of inspiration for the choice of the Blue Challenge at school. A non-exhaustive list of references is provided at the end of this deliverable (see SECTION 3, Annex 4b).



→ Collaborate with science

Even though the pupils are the protagonists of the project, the connection and dialogue between the involved generations is essential. Concerning Education for Sustainable Development, this characteristic is the most important given that it is based on new concepts that young people can in turn pass on to their circle.

Therefore, in order to create a local learning “blue” community, to develop scientific approach and critical thinking, and to cope with up to date and EU prioritized ocean issues, the schools have to involve in its “blue” project at least one marine research scientist from the nearest local/national/international public research institution. The BlueS_Med consortium will contribute to map the research institutions in their country as a first step (see SECTION 3, Annex 4d). During the second phase of the project, the map will be integrated as to include all the main EU research institutions in the Mediterranean Regional Sea Area as well as in the other EU member states.

On one hand, this collaboration will allow both teachers and pupils to have access to up-to-date scientific information and data, exchange on and learn how to best address the chosen ocean/marine issue, learn more about “blue” challenges and related opportunities, know EU agendas and choose among their priorities. On the other hand, this collaboration will stimulate research scientists to share their experience and knowledge, enhance their scientific skills as well as integrate them with science dissemination and communication skills. This collaborative relationship between research and schools will be crucial to further promote a deeper connection between science and society and a widespread marine/ocean scientific citizenship.

The school should also consider having an Education for Sustainable Development (ESD) expert, using collaboration with local and/or national agencies and institutions dedicated to this, to align its activities with the principles of sustainability education.

→ Visualize the "big picture"

The territory in which the project takes place should be seen as a knowledge-building environment. This knowledge is built up using several sources: lab and field research activities, class/seminar, discussions with stakeholders/decision makers, meeting with scientists, visits, observations and comparisons among local contexts, etc. To start the project, it is necessary to define a topic that makes it possible to establish a link between the pupils and their territories/local context. The pupils shall, as much as possible, be involved in choosing the topic(s) for research while taking into account their interest as well as the relevance of the topics in the local context.

The teacher is above all there to guide the pupils in their research. If there is just one teacher, his/her role will also be to establish a link between the chosen topic and the school curricula in such a way that the lesson subjects feed into the research. A locally, nationally and European-oriented approach is to be encouraged, since each territory represents a unique situation but inserted into a wider, more or less global context.

This investigative phase must as much as possible involve those who are connected to the topic examined in the territory (e.g., scientists, company representatives, local and regional authorities, and actors from civil society). It may be necessary to form research sub-groups tackling the topic from different perspectives and showing how each one concerns their territory, and other regions. Once the investigations have been conducted, time for the presentation of the different subjects to the rest of the group will make it possible to share knowledge and issues. These presentations may take several forms: talk, mini-conference, guided exhibition, game, performance, role-playing, etc. on the basis of the different work presented by the pupils, the teachers, with the pupils, will identify one or more issues that stimulate the debate.

→ Use the participatory democracy approach

With the young ones...

Young people are recognized as social subjects who can act right here, right now. The process is established on the basis of pupils' experiences, by trusting in their capacity for commitment and transformation through action. To ensure that pupils learn about democracy, it is therefore important that they, themselves, elect the delegates (i.e., BlueAmbassadors@School) who will represent them during the project activities. In order to prepare for this, it is necessary to define the criteria that pupils must meet in order to be eligible, and also to define with the pupils the qualities that a delegate should have. To be considered is guarantying gender balance, equity and inclusiveness. Here is an example of possible "criteria" to share with the pupils before co-defining with them the evaluation grid. The delegate should:

- Be involved in the project
- Be comfortable speaking (English?)
- Express themselves correctly
- Look at the audience when giving a presentation
- Use simple words that everyone can understand
- Be familiar with the responsibilities and actions taken
- Be able to answer different questions about the project in the school.

It is also important to clarify with the pupils what will be roles and responsibilities of the delegates within the BlueS_Med project. As for the role of the delegate: to represent his/her group, class or school at TPMs and Multiplier Events. As for the responsibilities, the delegate will be expected to:

- Take ownership of the project dealt with during the year
- Present the project and its results at the Transnational Project Meetings and multiplier events
- Participate in the workshops and debates with peers by conveying the opinions of his/her group
- Report the results of the Transnational Project and multiplier events to his/her group
- Ensure the continuity of the project with other peers.

.... And the teachers as well!

A similar collaborative approach will be used for teacher delegates.



The application and evaluation criteria for delegates, both pupils and teachers, will be finalised at the beginning of the second phase of the project, and presented at the second Transnational Project Meeting (TPM) on the basis of the above assumptions.

The network of young EU BlueAmbassadors@School and the network of EU BlueTeachers@School will be created under the umbrella of the EU Blue School Network/DG MARE.

Each year, the Blue School should (s)elect its “blue” representatives (i.e., 2 teachers and 2 pupils) who will speak on behalf of their school about their yearly Blue Challenge project. The delegates, representing their schoolmates are previously elected (or chosen by consensus) by their peers. The elected pupils will automatically join the YOUTH4Ocean Forum and/or the dedicated network of EU BlueAmbassadors@School according to the ages of pupils. To the elected teachers, a yearly membership fee to EMSEA, or other similar EU organization to be decided in the second part of this project, will be granted by the school principal/EMSEA/DG MARE. They will automatically join the network of EU BlueTeachers@School at the beginning of the school year.

As for the school principal, he/she will be invited to progressively engage all of his/her classes in the Blue Challenge program/initiative, such as :

- 1) For primary schools (i.e., 6-10 years old): year 1 – all first and second classes; year 2 – all third classes; year 3 – all fourth and fifth classes.
- 2) For middle schools (i.e., 11-13 years old): year 1 - all first classes; year 2 - all first and all second classes; year 3 - all first second and third classes.
- 3) For high schools (i.e., 14-18 years old): year 1 - all first classes and second classes; year 2 – all third classes; Year 3 – all fourth and fifth classes.



→ Enhance the professionalism and commitment

The BlueS_Med consortium and the associated schools contribute to define recognitions and incentives, including financial, such as purchasing materials and tools for a “Blue” lab at school, participation in events and activities, assignments, facilitate development and access to resources, support for outreach actions by research institutes, etc. by EU-DG MARE should give to the work done by teachers and pupils of the schools/classes involved. This EU level action should be similar on a national level (e.g., mediation with MS Ministries of Education through DG MARE) and at local level (e.g., through local community/stakeholder/decision maker involvement).

During the second phase of the project, the BlueS_Med consortium will evaluate, together with DG MARE the possible choices available at European level to organize and implement a program of annual BlueS_Med summer camps and/or cruises, in the Mediterranean, on board sailing boats where Med Blue Ambassadors (i.e., teachers and pupils) can develop skills and experience on OL and marine environmental issues.

2.3.2. Implementation

→ Promote team building and responsibility

Recognition by each person of their individual and collective responsibilities in the face of a problem is one of the foundations of this initiative. This is done with the understanding that each person is responsible only within the limits of his or her power and access to information.

It is not enough to discuss problems and call out responsibilities, we also need to think about collectively developing actions for change. These opportunities for reflection and action allow people to create new ways of being, living, and interacting that respect the diversity of humanity and life.

Each classroom should organize itself as a team where the “coach” is democratically elected by peers, where roles and tasks among team members are defined based on skills and abilities, by ensuring gender balance/equity and inclusiveness, by rewarding merit and effort, by sharing responsibility, respect for rules, etc. An example could be to organize the classroom like the crew of a ship where the skipper/master represents the coordinator, and the individual classmates are the crew members who fill all the functions and roles necessary to lead the ship to navigate safely, harmoniously, and profitably to reach its intended destination.

→ Build effective tools

Each school can design at least one learning unit (i.e., one instructional intervention) using the available toolkits, if any. It should be developed in collaboration with a scientific partner institution and in a multi/interdisciplinary way by possibly involving at least 4 subjects: e.g., 2 STEM subjects (1 basic science and 1 technological/applied), 1 humanity/economic, and 1 arts subject.

→ Produce teaching materials

The class (or multiple associated classes) is strongly encouraged to design and produce at least one toolkit per year/project. The teacher can decide to follow this suggested pathway, i.e., on basic concepts the first year, on the “big picture”, i.e., on the space-time context (e.g., historical/geographical/geological context), with a look at resources/anthropogenic impact and sustainability the second/third year, in order to encourage the pupils to go deeper into the subject/topic and to broaden their view about it. The BlueS_Med consortium will help teachers to design and develop the toolkits during the second phase of the project.



→ Communicate and share the experiences

The EUBSN aims to encourage dialogue and discussion among young European schoolmates on sustainable development issues and to strengthen their capacity for action and commitment to move towards sustainable societies. The BlueS_Med project is in line with the goals of education for sustainable development and those of international citizenship. By empowering young people to consider global contexts vs. local situation, it prepares them to discuss socially and societally important issues and values in such a way that they can take enlightened positions and implement thoughtful actions.

The BlueS_Med project is primarily a project established locally among young pupils who participate in Education or Sustainable Development (ESD) projects devoted to ocean-related issues, i.e., the Blue Challenges. Through these projects, the pupils (and teachers) will acquire the knowledge and skills enabling them to understand the complexity of the ocean issues relating to sustainable development and to thereby think about their responsibilities and to propose and implement concrete actions. These responsibilities and actions will, then, be presented and shared by delegates from the local school projects (i.e., the BlueAmbassadors@School) during the transnational project meetings and the multiplier events, as well as during the project training events. During these meetings, they will share their acquired knowledge and their points of view on the examined themes.

Each year, the schoolmates must also elect 2 peers who will form the Youth Press Agency of the BlueS_Med project. Criteria for reporter application and election will be discussed and presented at the second TPM. The Ambassadors will contribute to create, together with the peers who will be part of the BlueS_Med Youth Press Agency, edu-communication materials that will tell and spread their shared commitments at BlueS_Med, EUBSN and Mediterranean level. Edu-communication is a way of linking education with communication and supporting the right of individuals to produce information themselves using various media (e.g., newspapers, radio, cinema, social networks, etc.) and tools (e.g., posters, posts, press release, interview, speech, audio-video, photos, etc.).

At the end of each year, the "blue journalists" will be invited to join the Young Reporters for the Environment group (<https://www.yre.global/>) within the Foundation for Environmental Education (FEE) program (<https://www.fee.global/>), in order to bring ocean issues and their Blue Challenges in the broader context of the EU and international arenas.

2.3.3. Monitoring and Evaluation

→ Monitor and Evaluate action/activity effectiveness

BlueS_Med partners, in collaboration with the project pilot schools, should design and implement tools to evaluate the skills and knowledge acquired, as well as the level of engagement of the class and/or school to the requirements of the EUBSN/DG MARE (i.e., basic criteria to become an EU Blue School). We therefore suggest to use both questionnaires for pupils and teachers as well as indicators such as the realized “blue” toolkits and learning units. The BlueS_Med consortium has already defined shared simplified evaluation and validation criteria of toolkits and learning units created by the schools (see SECTION 3, Annex 4c) and is collaborating with teachers to develop suitable questionnaires to evaluate attitudes and behaviors together with skills and knowledge to be presented at the second TPM. In addition, we propose some further criteria for evaluating the effectiveness of teaching action such as: asking pupils at the same school level to evaluate the toolkits made by their peers in other schools, first at national level and then at Mediterranean level, and an exchange of products between teachers to share and review the different kits/learning units they have made.

→ Involve the local community

This will be realized in two steps: (a) during the implementation of the project; (b) during the dissemination phase. The school must organize its own annual event dedicated to OL (i.e., Open Day or an ocean dedicated part of it) with the support of EUBSN and DG MARE, and in collaboration with local partners and stakeholders. The Open Day can be scheduled at public events of DG MARE (e.g., EMD, etc.), of other international or European organizations (e.g., WOD, Mediterranean Coast Day), or according to school internal rules.

→ Create learning communities at national and international level on OL

The school can eventually participate in other celebratory events on OL (e.g., WOD, EMD, MedCOAST) in collaboration with other schools, EU or international networks (e.g., EUSBN, EMSEA, UNESCO), under the umbrella of EU4Ocean Coalition. We propose to create a Med network of expert reference persons (e.g., research scientists, educators) to support the Blue Schools both at national and European level based on previous and ongoing initiatives (e.g., COSEE, EMMA, ERNs, etc.). Roles and responsibilities of the participants to this network, as well as a first list of candidates, will be defined during the second phase of the project, and presented at the second project TPM.

We also recognize that the link among school, families and local communities needs to be made stronger. Therefore, at least one member of local councils and/or pupil families will be elected by the peers together with the Blue Ambassadors. This person will be involved in the production of resources and tools, and in the organisation of the local events, to ensure increased links with families and community and the local context. At the beginning of the Blue School project, BlueS_Med partner will help pilot school organize local meetings with the families to define if they want to participate and in which form.

3. INTERACTIVE INTERNET-BASED PLATFORM

The second part of this document is devoted to illustrate the main features of the interactive internet-based platform integrated into the project internet site combined with mobile application functionalities, that has been used to store and present the elements of the framework. This platform will progressively be fed via innovative/new resources, education material and experiences as the project is implemented to deliver Intellectual Output O4.

The interactive internet-based platform has the following components:

3.1. Meaning of the Blue Challenge

(i.e., mechanism for integrating marine and ocean issues in school activities with different levels of ambition) and criteria needed to develop it at school

The meaning of the (Blue) Challenge is to: a) identify an ocean topic, such as a good or a service that the ocean provides for our daily life (i.e., fishery/aquaculture, tourism/leisure, chemical/pharmaceutical, biotechnology, energy, climate/water cycle regulator, etc.), or a human activity that affects the ocean (i.e., sand/mineral/oil extraction, overfishing and intensive aquaculture, pollution, eutrophication, transport, etc.); b) develop a school project from it, together with a local partnership (i.e., marine scientist, stakeholder, decision maker, etc.); c) communicate and share with the society about the school project.

The criteria needed to develop it at school are:

- ▶ Know the state of the art and priorities;
- ▶ Collaborate with science;
- ▶ Visualize the "big picture";
- ▶ Use the participatory democracy approach;
- ▶ Enhance the professionalism and commitment;
- ▶ Promote team-building and responsibility;
- ▶ Build effective tools;
- ▶ Produce teaching materials;
- ▶ Communicate and share the experiences;
- ▶ Monitor and Evaluate action/activity effectiveness;
- ▶ Involve the local community;
- ▶ Create learning communities at national and international level on OL.

3.2. Monitoring and Evaluation methods:

Methodology to be followed is described in SECTION 2.3.3 and will be based on the M&E GRID (see SECTION 3, Annex 4c):

- ➔ Frequency: beginning/end of the school year/learning unit;
- ➔ Tools: questionnaires and indicators (e.g., toolkits, learning unit/ teaching-learning sequences; Open Day participation, etc.);
- ➔ Target audience: the school actors (i.e., pupils, teachers, school director), the involved local community (e.g., families, stakeholders, decision makers, etc.), the project partners (only during the BlueS_Med project).

3.3. Roadmap for the development, implementation and evaluation of a Blue Challenge in Schools:

- ➔ Steps to be followed (see SECTION 2):
 - ▶ Development (i.e., Know the state of the art and priorities; Collaborate with science; Visualize the "big picture"; Use the participatory democracy approach; Enhance the professionalism and commitment);
 - ▶ Implementation (i.e, Promote team-building and responsibility; Build effective tools; Produce teaching materials; Communicate and share the experiences);
 - ▶ Monitoring and Evaluation (i.e., Monitor and Evaluation of the effectiveness of the actions/activities; Involve the local community; Create learning communities at national and international level on OL).

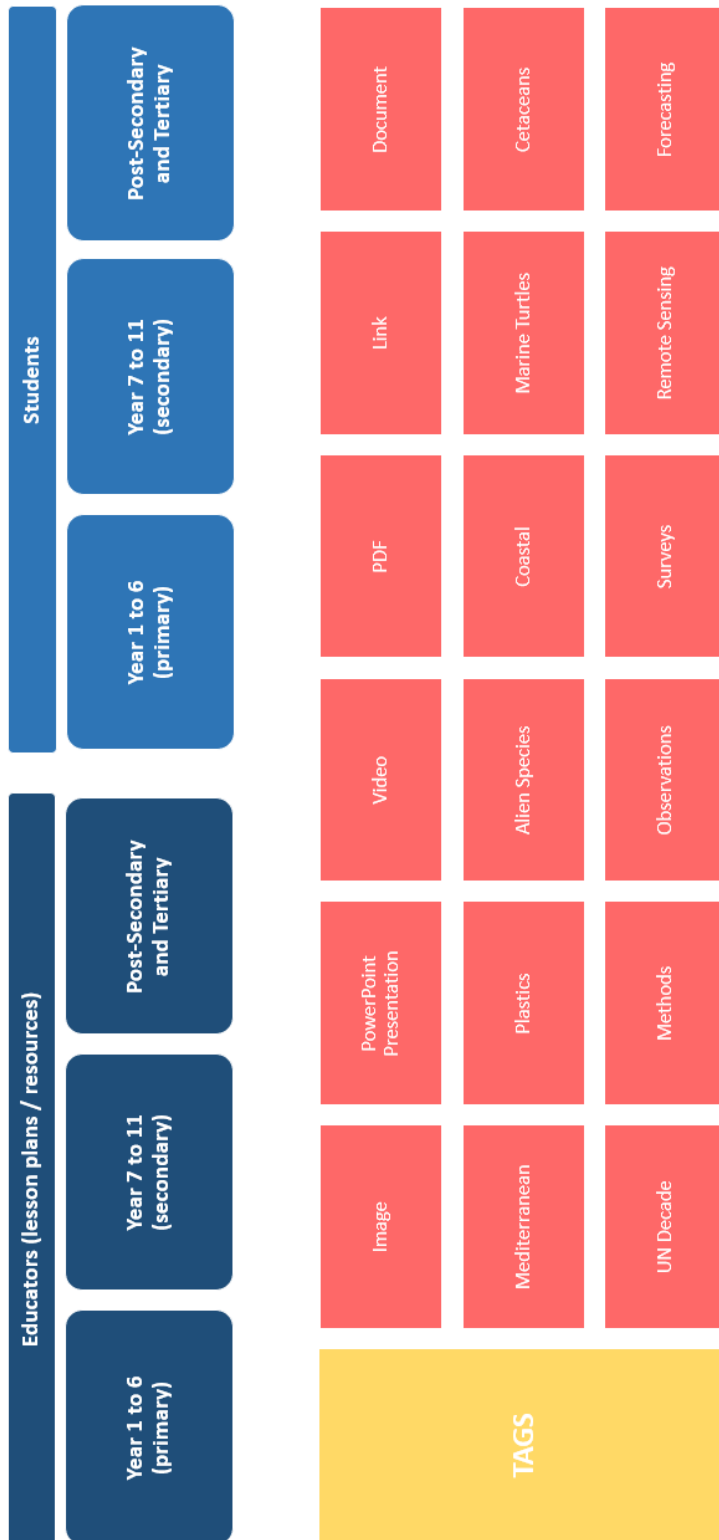
➔ Roles assigned to the different people involved (see SECTION 2):

- ▶ TEACHERS will have to set up the work in the classroom, elect their school representatives, help the pupils to create the crew, choose the blue challenges, design and implement the toolkits and learning paths, and organize and implement the Open Day;
- ▶ PUPILS will have to elect their school representatives and young reporters, create the crew, collaborate in the creation of toolkits and learning paths, and the Open Day;
- ▶ PUPILS AND TEACHER AMBASSADORS will have to represent the school in the project meetings and multiplier events, and participate in the training foreseen by the project;
- ▶ YOUNG REPORTERS will have to document all the activities of the local blue school project and contribute to the communication activities of the project towards the outside together with all the partners;
- ▶ SUPPORTING PARTNERS will have to facilitate the participation in the project of the schools involved, support the expenses for the representatives of their schools in the project events (i.e. training, meetings and multiplier events).

➔ Pre-conditions to ensure a successful experience and effective communication:

- ▶ Co-creation of the crew;
- ▶ Co-working for toolkits and educational path at the school;
- ▶ Election of representative by peers (i.e., pupils and teachers, possibly parents);
- ▶ Participation of the school representatives to all the project phase and activities;
- ▶ Creation of the BlueS_Med youth press agency to ensure communication and sharing;
- ▶ Creation of a local learning community (i.e., scientists as well as stakeholders and families).

4. CONCEPTUAL SCHEME OF THE INTERACTIVE INTERNET-BASED PLATFORM





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5. ANNEXES

Below is a list of annexes which are updated as the project advances and are a work in progress.

- 5.1. Best practices based on science-based critically-selected existing good practices from partners' past/on-going initiatives.**
- 5.2. Main EU legislation framework on ocean/sea, water quality**
- 5.3. Monitoring and Evaluation Scheme and Grid (M&E GRID)**