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Sustainable Blue Growth under Climate Change Living Lab

Prof. Phoebe Koundouri (ATHENA RC)

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INTELCOMP WP1 Consultation Workshop

Blue Growth Research-Innovation-Policy Interface
for a Sustainable and Resilient Recovery

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Professor School of Economics, Athens University of Economics and Business
Fellow, World Academy of Art and Science

President-Elect, European Association of Environmental and Resource Economist

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- Director, Cluster on Sustainability Transition
- Director, Sustainable Development Unit and EIT Climate KIC Hub Greece, ATHENA RC
- Co-Chair, UN Sustainable Development Solutions Network (SDSN) Greece and EUROPE
- Chair Scientific Advisory Board, European Forest Institute
- Chair Scientific Advisory Board, International Center for Research for the Economy and the Environment, ICRE8
- President of Climate Change Task Force, Green Cross International (GCI)
- Commissioner, Lancet Commission for COVID 19 Recovery
- Greek National Committee on Climate Change, Greek National Committee on 10-Development Plan

2050 long-term strategy

*The EU aims to be **climate-neutral by 2050** – an economy with net-zero greenhouse gas emissions. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement.*

The Policy Framework

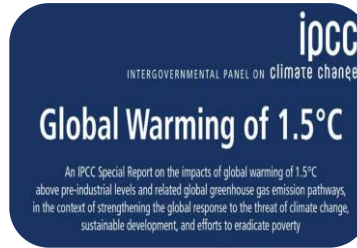2015 — UNITED NATIONS SUSTAINABLE DEVELOPMENT SUMMIT 2015, 25-27 SEPTEMBER
- 193 Countries
- 17 SDGs
- 169 Targets

2015 — PARIS 2015, UN CLIMATE CHANGE CONFERENCE, COP21·CMP11
- 197 Countries
- Limiting global temperature to well below +2°C

2018 — IPCC, INTERGOVERNMENTAL PANEL ON climate change, Global Warming of 1.5°C
An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty
- Limiting global temperature to +1.5°C
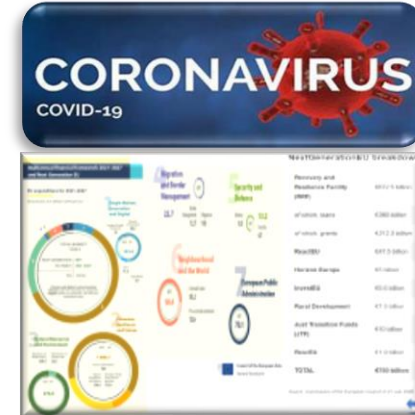- Global CO_2 to fall 45% from 2010 levels by 2030, reaching 'net zero' around 2050."

2019 — SUSTAINABLE DEVELOPMENT REPORT 2019, TRANSFORMATIONS TO ACHIEVE THE SUSTAINABLE DEVELOPMENT GOALS
- 6 Major Transformations to achieve SDGs

Dec 2019 — What is the European Green Deal?
The Sustainable Europe Investment Plan
EUROPEAN SEMESTER 2020 — Winter, Spring, Autumn
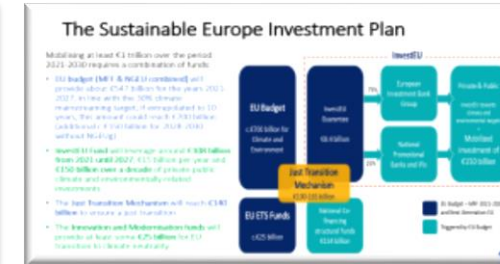
2020 … — CORONAVIRUS COVID-19
- MS Leaders agree 55% emissions reduction by 2030

Science, technology and innovation in EU

EU provides funding to:

- strengthen the EU's position in science

- strengthen industrial innovation, including investment in key technologies, greater access to capital and support for small businesses

- address major social concerns, such as climate change, sustainable transport and renewable energy

- ensure technological breakthroughs are developed into viable products with real commercial potential – by building partnerships with industry and governments

- step up international cooperation on research & innovation

Investing in research and innovation is investing in Europe's future.

UN SDSN Blue Growth Initiative: Call for Collaboration

SDSN GREECE · SDSN Europe · SDSN Mediterranean · SDSN Black Sea

intelcomp — European Commission

A Competitive Intelligence Cloud/High Performance Computing Platform for AI-Based Science Technology & Innovation Policy Making

New and innovative AI services to public administrators and policy makers across Europe for a co-creation ecosystem that allows for data- and intelligent-driven policy design, implementation and making in the field of STI.

We promote integrated approaches to implement the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change, through education, research, policy analysis, and global cooperation.

SDSN NETWORKS
We are committed to supporting the implementation of the SDGs at local, national, and global scales.

14 LIFE BELOW WATER

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

SDG 14

Life below water

Displaying Ratings

Ratings provide a visual representation of a country's performance on the SDG.

Legend

Click on a country to see its performance.

- 🟢 SDG achieved
- 🟡 Challenges remain
- 🟠 Significant challenges remain
- 🔴 Major challenges remain
- ⚪ Information unavailable

Description

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

Indicators

Click on an indicator to visualize it on the map.

Mean area that is protected in marine sites important to biodiversity

Ocean Health Index: Clean Waters score

Fish caught from overexploited or collapsed stocks

Fish caught by trawling

Marine biodiversity threats embodied in imports

Ratings   Trends
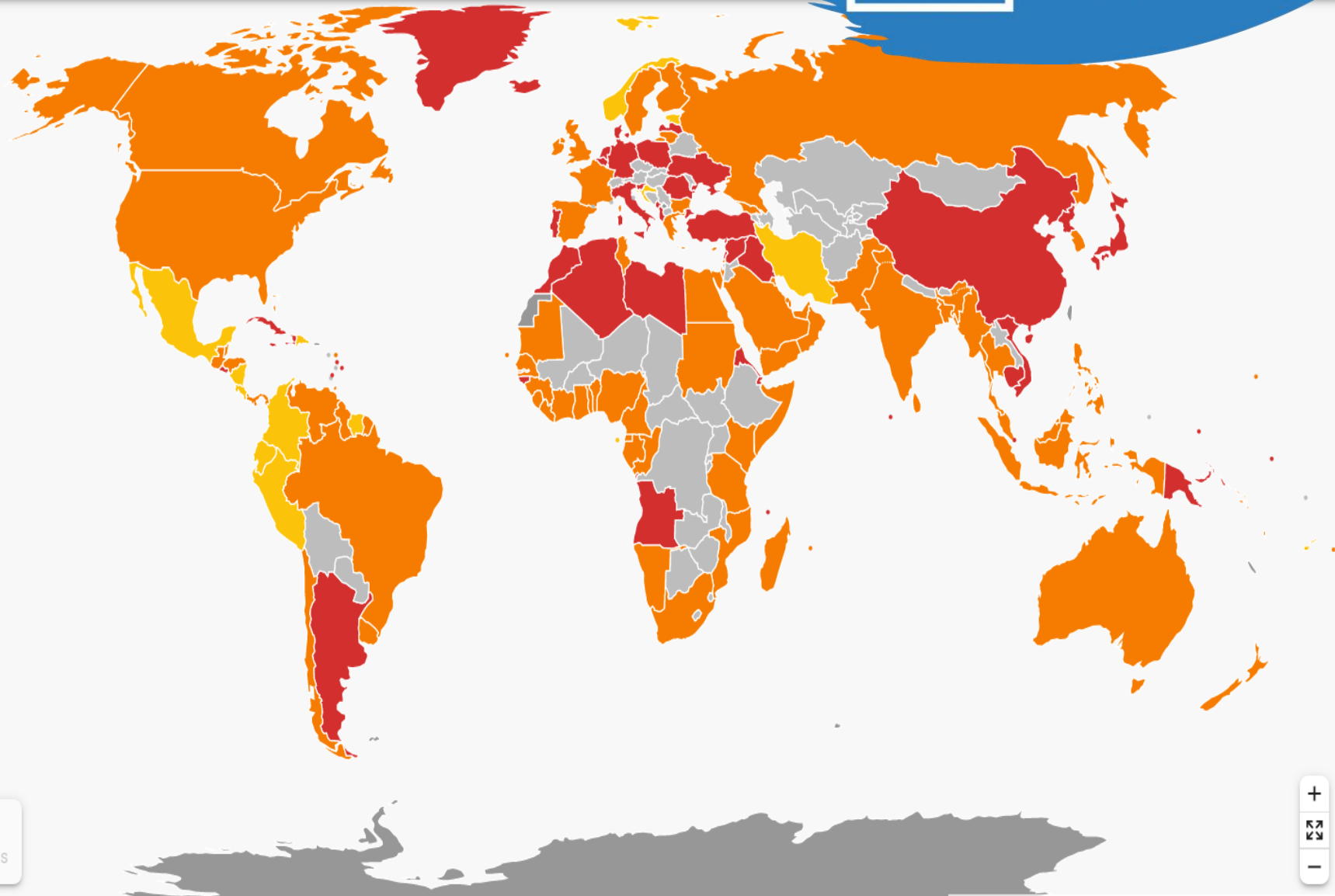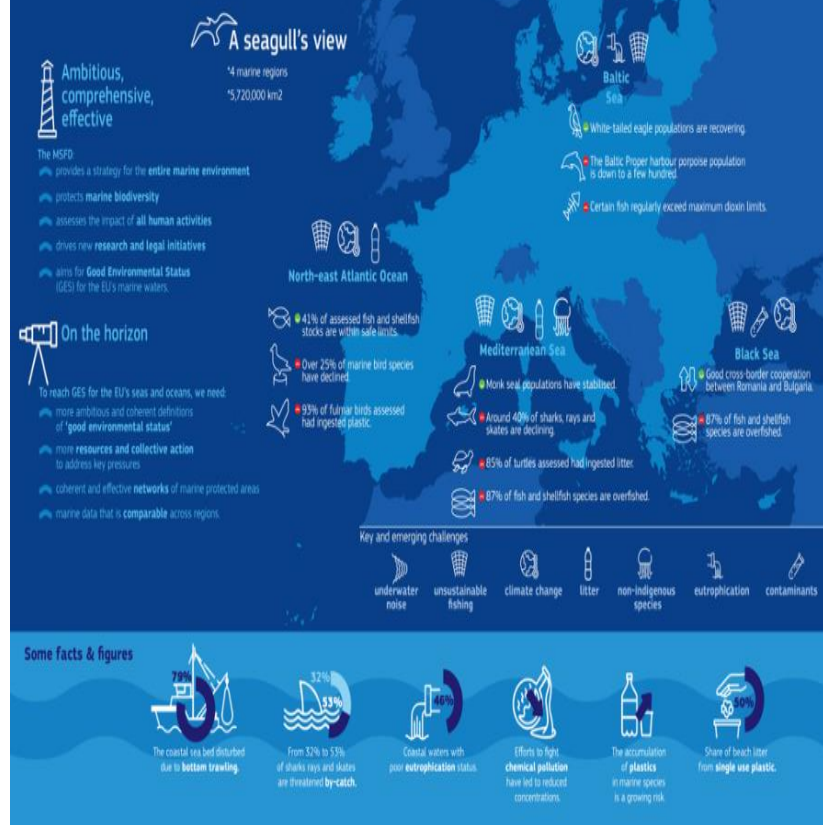
European Blue Economy Indispensable to achieve EGD ambitions. Many solutions (renewable energy, plastic-free packaging, low-impact food) will come from the blue economy.

Blue sectors will have to reduce their own environmental and climate impact significantly to contribute to the overall targets.

Several EU policies are already in place or being created, and will come together in the new approach for a sustainable blue economy in the EU, expected in May 2021.

Methodology – Activities

- Use IntelComp Viewer to **explore and understand** the scientific production and trends related to blue economy and climate: what are the trends in R&D and what are the national competence on specific subtopics, that are the most efficient teams and how do they collaborate on the EU and global level
- Develop and customize AI modules to **classify R&D** according to climate related SDGs.
- Develop, customize or adapt AI modules to **identify innovations** and **policy recommendations** from projects (reports and publications) and teams and transform them to indicators for specific needs.
- Develop, customize or adapt AI modules to **extract and interlink information** for the understanding and mapping of interrelated policies, laws and strategies implemented in Greece.
- Consider interfaces and analysis tools to gauge **collaboration / co-development** via social/traditional media.

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European Commission

Five vital elements

- **Climate change** and its **implications on Blue Growth**

- Holistic **mapping and understanding of the laws, policies and strategies at International, European and National level**

- **Innovations and new technologies** to enhance mitigation and adaptation to climate change

- **Natural Capital Accounting and Valuation of Ecosystem Services**

- Connections with different **innovation ecosystems and networks** in order to find synergies.

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Sustainable Blue Growth and Climate Change Living Labs

Systems Innovation can be understood as a combination of systems thinking and the process of innovation so as to enable transformative change within complex systems

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European Commission
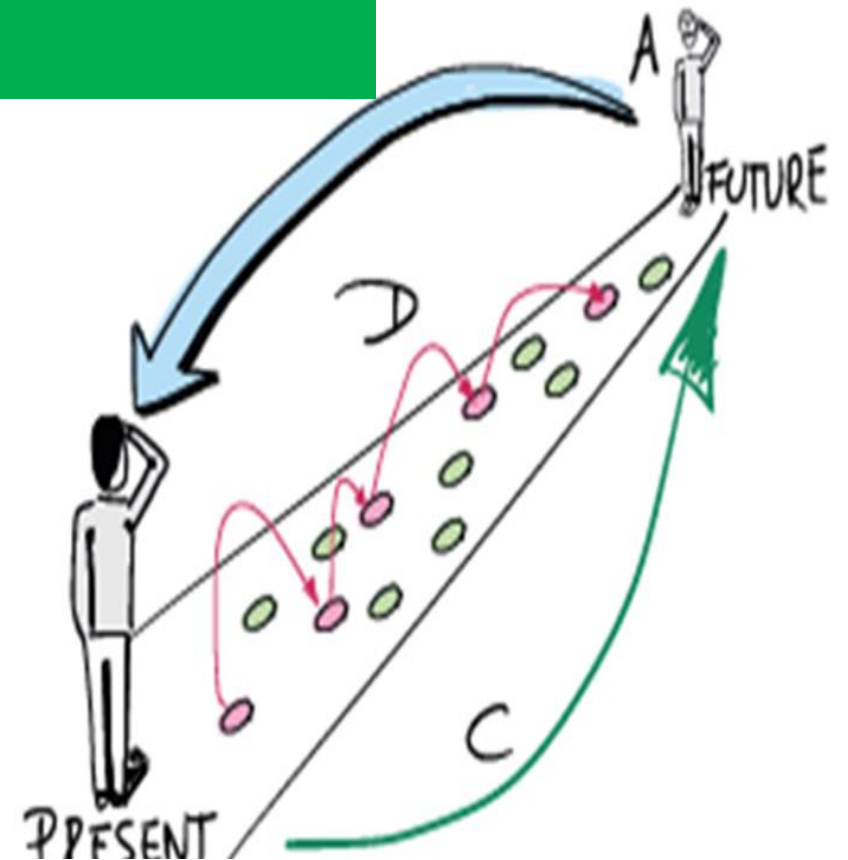
Living Labs

Stakeholder mobilization through **Systems Innovation approach**

Defining stakeholders at EU level, behaviours, relationships, interlinkages

Four sets of Living Labs

1) Interactive Model Trainer set up and validation
   - The objective is to work with the engaged administrative units in a co-creation iterative process to obtain feedback
2) IntelComp Tools for Public Administrations
   - Define the context, needs, analysis, co-creation framework
   - Co-create a vision and specific goals
3) IntelComp Tools for Citizens
   - Define challenges and revise expected outcomes of the platform
4) IntelComp tools for Academia and Industry
   - Policy development

Data - Living Labs

user-centered, iterative, open-innovation ecosystems, often operating in a territorial context, integrating concurrent research and innovation processes within a public-private-people partnership.

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European Commission
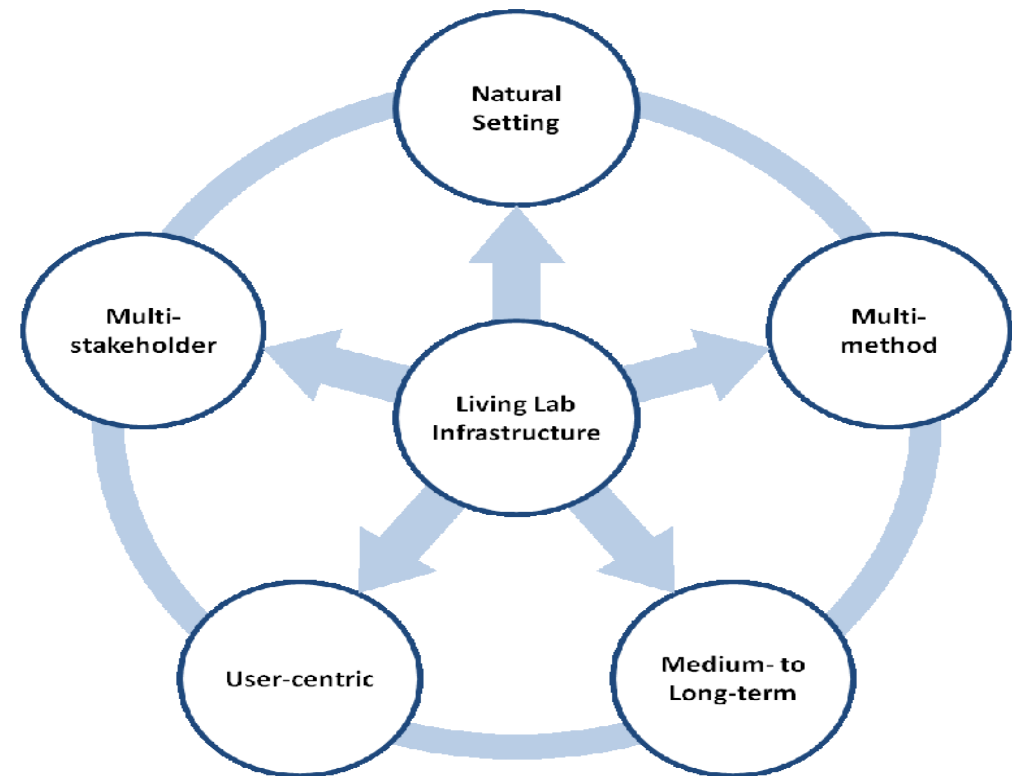
Approach
River Basin/Coast/Sea Ecosystem

- At a river basin scale, land-based ecosystems and coastal & sea ecosystems are directly linked through water flows. In the same way, land-based activities (agriculture, forestry, industries & urbanization) are directly impacting land ecosystems and coastal & sea ecosystems.

- Coastal & seas regions concentrate populations and economic activities but also environmental stresses & pollutions.

- On the other hand, rural hinterlands face depopulation and economic recession, while still environmentally impacting coastal regions.
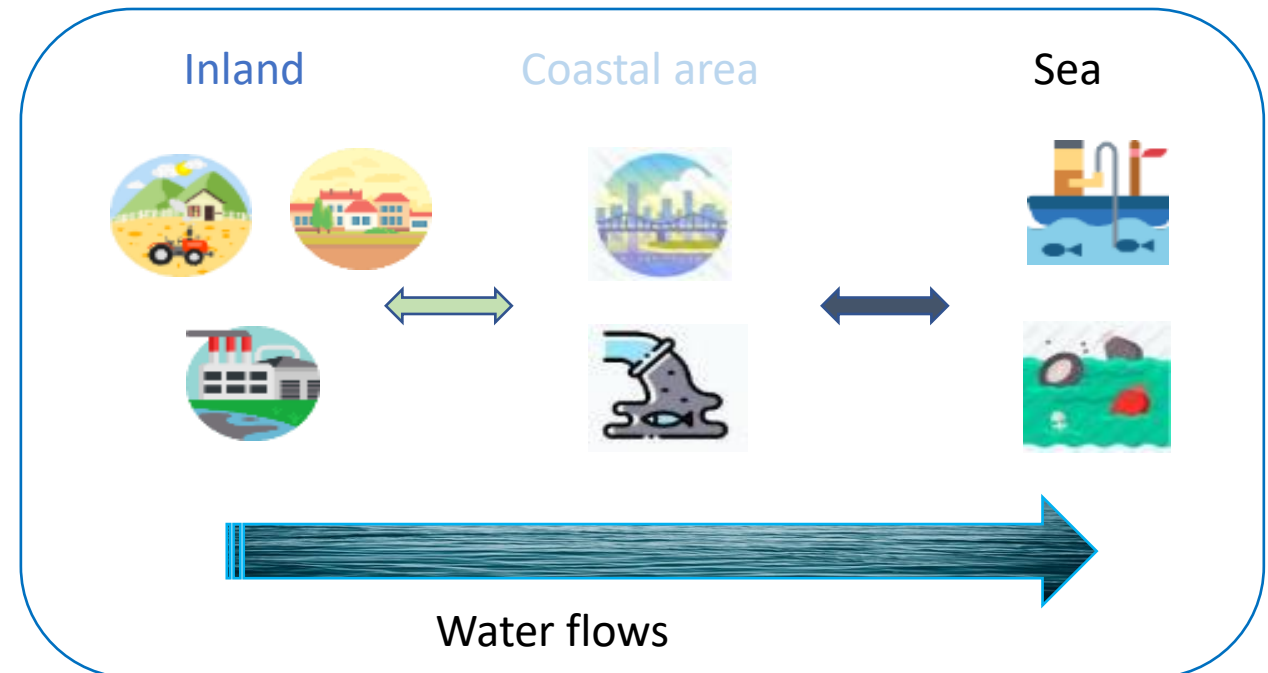
Approach

The **EU Water Framework Directive** seeks to reach the Good Environmental Status of rivers while the **EU Marine Strategy Framework Directive** targets the Good Environmental Status of EU marine waters but the two legislations lack interconnections.

In a wider context the **2030 Agenda for Sustainable Development** set goals for sustainable use of freshwater (SDG 6), seas (SDG14), and terrestrial ecosystems (SDG 15) as well as taking urgent actions to combat climate change (SDG13).

SBGI-OBJECTIVES

Research

Education

Data Management

Innovation

Policy Reform

4-SEAS-INITIATIVE
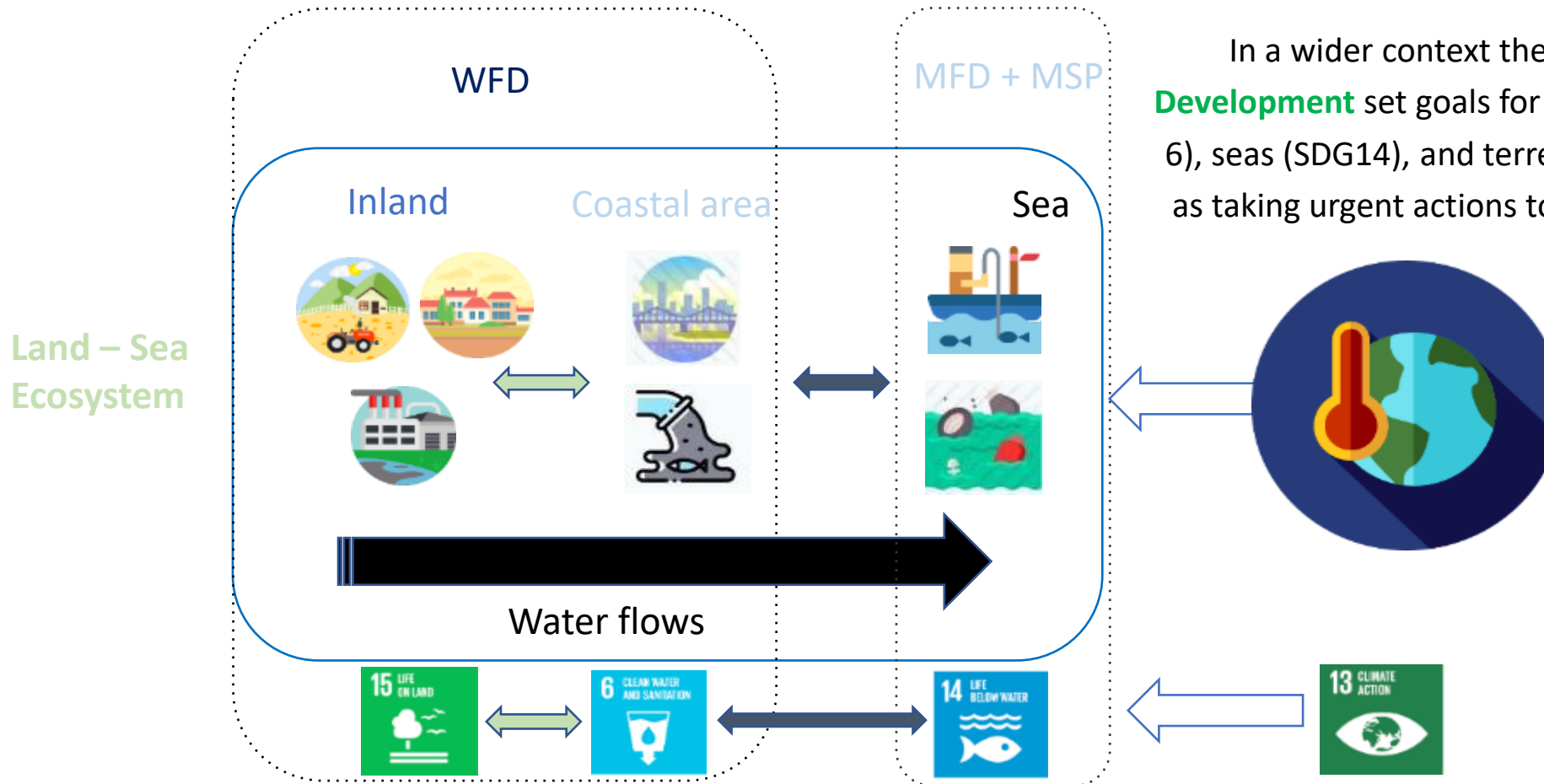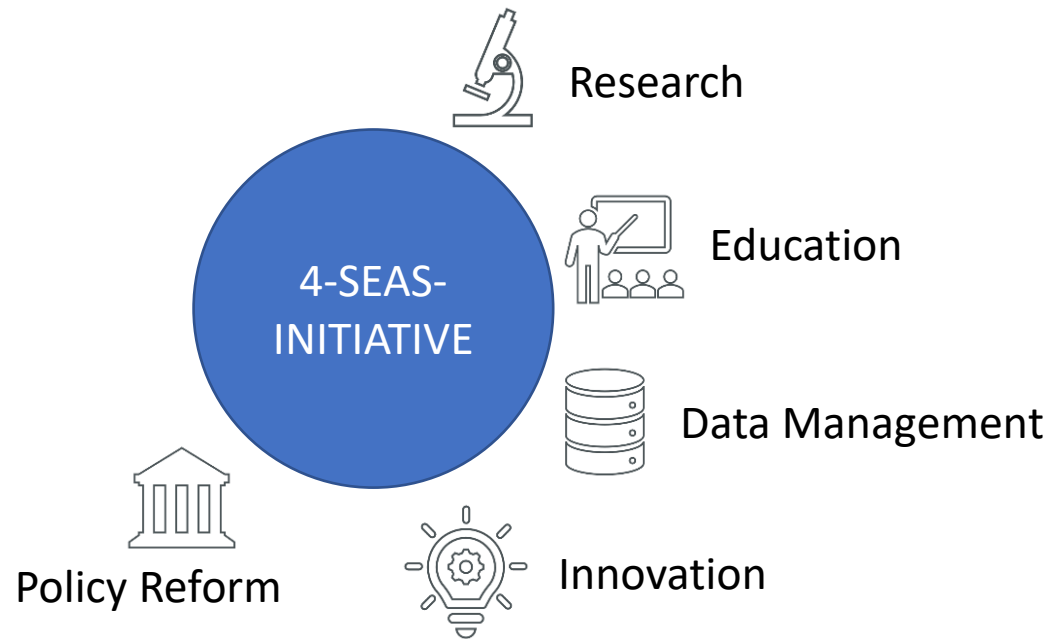
The BLUE GROWTH INITIATIVE will focus on 5 Objectives
- Research
- Education
- Data Management
- Innovation
- Policy Reform

Cluster for Sustainability Transition:
Transforming Research and Innovation into Sustainability Action

Director: Professor Dr. Phoebe Koundouri
Fellow, World Academy of Art and Science

CLUSTER ON SUSTAINABILITY TRANSITION

Research - Innovation Acceleration
Deep Demonstration - Education & Training

Research and Innovation Projects Global Initiatives	Innovation Acceleration Deep Demonstration	Education & Training Awareness
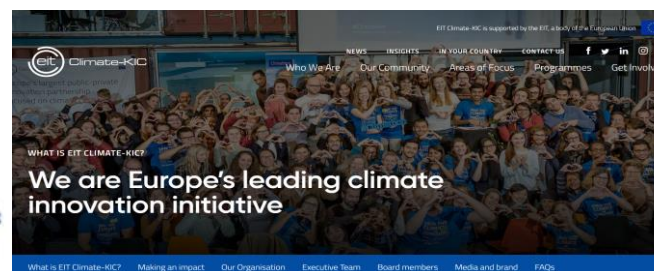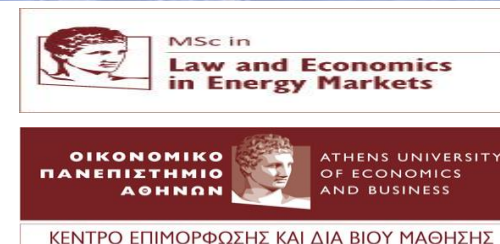
GLOBAL ROUNDTABLE FOR SUSTAINABLE SHIPPING AND PORTS

ClimAccelerator Maritime Accelerator

Projects

Blue Growth

Scientific Director: Prof. Koundouri

EIT Climate-KIC Maritime Themed Accelerator Expression of Interest

Our Vision: To Become a Global Initiative for the Decarbonization and Adaptation to Climate Change for the Marine Sector

4-Seas Initiative

An initiative led by the regional networks SDSN Black Sea and SDSN Mediterranean and the national networks SDSN Greece, SDSN Italy, SDSN Spain, SDSN France, SDSN Turkey and SDSN Russia

GLOBAL ROUNDTABLE FOR SUSTAINABLE SHIPPING AND PORTS

- Aims at bringing together **researchers and technology developers, shipbuilders, shipowners, ports, policy makers and politicians**, from across the globe, to work on technological and policy innovations, related to zero emissions shipping, to target net-zero emissions by 2050.

- Find more at: http://www.unsdsn.gr/global-roundtable-for-sustainable-shipping-2

Transformation

Radical changes happening simultaneously, holistically and faster than we have ever experienced change before

14 LIFE BELOW WATER Conserve and sustainably use the oceans, seas and marine resources for sustainable development

4 New Horizon 2020 Projects

on **Blue Growth**

- **H2020 SEAWISE:** Shaping Ecosystem Based Fisheries Management

- **H2020 DOORS:** Developing an Optimal and Open Research Support System to Unlock the Potential for Blue Growth in the Black Sea

- **H2020 BRIDGE BS:** Advancing Black Sea Research and Innovation to Co-Develop Blue Growth within Resilient Ecosystems

- **H2020 INTECOMP:** A Competitive Intelligence Cloud/HPC Platform for AI-Based STI Policy Making: a platform that will offer new and innovative AI services to public administrators and policy makers across Europe for a co-creation ecosystem that allows for data- and intelligent-driven policy design, implementation and making in the field of STI.

Projects, Scientific Director: Prof. Koundouri
Water-Food-Energy Nexus
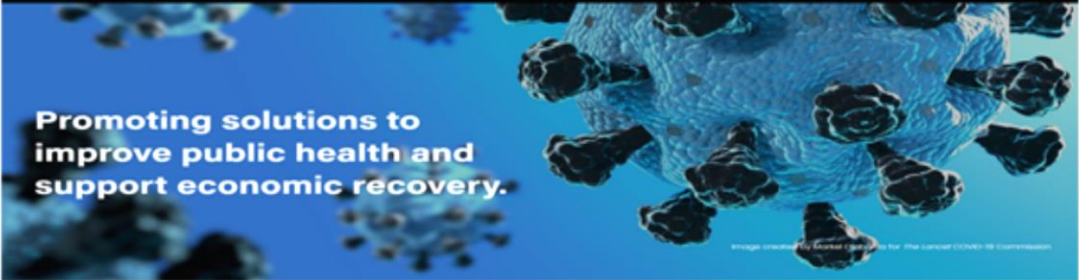## Smart Agriculture & Smart Urban Water Systems

Projects, Scientific Director: Prof. Koundouri

Climate Change Mitigation and Adaptation
Green-Digital-Just Recovery Pathways
Circular Economy and Nature-Based Solutions
Systems Innovation Approach

EIT Climate KIC **HUB Greece, Director Prof. Koundouri**
Innovation Acceleration
Training for Up-Skilling and Re-Skilling

With presence in 50+ countries across 6 continents, Climathon is a global success story...

EUROPE
SUSTAINABLE
DEVELOPMENT
REPORT 2020

Meeting the Sustainable Development Goals
in the face of the COVID-19 pandemic

Includes the SDG Index and Dashboards for the European Union,
its Member States, and partner countries

Europe Sustainable Development Report 2020

Meeting the Sustainable Development Goals in the face of the COVID-19 pandemic

READ REPORT   EXPLORE DATA

ESDR 2020

Overall score
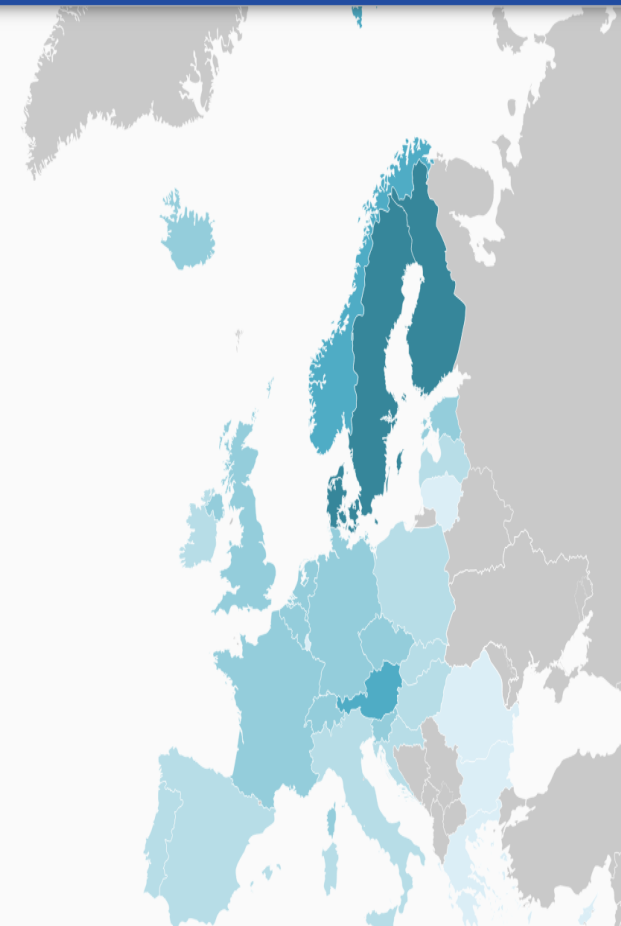
Legend

Click on a country to see its performance.

- > 80
- 75 - 80
- 70 - 75
- 65 - 70
- < 65
- Information unavailable

Description

The overall score measures a country's total progress towards achieving all 17 SDGs. The score can be interpreted as a the percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Performance by Index

Click on an index to visualize it on the map

The European Green Deal

#EUGreenDeal

SUSTAINABLE DEVELOPMENT
SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

SDSN Europe

#EUGreenDeal Senior Working Group

SDSN Europe

#EUGreenDeal Senior Working Group

Transformations for the Joint Implementation of Agenda 2030 for Sustainable Development and the European Green Deal:
A Green and Digital, Job-Based and Inclusive Recovery from the COVID-19 Pandemic

https://www.unsdsn.org/the-future-europe-wants-a-green-and-digital-job-based-and-inclusive-recovery-from-covid-19-pandemic

Jeffrey Sachs President UN SDSN

Phoebe Koundouri President-elect EAERE co-Chair SDSN Europe

Paolo Carnevale Fondazione Eni Enrico Mattei

Carlo Papa Enel Foundation

Laura Cozzi International Energy Agency

Mariana Mazzucato UCL

Leonardo Becchetti University of Roma

Data

(i) Scientific publications from OpenAIRE (a pan European infrastructure for open knowledge, a pillar to the European Open Science Cloud (EOSC)), RepEc (repository of economic papers for models and policies, project descriptions and reports)

(ii) Innovative solutions from the Climate Innovation Window, a reference portal for innovations on climate change adaptation, and the Nature-based Solutions Policy Platform with information on climate change adaptation planning across the globe.

(iii) European and national policies, laws and strategies related to the climate, the project aims to create optimum conditions

(iv) experimental information of people's perception of climate change (social media, living labs, interaction with IntelComp)

Data – Scientific Publications
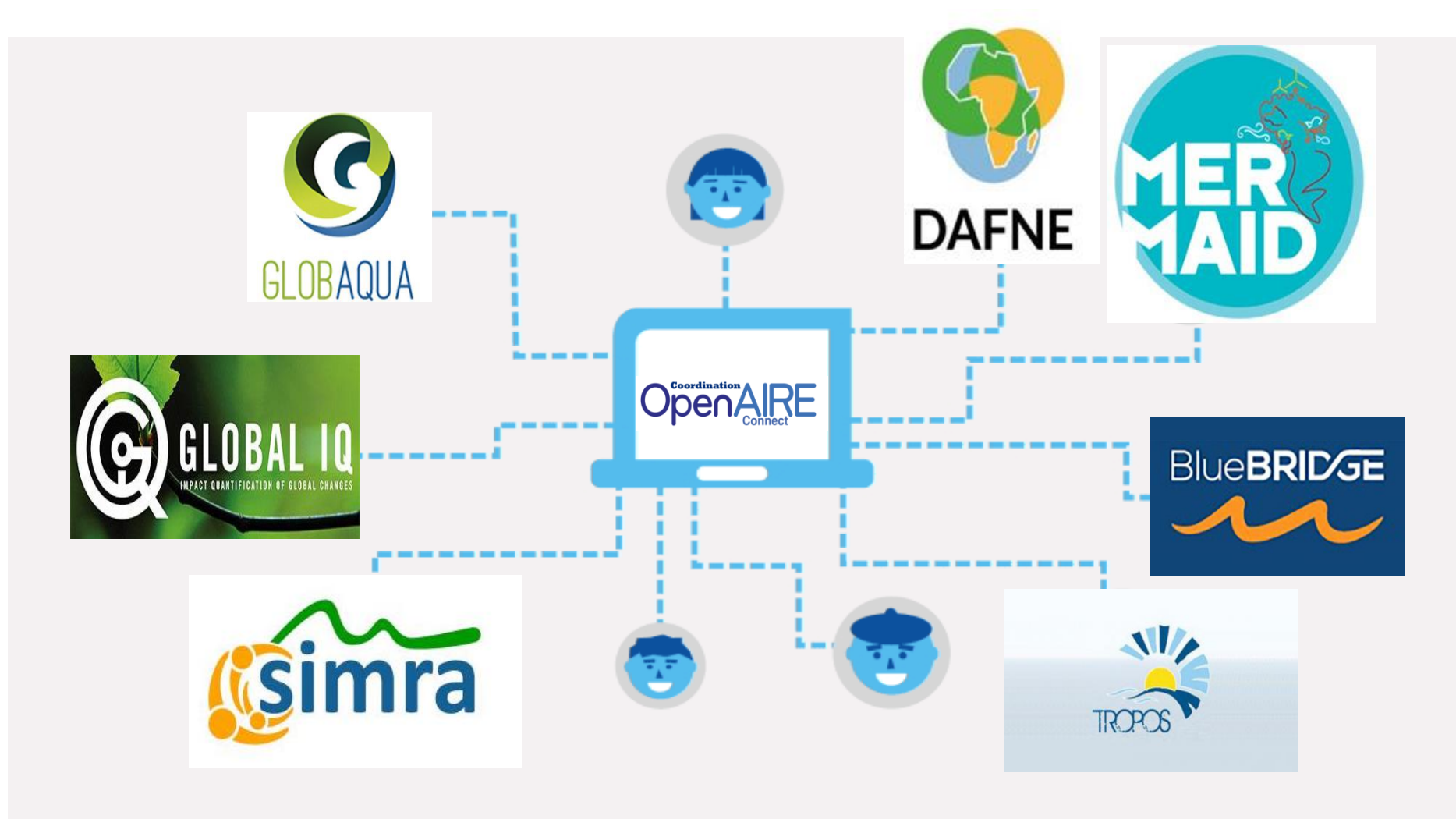
Data - How the Dashboard works

Research Life Cycle & Research Outputs

(i) Data - OpenAIRE

SDSN Greece Dashboard

(i) Data - OpenAIRE

Searching

(i) Data - OpenAIRE

Monitoring

(i) Data - OpenAIRE

Monitoring
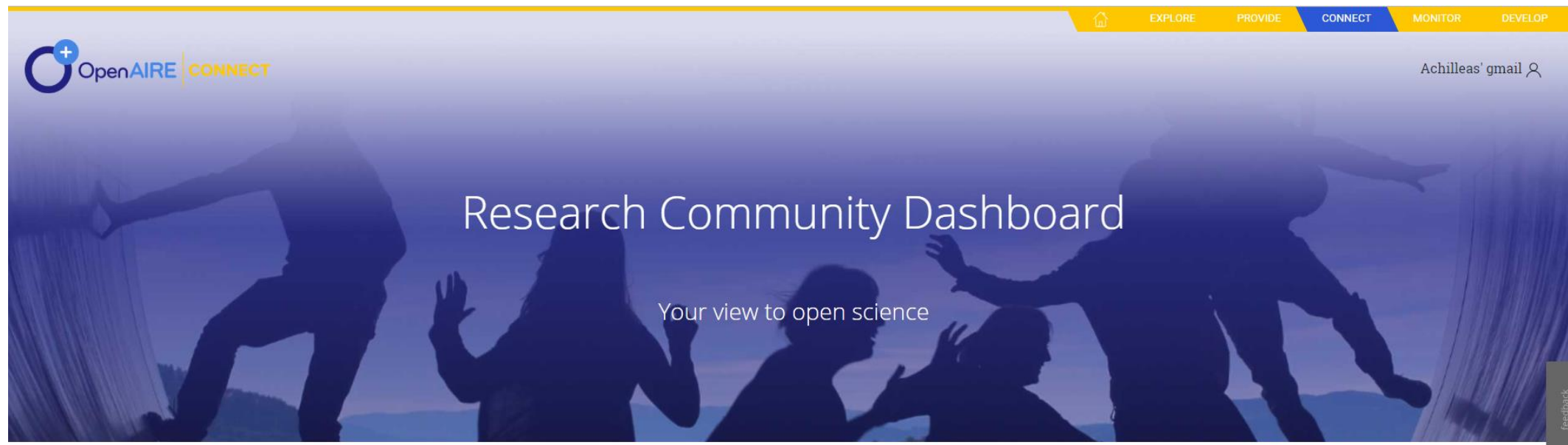
SDSN GREECE · Environment and Economy

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Organization name   LOCATE

Or locate repository on map

Datasource type	Compatibility	Country
☑ Journal	☑ OpenAIRE Basic (DRIVER OA)	[select all|none]
☑ Publication Repository Aggregator	☑ under validation	all countries selected
☑ Thematic Repository	☑ OpenAIRE 3.0 (OA, funding)	
☑ Institutional Repository	☑ OpenAIRE 2.0+ (DRIVER OA, EC funding)	☑ TZ
☑ Publication Repository		☑ UA
☑ Journal Aggregator/Publisher	☑ OpenAIRE 2.0 (EC funding)	☑ UK
		☑ UNKNOWN
		☑ US
		☑ ZA

BRIGAID: BRIdging the GAp for Innovations in Disaster resilience
DG RTD, Budget: 9,000,000 euro
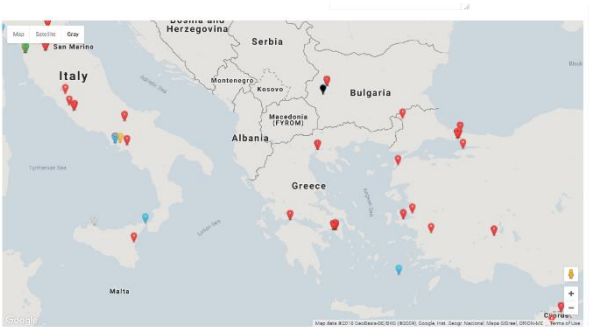
FROM PROTOTYPE TO MARKET READY INNOVATION
ADAPTING TO: FLOODS, DROUGHTS & EXTREME WEATHER

BRIGAID
Bridging the Gap for Innovation
in Disaster Resilience

INNOVATION PROCESS

Test & Implementation Support

Business Development & Financing Support

Market Outreach & Dissemination Support

PROTOTYPE
STOCKTAKING OF INNOVATIONS
INNOVATOR INCUBATOR

END USERS
MARKET READY INNOVATIONS
LARGE SCALE MARKET UPTAKE

VALLEY OF DEATH

Figure 1.1: BRIGAID's conceptual approach with three types support for innovations

SHARE AND DISCOVER CLIMATE INNOVATIONS

INNOVATIONS FOR CLIMATE CHANGE ADAPTATION

the EU reference marketplace where end-users and Innovators can meet

Share your innovation

Show   **Innovations** ✓ | 🖉 **All Hazards** ✓   **All Topics** ✓ | View by   **Most Recent** ✓

Disasters and ICT | Water Safety

MyFloodRisk (for business)

TRL 5

Disasters and ICT | Urban Areas

3C for Cities

TRL 6

Agriculture | Disasters and ICT

ARIEL, soil moisture retrieval by microwave remote sensing

TRL 5

Prof. Phoebe Koundouri

www.phoebekoundouri.org

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E&P

Phoebe Koundouri *Editor*

The Ocean of Tomorrow

Investment Assessment of Multi-Use Offshore Platforms: Methodology and Applications – Volume 1

Springer

Environment & Policy 57

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The Ocean of Tomorrow

The Transition to Sustainability – Volume 2

Springer