



GREENDIVING

Presentation of the project Green

Diving:

The importance of sustainability in the Maritime Field

Lucía Fraga Lago



Funded by the
European Union

THIS SESSION
WILL BE
RECORDED

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- 6. What includes the goal 14?**
- 7. Why is it important?**
- 8. Projects working on sustainability in the maritime field.**

1. Agenda of the course:

Month	Day	Time	Title of the session	Description
Septemeber	5	1 h 30 min	The importance of sustainability in the Maritime Field.	Module focusing on Green skills, Sustainability, Environment awareness and Fight against climate change. Overall presentation of the tools provided by Green-Diving Project to integrate those aspects in the maritime teaching curriculum. Speaker: CETMAR.
	12	1 h 30 min	Environmental awareness and literacy.	Module presenting 3 class plans: How to tackle the Impact of Litter in Natural Spaces, Alternative Fishing Gears and Good practices to reduce the carbon footprint. Speackers: BBZ-NOK & Escola do Mar dos Açores.
	19	2h	Ecosystems and biodiversity awareness.	Module presenting 4 class plans to address Awareness Raising on Sustainability, Microplastics in Maritime Areas, Impact on Boat- Building Materials and Waste management at the boatbuilding and maintenance workshops. Speackers: Latvian Maritime Academy, CIFP Coroso & CETMAR.
	26	2 h	Social Responsibility.	Module focusing on the integration of Green Skills in the teaching curriculum. Presentation of proposals from the participants.
October	3	2h	Ocean Literacy: boosting green and Sustainable VET maritime schools.	Presentation of the topic of Ocean Litercay and a class plan to adress it. Presentation of Blue Careers. Speackers: Escola do mar dos Açores & INOVA+.
	10	2h	Building Green Actors: General Overview of the Programme and evaluation.	General Overview of the Programme and Brain Storm about the European Blue Schools Initiative and Feedback. Speaker: INOVA+.

2. Learning outcomes of the course: general outcomes

1. Enhance your educational curriculum by incorporating activities that specifically target the development of green skills.
2. Create comprehensive programs and engaging activities aimed at fostering the acquisition and utilization of green skills.
3. Use innovative teaching methodologies which work in a holistic manner in sustainability and green concepts.
4. Get to know the Green Diving project.
5. Get to know people from other countries and the work they develop in the maritime sector, specifically in the educational field.
6. Explore and become familiar with real-world projects and initiatives that focus on sustainability in the maritime sectors.

3. Introduction to the Green Diving project: **consortium**

The consortium of the project is:

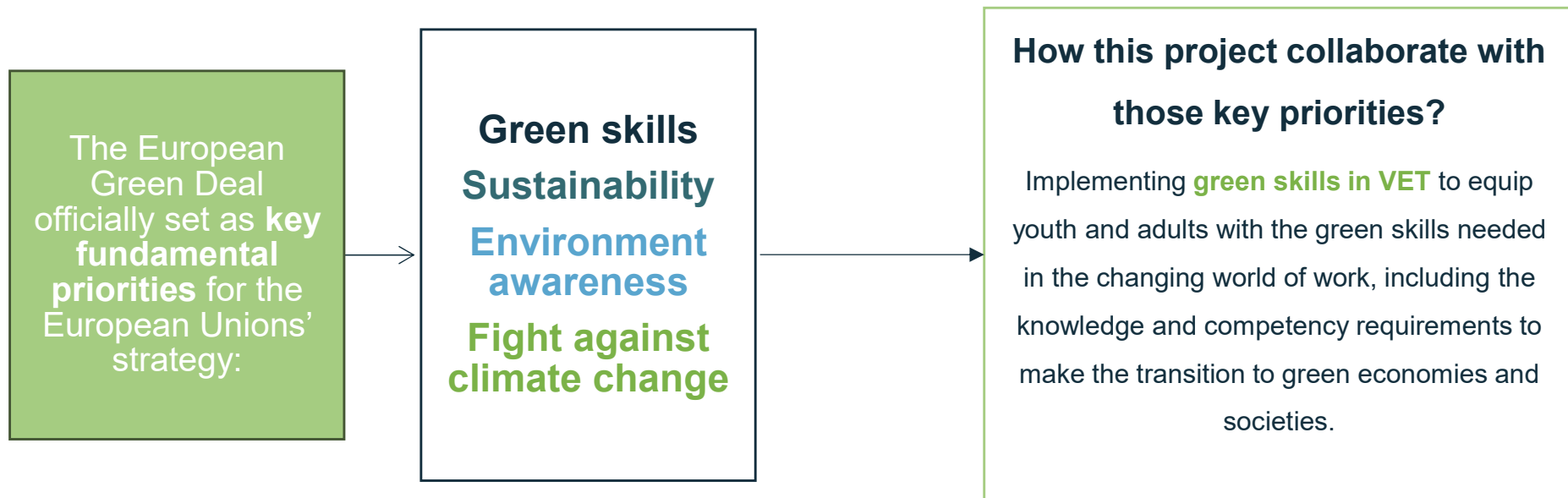
- CENTRO TECNOLÓGICO DEL MAR - FUNDACION CETMAR (Spain, Vigo).
- INOVA+ - INNOVATION SERVICES, SA.
- BERUFSBILDUNGSZENTRUM AM NORD-OSTSEE-KANAL (Germany).
- LATVIJAS JURAS AKADEMIJA (Latvia, Riga).
- Centro Integrado de Formación Profesional Coroso (Spain, Galizia).
- Associação para o Desenvolvimento e Formação do Mar dos Açores - ADFMA (Açores, Portugal).



You will get to know all the participants through this course.



3. Introduction to the Green Diving project:



3. Introduction to the Green Diving project: **main goal**

Is to develop pedagogical teaching resources, capacity building and co-designing processes that will convey:

- Sustainability and green skills development in maritime VET.
- The elevation of VET and Maritime professions attractiveness among school communities.



3. Introduction to the Green Diving project: target Groups

INTERNAL



Academic partners:

Project members, Professors and Researchers, other staff working in business support structures and training structures.



Other partners:

Project members, Project Managers and Consultants, other staff working in business support structures and training structures.

EXTERNALS



VET maritime school and their leaders.



VET teachers/trainers that teach maritime pathways (navigation; ports and shipping management; naval engineer; marine engineer; naval administration; or related courses like electrotechnical; engineering pathways which can lead into maritime) + **Initial VET students/trainees** (aged 15-25) in a VET Maritime Pathway.



3. Introduction to the Green Diving project: **structure of the project**

The global structure of the Green Diving project is constituted of **3 Results**, defined in a series of support actions to ensure the achievement of the general objective of the project:

R1: Digital Toolkit for Green Skills

R2: Green Skills Course for VET Teachers Professional Development;

R3: Action Plan for Greener VET Maritime Schools.

3. Introduction to the Green Diving project: **result 1**

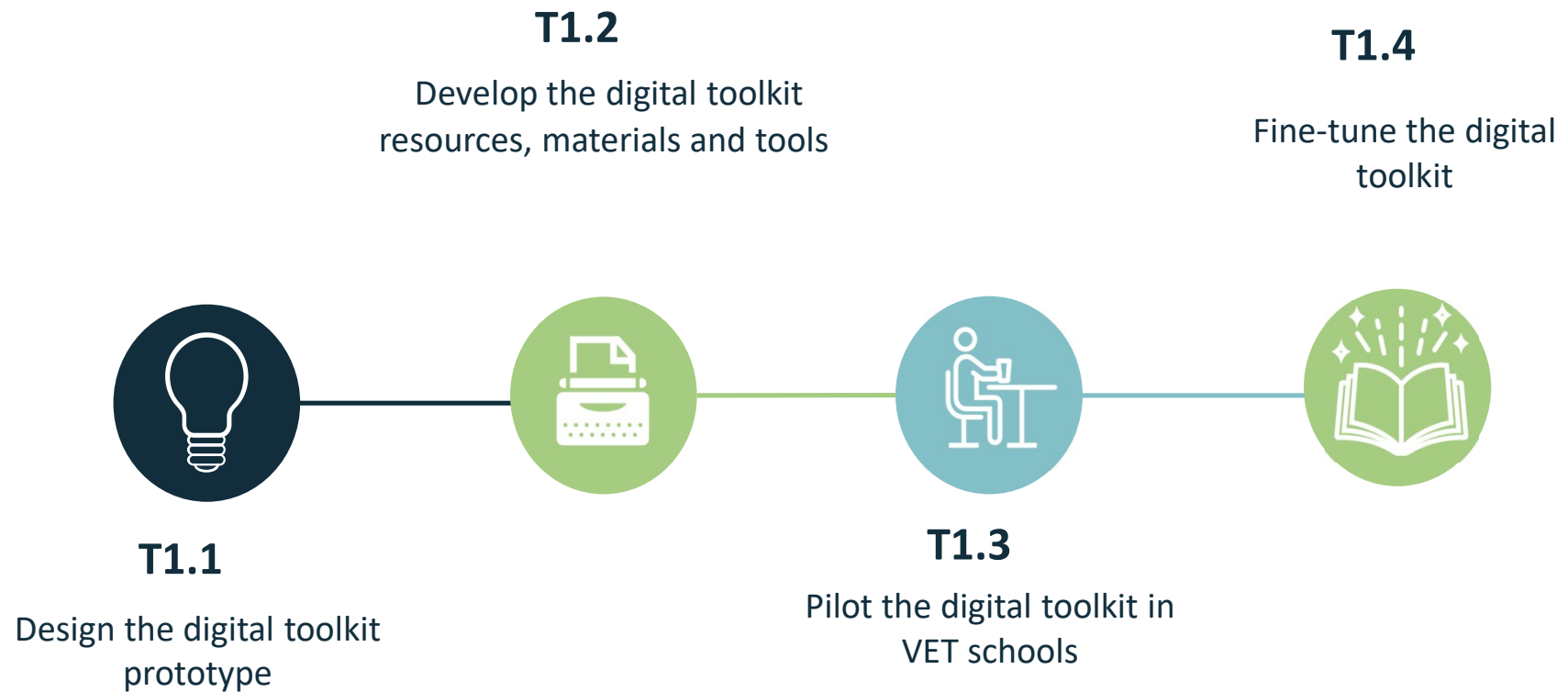
R1: Digital Toolkit for Green Skills



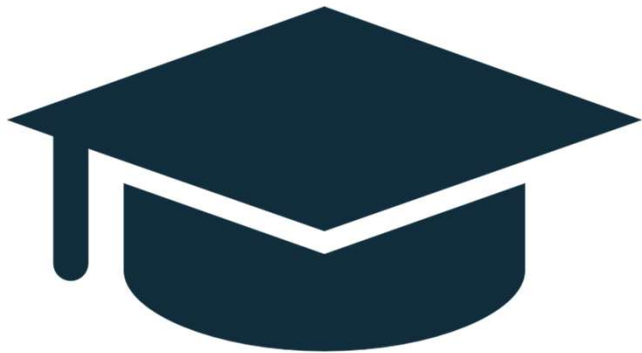
R1 → Provides of a comprehensive set of pedagogical materials, tools and resources that focus on green skills development and that can be used both by VET maritime teachers and its students.

In this course we will present this materials!!

3. Introduction to the Green Diving project: the process of development of the Digital Toolkit (R1)



3. Introduction to the Green Diving project: **result 2**



R2: Green Skills Course for VET Teachers Professional Development

R2 → is an **online training course** for maritime VET teachers and school directors that is being developed in order to actively capacitate them to foster green skills, sustainability, and climate awareness.

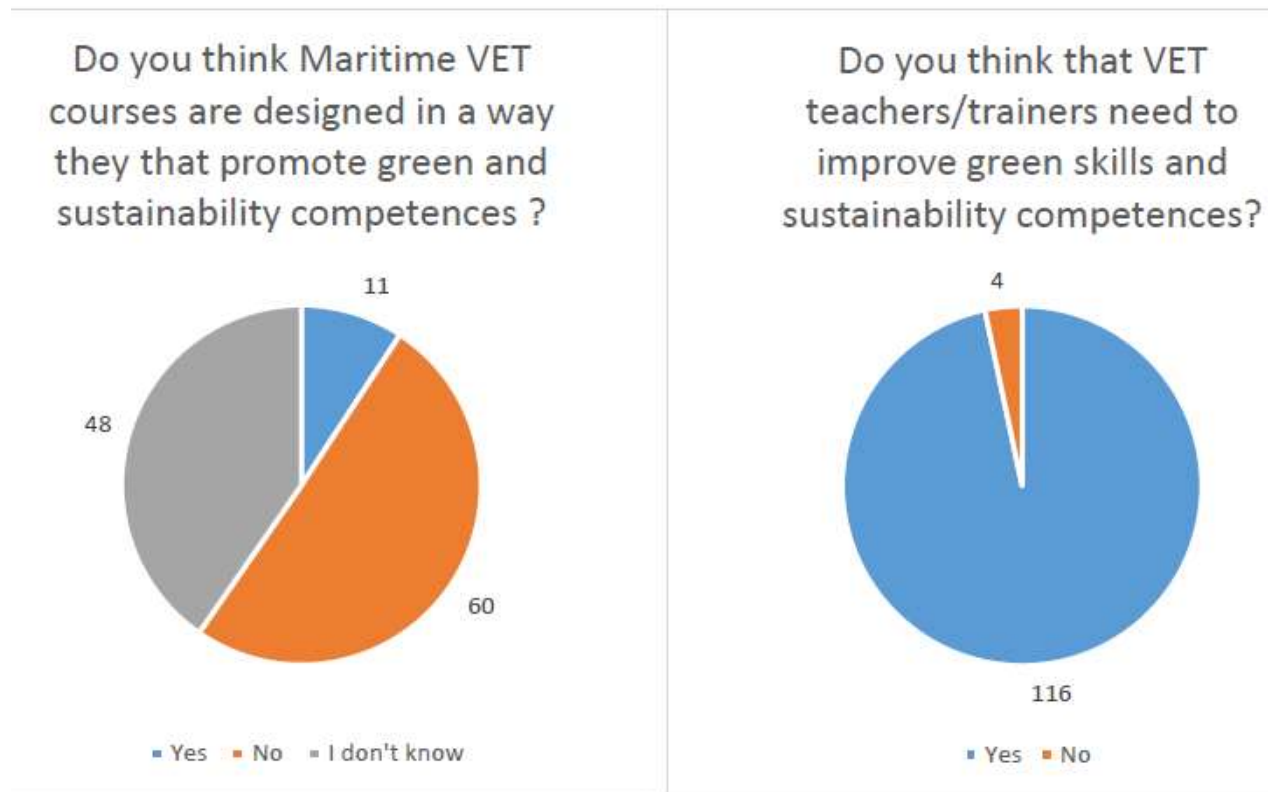
1. Introduction to the Green Diving project: **result 3**



R3: Action Plan for Greener VET Maritime Schools (ADFMA)

R3 → intends to co-design an **action plan for greener VET maritime schools** which will define measures, steps, initiatives, changes needed and action lines to answer such changes in light of greening and sustainable processes.

3. Introduction to the Green Diving: the origin of the project is based on an analysis of needed competences: 120 answers from 4 countries (Germany, Latvia, Spain and Portugal).



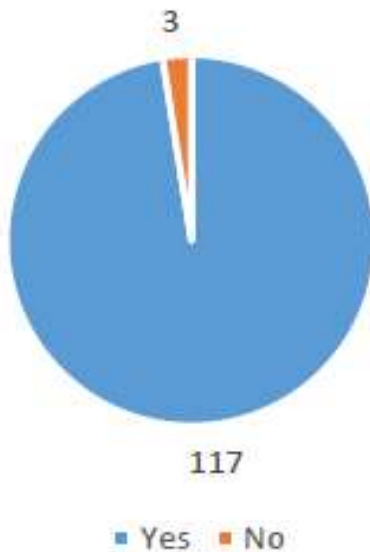
Do you think that making the Maritime sector greener and more sustainable can contribute to its attractiveness and thus foster a bigger interest among students?



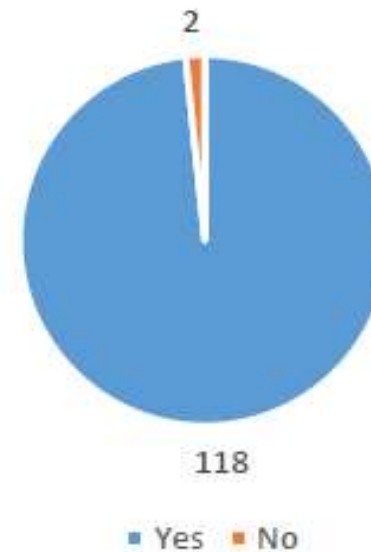
Do you think there is still a need to promote Maritime sector attractiveness and opportunities among students?



Do you consider that there is a need of improving VET students green competences and skills, especially those within the ages of 15-25 years old?



Do you consider relevant to raise students awareness in this field (green skills, sustainability) in order to positively influence their attitudes as future professionals?





1. Initial activity:
**Let's get to know the
participants through
some questions!**

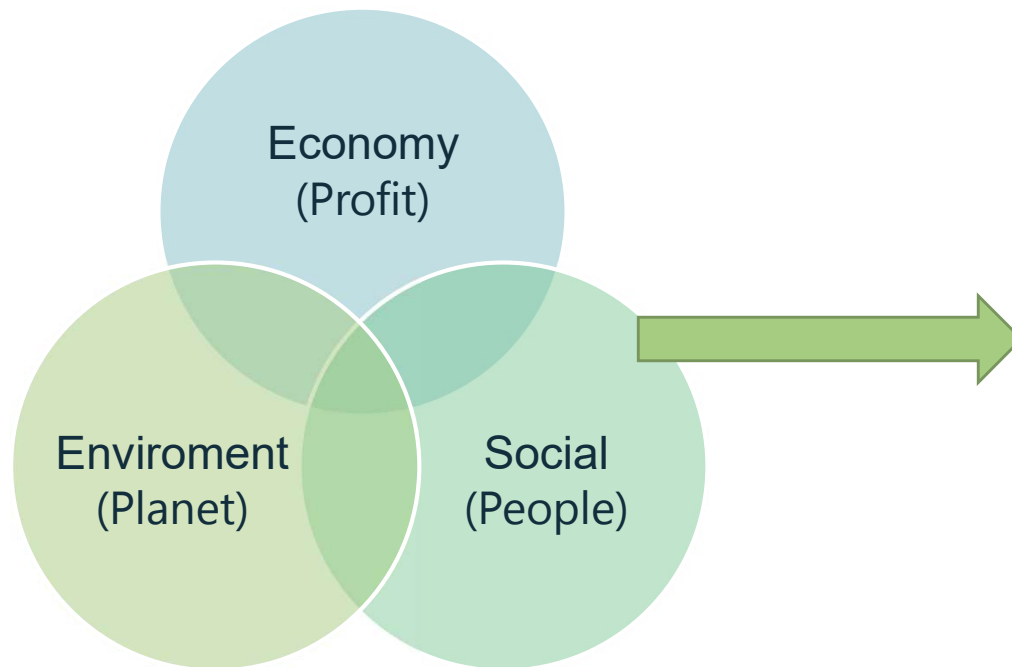
A large cargo ship is visible in the background, sailing on a blue sea. The ship has several cranes and a red hull. The foreground shows the white wake of a boat moving through the water. The entire image has a teal overlay.

4. What is **Sustainability** or **Sustainable** development?

4. What is sustainable development?

According to [European Commission](#) **sustainable development** means meeting the needs of the present whilst ensuring future generations can meet their own needs.

It has three pillars:



To achieve sustainable development, these three areas, **the 3Ps**, must work **together** and support each other.

A large cargo ship is visible in the background, sailing on a dark blue sea. The ship has a red hull and a white superstructure with several cranes. The foreground shows white, foamy waves from a boat moving through the water. The entire image has a teal color overlay.

5. How to achieve sustainable development?

5. How to achieve sustainable development?

In 2015, world leaders agreed on **Agenda 2030**, a set of **17 Sustainable Development Goals** and 169 targets proposed by the United Nations.





THE 17 GOALS

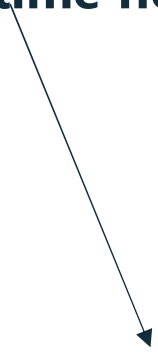
-
1. No poverty;
 2. Zero hunger;
 3. Good health and well-being;
 4. Quality education;
 5. Gender equality;
 6. Clean water and sanitation;
 7. Affordable and clean energy;
 8. Decent work and economic growth;
 9. Industry, innovation and infrastructure;
 10. Reduced inequalities;
 11. Sustainable cities and communities;
 12. Responsible consumption and production;
 13. Climate action;
 14. Life below water;
 15. Life on land;
 16. Peace, justice, and strong institutions;
 17. Partnerships for the goals.



Activity 2. Your contribution

Which of the presented objectives do you believe you can make a greater contribution to through your role as an educator?

The goal number 14 is focused specifically into achieve the sustainability in the maritime field



 **United Nations** | Department of Economic and Social Affairs
Sustainable Development

Home | SDG Knowledge | Intergovernmental Processes | HLPF | SIDS | SDG Actions | Engage | News | About

Goals

14

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

[← Previous](#) [Next →](#)



6. What includes the goal n° 14?

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development



14.1. Sustainability in the HBO maritime field includes:

Reduce marine pollution of all kinds, from land-based activities, including marine debris and nutrient pollution.

14.2. Sustainability in the maritime field includes:

HBO

Protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and act for their **restoration** in order to achieve healthy and productive oceans.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.3. Sustainability in the maritime field includes:

Minimize and address the impacts of **ocean acidification**.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

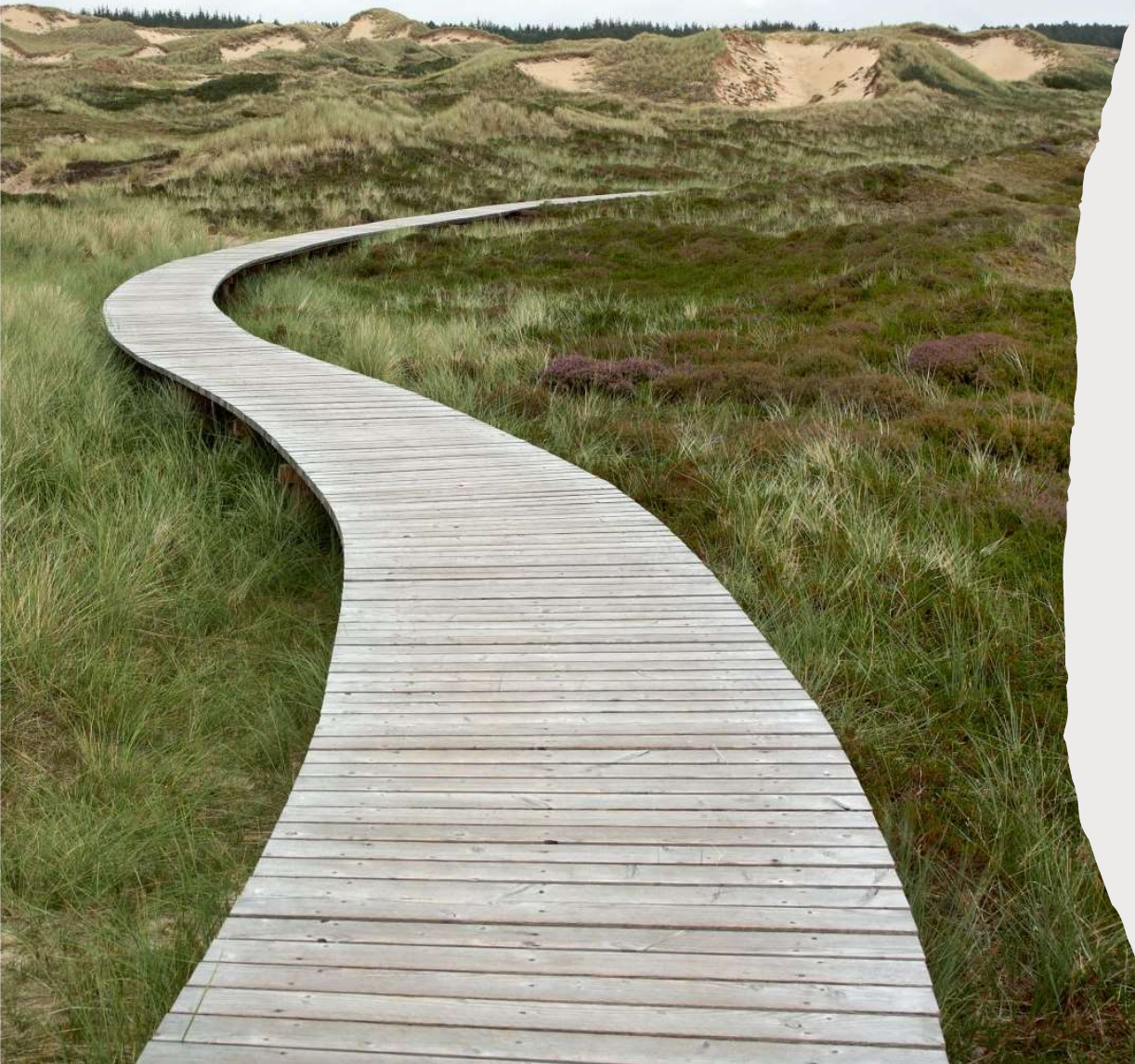
14.4. Sustainability in the maritime field includes:

Regulate harvesting and **end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices.**

Implement science-based management plans, in order to **restore fish stocks** in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.



Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development



14.5. Sustainability in the maritime field includes:

Conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.6. Sustainability in the maritime field includes:

Prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.



Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.7. Sustainability in the maritime field includes:

Increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.8. Sustainability in the maritime field includes:

Increase **scientific knowledge**, develop **research** capacity and transfer marine technology.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development



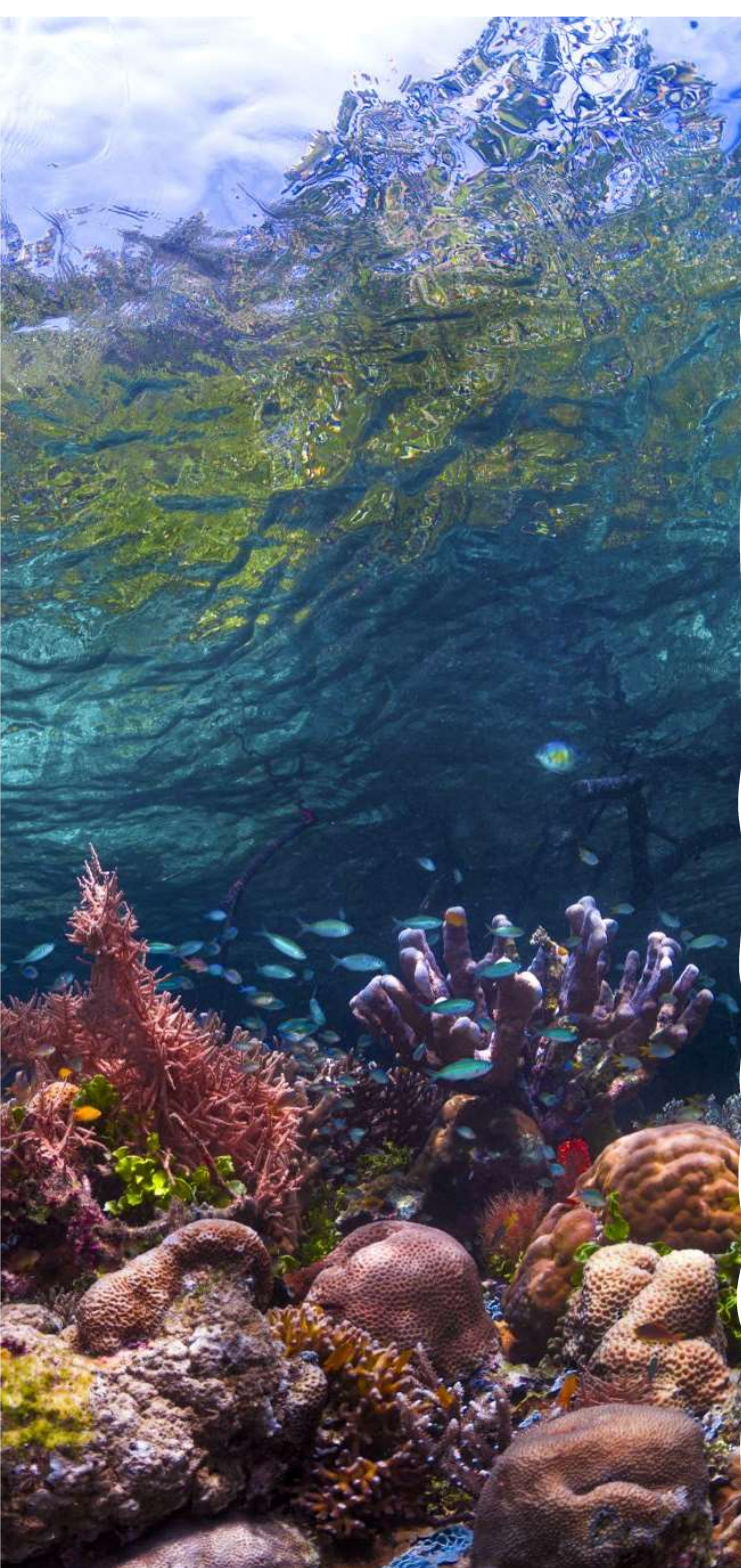
14.9. Sustainability in the maritime field includes:

Provide access for small-scale artisanal fishers to marine resources and markets.



Activity 3

**IN WHICH OF THOSE ASPECTS DO YOU
THINK YOU COULD HAVE A GREATER
IMPACT THROUGH YOUR ACTIVITY AS
A TEACHER?**



Activity 3.

Participants are now divided into **groups** to **discuss** about an **activity or action as teacher they can implement or that they already have implemented to contribute to this goal (n° 14).**

Each group has a speaker and then back in the common group they briefly describe what they discussed.

Maximum number of people in each group: 10

7. Why sustainability in the maritime field is important?



The importance of the oceans

- The oceans cover 71% of the Earth surface.
- The oceans are the ecosystem of many species.
- The oceans nourish us, provide us with a range of essential and novel chemicals for use in medicine and are responsible for climate cycles and other global processes that sustain life.
- Humans use the oceans for many purposes.

20 uses of the HBO ocean

- 1. **Transportation:** Oceans serve as vital routes for global shipping and transportation of goods and people.
- 2. **Fishing:** Oceans are a major source of seafood, providing sustenance and employment for millions of people.
- 3. **Tourism:** Oceans attract tourists for activities such as beach vacations, cruises, snorkeling, and scuba diving.
- 4. **Energy production:** Oceans facilitate the generation of renewable energy through technologies like offshore wind farms and tidal power.
- 5. **Climate regulation:** Oceans absorb and store large amounts of carbon dioxide, helping to mitigate climate change.

20 uses of the ocean

- **6. Recreation:** Oceans offer opportunities for water sports like surfing, sailing, jet skiing, and swimming.
- **7. Research:** Oceans provide valuable resources for scientific study, enabling research on marine ecosystems, climate patterns, and biodiversity.
- **8. Waste disposal:** Oceans can be used for the safe disposal of treated wastewater and certain types of waste.
- **9. Mineral extraction:** Oceans contain various minerals and resources that can be extracted, such as oil, natural gas, and valuable metals.
- **10. Medicine:** Marine organisms are a rich source of potential medicines and compounds used in pharmaceutical research.



20 uses of the ocean

- 11. **Desalination:** Oceans can serve as a source of saltwater for desalination, providing freshwater in regions with limited water resources.
- 12. **Coastal protection:** Oceans act as a natural buffer, protecting coastal areas from erosion and storm surges.
- 13. **Recreation:** Oceans offer spaces for leisure activities like beachcombing, picnicking, and sunbathing.
- 14. **Trade routes:** Oceans facilitate international trade by providing efficient and cost-effective transportation routes.
- 15. **Climate modeling:** Oceans play a crucial role in climate models, helping scientists understand and predict climate patterns.



20 uses of the ocean

- **16. Oxygen production:** Marine plants, such as phytoplankton, contribute a significant portion of Earth's oxygen through photosynthesis.
- **17. Carbon sequestration:** Oceans absorb and store carbon dioxide, reducing its concentration in the atmosphere.
- **18. Ecosystem support:** Oceans support diverse ecosystems, sustaining marine life and providing habitats for countless species.
- **19. Inspiration and aesthetics:** Oceans inspire art, literature, and photography, and their beauty enhances the aesthetic appeal of coastal regions.
- **20. Recreation:** Oceans offer opportunities for boating, yachting, kayaking, and paddleboarding, providing recreational enjoyment for enthusiasts.

A large cargo ship is visible in the background, sailing on a dark blue sea. The ship has a red hull and a white superstructure with several cranes. In the foreground, white waves are breaking, creating a white wake. The entire image has a teal overlay. The text "8. Projects working on sustainability in the maritime field." is written in white, bold, sans-serif font across the center of the image.

8. Projects working on sustainability in the maritime field.



Activity 4.

Type in the chat the name of a project or initiative focused on green skills, sustainability on maritime sector or related to the topic of the course.

Here you have some!

Example of project: [Catching the potencial](#)

- Project focus on the creation of a course of **sustainable fishing**.
- 4 years
- Develop country specific courses.
- Conduct 14 courses in seven EU countries
- Establish a standard EU-wide sustainable fisheries course.
- Implement the requirements in the IMO STCW-F Code and in the EU.
- Make sure materials are available.



O **Catching**
THE **Potential**

Here you have some!

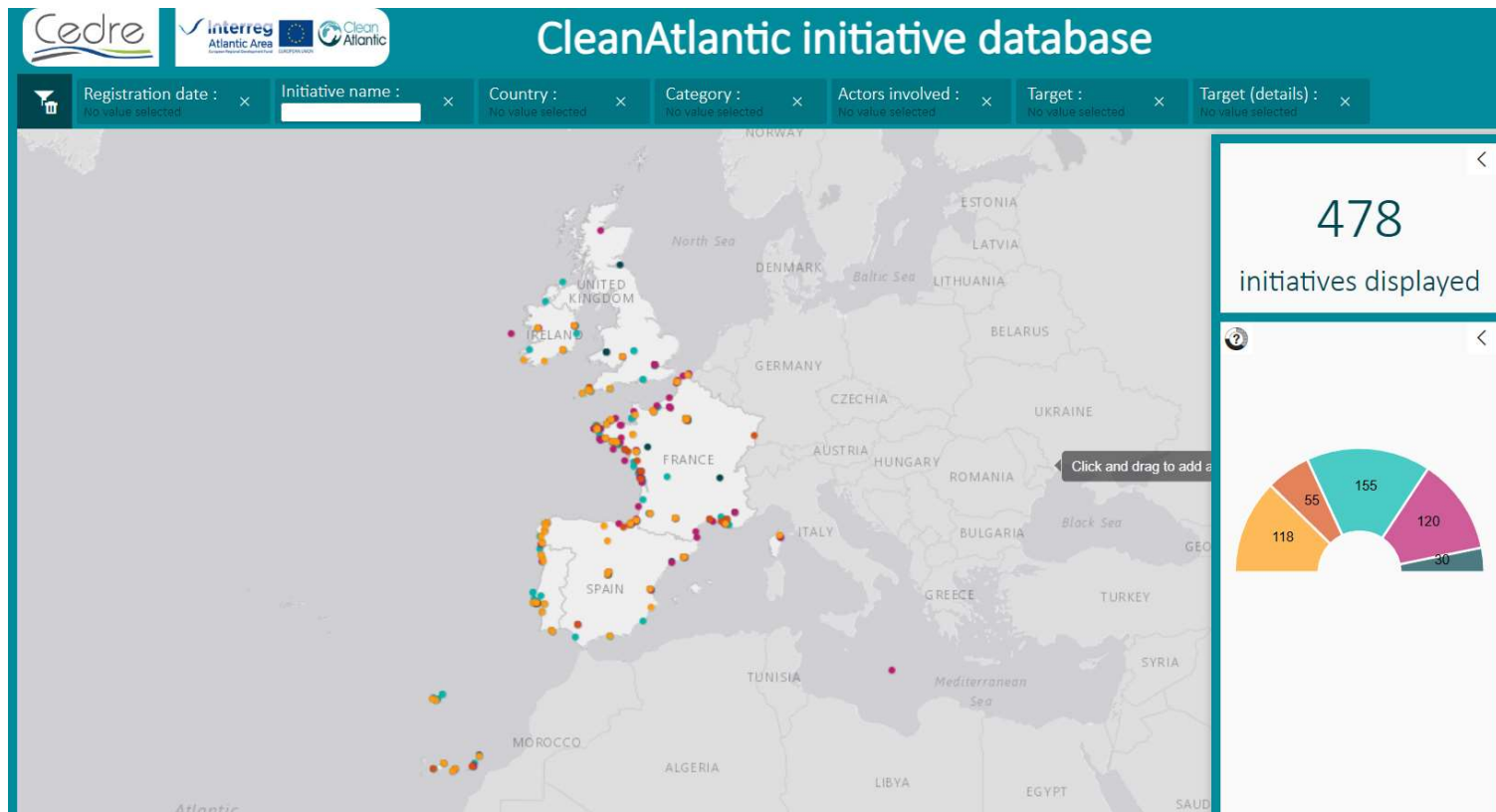
Clean Atlantic

CleanAtlantic aims to protect biodiversity and ecosystem services in the Atlantic Area by improving capabilities to monitor, prevent and remove (macro) marine litter. The project will also contribute to raise awareness and change attitudes among stakeholders and to improve marine litter managing systems.

This project has a big database of initiatives or project related to sustainability!!



The data base: [Link](#)





Green Diving database:

During the development of this project, we are creating our **own database** that will be available in the project website.

[Green Diving – Green Diving \(green-diving.eu\)](http://green-diving.eu)

References

European Commission. (2020). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Stepping up Europe's 2030 climate ambition. COM(2020) 562 final. Brussels. [EUR-Lex - 52020DC0562 - EN - EUR-Lex \(europa.eu\)](#)

United Nations. (n.d.). Oceans and the Law of the Sea. Retrieved July 3, 2023, from <https://www.un.org/sustainabledevelopment/oceans/>

European Commission. (n.d.). Catching potential, setting the standard for sustainable fishing. Retrieved July 3, 2023, from https://cinea.ec.europa.eu/featured-projects/catching-potential-setting-standard-sustainable-fishing_en

CleanAtlantic. (n.d.). CleanAtlantic Project. Retrieved July 3, 2023, from <http://www.cleanatlantic.eu/es/project/>



GREENDIVING

THANK YOU!

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GREENDIVING

Presentation of the project **Green Diving: The Digital Toolkit for Green Skills**

**Enhancing green skills,
sustainability, and attractiveness of Maritime
VET**



Funded by the
European Union

CONSORTIUM DEVELOPING THE TOOLKIT:

1. CENTRO TECNOLOGICO DEL MAR - FUNDACION CETMAR (Spain, Vigo).
2. INOVA+ - INNOVATION SERVICES, SA.
3. BERUFSBILDUNGSZENTRUM AM NORD-OSTSEE-KANAL (Germany).
4. LATVIJAS JURAS AKADEMIJA (Latvia, Riga).
5. Centro Integrado de Formación Profesional Coroso (Spain, Galizia).
6. Associação para o Desenvolvimento e Formação do Mar dos Açores - ADFMA (Açores, Portugal).



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- 3) Process of development.**
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- 5) Section 3 of the toolkit.**
- 6) References.**



1. Introduction



1. Introduction to Green Diving:

IMPLEMENTATION AND ACTIVITIES

The global structure of the Green Diving project is constituted of **3 Results**, defined in a series of support actions to ensure the achievement of the general objective of the project:

R1: Digital Toolkit for Green Skills

R2: Green Skills Course for VET Teachers Professional Development

HBO

R3: Action Plan for Greener VET Maritime Schools.



2. Structure of toolkit

R1: Digital Toolkit for Green Skills

What will you find in the toolkit?

- **Section 1:** Toolkit rationale and context
 - Introduction to the project
 - Introduction to the toolkit
 - Target group and pilot
- **Section 2:** Green skills and relevant resources
 - Overview of Green Comp
 - Overview of ESCO
 - Overview of SKILLSEA
 - Overview of MATES

R1: Digital Toolkit for Green Skills

**What will you
find in the
toolkit?**

Section 3: Toolkit Wireframe: Green Diving Class Plans

Competences:

- 1. Impact of Litter in natural spaces**
- 2. Alternative fishing gears**
- 3. Microplastics in maritime areas**
- 4. Raising awareness on sustainability**
- 5. Impact of boat-building materials**
- 6. Waste management at different workshops**
- 7. Ocean literacy (seven principles)**
- 8. How to reduce footprint in training and in real life: good practices**

Activity 4

- Order the presented topics based on which ones you believe you could integrate into your classes, with the highest being the one you would integrate most easily.



R1: Digital Toolkit for Green Skills

What will you find in the toolkit?

Section 4: Guiding materials to attract students to blue careers

1. The importance of attracting VET students
2. Tips and recommendations
3. Good practices

Section 5: Bibliography



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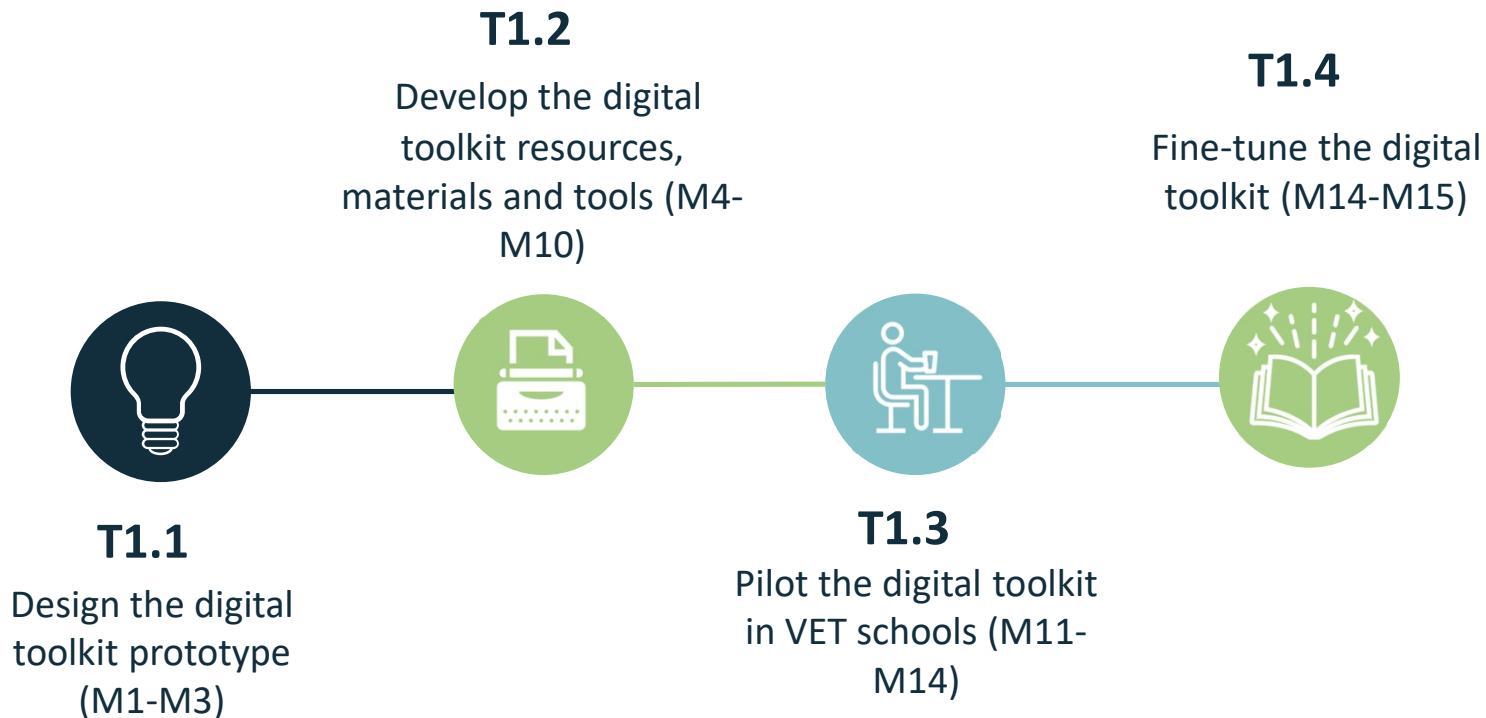
3. Process of development

R1: Digital Toolkit for Green Skills

What is the toolkit for Green Skills?

A set of pedagogical materials and tools that focus on green skills development and that can be used both by VET maritime teachers and its students.

And we created through the process below:





4. Section 2 of the toolkit



4. Section 2:

4.1. Overview of Green Comp

4.2. Overview of ESCO

4.3. Overview of SKILLSEA

4.4. Overview of MATES

4.1. Green Comp Skills: what is it?

Green Comp responds to the growing need for people to improve and develop the knowledge, skills and attitudes to live, work and act in a sustainable manner.

GreenComp is a reference framework for sustainability competences. It provides a common ground to learners and guidance to educators, providing a consensual definition of what sustainability as a competence entails.

GreenComp consists of **four competence 'areas'** that correspond to the definition of sustainability; and the **12 'competences'** that, taken together, make up the **building blocks of the sustainability competence for all people.**

4.1. Green Comp Skills: 12 competences

AREA	COMPETENCE	DESCRIPTOR
Embodying sustainability values	Valuing sustainability	To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values
	Supporting fairness	To support equity and justice for current and future generations and learn from previous generations for sustainability
	Promoting nature	To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.
Embracing complexity in sustainability	Systems thinking	To approach a sustainability problem from all sides; to consider time, space and context in order to understand how elements interact within and between systems
	Critical thinking	To assess information and arguments, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions
	Problem farming	To formulate current or potential challenges as a sustainability problem in terms of difficulty, people involved, time and geographical scope, in order to identify suitable approaches to anticipating and preventing problems, and to mitigating and adapting to already existing problems.

4.1. Green Comp Skills: 12 competences

AREA	COMPETENCE	DESCRIPTOR
Envisioning sustainable futures	Futures literacy	To envision alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future.
	Adaptability	To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk.
	Exploratory thinking	To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.
Acting for sustainability	Political agency	To navigate the political system, identify political responsibility and accountability for unsustainable behavior, and demand effective policies for sustainability.
	Collective action	To act for change in collaboration with others.
	Individual initiative	To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet

4.1. Green Comp Skills: 12 competences

All 12 competences of the framework are applicable to all learners, irrespective of their age and their education level and in any education settings – formal, non-formal and informal. The framework provides:

- A model of sustainability competence areas and competences.
- A common reference that everyone working in education and training for environmental sustainability can use.
- A list of competence components, namely knowledge, skills and attitudes.
- Examples of how to put the competences into practice.
- A common reference basis for dialogue, exchange of practices and peer learning among educators involved in lifelong learning across the EU.
- A contribution to help make the competences portable and promote mobility in the EU for a full participation in European society.

4.2. ESCO: what is it?



ESCO is the multilingual European classification of skills, competences, qualifications, and occupations and is part of the Europe 2020 Strategy.



The classification serves as a dictionary for key skills and occupations relevant to the European labour and education market. It was launched by the European Commission services in 2010 through an open stakeholder consultation.



Available in 28 languages, ESCO v1 provides a useful framework for aligning the education system with industry needs by describing the skills and competencies required for each occupation.



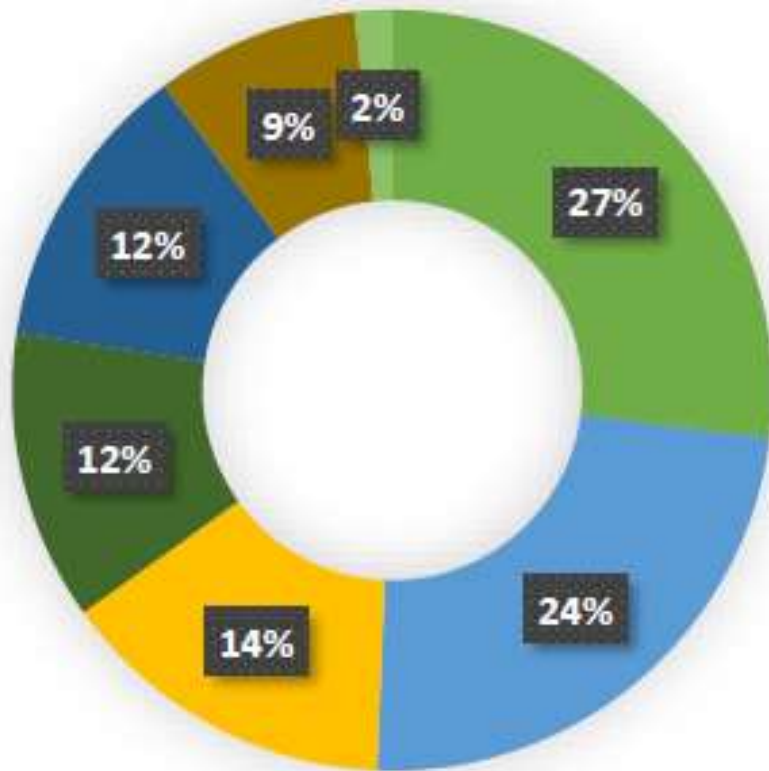
Occupations are divided into 10 categories with subcategories, and the section on qualifications includes 13485 different concepts structured in a hierarchy with subcategories.

4.2. ESCO

- The ESCO qualification hierarchy is a continuous process of improvement. Since 2022, this classification also includes 3 categories that identify the capabilities according to their impact on the environment, available on the [Labeling ESCO classification](#) page:
- **Brown skills:** those increasing the negative impact of human activity on the environment, as “production of electricity by using coal.”
- **White skills:** including knowledge and skills that don’t increase nor reduce this negative impact in the environment, as for example: software performance”.
- **Green skills:** all the skills that help protecting the environment by reducing the negative impact of human activity on the environment, as “cogeneration of heat or cold power from geothermal energy”. Meanwhile some examples of green knowledge are engineering, manufacturing, construction, or natural sciences.

4.2. ESCO

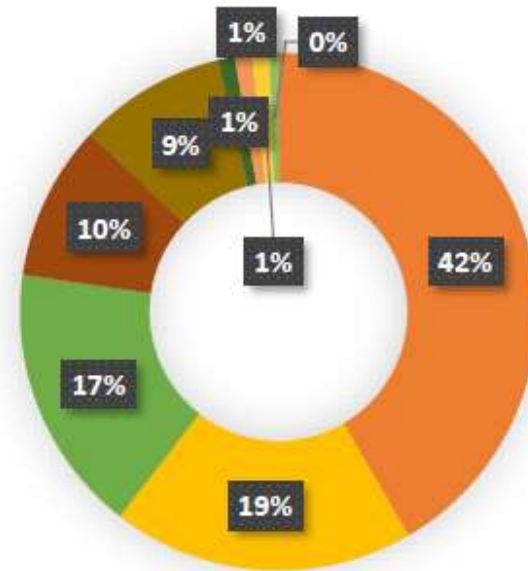
Green Skills



- information skills
- communication, collaboration and creativity
- assisting and caring
- management skills
- handling and moving
- working with machinery and specialised equipment
- constructing

4.2. ESCO

Green Knowledge Concepts



Green Transversal Skills



4.3. SKILLSEA: what is it?

The SKILLSEA blueprint Project is led by the social partners of the maritime industry, the European Community Shipowners' Association (ECSA) and the European Transport Workers' Federation (ETF), and consists of a consortium of national maritime authorities, shipping companies, shipowners' associations, maritime trade unions and maritime education providers from 16 countries in Europe.

The project analyses how technological developments in the maritime industry will affect the skill requirements for workers of the future. New educational packages have been created to support the adaptation of the educational system to the new needs and trends.

The first is aimed at maritime professionals (at operational and management levels) interested in energy-efficient and environmentally friendly ship operations and includes 12 lessons of 3 hours each. The lessons are available in English and the topics are (those marked with * are available as examples only):

4.3. SKILLSEA

TOPIC	
1.	Alternative fuels*
2.	Green legislation in an operational context*
3.	Determining environmental impact
4.	Climate change and the adaptation of transport infrastructure
5.	Energy-efficient operation – power production*
6.	Energy-efficient operation – power consumption*

7.	Energy-efficient operation – energy efficiency awareness*
8.	Data collection and interpretation, I
9.	Data collection and interpretation II
10.	Management of operation in a green context
11.	Improving green performance in an operational context
12.	Introduction to assessment case and methodology

4.3 SKILLSEA

A second Green Skills package is for ambitious deck or engine officers who want to transfer from sea to shore or have already made that transfer and want to take on duties that include Green Skills. The duration of the entire package is 40 hours of guided learning (contact) and 85 hours of self-study for a total workload of 125 hours. The course consists of five main learning streams as core elements:

1. Data Processing
2. Calculation and documentation of emissions
3. Vessel performance management systems
4. The role, design, and validation of Key Performance Indicators (KPIs)
5. The development of regulation and political structures in the maritime industry



4.4. MATES



The **MATES** blueprint project developed a skills strategy for maritime technologies, in particularly shipbuilding and offshore renewable energies.



The project provided an opportunity to contribute to updating ESCO by feeding the database with expected new profiles in the Shipbuilding (SB) and Offshore Renewable Energy (ORE) sectors and updating ESCO descriptors for existing occupations in these sectors.



Two of the identified future trends are expected to have a stronger impact on the demand for green skills for the maritime technologies: **the exploitation of alternative fuels and the green retrofitting of vessels.**



A set of 16 skills and knowledge were assigned to these occupations to facilitate their adaptation to the new scenario.

4.4. MATES

Skills:	Analyze energy consumption.	Conduct energy audit.	Develop energy saving concepts.	Identify energy needs.
Operate battery test equipment.	Promote innovative infrastructure design.	Promote sustainable energy.	Knowledge:	Energy efficiency.
Battery chemistry.	Battery components.	Battery fluids.	Chemical products.	Fuel gas.
	Renewable energy technologies.	Solar energy.	Vessel fuels	



4. Section 3 of the toolkit

4. Section 3: the class plans



COMPONENTS:

- Introduction to the competence/skill (1-3 pages)
- Age of the students
- Duration HBO
- Learning outcomes
- Resources
- The steps and activities to carry out the class plan
- And some tips!

The toolkit is available in our Google Drive Group

Organization of the common folder:

Mi unidad > GREEN DIVING MATERI..


Tipo ▾


Personas ▾

Modificado ▾

Nombre ↑

 Presentations of the sessions

 Recording of the sessions

 Repository of resources

 Toolkit

Link to access:

https://drive.google.com/drive/folders/1I2yQLPBLfF-F0XBOgGEOeWEn4O7kjs4I?usp=drive_link

From now,
each partner
will present
the class plan
they develop
and tested...

So, you can create own
sustainable class plan. HB0



Next sessions:

Month	Day	Time	Title of the session	Description
Septemeber	5	1 h 30 min	The importance of sustainability in the Maritime Field.	Module focusing on Green skills, Sustainability, Environment awareness and Fight against climate change. Overall presentation of the tools provided by Green-Diving Project to integrate those aspects in the maritime teaching curriculum. Speaker: CETMAR.
	12	1 h 30 min	Environmental awareness and literacy.	Module presenting 3 class plans to tackle the Impact of Litter in Natural Spaces, Alternative Fishing Gears and Good practices to reduce the carbón footprint. Speakers: BBZ-NOK & Escola do Mar dos Açores.
	19	2h	Ecosystems and biodiversity awareness.	Module presenting 4 class plans to address Awareness Raising on Sustainability, Microplastics in Maritime Areas, Impact on Boat- Building Materials and Waste management at the boatbuilding and maintenance workshops. Speakers: Latvian Maritime Academy, CIFP Coroso & CETMAR.
	26	2 h	Social Responsibility.	Module focusing on the integration of Green Skills in the teaching curriculum. Presentation of proposals from the participants.
October	3	2h	Ocean Literacy: boosting green and Sustainable VET maritime schools.	Presentation of the topic of Ocean Litercay and a class plan to adress it. Presentation of Blue Careers. Speakers: Escola do mar dos Açores & INOVA+.
	10	2h	Building Green Actors: General Overview of the Programme and evaluation.	General Overview of the Programme and Brain Storm about the European Blue Schools Initiative and Feedback. Speaker: INOVA+.

IMPORTANT INFORMATION!

During the lesson HBO n° 4 you will present your own class plan or your adaptation of one of the class plan presented to your reality.

But don't worry you will have time until then...

References

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2. European Commission. (n.d.). ESCO portal. Retrieved July 3, 2023, from <https://esco.ec.europa.eu/select-language?destination=/node/1>
3. European Commission. (n.d.). Green Skills and Knowledge Concepts: Labelling the ESCO classification. Retrieved July 3, 2023, from <https://esco.ec.europa.eu/en/about-esco/publications/publication/green-skills-and-knowledge-concepts-labelling-esco>
4. SkillSea. (n.d.). Green Skills 1 lessons materials. Retrieved July 3, 2023, from <https://www.skillsea.eu/index.php/maritime-education-training-portal/educational-packages/green-skills-1>
5. Mates Project. (n.d.). Mates project page. Retrieved July 3, 2023, from <https://www.projectmates.eu/>
6. SkillSea. (n.d.). SkillSea project maritime-education-training portal. Retrieved July 3, 2023, from <https://www.skillsea.eu/index.php/maritime-education-training-portal>



GREENDIVING

THANK YOU!

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