

# Convergences Green Cities



- **Organizers:**

UN SDSN Greece and EIT Climate KIC Greece

Institut français de Grèce

Hellenic-French Chamber of Commerce

- **Moderator Phoebe Koundouri,**

Professor Athens University of Economics and Business

Director EIT Climate KIC Greece

Co-chair UN SDSN Greece

## Sustainable Growth:

Organizing principle for meeting human development goals, **while**

sustaining the ability of natural systems to provide the natural resources and ecosystem services , **upon which**

the economy and society depend.

**Environmental Sustainability**

**Economic Sustainability**

**Social Sustainability**

**Sustainable development meets the needs of the present, without compromising the ability of future generations to do the same.**





- We are on course for disastrous +3C.
- We have **12 years left** until the point of no return. Most of us will still be alive then!
- Urgent and unprecedented changes are needed to reach the target. The target is affordable and feasible. The final tick box is political/policy will!

- **Transforming our world: the 2030 Agenda for Sustainable Development**

**10 OCTOBER 2018 REPORT**  
**Intergovernmental Panel on**  
**Climate Change (IPCC):**

Urgency of limiting global warming to +1.5 C.

Beyond which risk of drought, floods, extreme heat and poverty for hundreds of millions of people, will significantly increase.



# 11 SUSTAINABLE CITIES AND COMMUNITIES



Making *cities safe and sustainable* means ensuring access to safe and affordable housing, investment in public transport, creating green public spaces, improving urban planning and management in a way that is both participatory and inclusive.

**3.5 billion**

3.5 billion people, half of the world's population, live in cities. By 2050, the urban population is expected to reach 6.5 billion

**3%**

Cities occupy just 3 percent of the Earth's land but account for 60 to 80 percent of energy consumption and 75 percent of carbon emissions.

**828 million**

There are 828 million people live in slums, and the number is rising.

**28**

In 1990, there were 10 cities with 10 million inhabitants or more; by 2014, the number of "mega-cities" had reached 28.

**95%**

In the coming decades, 95 percent of urban expansion will take place in the developing world.

**1.2 billion**

1.2 billion jobs depend on a healthy and stable environment.

# Greece Performance

Index Score: 70.6

Regional Average 76.9

Overall Rank: 48 out of 156

## ▼ CURRENT ASSESSMENT – SDG DASHBOARD



## ▼ SDG TRENDS





**SUSTAINABLE DEVELOPMENT  
SOLUTIONS NETWORK**  
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

**A Global Network of :**  
Universities & Research and Innovation Centers  
Businesses  
Civil Society Organizations  
Policy Making  
Political Institutions

To support **SCIENCE DRIVEN** implementation of **SDGs**



# Our Projects, currently 100 researchers



- €100+ million of research funding from: European Commission (DG RTD, DG MARE, DG ENV, DG ENER, DG REGIO), International Organizations (World Bank, OECD, EBRD, WHO, FAO, UN), Governments in all 5 continents, etc.
- 1000+ peer-reviewed research papers & books





Climate-KIC



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

**Transforming innovation  
into climate action**







Climate-KIC

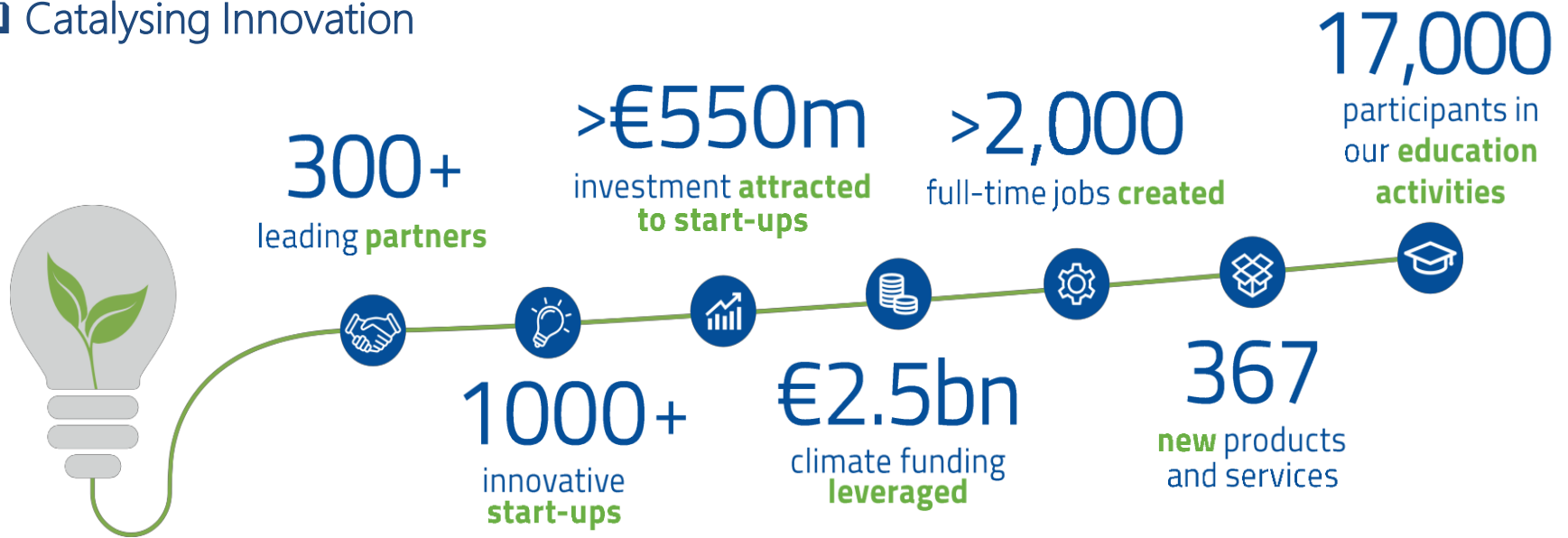
EIT Climate-KIC is a European **knowledge and innovation community** working to accelerate the transition to a **zero-carbon economy** through **whole systems** transformation.

The EIT Climate-KIC is part of the European Institute of Innovation and Technology (EIT) and the EIT Community.

The EIT is a body of the European Union and a global innovation leader, delivering world class solutions to societal problems

# ETClimate KCEurope is Building a Movement of Climate Action

- ❑ Convening networks of expertise
- ❑ Leveraging Grants Smartly & Effectively
- ❑ Developing People & Capacity
- ❑ Catalysing Innovation



# Climate KIC Innovation Initiative for Cities Smart Sustainable Districts

- Scaling up urban transformation through open innovation
- Linking cities to global value chains and surrounding landscapes
- Finance and capacity building to support innovation

**CLIMATHON: ATHENS: How can we create Athens' first open-data Urban Tree Inventory?**





# Convergences - Green Cities

## SPEAKERS

- **Lenio Myrivili** Deputy Mayor of Urban Nature, Resilience and Climate Change Adaptation, City of Athens Athens, Chief Resilience Officer
- **Marianthi Liapi** Research Program Manager, Transformable Intelligent Environments Lab, Maker Space City of Athens
- **Dinos Machairas**, Executive Director, Organization Earth
- **Dr. Adriosopoulos, President** Hellenic Association for Energy Economics
- **Eric Scotto** President Akuo Energy
- **Dora Trachana**, Uni.Fund
- **Dr. Efi Tritopoulou**, General Manager Citipost
- **Olga Hadzidaki & Maria Thallia Carras**, Locus Athens
- **George Kremlis** Honorary Director DG Environment, European Commission; Chair of the Espoo Bureau



Greece



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# Transforming innovation into climate action



# Integrated and Interdisciplinary Methodology

**Aim: Allocation of scarce resources across people, over time & space, while EnvS, EconS, Social Equity achieved.**

## MODELS ON INTERACTION

**Dynamic, Spatial, Uncertainty**

- Nature
- Society
- Economy

## FRAMEWORK CHARACTERIZATION

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

## EMPIRICAL APPLICATION of MODELS

Estimation of Economic Value

**OPTIMAL ALLOCATION based on Value**

## How?

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

## STRATEGIC MANAGEMENT PLANS &

## POLICY RECOMMENDATIONS:

Stakeholders engaged & convinced throughout the process





# EIT Climate - KIC Core Programs

# EIT Climate KIC Accelerator - Greece

Accelerator



- Offers structured **business and commercial support** to European start-ups in the new climate economy. It is a **real-world business school** for clean tech entrepreneurs
- **Offers coaching, training, technology validation and office space**
- Selected start-ups benefit from funding, exposure to customers, partners and investors as well as access to an extensive relevant international network

<https://www.climate-kic.org/programmes/entrepreneurship/accelerator/>

- **Stage 1: Fundamentals**

Develop a **financial model** and figure out how to make money and scale your business. This stage comes with a **grant of up to €10,000**.

- **Stage 2: Validation**

Are you solving real customer problems? **Talk to customers and verify your business assumptions**. Grants in Stage 2 could add **up to €15,000**.

- **Stage 3: Delivery**

**Find launching customers, development partners or investors**. Form partnerships that make you grow fast. Get **up to €50,000**.



# EIT Climate KIC Supported startups

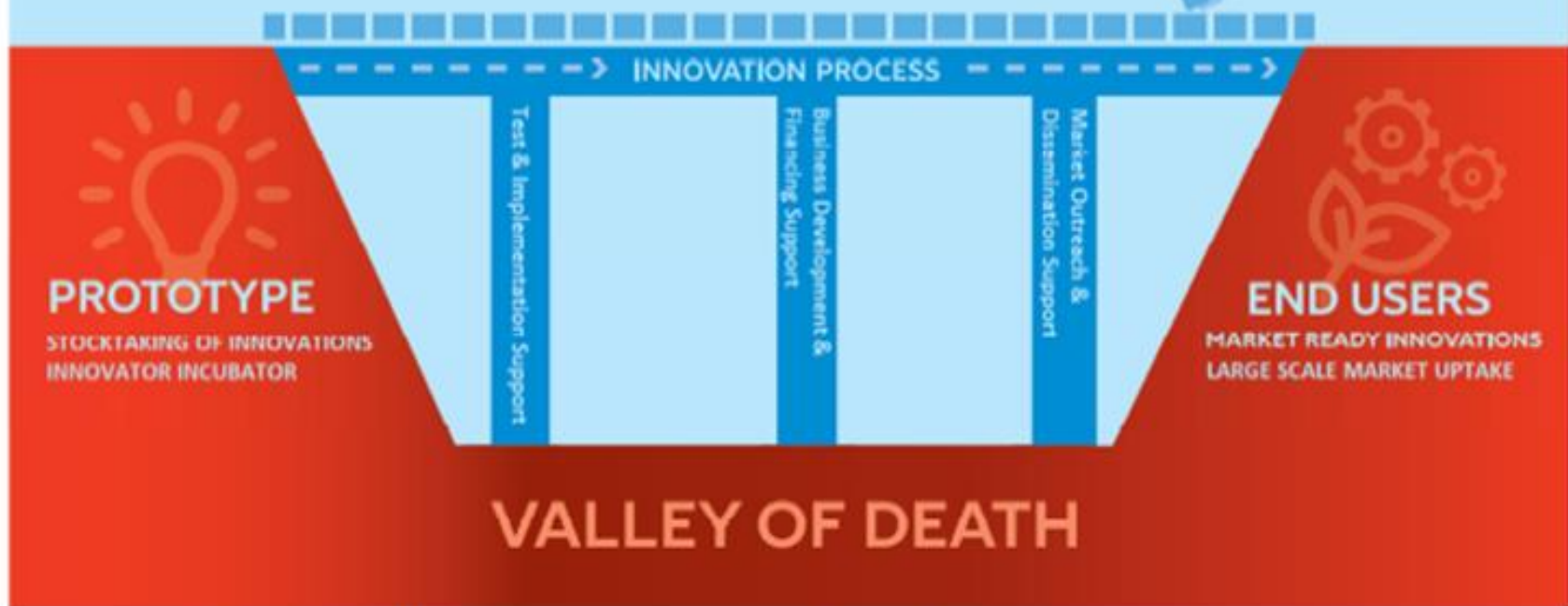
- **Cyrus:** A Demokritos spin-off working on hydrogen technologies and designing non-mechanical high-pressure H<sub>2</sub> compressors using metal hydrides
- **Citipost:** Innovative waste and data management platform focusing on smart cities and sustainability through recycling
- **Cargoshare:** An 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:** A convenient, trust-centered and inexpensive 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 as a living creature with a highly efficient life-cycle regarding sustainability, energy consumption and CO<sub>2</sub> emissions



**FROM PROTOTYPE TO MARKET READY INNOVATION  
ADAPTING TO: FLOODS, DROUGHTS & EXTREME WEATHER**

**BRIGAIID**  
Bridging the Gap for Innovations  
in Disaster Resilience

**BRIGAIID: BRIdging the GAP for  
Innovations in Disaster resilience  
DG RTD, Budget: 9,000,000 euro**



*Figure 1.1: BRIGAIID'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

## Pioneers into Practice

- Climate-KIC's professional mobility program Operates in over 16 locations across Europe
- Professionals from industry, small companies, universities, municipalities, governance, are offered an innovative blend of e-learning, workshops, coaching and placements by Host organizations active in the field of sustainability.
- Practical experience through 4 - 6 week placements
- 1 day International Workshop



<https://pioneers.climate-kic.org>



# Climathon

<https://climathon.climate-kic.org/en/>

A **global movement** dedicated to solving the toughest climate challenges cities face today

This is manifested in a **24-hour hackathon** taking place simultaneously in major cities around the world

Citizens, city officials and partners connect under a shared vision for a healthier city and try to find innovative solutions

In 2018, 4 Climathons took place in Greek cities under the auspices of EIT Climate-KIC Hub Greece (Athens, Piraeus, Heraklion, Larissa)



# ReSees Laboratory@AUERB

## Selected Research Projects



<https://www.dept.aueb.gr/el/ReSEES>

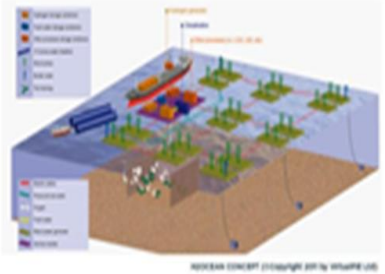


# Innovative Multi-purpose offshore platforms: planning, design & operation

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.tropisplatform.eu/>



**MERMAID ASSESSMENT TOOL**  
 Decision making process for the Socio Economic Assessment of MUOP on different Mermaid Sites

- Web based analysis platform
- Open Source Technologies
- Can take advantage of cloud based technologies
- Formalized language that enables correct workflow from data collection to results production and interpretation
- Automated assessment
- Capability of producing alternative scenario with / without Socio - Economic Externalities
- Technical & Legal Feasibility assessment / Environmental Impact Assessment interactive questionnaires

PHOEBE KOUNDOURI - ICREL, AUEB, L.I.E.  
 IRANIS KAVANIDIA, EUCOONIA MALLI - MAGGIK team, UGA, ATHENA, GR

Environment & Policy 56

Phoebe Koundouri Editor

## The Ocean of Tomorrow

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

Springer



## 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

<i>Supporting assessment of stocks and fisheries</i>	<i>Improving performance and sustainability in aquaculture</i>	<i>Monitoring fisheries &amp; habitat degradation</i>
A diagram illustrating the marine food web. It is divided into three horizontal layers: "Secondary consumers" (top, showing large fish), "Primary consumers" (middle, showing smaller fish and squid), and "Primary producers" (bottom, showing seaweed and other marine plants).	An aerial photograph of a large-scale aquaculture operation, showing numerous circular and rectangular cages floating in the water, with a service boat nearby.	An underwater photograph of a vibrant coral reef, showing various types of coral and colorful fish swimming around.





GLOBAQUA

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

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



## Ecosystems & Biodiversity

**Biophysical Structure or process**  
(eg. vegetation cover or Net Primary Productivity)

**Function\***  
(eg. slow water passage, biomass)

**Service**  
(eg. food-protection, products)

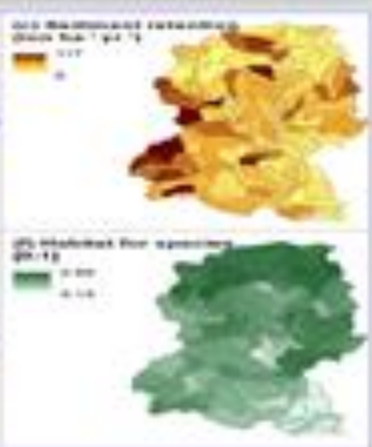
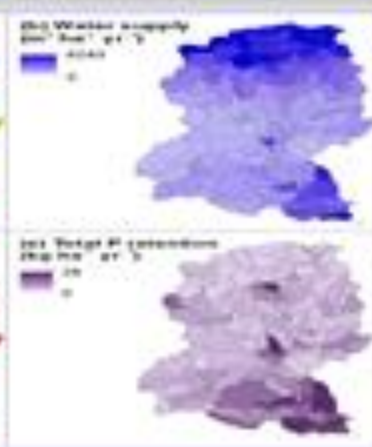
## Human wellbeing (socio-cultural context)

**Benefit(s)**  
(contribution to health, safety, etc.)

**(econ) Value**  
(eg. WTP for protection or products)

\* ) subset of biophysical structure or process providing the service

Adapted from Haines-Young & Pollock, 2001 and Muller (et al.) 2009





<http://www.theseusproject.eu/>

## Innovative technologies for safer European coasts in a changing climate

European Commission

FP7, THEME 6 - Environment, including climate

Budget: (6,530,000 €)



**DAFNE**

A Decision-Analytic Framework to explore the water-energy-food Nexus 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

Omo River Basin



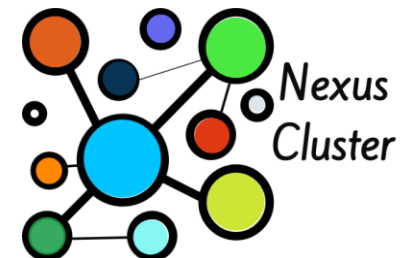
**2 Case Studies**

Zambezi River Basin



**European Cluster of WEF Nexus Projects**

**Budget: 100 million euro**







OpenAIRE

Coordination  
OpenAIRE  
Connect



OpenAIRE is the European online network that makes research output openly accessible to all.

It is all about sharing, reusing and linking research information.

## Our Vision

An SDG E-library for Greece, Europe, Global

An Open Science directory of all past **20 years** completed and ongoing projects, research publications, data and related models relevant to the 17 SDGs

## immediate & long-term benefits to:

Research Communities  
Research Organizations  
Fundors, industry, Policy Making and... society

## Education and Training

International, Regional, National  
Conferences, Workshops, Training  
Seminars & Research, Policy,  
Business Events



### Coordinator

The course is coordinated by Phoebe Koundouri, Professor of Economics and Econometrics, Athens University of Economics and Business (School of Economics) and London School of Economics (CGCEP), Scientific Director of ICRES, SDSN-Greece chair.



## Coming Soon:

- MSc Energy Law and Economics
- Greek Sustainability Report
- Sustainability Summit, with the Economist, 16-17 Oct. 2019

## Our Ongoing Projects



## Institutional Support

