SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

eit Climate-KIC

Climate-KIC is supported by the EIT, a body of the European Union

The Sustainability Transition has started!
Will it happen fast enough?

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Director, EIT Climate KIC Hub – Greece, ATHENA RC

Co-Chair, UN Sustainable Development Solutions Network (SDSN) - Greece

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

THE CLIMATE EMERGENCY

Urgency of limiting global warming to +1.5C, beyond which the risk of drought, floods, extreme heat and poverty for hundreds of millions of people, will significantly increase.

The SDR 2019 proposes SIX MAJOR TRANSFORMATIONS

Leave No One Behind

1. Education, Gender, and Inequality

SDGs 1-5, 7-10, 12-15, 17

2 Health, Wellbeing, and Demography

SDGs 1, 2, 3, 4, 5, 8, 10

3. Energy Decarbonization and Sustainable Industry

SDGs 1-16

4. Sustainable Food, Land, Water, and Oceans

SDGs 1-3, 5, 6, 8, 10-15

5. Sustainable Cities and Communities

SDGs 1-16

6. Digital Revolution for Sustainable Development

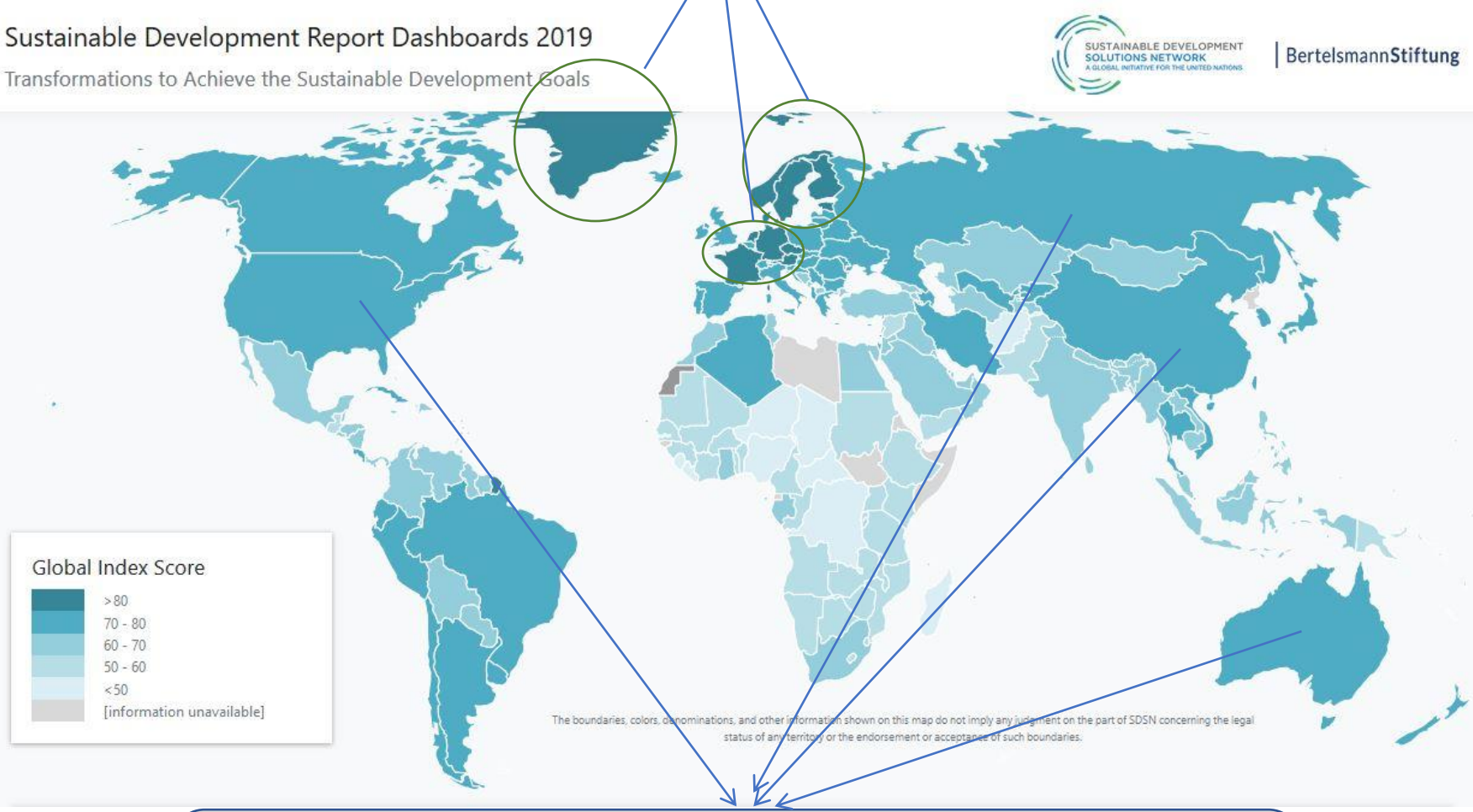
SDGs 1.4, 7-13, 17

Circularity and Decoupling

Are We on Track ?

Globally, Sustainability Transition has started!
BUT…

Right on track:
Minority



Making Progress but not Fast Enough

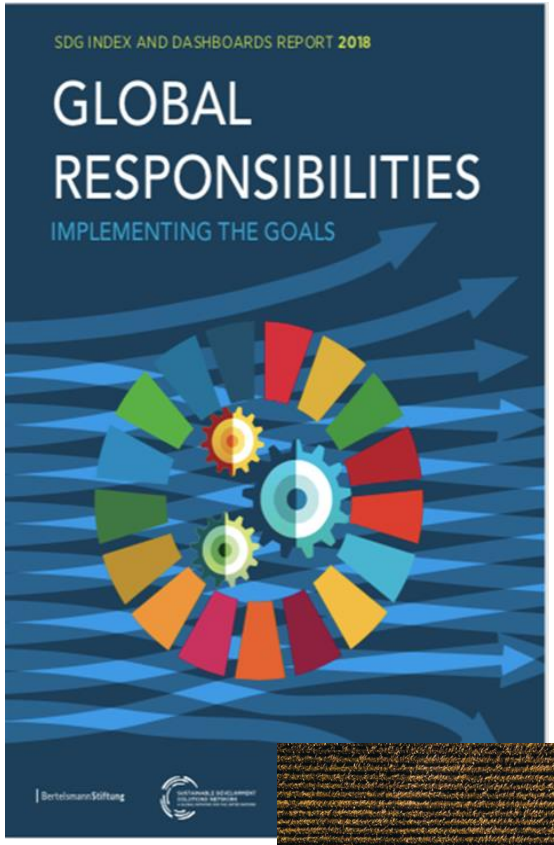
2013-2018 collectively, the warmest years in modern record

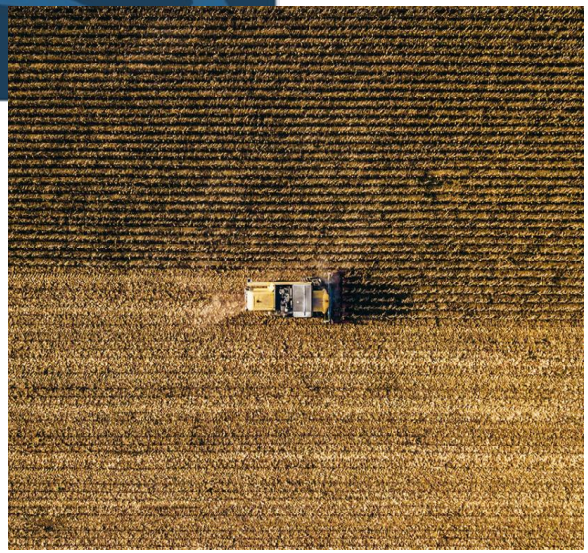
Greece Performance:

Index Score: 70. 6 Regional Average 76.9 Overall Rank: 48 out of 156

CURRENT ASSESSMENT – SDG DASHBOARD

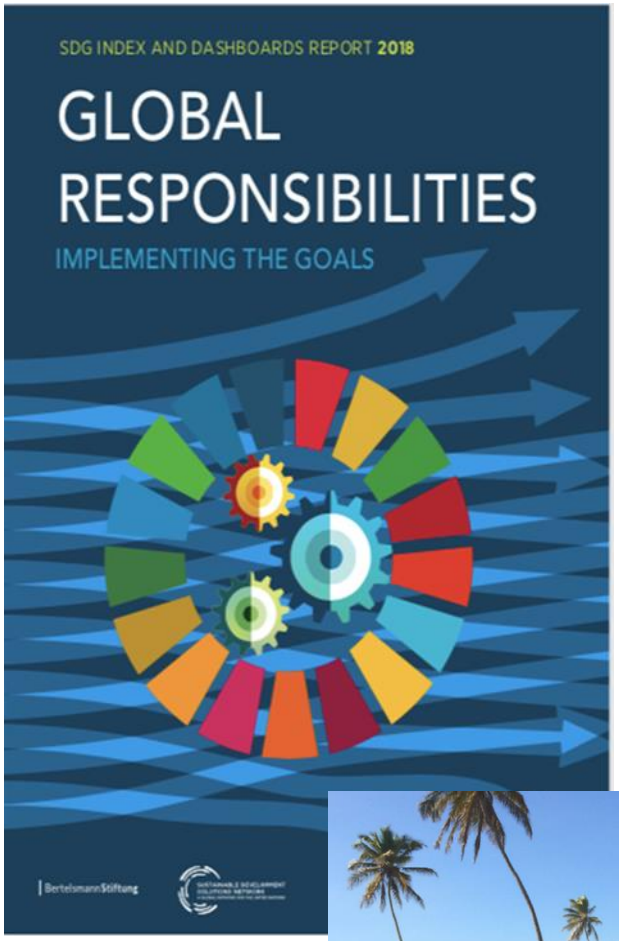
SDG TRENDS





Sustainable land-use and healthy diets require integrated agriculture, climate and health policy interventions

Land use and food production are not meeting people's needs. Agriculture destroys forests and biodiversity, squanders water and releases one-quarter of global greenhouse-gas emissions. In total, 78% of world nations for which data are available obtain a "red rating" (synonym of major SDG challenge) on sustainable nitrogen management; the highest number of "red" rating across all indicators included in the report. At the same time, one-third of food is wasted, 800 million people remain undernourished, 2 billion are deficient in micronutrients, and obesity is on the rise. New indicators on nations' trophic level and yield gap closure highlight the depth of the challenge. Transformations towards sustainable land-use and food systems are required that balance efficient and resilient agriculture and forestry with biodiversity conservation and restoration as well as healthy diets.



Trends on climate (SDG 13) and biodiversity (SDG 14 and SDG 15) are alarming

On average, countries obtain their worst scores on SDG 13 (Climate Action), SDG 14 (Life Below Water) and SDG 15 (Life on Land). No country obtains a "green rating" (synonym of SDG achieved) on SDG 14 (Life Below Water). Trends on greenhouse gas emissions and, even more so, on threatened species go in the wrong direction. These findings are in line with the recent reports from the IPCC and IPBES on climate change mitigation and biodiversity protection, respectively.

PRIMA – Partnership for Research and Innovation in the Mediterranean Area is the most ambitious joint program to be undertaken in the frame of Euro-Mediterranean cooperation.

BY FUNDING R&I THROUGH COMPETITIVE CALLS, PRIMA AIMS TO:

"build research and innovation capacities and to develop knowledge and common innovative solutions for **agro-food systems, to make them sustainable, and for integrated water provision and management in the Mediterranean area**, to make those systems and that provision and management more climate resilient, efficient, cost-effective and environmentally and socially sustainable, and to contribute to solving water scarcity, food security, nutrition, health, well-being and migration problems upstream".

Cluster of Institutions

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
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SDSN GREECE
www.unsdsn.gr
Hosting Institutions
ICRE8
Research laboratory on Socio-Economic and Environmental Sustainability
ReSEES
ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
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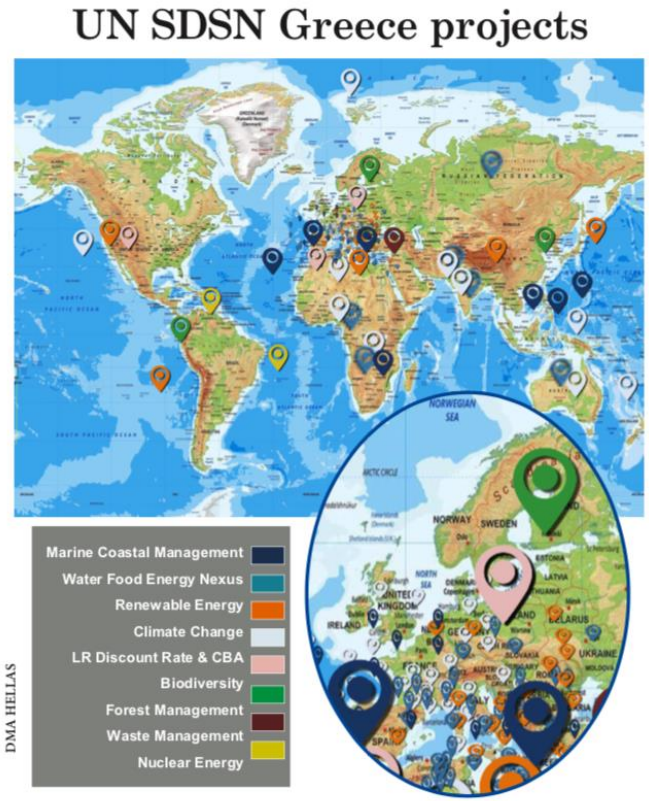
Mobilizing Sustainability Transition, the Greek Chapter

UN SDSN - ETI Climate KIC – ReSEES@AUEB



BRIGAID

OpenAIRE

simra
Social Innovation in Marginalised Rural Areas

AMAre

COASTAL
Collaborative Land-Sea Integration Platform

eit Climate-KIC

SMIRES
Science and Management of Intermittent Rivers and Ephemeral Streams

Interreg
Balkan-Mediterranean
RECONNECT

BlueBRIDGE

MERMAID

GENESIS
groundwater and dependent ecosystems

TROPOS

GLOBAQUA

THESEUS

DAFNE

H2Ocean

Euro-limpacs

CIGESMED

AquaStress

www.unsdsn.gr

Co-Chairs

Prof. Phoebe Koundou

Prof. Andreas Papandr

Leadership Council

Business, NGOs,

Policy Making, Politici

3000+ universities & r

2000+ companies and

CROSS-CUTTING THEMES

Natural Capital Valuation & Integ
Sustainable Investment Allocatio

Climate Change: Mitigation and A
Policies

Sustainable Development in Times of Crisis

THEMATIC PRIORITIES

Sustainable Shipping and Marine Resources Management

Sustainable Energy and Energy Security

Sustainable Water-Food-Energy Nexus

Sustainable Tourism and Biodiversity and Culture

Education and Training Courses in Sustainable Development

Systems innovation approach!

Climate change is wickedly complicated.

It is interconnected with other massive global problems such as food security, water scarcity, biodiversity depletion and environmental degradation.

This means that it is impossible to solve climate change with traditional approaches to innovation which tend to focus on a single, or just a few aspects of the problem.

Instead, analysis of challenges and creation of solutions need to address the entire systems!

Integrated and Interdisciplinary Methodology

Aim: Max Social Welfare by allocation of scarce resources across people, over time & space,

while EnvS, EconS, Social Equity achieved.

EMPIRICAL APPLICATION of MODELS

Estimation of Economic Value

OPTIMAL ALLOCATION based on Value

MODELS ON INTERACTION

Dynamic, Spatial, Uncertainty

- Nature
- Society
- Economy

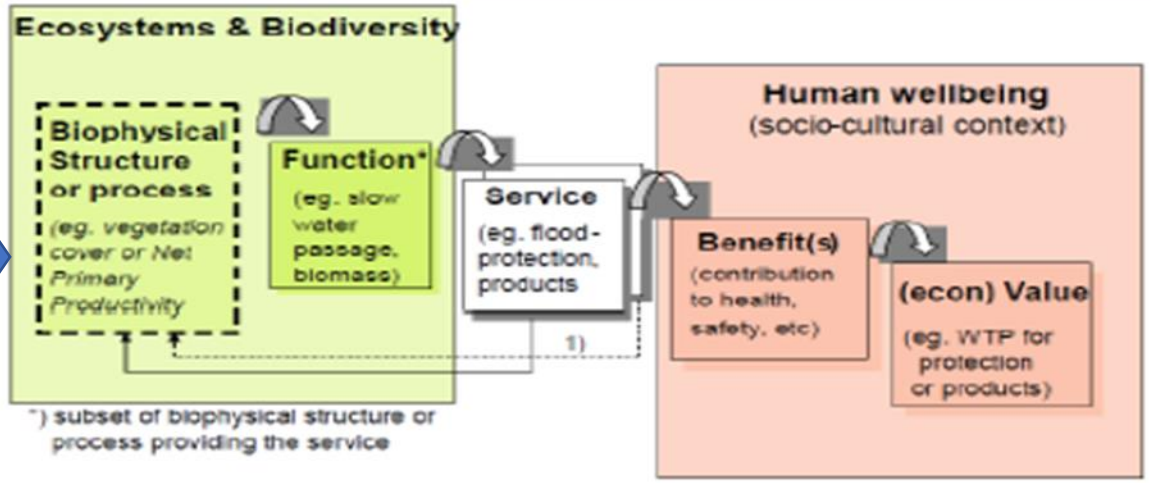
How?

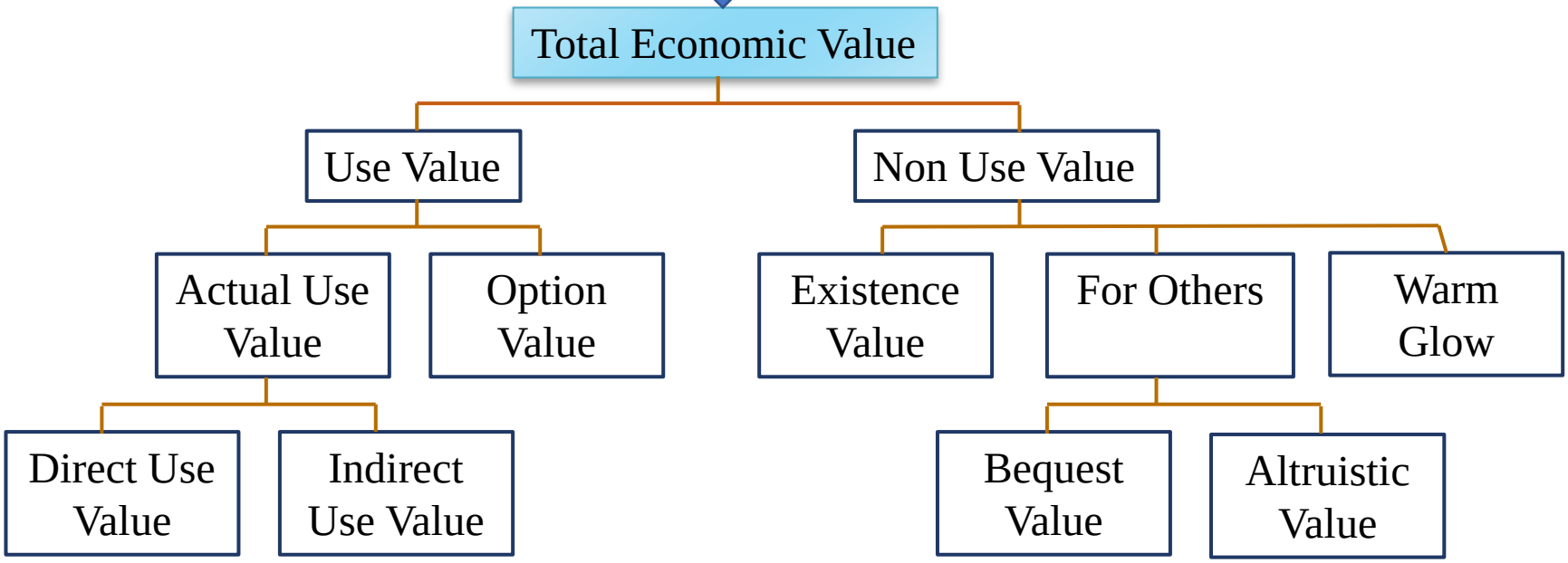
- Socio-Economic, Legal Instruments
- Technological Innovations
- Social and Institutional Innovations
- Nature Based Solutions
- Infrastructural Solutions

FRAMEWORK CHARACTERIZATION

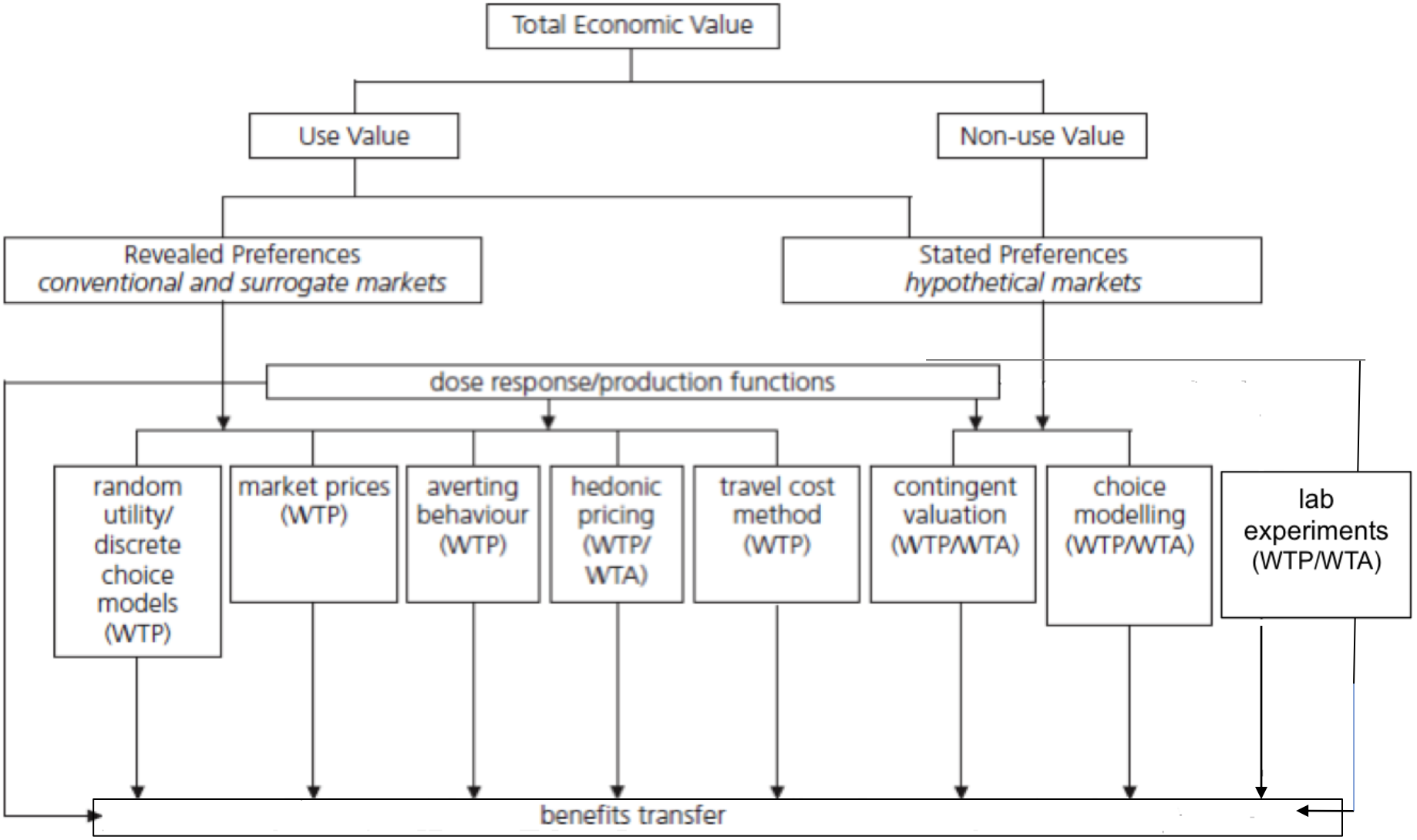
- Natural Resources,
- Socio-Economic-Institutional
- All relevant Stakeholders

STRATEGIC MANAGEMENT PLANS & POLICY RECOMMENDATIONS:
Stakeholders engaged & convinced throughout the process





The global economic benefit of a low-carbon future is estimated at US$26 trillion by 2030 compared with staying on the current high-carbon pathway.
https://exponentialroadmap.org/



- TEV: systematic tool for considering full range of impacts on human welfare.
- TEV: reflects the preferences of individuals, which can be statistically estimated
- TEV: essential for resource allocation and policy making.

Mobilizing Sustainability Transition in Greece and Europe: Our Projects

Research

BANK OF GREECE

Climate Change Committee

Deep Demonstration

Climate KIC Programmes

Climate KIC Projects

Education

Sustainability Education ages 4-17, **GNHM**

Sustainability Education, **Greek Universities**

MSc Energy Law and Economics, **AUEB**

Summer School on Aristotelian Values in SDGs – **Aikaterini Laskaridis Foundation**

Training Courses for entrepreneurs, innovators and policy makers

International Institute for Applied Systems Analysis
IIASA

The Food and Land Use Coalition

2019 Report of the FABLE Consortium

Pathways to Sustainable Land-Use and Food Systems

Integrated land and water-use planning

PILLAR 1

Efficient and resilient agriculture systems

Increase yields; reduce food loss; limit emissions from agriculture; raise water-use efficiency; reduce release of nitrogen and phosphorus.

PILLAR 2

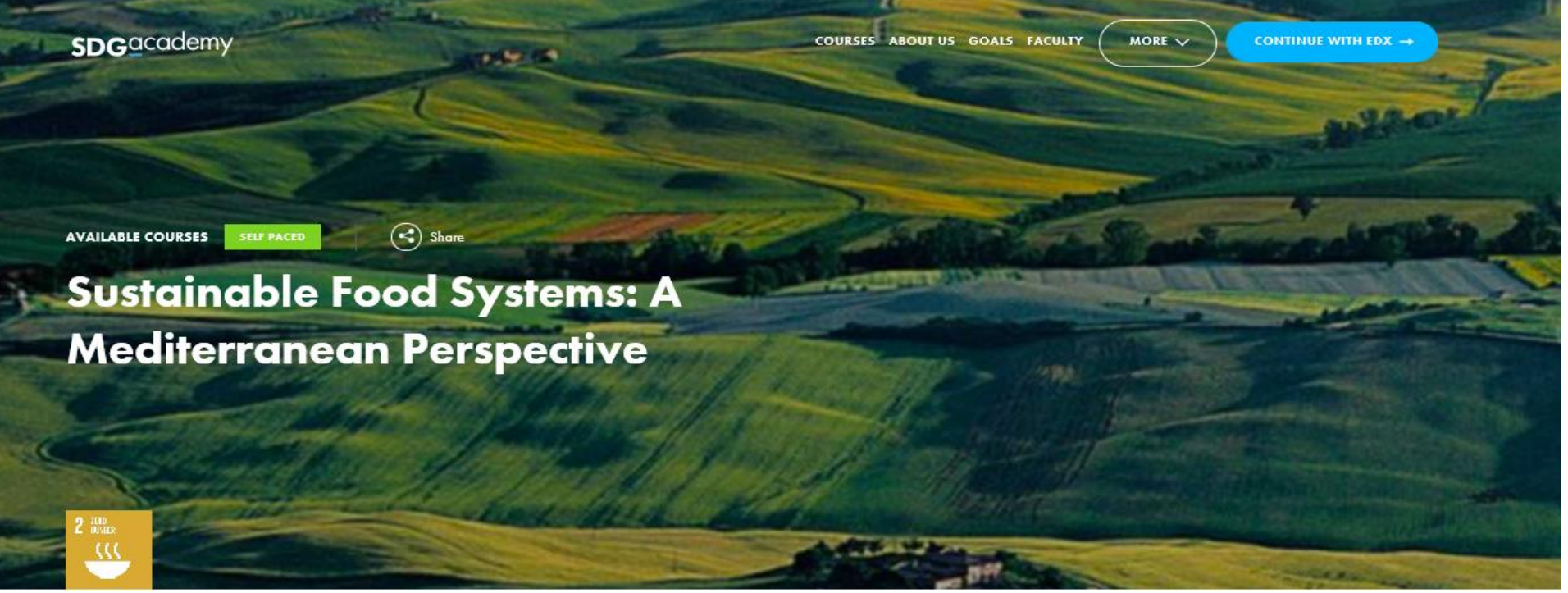
Conservation and restoration of biodiversity

Limit emissions from deforestation; protect a minimum share of terrestrial land; ensure that land supports biodiversity conservation.

PILLAR 3

Food security and healthy diets

Zero hunger, low dietary-disease risk and reduced food waste.

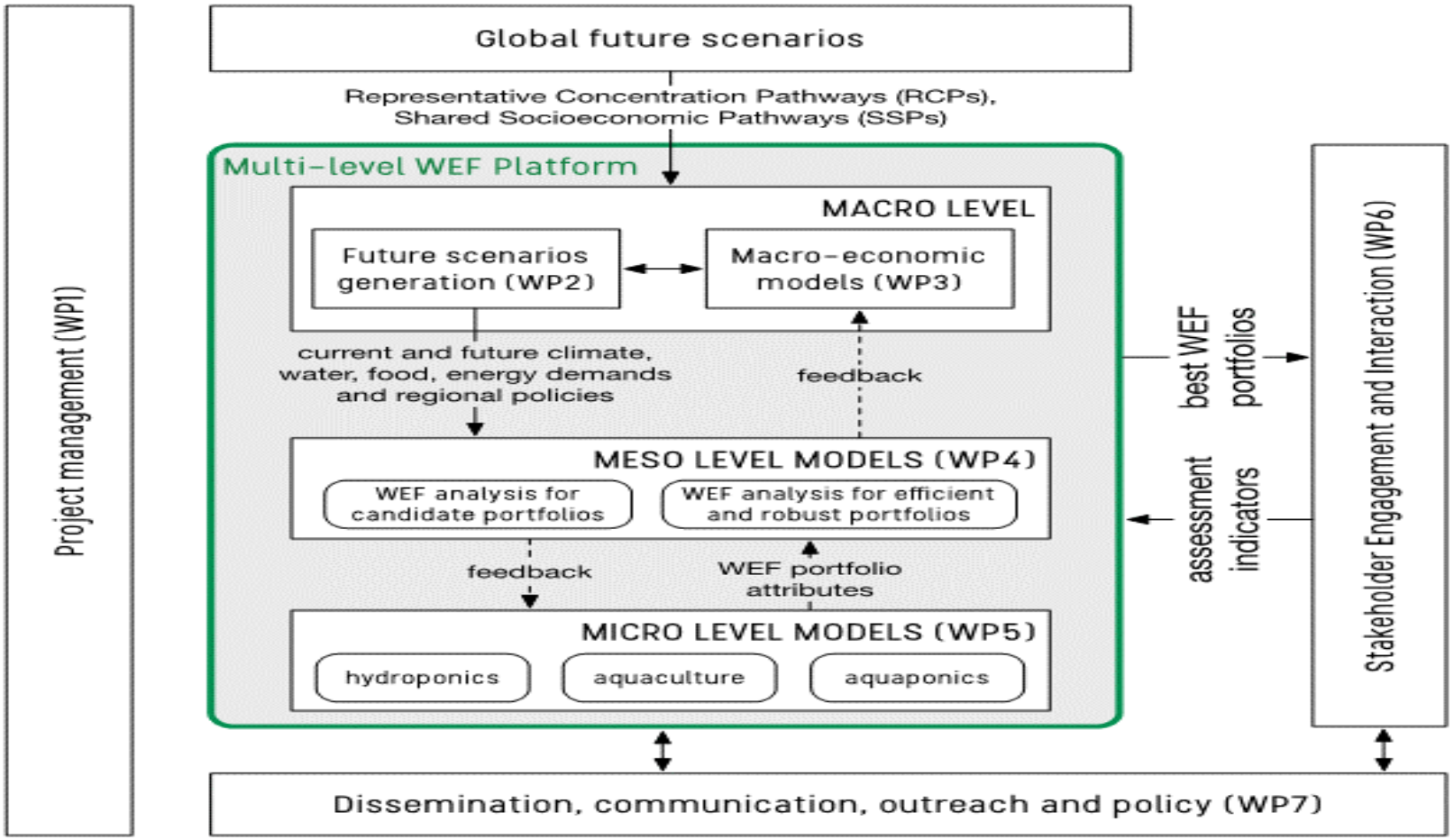


How do we produce more, better quality, and safer food while simultaneously achieving social and environmental goals?

- Unsustainable agriculture production and limited agricultural diversification;
- Overexploitation of natural resources, including loss of soil fertility and agricultural biodiversity;
- Water scarcity and poor water management;
- Limited agricultural diversification;
- Increasingly poor nutritional value of food products and diets;
- Food loss and waste; and
- Decline in food culture and food sovereignty, highlighting the struggle between modernity and tradition.

AWESOME

mAnaging Water, Ecosystems and food across sectors and Scales in the sOuth MEditerranean



DAFNE

A **D**ecision-**A**nalytic **F**ramework to explore the water-energy-food **NE**xus in complex and transboundary water resources systems of fast growing developing countries

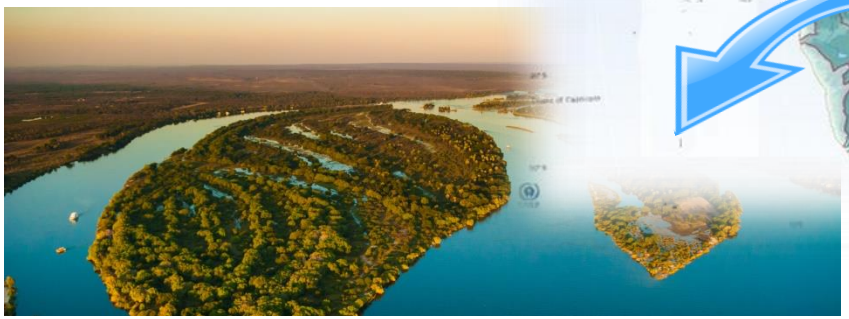
EC DG RTD, Budget: 5,000,000 euro

Aim: To establish a Decision-Analytic Framework for Participatory and Integrated Planning

2 Case Studies

Omo River Basin

Zambezi River Basin



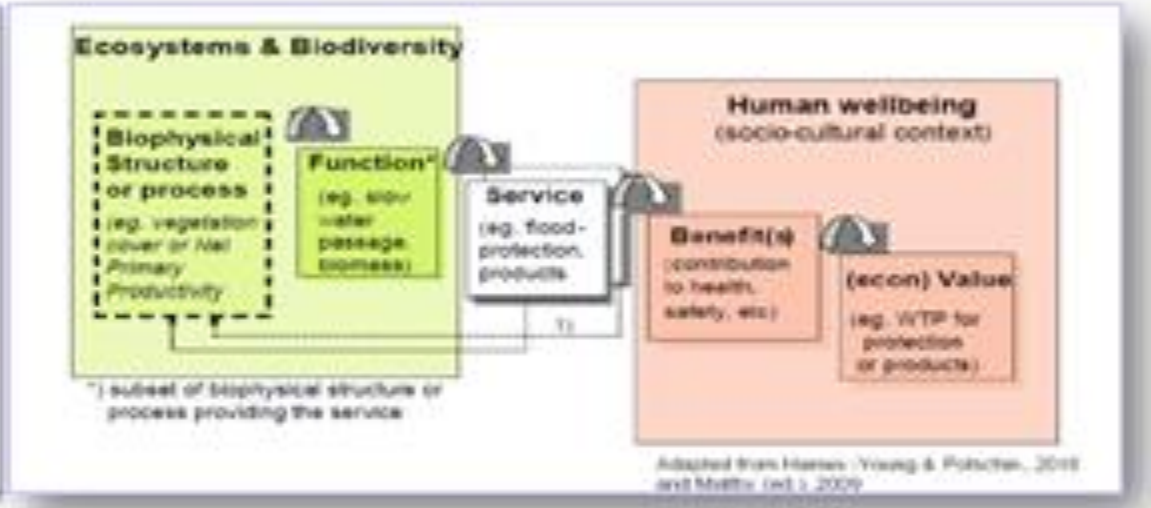
European Cluster of WEF Nexus Projects
Budget: 100 million euro

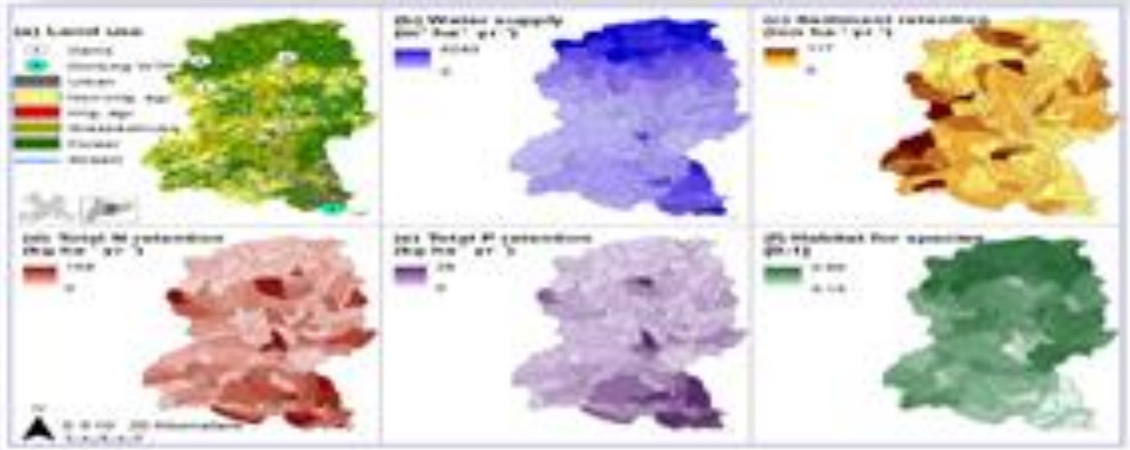
Nexus Cluster

GLOBAQUA

Managing the effects of multiple stressors on biodiversity and functioning of aquatic ecosystems

http://www.globaqua-project.eu, Budget: 10,000,000 euro





The BlueBRIDGE Project –

Addressing the Blue Societal Challenge

EC DG Research & Innovation H2020.
Budget: 10,000,000 euro

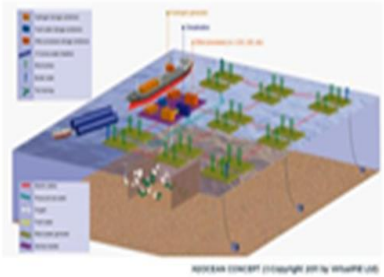
Building Research environments fostering Innovation, Decision Making, Governance and Education to support Blue Growth

Innovative Multi-purpose offshore platforms: planning, design & operation

OCEANS of TOMORROW, EC-DG Research-FP6; Budget: 20,000,000

Development of a wind- wave power open-sea platform equipped for hydrogen generation with support for multiple users of energy

http://www.h2ocean-project.eu/

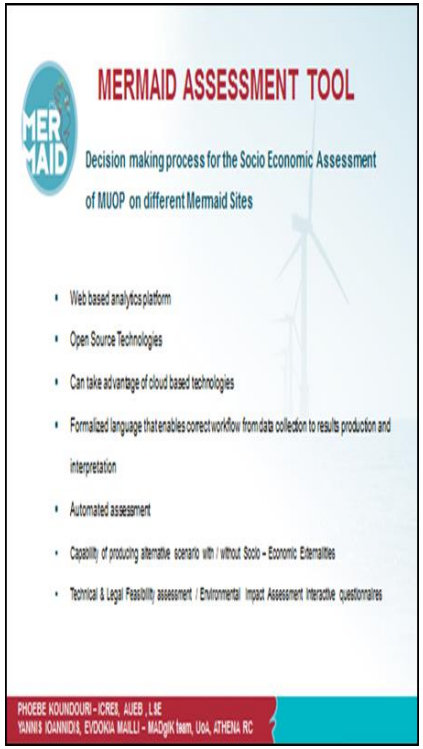


Innovative multi-purpose offshore platforms: planning, design and operation

http://www.mermaidproject.eu/

Modular multi-use deep water offshore platform harnessing and servicing Mediterranean, subtropical and tropical marine resources

http://www.troposplatform.eu/



Europe's Main Climate Innovation Initiative

C-KIC - PROGRAMMES

Accelerator

Climate-KIC

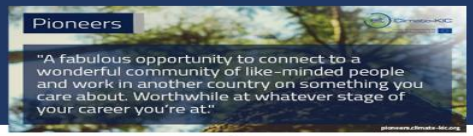
EIT Climate-KIC Accelerator is the only EU acceleration programme focused on climate impact by cleantech commercialization

Transforming ideas into climate-positive businesses

€550m+	1000+	2500+	33
capital raised in external investment by our start-ups	climate-positive companies incubated	jobs created through our start-up community	partners supporting the accelerator programme

Pioneers Into Practice

Climate-KIC



- lacement (all expenses covered).
- articipation in an educational gram (two workshops and online ning).
- raining based on innovative thodologies developed within the nate KIC.

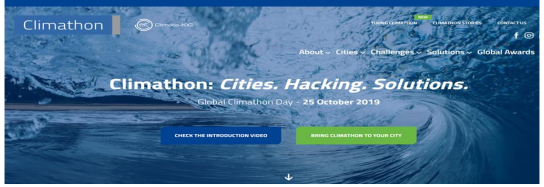
- Mentorship for improving innov ideas and skills.
- Participation in solving challen in the real environment.
- Participate in international workshops.
- Develop international profession network.

Climathon

Climate-KIC

Climathon Cities 2018

113	46	6	+5000
Cities	Countries	Continents	Participants



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€550m+
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1000+
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2500+
jobs created through our start-up community

33
partners supporting the accelerator programme

- **Cyrus:** A Demokritos spin-off working on **hydrogen technologies** and designing non-mechanical high-pressure H_2 compressors using metal hydrides

- **Citipost:** Innovative waste and data management platform focusing on **smart cities** and sustainability through **recycling**

- **Cargoshare:** An automated **freight brokerage services platform** which results in a more transparent market, leading to less communication friction, while resulting to reduced emissions by freight ships traveling empty

- **Parity:** A two-sided Financing Platform, that makes **Greentech investing** accessible to retail investors and small funds

- **Trustporter: System for shipping & transportation needs** - designed to match requests to transfer goods or transport people, with other people that happen to travel along the requested routes anyway

- **Enaleia:** Educate, motivate, organize and track the fishermen, so as to be able to **collect plastic from the sea through their bi-catch**.

- **Shallows: Zero-footprint architecture** based on natural raw materials, using biological mechanisms

EIT Climate-KIC Greece ongoing H2020 EU funded projects

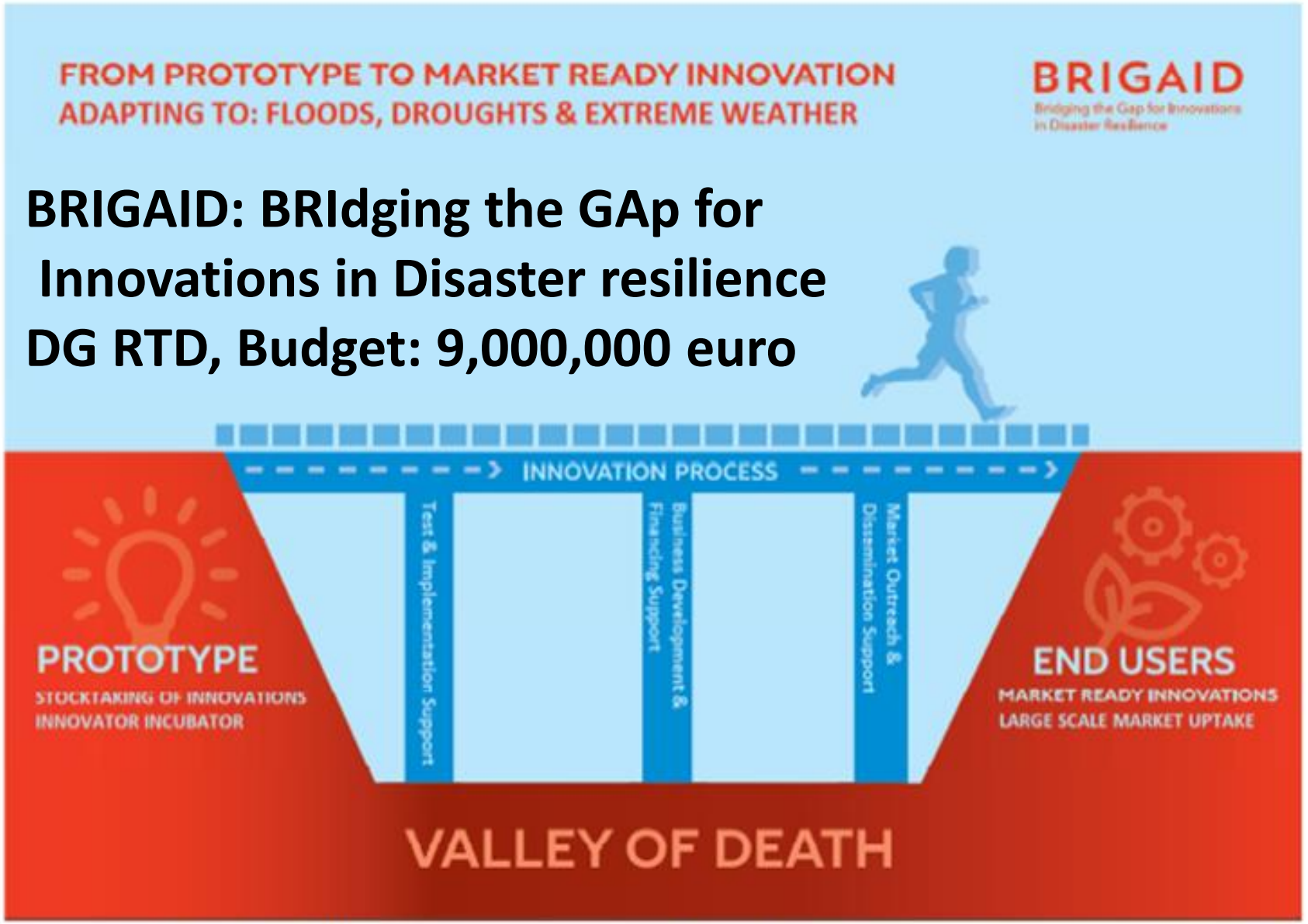


Figure 1.1: BRIGAID's conceptual approach with three types support for innovations

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

Pioneers Into Practice

Climate-KIC

- Professional Mobility via Placement
- Participation in an educational programme.
- Training based on innovative methodologies developed within the Climate KIC.
- Develop international professional network.

- Mentorship for improving innovative ideas and skills.
- Participation in solving challenges in the real environment.
- Participate in international workshops.


Climathon
Climate-KIC
Climathon Cities 2018
113
Cities
46
Countries
6
Continents
+5000
Participants
Climathon
Climate-KIC
NEW
YOUNG CLIMATHON
CLIMATHON STORIES
CONTACT US
About
Cities
Challenges
Solutions
Global Awards
Climathon: Cities. Hacking. Solutions.
Global Climathon Day - 25 October 2019
CHECK THE INTRODUCTION VIDEO
BRING CLIMATHON TO YOUR CITY

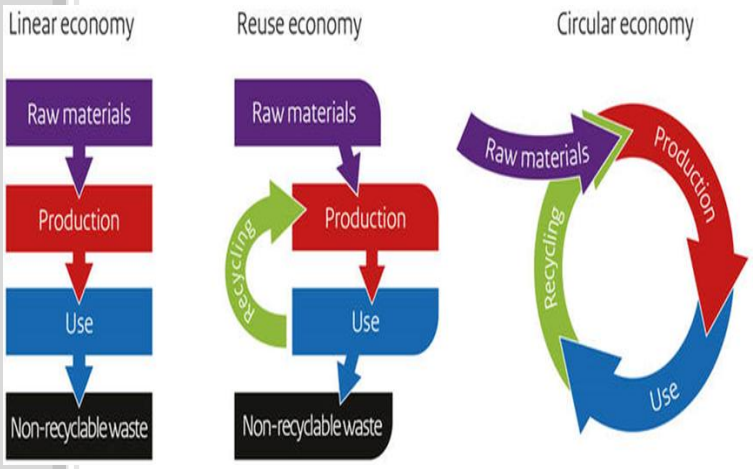

Climate-KIC
Climate-KIC is supported by the
EIT, a body of the European Union
EIT Climate – KIC Hub Greece
Deep Demonstration Projects
Transformation Pathways to
zero-net CO2 emissions via
Systems Innovation and Circular Economy

Europe's Main Climate Innovation Initiative

C-KIC – DEEP DEMONSTRATION PROJECTS

Circular Economy Transition in Smart Specialization Strategy

- Contribute to the Europe 2020 objectives of smart, sustainable and inclusive growth.
- Pilot the adoption of CE in respective S3s, with the responsible authorities.
- Stimulate the timely and systemic adoption of the CE in S3s for the 2020-2027 programming period, for all EU Member States.



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Circular Learning Hub (CL-hub)

A learning hub for the engagement and ecosystem transition towards circular thinking

- Multi-sensor and multi-virtual experiment designed to overcome short-run bias wrt climate change
- For Investors and Entrepreneurs

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Resilient Maritime Hubs

- Catalyzing Systemic Change in Maritime Sector across Europe by:

  - Decarbonization Shipping Industry
  - Ports Sustainable Transition Roadmap
  - Fostering Sustainable Tourism
  - Strengthening Fragile Ecosystems & Communities

- 13 European Ports including the Port of Piraeus.

LOOP·Ports
Circular Economy Network of Ports

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Climate Innovation in Southern European Waters

BL.EU CLIMATE

- Roadmap for plastic free southern European seas for the next 10 years
- Building capacity for innovation alongside the local challenge owners
- Address the issue at the beginning of its life cycle, on the prevention side

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New UN SDSN Global Initiatives

in association to UN getting to Zero Coalition

Global Roundtable for Sustainable Shipping

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

IPCC warned of unprecedented changes if we exceed 1.5 degrees of warming. Maritime transport emits around 940 million tonnes of CO_2 annually and is responsible for about 2.5% of global greenhouse gas (GHG) emissions (3rd IMO GHG study). These emissions are projected to increase significantly if mitigation measures are not put in place swiftly. According to the 3rd IMO GHG study, shipping emissions could under a business-as-usual scenario increase between 50% and 250% by 2050, undermining the objectives of the Paris Agreement. The **Global Roundtable for Sustainable Shipping** aims at bringing together shipowners, shipbuilders, technology developers and researchers, ports and policy makers, on innovation related to zero emissions shipping, from across the globe, to target net-zero emissions by 2050. It will be launched at a specific session on the zero-carbon ocean shipping at the two-day **COP 25 in Santiago, Chile** hosted by SDSN on December 9th & 10th 2019.

The UN SDSN 4-Seas Initiative

The UN SDSN 4-Seas is a Euro-Asian Initiative that aims to mobilizing science driven sustainable blue growth in the **Mediterranean Sea**, the **Black Sea**, the **Caspian Sea** and the **Aral Sea**, in order to protect the future state of global seas and oceans by providing a Blue Sustainability Transition Plan "from rivers to the oceans".

The initiative is led by **SDSN Greece** and **SDSN Black Sea**, established leaders on research for the implementation of SDGs in rivers and wetlands, coastal zones, seas and oceans, shipping, marine transport, offshore energy production, fishing, aquaculture, marine litter, and relevant education and training.