



# Horizon Europe Missions

## Mission Restore our Ocean and waters by 2030

8 February 2022

**Magdalena Andreea Strachinescu Olteanu** – Head of Unit

DG MARE - Maritime Policy and Blue Economy Directorate  
Maritime Innovation, Marine Knowledge and Investment Unit

# Mission main features

- Be bold and inspirational, with wide societal relevance;
- Indicate a clear direction: targeted, measurable and time-bound;
- Be ambitious but realistic research and innovation actions;
- Spark innovation across disciplines, sectors and actors;
- Be based on a bottom-up approach of multiple solutions



# Horizon Europe: structure



- 1) Adaptation to climate change
- 2) Mission cancer
- 3) Restore our Ocean and waters

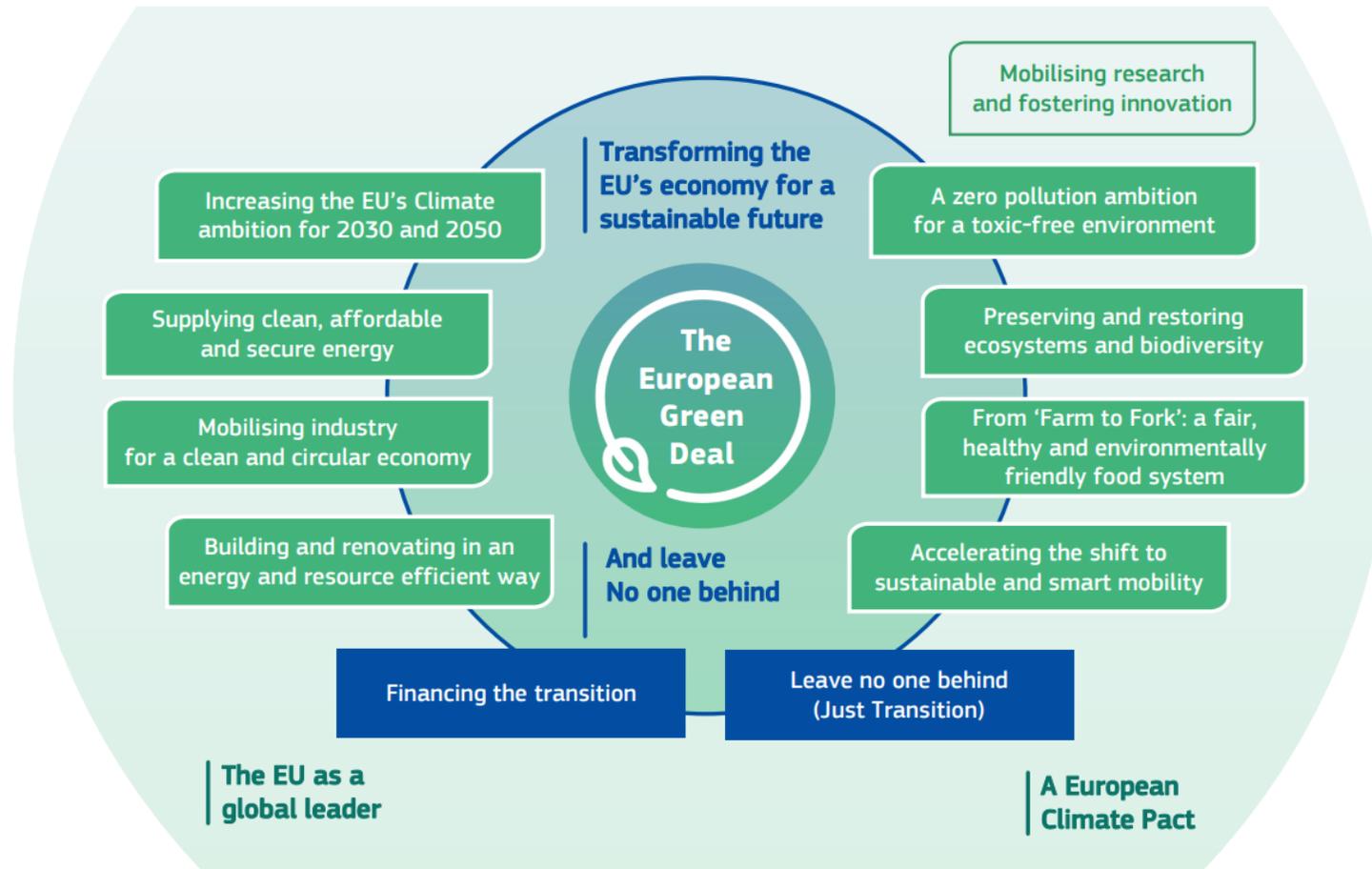
5 MISSIONS

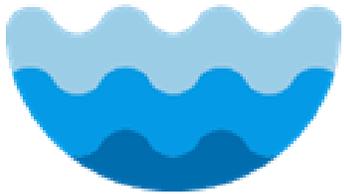
- 4) 100 climate-neutral and smart cities
- 5) A soil deal for Europe

# Mission Restore our Ocean and Waters

## There is no green without blue!

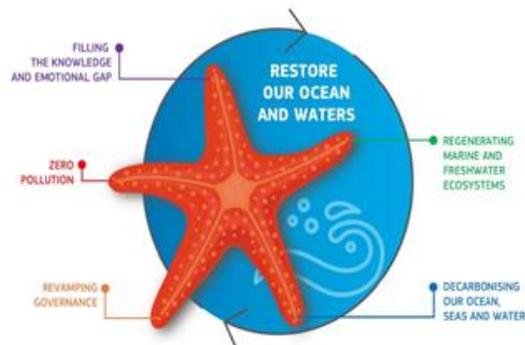
- Healthy ocean is only possible with a healthy water system.





# European Mission 'Restore our Ocean and Waters by 2030'

***Systemic path  
to restoration of the health of the ocean & waters  
as recommended by the  
Mission Board in its Starfish report***



# Specific objectives and targets

## Protect and restore marine and freshwater ecosystems and biodiversity in line with EU Biodiversity Strategy

Protect a minimum of 30% of the EU's sea area and integrate ecological corridors, as part of a true Trans-European Nature Network.

Strictly protect at least 10% of the EU's sea area

At least 25,000 km of free-flowing rivers are restored

Contribute to relevant upcoming marine nature restoration targets incl. degraded seabed habitats and coastal ecosystems

## Prevent and eliminate pollution of our ocean, seas and waters in line with EU Action Plan towards Zero Pollution

Reduce by at least 50% plastic litter at sea

Reduce by at least 30% microplastics released into the environment

Reduce by at least 50% nutrient losses, the use and risk of chemical pesticides

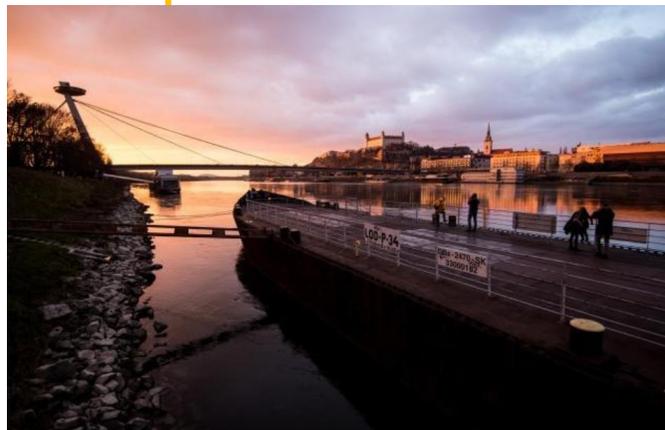
## Make the Blue Economy carbon neutral and circular in line with the European Climate Law

Eliminate greenhouse gas emissions from maritime economic activities in the EU and sequester those emissions that cannot be avoided (net zero maritime emissions)

Develop zero-carbon and low-impact aquaculture, and promote circular, low-carbon multi-purpose use of marine and water space.

# Mission lighthouses

Danube river basin



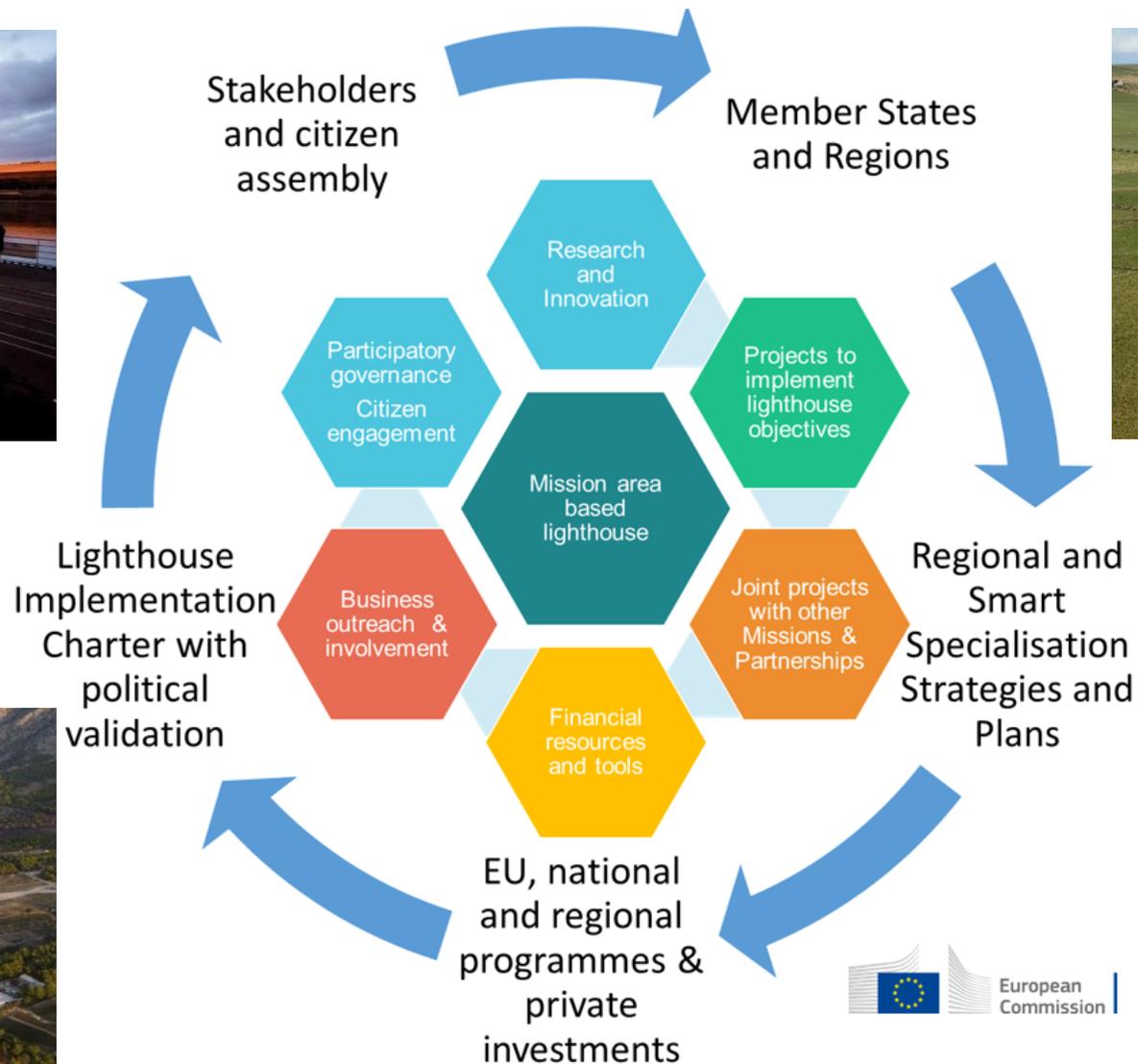
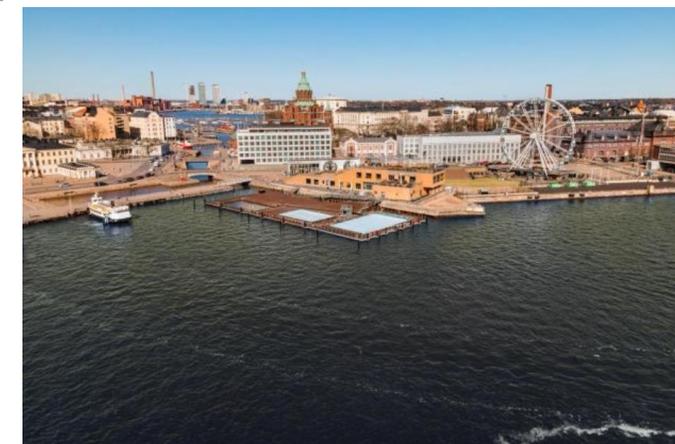
Atlantic & Arctic basin



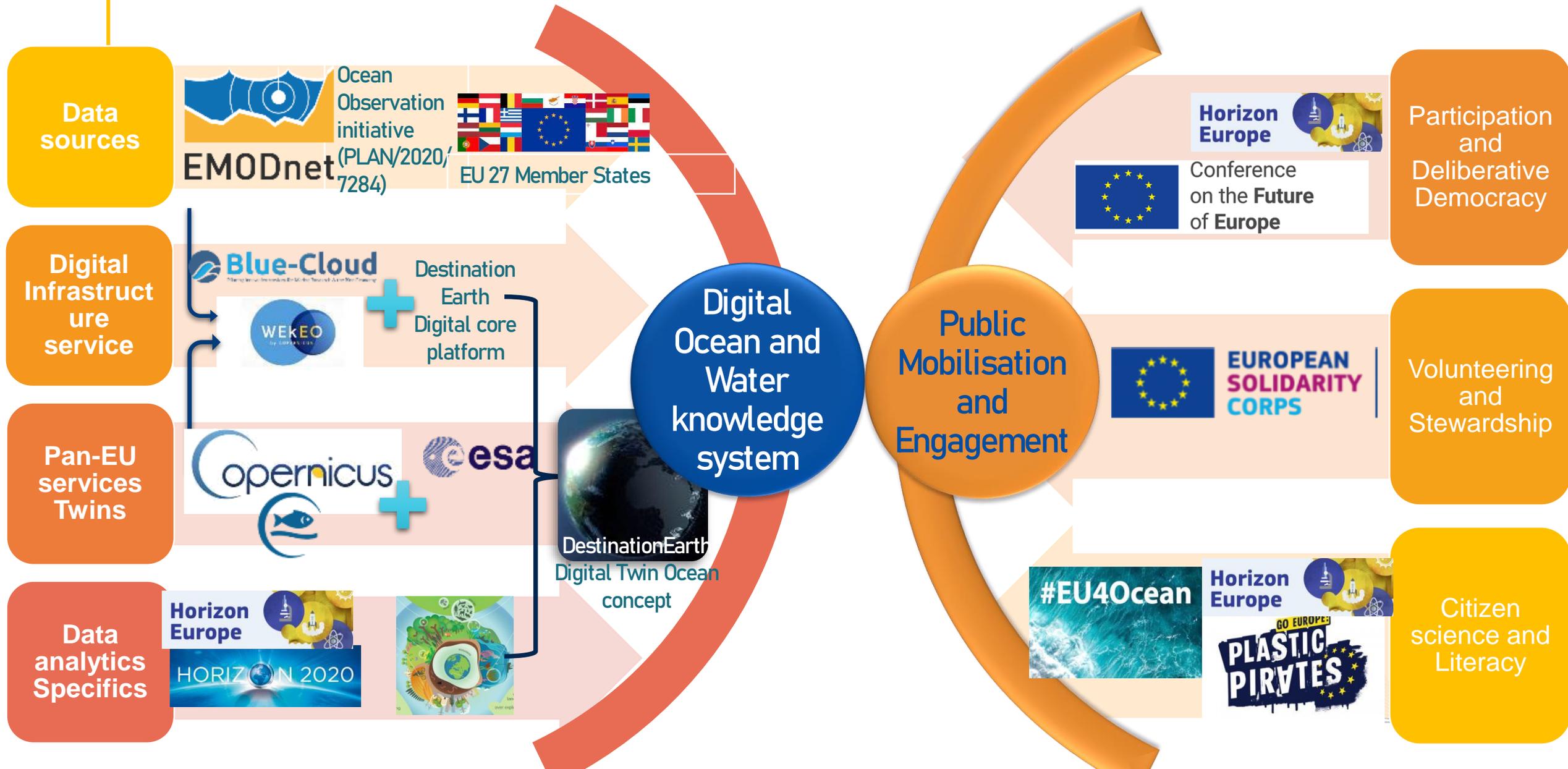
Mediterranean sea basin



North and Baltic sea basin



# Cross cutting enablers



# Mission implementation phases



## Development and Piloting phase 2021-2024

- Mission lighthouses
- Blue Parks Platform
- Piloting and testing of innovative R&I solutions
- Precursor of digital ocean and water knowledge system
- Citizen science, literacy and engagement



## 2023 Mid-term review



## Deployment and upscaling phase 2025-2030

- Scale up projects
- Blue parks conservation projects
- Dynamic investment ecosystem
- Digital Ocean and water knowledge system
- Digital Twin Ocean
- Citizen science, literacy and engagement



# Next steps in the Mission implementation

Implementation of  
Mission lighthouses &  
Blue Parks technical  
support

Lighthouse  
Implementation Charter

1<sup>st</sup> Mission Horizon  
Europe Work  
programme 2021 +  
preparation of work  
programme 2022

Start of first projects

Links with other EU and  
national programmes

Communication,  
outreach, literacy &  
citizen engagement

Actions to support  
digital ocean and water  
knowledge system

# EU Mission Ocean and waters work programme 2021: main features

# WP 2021 - Mission Ocean, seas and waters

## ...adopted on 15 December 2021

### WP 2021 Main features

- ✓ Follows the **impact-driven logic** of Horizon Europe
- ✓ Support major **EU policy objectives**, e.g.: the EU Biodiversity Strategy 2030, the Action Plan toward Zero pollution, the COM on a Sustainable Blue Economy
- ✓ Special focus on «**lighthouses**»: hubs for the development and deployment of transformative innovations (technological, social, business, governance) in **4 main basins**:
  - **Atlantic and Arctic sea basin**
  - **Baltic and North Sea basin**
  - **Mediterranean Sea basin**
  - **Danube River basin**
- ✓ Based on the **Mission Board *Starfish 2030* Report** and the **Mission Implementation Plan**
- ✓ Support the Mission first phase: «***development and piloting***» for 2021-2025
- ✓ **Topics for 2021 only** – further WP amendment for 2022 topics

# WP 2021 - Mission Ocean, seas and waters

## ... adoption in December 2021

### WP 2021 Structure

- ✓ **3 calls** addressing 3 policy objectives and specific expected impacts
  - **Protect and restore marine and freshwater ecosystems and biodiversity**
  - **Prevent and eliminate pollution of our oceans, seas and waters**
  - **Sustainable, carbon-neutral and circular Blue Economy**
- ✓ **1 call** supporting enabling activities: digital knowledge system, public engagement, foresights and other studies
- ✓ **Other actions:** Digital twin Ocean Infrastructure; Coordination activities - «lighthouse» implementation/coordination; technical assistance
- ✓ **Indicative budget 2021:** EUR 114 million
- ✓ **Call deadline:** 12 April 2022

# WP 2021 - Mission Ocean, seas and waters

## ... adopted in December 2021

### WP 2021 Type of Actions

#### ✓ Innovation Actions:

- Demonstrate the technical, economic and/or societal viability of innovative solutions in a (near to) operational environment (validation, testing, demonstration, prototyping, piloting, and market replication activities) - TRL 5 to 7
- Involvement of at least 5 «*associated regions*» to showcase the feasibility, replicability and scale-up of innovative solutions
- Citizens' engagement and users' involvement
- Ideally building on previous successful projects

#### ✓ Research and Innovation Actions: foresight study on young generations and their relation with the sea;

#### ✓ Coordination and Support Actions: Lighthouses coordination and networking; citizen science activities;

#### ✓ Public procurements: EU Digital Twin of the Ocean infrastructure; monitoring; technical assistance; communication

# Who is eligible for funding?



## EU COUNTRIES

- Member States (MS) including their outermost regions



## NON-EU COUNTRIES

- **Countries associated to Horizon Europe (AC) e.g.: Turkey**
- Low and middle income countries
- Other countries when announced in the call or exceptionally if their participation is essential



## SPECIFIC CASES

- Affiliated entities established in countries eligible for funding.
- EU bodies
- International organisations (IO):
  - International European research organisations are eligible for funding.
  - Other IO are not eligible (only exceptionally if participation is essential)
  - IO in a MS or AC are eligible for funding for Training and mobility actions and when announced in the call conditions

# EU Mission Ocean and waters work programme 2021: overview of topics

# Call “Protect and restore marine and freshwater ecosystems and biodiversity”

# Call “Protect and restore marine and freshwater ecosystems and biodiversity”

## Expected impact – contribution of the project to policy objectives:

- Protect a minimum of 30% of EU seas and integrate ecological corridors
- Strictly protect at least 10% of the EU sea area
- Restore at least 25,000 km of free-flowing rivers
- Provide evidence for new legislations and the implementation of the existing ones
- Support the EU *Water Framework Directive* and the *Marine Strategy Framework Directive* to achieve good environmental status
- Support international cooperation to enable global transformative changes

# Call “Protect and restore marine and freshwater ecosystems and biodiversity”

## Overview of the topics proposed and main features

### HORIZON-MISS-2021-OCEAN-02-01: European Blue Parks

**Scope:** development of innovative solutions for the protection, conservation and enhancement of the EU blue natural capital in a biogeographical area or a marine region.

- **Topic main features:**

- ✓ Type of action: IA; TRL 5-7
- ✓ Innovative solutions expected to be scaled up and reproduced at EU level and beyond
- ✓ Socio-economic sustainability of the solutions expected to be addressed
- ✓ Citizens’ engagement, involvement of regional/local authorities, MPA managers and key stakeholders expected
- ✓ Indicative budget: €17 million - estimated EU contribution per project: € 8,5 million

# Call “Protect and restore marine and freshwater ecosystems and biodiversity”

## HORIZON-MISS-2021-OCEAN-02-02: Danube river basin lighthouse – restoration of freshwater ecosystems

**Scope:** development and demonstration of effective and economically profitable solutions for the restoration and sustainable use of freshwater in the Danube river basin (including its delta and main tributaries)

✓ Indicative budget: €17 million

## HORIZON-MISS-2021-OCEAN-02-03: Atlantic and Arctic basin lighthouse - restoration of marine and coastal ecosystems and increased climate resilience

**Scope:** development and demonstration of nature-based solutions in the Atlantic and Arctic basin, for the restoration of marine and coastal ecosystems and for increasing climate resilience

✓ Indicative budget: €17 million

# Call “Protect and restore marine and freshwater ecosystems and biodiversity”

## Main features common to all basin-related topics:

- ✓ Type of action: IA; TRL 5-7
- ✓ Involve at least 3 countries of the basin covered by the topic (Danube River basin or Atlantic and Arctic sea basin)
- ✓ Innovative solutions expected to be scaled up and reproduced
- ✓ Involvement of «associated regions» in MS/ACs **others than those involved in the project** to show-case the feasibility, replicability and scale-up of innovative solutions
- ✓ Citizen engagement, involvement of regional/local authorities and key stakeholders expected
- ✓ Estimated EU contribution per project: € 8,5 million

**Call “Prevent and eliminate pollution of our ocean,  
seas and waters”**

# Call “Prevent and eliminate pollution of our ocean, seas and waters”

## Expected impact – contribution of the project to policy objectives:

- Reduce by at least 50% plastic litter at sea
- Reduce by at least 30% microplastics released into the environment
- Reduce by at least 50% nutrient losses, the use and risk of chemical pesticides
- Provide evidence for new legislation and the implementation of the existing ones
- Support the EU Green Deal objectives, the Zero Pollution Action Plan and the Marine Strategy Framework Directive objectives
- Support international cooperation to enable global transformative changes

# Call “ Prevent and eliminate pollution of our Ocean, seas and waters”

## Overview of the topics proposed and main features

**HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution**

**Scope:** demonstration of innovative solutions for preventing and minimising marine and freshwater pollution from litter, plastics and microplastics in the Mediterranean sea, including its major river catchments areas and land-sea interactions

### Main features:

- ✓ Type of action: IA; TRL 5-7
- ✓ Involve at least 3 countries of the Mediterranean sea basin
- ✓ Involve «associated regions» in MS/ACs **others than those involved in the project** to showcase the feasibility, replicability and scale-up of innovative solutions
- ✓ Citizen’s engagement, involvement of regional/local authorities, MPA managers and key stakeholders expected
- ✓ Indicative budget: 16 million, estimated EU contribution per project: € 8 million

# Call “Sustainable, carbon-neutral and circular blue economy”

# Call “Sustainable, carbon-neutral and circular Blue economy”

## Expected impact – contribution of the project to policy objectives:

- Achieve net-zero emissions from maritime activities
- Develop zero-carbon and low-impact aquaculture
- Promote circular, low-carbon, multi-purpose use of marine and water space
- Provide evidence for new legislation and the implementation of the existing legislation and policies
- Support international cooperation to enable global transformative changes

# Call “Sustainable, carbon-neutral and circular Blue economy”

## Overview of the topics proposed and main features

**HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North sea basins - Low impact marine aquaculture and multi-purpose use of marine space**

**Scope:** demonstration of innovative solutions for profitable and sustainable seafood farming, spanning from engineering and robotics to breeding issues, from special planning to systemic governance of multiple maritime activities.

- **Main features:**

- ✓ Type of action: IA; TRL 5-7
- ✓ Involve at least 3 countries of the Baltic and North sea basin
- ✓ Involve «associated regions» in MS/ACs **others than those involved in the project** to show-case the feasibility, replicability and scale-up of innovative solutions
- ✓ Citizen engagement, involvement of regional/local authorities and key stakeholders expected
- ✓ Indicative budget: € 16 million; estimated EU contribution per project: € 8 million

# Coordination activities in the sea/river basins

- HORIZON-MISS-2021-OCEAN-02-04: Danube River basin lighthouse – coordination activities
- HORIZON-MISS-2021-OCEAN-02-05: Atlantic and Arctic sea basin lighthouse – coordination activities
- HORIZON-MISS-2021-OCEAN-03-02: Mediterranean sea basin lighthouse – coordination activities
- HORIZON-MISS-2021-OCEAN-04-02: Baltic and North Sea basin lighthouse – coordination activities

**Scope:** support the implementation of the Mission and the development and deployment of transformative innovative solutions in all forms – technological, social, business, governance, ensuring fast progress towards the achievement of Mission objectives and important impact on society

## Main features:

- ✓ Type of action: CSA
- ✓ Activities at basin level: 1) governance and networking; 2) communication, monitoring support implementation; 3) support innovation ecosystem; 4) technical expertise and know-how provision
- ✓ estimated EU contribution per project: € 3 million

# Call “Mission enabling activities”

# Call “Mission enabling activities”

## Expected impact – contribution of the project to policy objectives:

- Boost R&I capacities and knowledge in marine and freshwater domains
- Support observation and monitoring capacity, data use and modelling
- Support citizen engagement and involvement
- Provide evidence for policy-making
- Enhance cooperation among countries, regions and relevant actors to enable transformative changes needed to achieve the European green deal objectives
- Support international cooperation to address global challenges

# Call “Mission enabling activities”

## Overview of the topics proposed and main features

### HORIZON-MISS-2021-OCEAN-05-01: Underlying models for the European Digital Twin Ocean

**Scope:** develop the next generation of the EU Digital Twin of the Ocean, i.e.: digital Ocean models complementary to the Copernicus marine service. It will support the EU Digital Twin Ocean (DTO) public infrastructure (in Other Actions). Type of Action: IA; Budget: €7 million

### HORIZON-MISS-2021-OCEAN-05-02: The relation of young generations with the sea and waters: values, expectations and engagement

**Scope:** provide a forward-looking analysis, insights and future visions about the cultural and emotional relation of tomorrow’s generation with the sea and waters to shape future policies and initiatives. Type of Action: RIA; Budget: €1 million

### HORIZON-MISS-2021-OCEAN-05-03: Piloting citizen science in marine and freshwater domains

**Scope:** Connect EU citizens’ and local communities with the Ocean, seas and waters, create ownership and empower citizens to take actions to protect aquatic resources  
Type of Action: CSA; Budget: €1 million

# Other activities

- **EU public infrastructure for the European Digital Twin Ocean (Grant to Identified Beneficiaries – GIB):** establish a public infrastructure hosting existing (e.g.: Copernicus and EMODnet) and new sources of data and modelling capacities for oceans and freshwaters. Indicative budget: € 3.00 million
- **Europeanisation of Plastic Pirates Citizen Science Initiative (Grant to Identified Beneficiaries – GIB):** The action should respond to the Council’s call “on the Commission and Member States to further develop and implement the ‘plastic pirates’ citizen science campaign”. Indicative budget: € 2.00 million
- **Mission Implementation Support Platform:** overall coordination and monitoring; Blue Parks technical assistance; citizen engagement and communication (**Public Procurements**). Indicative budget: € 5.34 million

EU Mission Ocean and waters –  
work programme 2022  
*... is taking shape...*



# Mission HE Work programme 2022: work in progress

- **Elements of continuity and main novelties:**
  - 2022 WP structure follows the 2021 WP
  - Topics around three policy objectives and two enablers + other actions
  - Sea/river basin approach complemented by some cross-basin topics
  - Concept of “*associated regions*” included in all relevant IAs
  - New focus of topics to complement areas/domains covered in 2021
  - Majority of topics implemented via IAs – around 90% of the budget 2022
- **Total indicative budget 2022: € 117 million**

# MISSION OCEAN & WATERS



## To know more...

### Ocean & Waters website:

[https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/healthy-oceans-seas-coastal-and-inland-waters\\_en#what-are-missions-and-mission-areas](https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/healthy-oceans-seas-coastal-and-inland-waters_en#what-are-missions-and-mission-areas)



### Follow us!

@EU\_MARE  
@EUScienceinnov  
@HorizonEU

#EUMissions  
#MissionOcean  
#HorizonEU