Interreg

Co-funded by the European Union

Italy – Croatia

DIH InnovaMare

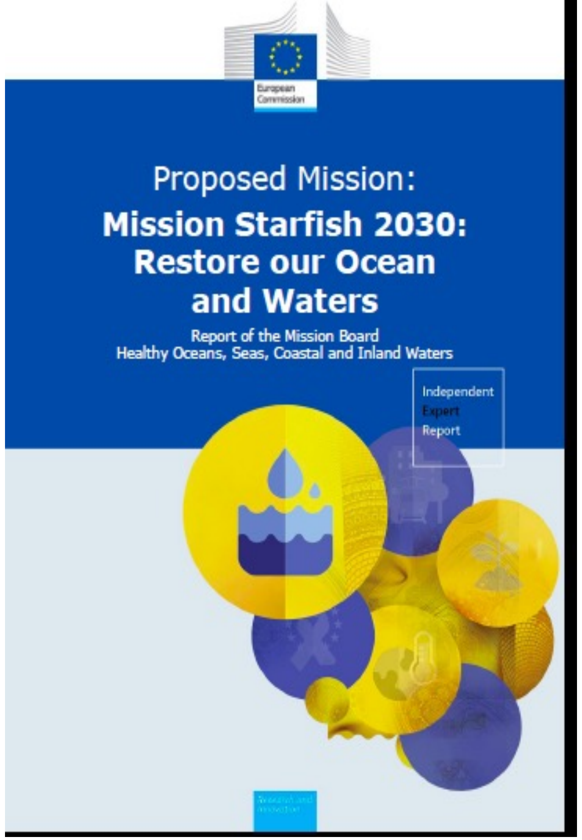
A European Pact for the Oceans: the role of the INEST project

Maria Cristina Pedicchio
University of Trieste
APRE President

»The European Union is the world's pre-eminent **ocean actor** whose **energy, communications, food, biotech and nature services** will be central to its **competitiveness**, to its **climate and to its security.**

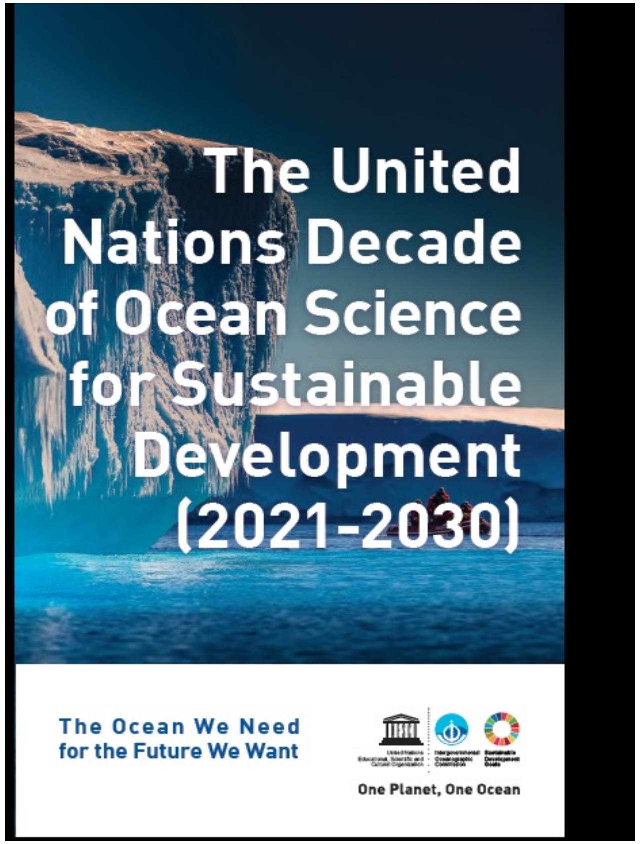
The EU urgently needs a coherent plan, a new smart, powerful combination of policies and actions to **address both economic opportunities and environmental challenges «**

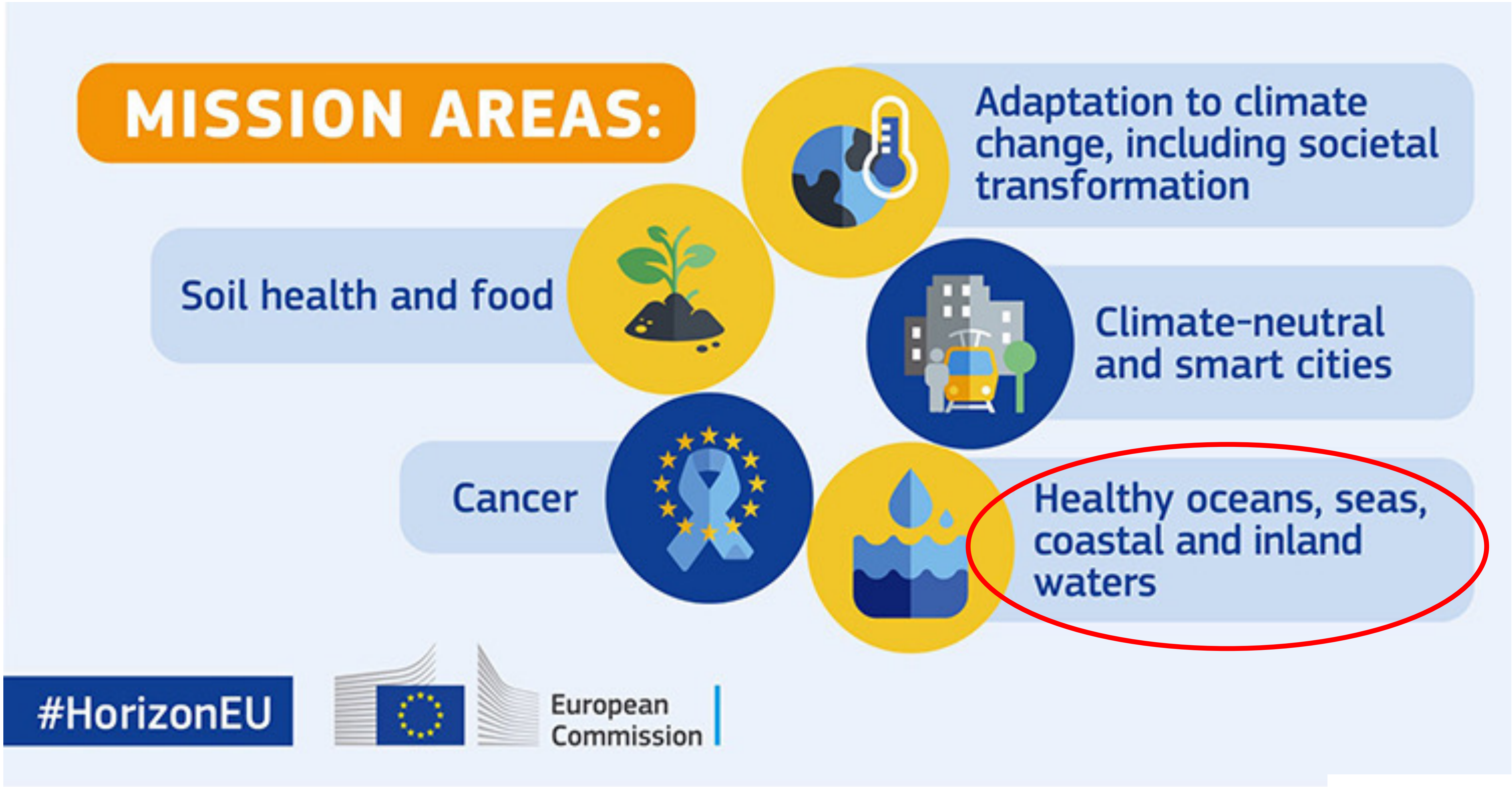
The context


European Commission
Proposed Mission:
Mission Starfish 2030: Restore our Ocean and Waters
Report of the Mission Board
Healthy Oceans, Seas, Coastal and Inland Waters
Independent Expert Report


14 LA VITA SOTT'ACQUA


SUSTAINABLE DEVELOPMENT 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
SUSTAINABLE DEVELOPMENT GOALS


The United Nations Decade of Ocean Science for Sustainable Development (2021-2030)
The Ocean We Need for the Future We Want
One Planet, One Ocean


MISSION AREAS:
Adaptation to climate change, including societal transformation
Soil health and food
Climate-neutral and smart cities
Cancer
Healthy oceans, seas, coastal and inland waters
#HorizonEU
European Commission


EUROPEAN UNION
EU
MISSIONS
RESTORE OUR OCEAN & WATERS
Concrete solutions for our greatest challenges
#EUmissions #HorizonEU #MissionOcean
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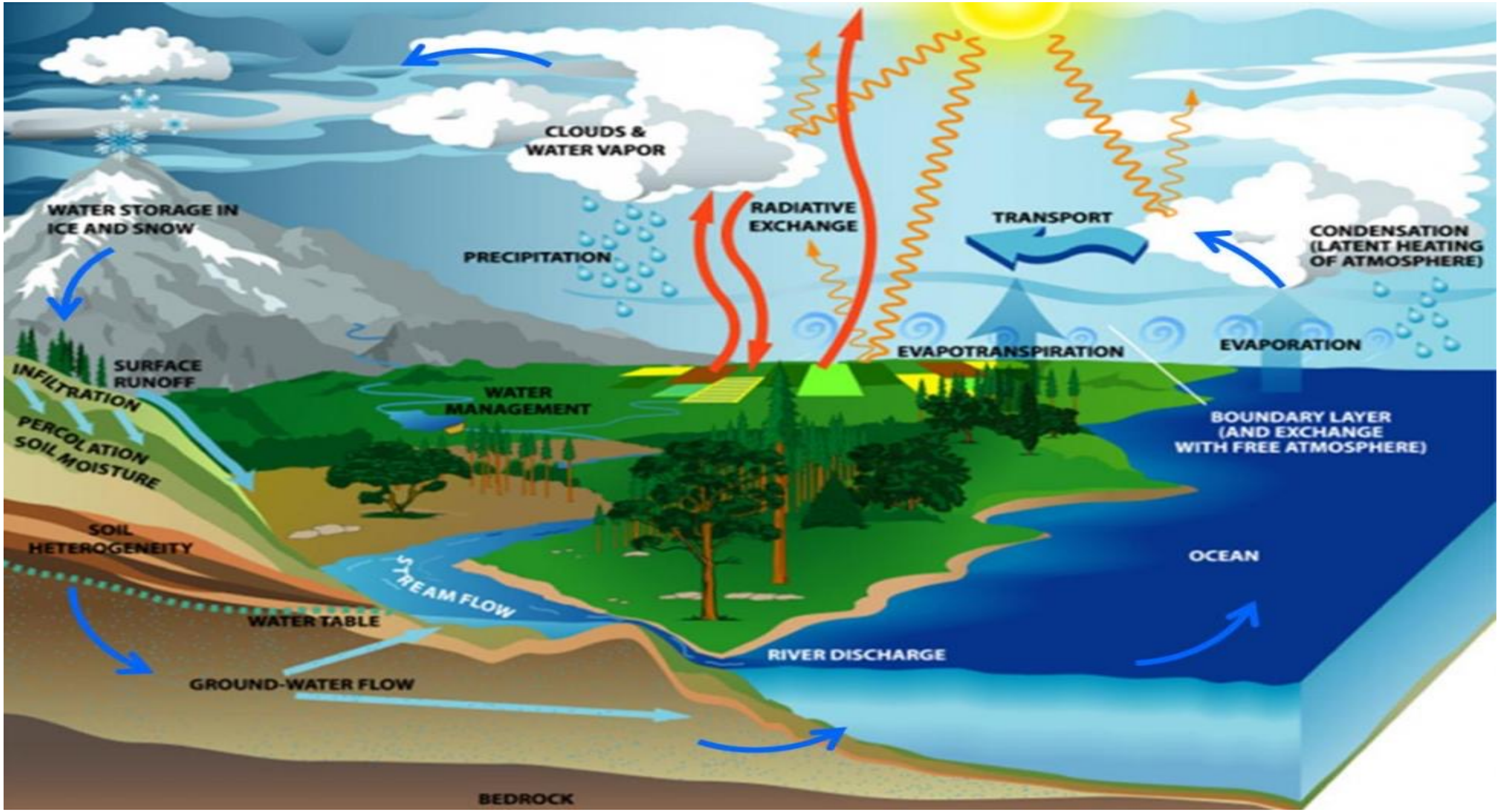
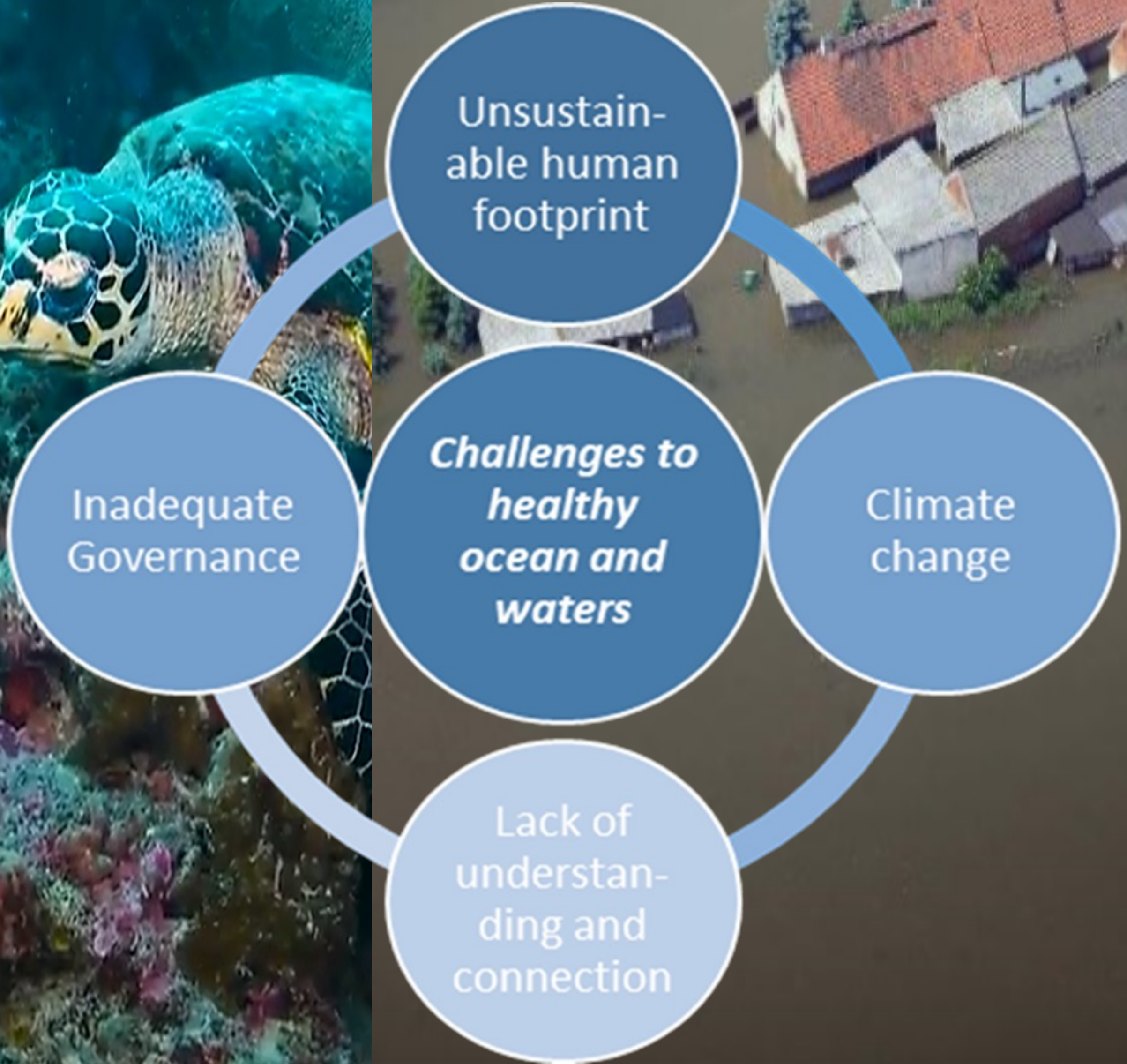
Holistic approach



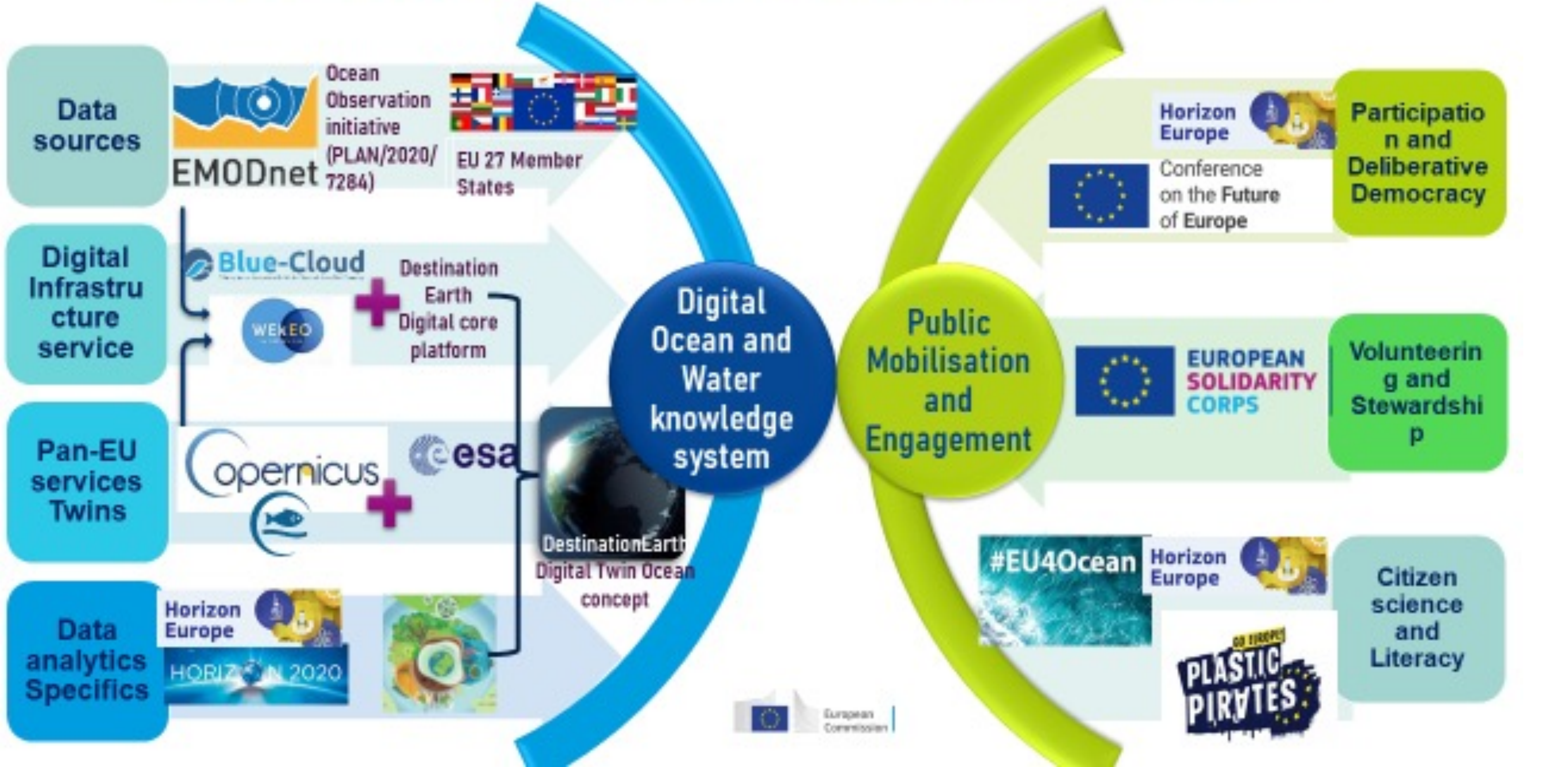
Source: http://archive.sswm.info/pt-pt/category/concept/water-cycle

The Ocean and Waters are under Threat



The Starfish Mission

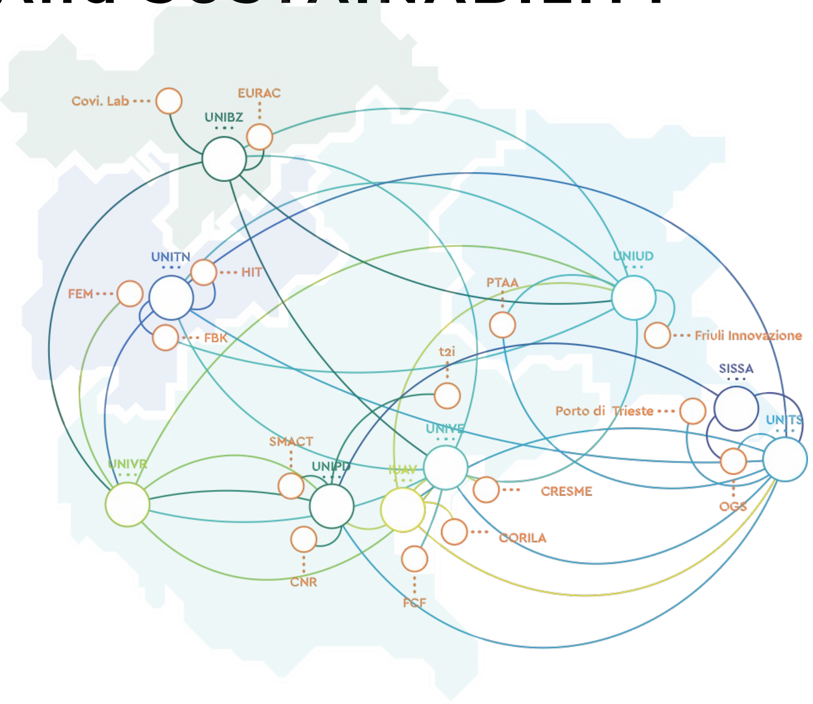
Cross cutting enablers for the Mission



INTERCONNECTED NORD-EST INNOVATION ECOSYSTEM

iNEST: HUB e 9 Spokes

Priority : DIGITALIZATION And SUSTAINABILITY



University of Bolzano
-
Ecosystems for mountain innovations

University of Trento
-
Health, Food and Lifestyle

Ca' Foscari University of Venice
-
Tourism, Cultural and Creative industries

University of Udine
-
Green and digital transition
for advanced manufacturing technology

University of Verona
-
Smart Agri-Food

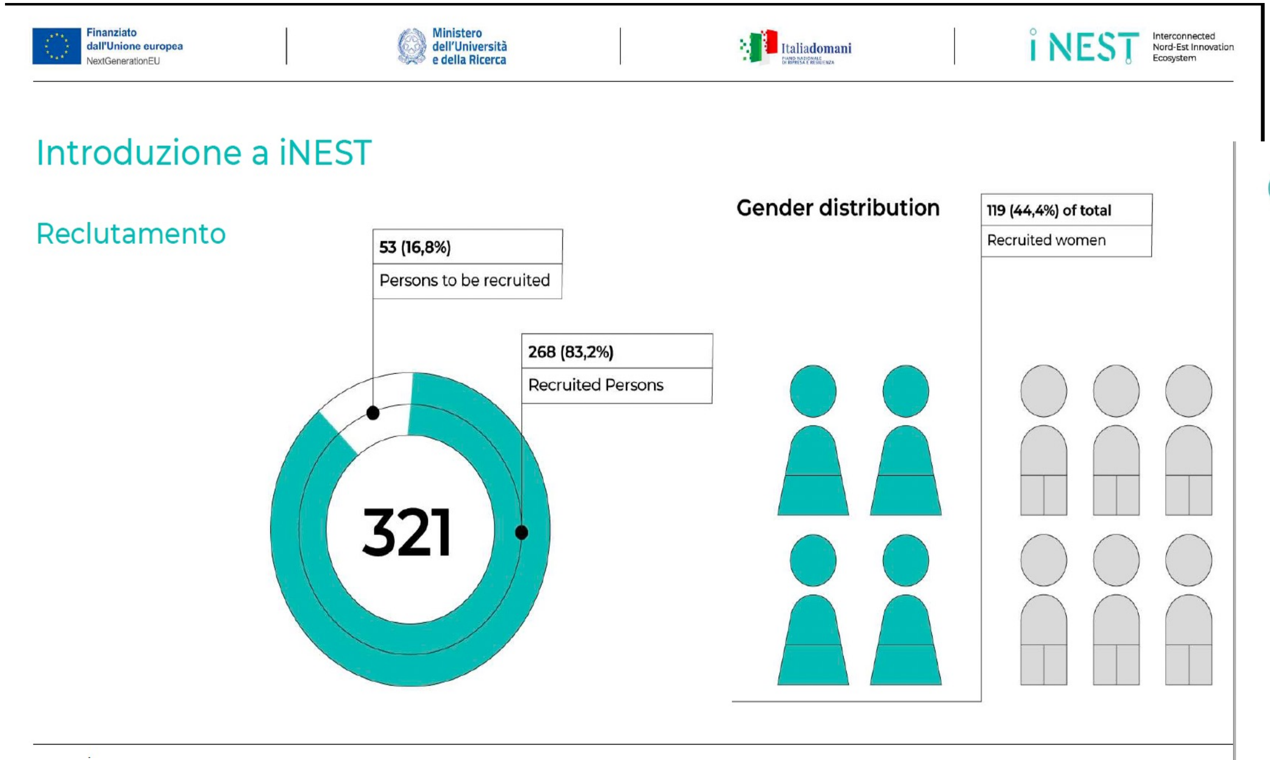
University IUAV of Venice
-
City, Architecture, Sustainable Design

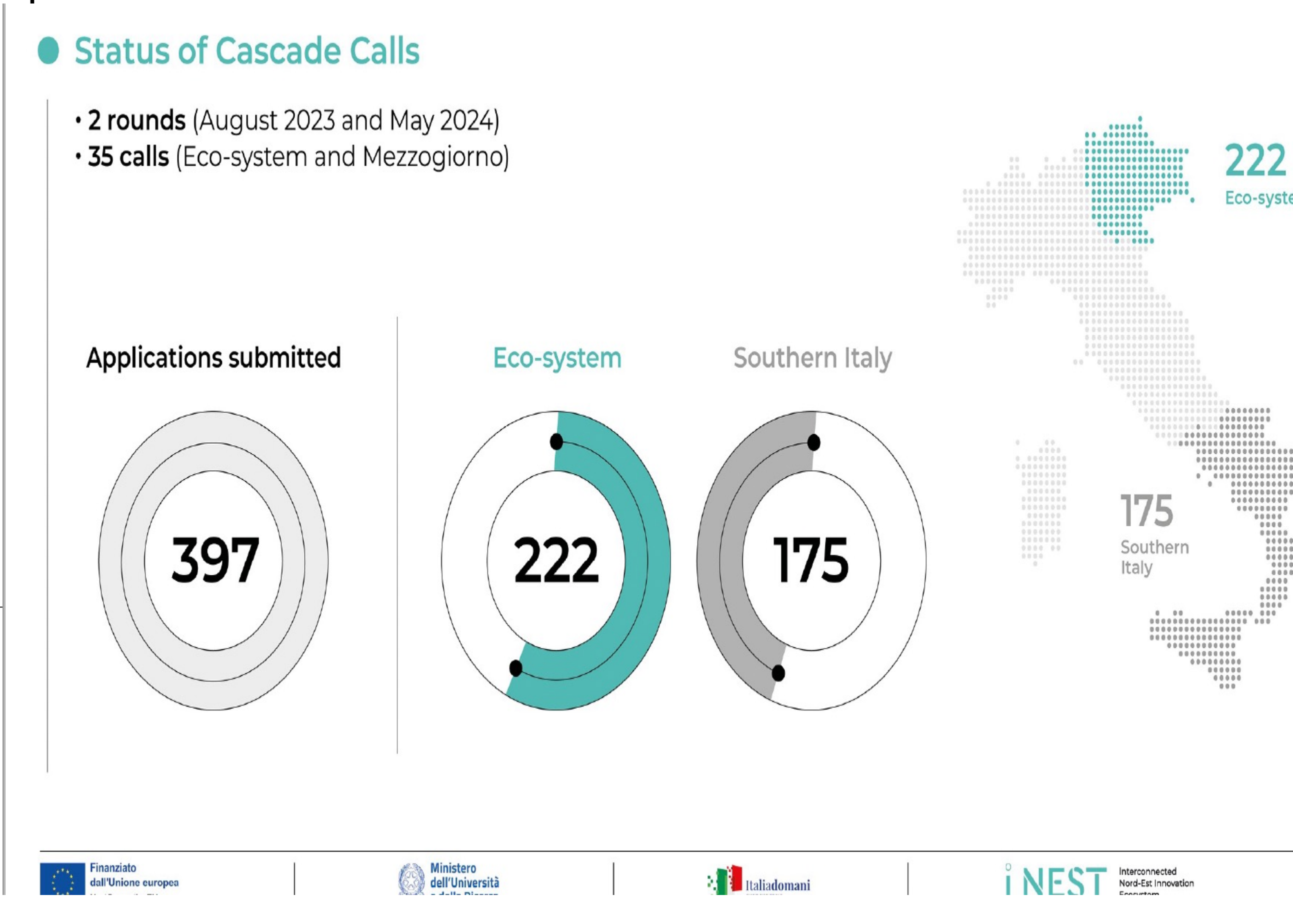
University of Trieste
-
Maritime, marine and inland water technologies: towards the Digital Twin of the Upper Adriatic

University of Padova
-
Smart & sustainable environments (manufacturing, working, living)

SISSA
-
Models, Methods, Computing Technologies for Digital Twins

Some data


Finanziato dall'Unione europea
NextGenerationEU
Ministero dell'Università e della Ricerca
Italiadomani
iNEST
Interconnected Nord-Est Innovation Ecosystem
Introduzione a iNEST
Reclutamento
53 (16,8%)
Persons to be recruited
268 (83,2%)
Recruited Persons
321
Gender distribution
119 (44,4%) of total
Recruited women


Status of Cascade Calls
• 2 rounds (August 2023 and May 2024)
• 35 calls (Eco-system and Mezzogiorno)
Applications submitted
397
Eco-system
222
Southern Italy
175
222
175
Southern Italy
Finanziato dall'Unione europea
Ministero dell'Università
Italiadomani
iNEST
Interconnected Nord-Est Innovation

PNRR Project
INEST ECOSYSTEM

iNEST

iNEST Interconnected Nord-Est Innovation Ecosystem

8. Maritime, Marine and Inland Water Technologies

Spoke 8: MARITIME, MARINE, AND INLAND WATER TECHNOLOGIES: TOWARDS THE DIGITAL TWIN OF THE UPPER ADRIATIC

1924 2024

UNIVERSITÀ DEGLI STUDI DI TRIESTE

Spoke 8: MARITIME, MARINE, AND INLAND WATER TECHNOLOGIES: TOWARDS THE DIGITAL TWIN OF THE UPPER ADRIATIC

Research Topics

- **RT1**
Biology of hydrosphere. ecosystems

- **RT2**
Physical-chemical risks and impacts on the hydrosphere

- **RT3**
Sustainable waterway. mobility

- **RT4**
Land-sea integrated maritime and spatial Planning

- **RT5**
North Adriatic Digital Twin

INVEST IN YOUNG PEOPLE

Spoke 8: MARITIME, MARINE, AND INLAND WATER TECHNOLOGIES: TOWARDS THE DIGITAL TWIN OF THE UPPER ADRIATIC

- **UNITS**: Depts of Life Sciences, Mathematics and Geosciences, Engineering and Architecture, Chemical and Pharmaceutical Sciences;
- **OGS**: Section of Oceanography; Section of Geophysics;
- **UNITN**: Departments of Civil, Environmental and Mechanical Engineering, Information Engineering and Computer Science;
- **IUAV**: Department of Architecture and Arts;
- **UNIVE**: Depts of Environmental Sciences, Informatics and Statistics, Molecular Sciences and Nanosystems;
- **UNIPD**: Departments of Comparative Biomedicine and Food Science, Biology, Civil, Environmental and Architectural Engineering, Geoscience, Industrial Engineering;
- **PNAEAS: Autorità di Sistema Portuale del mare Adriatico Orientale**
- **Polo Tecnologico Alto Adriatico**

RT1
Biology of hydrosphere ecosystems

RT2
Physical-chemical risks and impacts on the hydrosphere

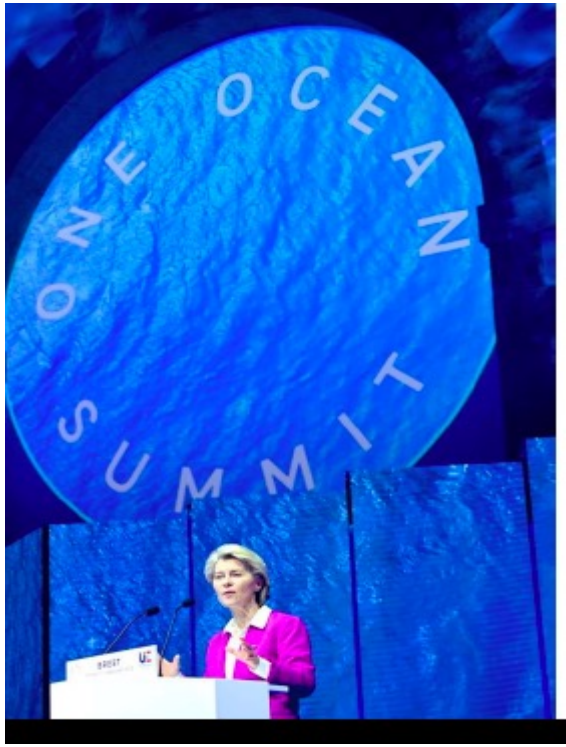
RT3
Sustainable waterway mobility

RT4
Land-sea integrated maritime and spatial Planning

RT5
North Adriatic Digital Twin

And companies

Digital Twin of Ocean

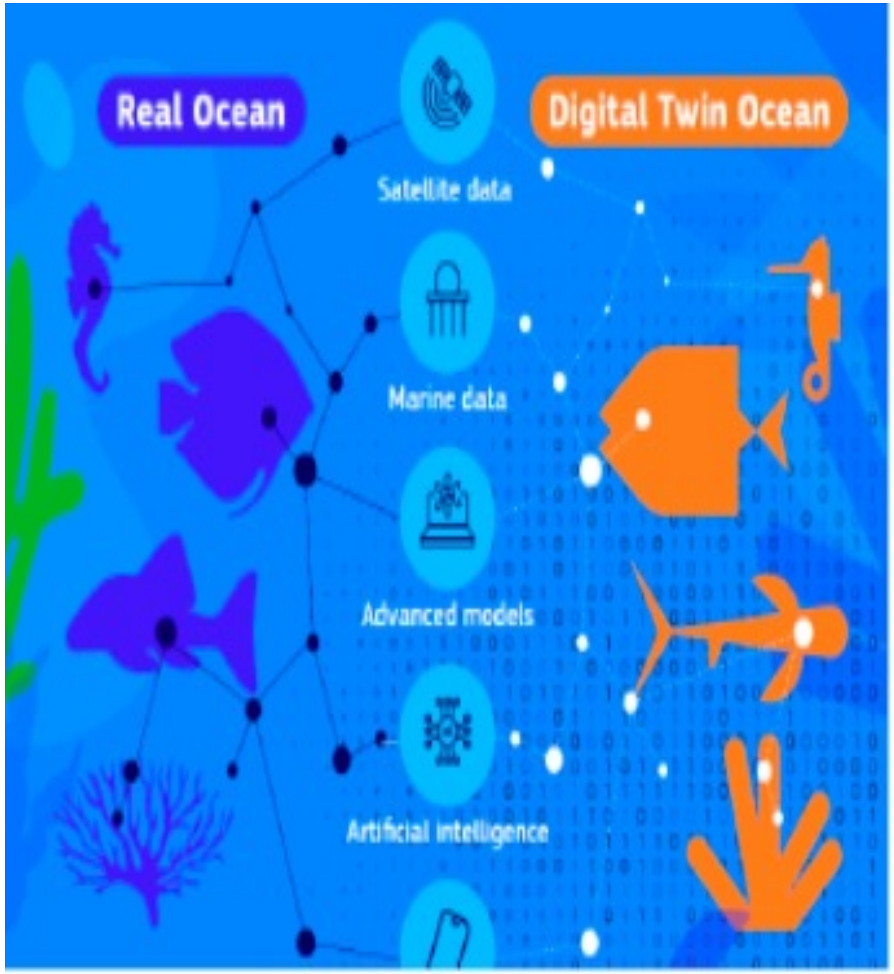


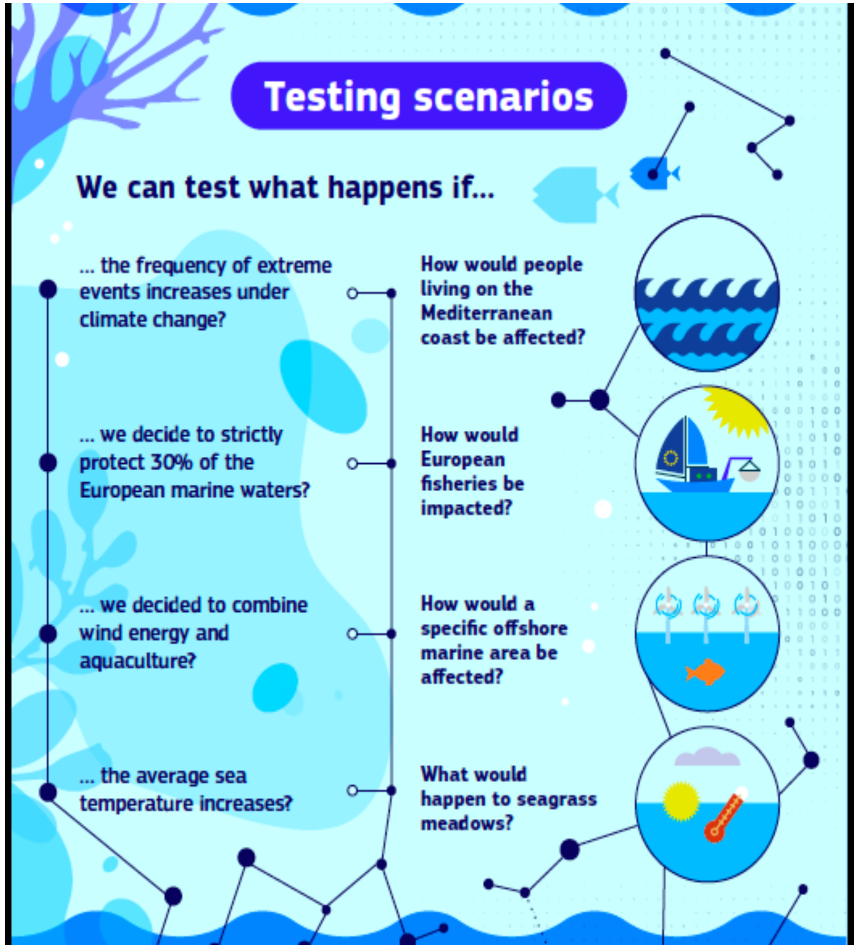
U. Von Der Leyen in the Brest conference 2022:

“Europe wants to build a Digital Twin of the ocean, as a platform for global cooperation. We are connecting our satellites, drones, high performance computing.   For real-time knowledge and long-term predictions on the impact of climate change.”

….you want to answer ‚what if‘ question. I.e. how will the ocean change if I stop fishing. Or what is the most cost effective way to protect a coastal town from sea level rise (damming, sand bars, mangoves, corals etc). So you start from the outcome and optimise interventions.

DT and the WHAT IF Scenarios





INEST example

PNRR

MISSIONE «ISTRUZIONE E RICERCA»

Ministero dell'Università e della Ricerca

**Ecosistema INEST-
Interconnected Nord-Est
Innovation**

Missione 4 Componente 2

Investimento 1.5

Obiettivo finale:

MARITIME, MARINE, AND INLAND WATER TECHNOLOGIES:

TOWARDS THE DIGITAL TWIN OF THE UPPER ADRIATIC

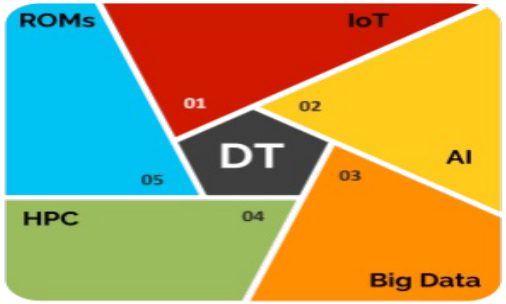


Figure 1: DT foundation pillars