

# **The EU Horizon Mission Board on Climate Change Adaptation, Including Societal Transformation**

**Jean-Pascal van Ypersele**

**Université catholique de Louvain, Belgium**

**Mission Board member**

**Former IPCC Vice-Chair (2008-2015)**

**Twitter: @JPvanYpersele**

**Gobeshona Global (online) Conference on Locally Led Adaptation**

**organised by the International Centre for Climate Change and  
Development (ICCCAD), Dhaka, Bangladesh**

**20 January 2021**

**Thanks to the Walloon government for supporting [www.pplateforme-wallonne-giec.be](http://www.pplateforme-wallonne-giec.be) & my team at UCLouvain**

# The Essential Truth About Climate Change in Ten Words

The basic facts of climate change, established over decades of research, can be summarized in five key points:

IT'S REAL

IT'S US

EXPERTS AGREE

IT'S BAD

THERE'S HOPE

Global warming is happening.

Human activity is the main cause.

There's scientific consensus on human-caused global warming.

The impacts are serious and affect people.

We have the technology needed to avoid the worst climate impacts.

**JRC Peseta IV Final  
Report (2020)  
« Climate change  
impacts and adaptation  
in Europe »**

**Available on  
<https://op.europa.eu>**



# Key findings from JRC Peseta IV (2020) report (« Climate change impacts and adaptation in Europe »):

- *Ecosystems, people and economies in the EU are projected to face major impacts from unmitigated climate change*
- *The burden of climate change shows a clear north-south divide, with southern regions in Europe impacted more*
- *Climate mitigation can considerably lower the impacts of climate change in the EU*
- *Climate change adaptation can reduce unavoidable impacts of climate change in the EU in a cost-efficient way*



# Heat waves kill



Une personne âgée dans un couloir des urgences du centre hospitalier de Versailles en août 2003. | AFP PHOTO MARTIN BUREAU

# **Ecosystems, people and economies in the EU are projected to face major impacts from unmitigated climate change (1)**

**Without climate mitigation (warming of 3°C or more above pre-industrial temperature) and adaptation actions the EU could face the following impacts:**

**□ Each year nearly 300 million citizens in the EU and UK would be exposed to deadly heatwaves, resulting in a 30-fold rise in deaths from extreme heat (90,000 annual deaths compared to around 3,000 each year today).**

# Floods cost



## **Ecosystems, people and economies in the EU are projected to face major impacts from unmitigated climate change (2)**

**Without climate mitigation (warming of 3°C or more above pre-industrial temperature) and adaptation actions the EU could face the following impacts:**

**□ Coastal flood losses in the EU and UK would grow by two orders of magnitude and climb to 250 €billion/year in 2100, while 2.2 million people would be exposed per year to coastal inundation compared to 100,000 at present.**



**Risk = Hazard x Vulnerability x Exposure**  
**(Victims of New Orleans floods after Katrina in 2005)**



AP Photo - Lisa Krantz (<http://lisakrantz.com/hurricane-katrina/zspbn1k4cn17phidupe4f9x5t1mzdr>)

# ***Climate mitigation can considerably lower the impacts of climate change in the EU***

**All climate impacts considered in PESETA IV would be reduced significantly with mitigation policies attaining the Paris Agreement targets:**

- The increase in the number of people near wildland that are annually exposed to at least 10 days of high-to-extreme fire danger would be limited to 5 million, compared to 15 million with 3°C global warming.**
- The number of people annually exposed to deadly heatwaves would be reduced by 200 million with 60,000 fewer deaths per year.**

# ***Climate change adaptation can reduce unavoidable impacts of climate change in the EU in a cost-efficient way***

**Even if global warming were limited to well below 2°C there will be unavoidable impacts in the EU. (...) Adaptation can reduce climate change impacts in a cost-efficient way.**

**In case of unmitigated climate change,**

**□ reducing flood peaks by installing retention reservoirs would reduce annual river flood damage at the end of the century by nearly 40 €billion and around 400,000 fewer people would be exposed each year to flooding in the EU and the UK.**

**□ strengthening protection along coastlines of populated and economically pivotal coastal areas would avoid 220 €billion of coastal flood losses each year in the EU and UK at the end of this century, for an annual cost of less than 2 €billion/year from now until 2100. Also 1.4 million fewer people would be exposed each year to coastal flooding.**

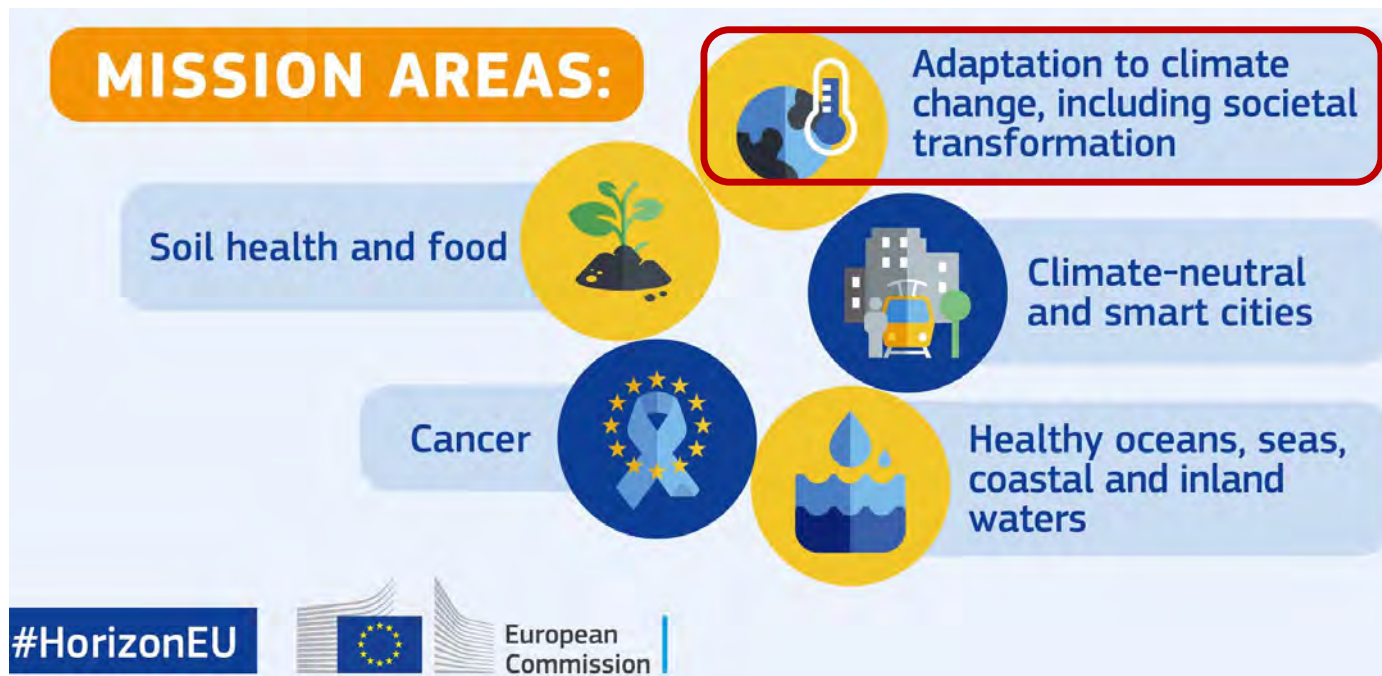
# Horizon Europe Mission Climate Adaptation, including Societal Transformation

**ACCELERATING THE  
TRANSITION TO A  
CLIMATE PREPARED AND  
RESILIENT EUROPE**



# Horizon Europe Missions

- Intended to achieve **ambitious** and **inspirational** goals
- With a **clear direction**: targeted, measurable and time-bound
- With **impact** for society and policy making
- **Engage citizens** in co-designing, co-creating, co-implementing and co-assessing missions





# Members of the Mission Board

Title	First Name	Last Name	Affiliation	
Ms	Connie	Hedegaard	Former European Commissioner for Climate Action	<u>Chairperson</u>
Prof.	Jean-Pascal	van Ypersele	Université catholique de Louvain	
Prof. Dr.	Daniela	Jacob	Climate Service Center Germany (GERICS)	
Ms	Ann	Runnel	Reverse Resources	<u>Lead Citizen Engagement</u>
Dr.	Asunción	T. Lera St. Clair	Det Norske Veritas, and Barcelona Supercomputing Centre	
Mr	Mathieu	Cornieti	Impact Partners	
Prof.	Mirela	Holy	VERN University of Applied Sciences	<u>Liaison to MS</u>
Prof.	Kevin	O'Connor	University College Dublin	
Mr	Mark Scicluna	Bartoli	Bank of Valletta	
Mr	Hein	Pieper	Dutch Water Authorities	<u>Rapporteur</u>
Prof.	Helena	Freitas	University of Coimbra	
Prof. Dr.	Johan	Rockström	Potsdam Institute for Climate Impact Research (PIK)	
Dr.	Jaroslav	Mysiak	Euro - Mediterranean Centre on Climate Change (CMCC)	
Prof.	Virginia	Murray	Global Disaster Risk Reduction for Public Health England	
Dr.	Per	Espen	BI – Norwegian Business School	

ACCELERATING THE  
TRANSITION TO A CLIMATE  
PREPARED AND RESILIENT  
EUROPE

## Vision:

“Turning the urgent challenge of adapting to climate change into an opportunity to make Europe more resilient, climate prepared and fair”

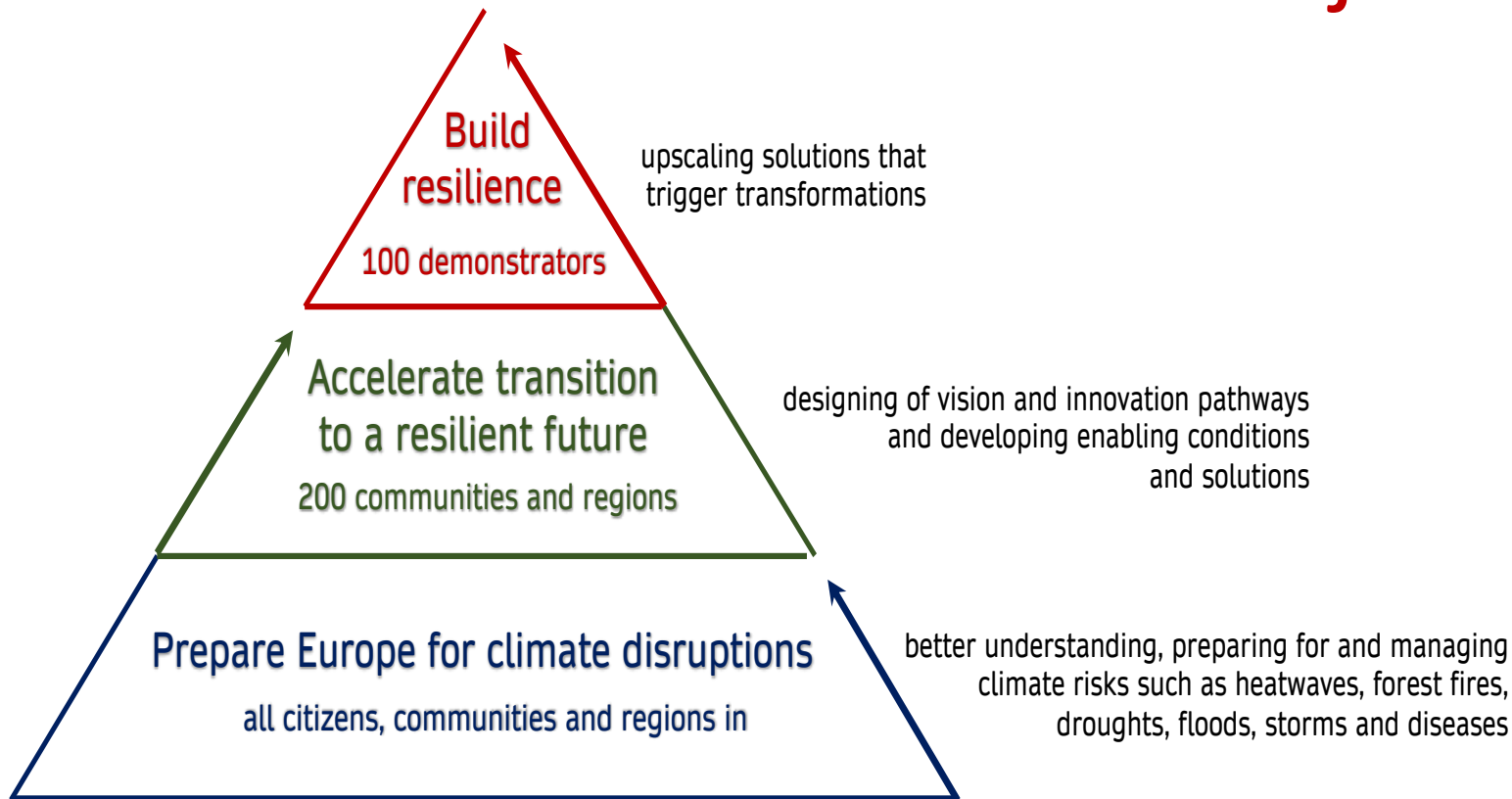
# Objectives

## ACCELERATING THE TRANSITION TO A CLIMATE PREPARED AND RESILIENT EUROPE

By 2030, the Mission will:

- 1) **Prepare Europe** to deal with climate disruptions, and assist all citizens, communities and regions in better understanding, preparing for and managing climate risks such as heatwaves, forest fires, droughts, floods, storms and diseases;
- 2) **Accelerate the transition** to the future we want, supporting 200 European communities and regions in co-creating a vision and innovation pathways, as well as developing solutions and enabling conditions for transformative adaptation within safe planetary boundaries;
- 3) **Build deep resilience** by scaling up actionable solutions triggering societal transformations through 100 deep demonstrations of resilience across a number of European communities and regions

# Objectives



# Prepare Europe

The Mission will support citizens, communities and regions to:

## Target:

By 2030, all local administrative units (LAU) and regions (NUTS) will have **access to climate risk profiles** and enhanced **early warning systems** for all relevant risks, and will have adopted comprehensive **climate risk management plans**

- **foster a better understanding** of climate risk exposure, providing access to fast track climate risk assessments and strengthening existing early warning systems;
- **facilitate the adoption of climate risk management plans** and community-based emergency plans; and
- **ensure that community infrastructure is safe and essential services operable and accessible** under critical conditions

NB: NUTS = « *Nomenclature des unités territoriales statistiques* »



# Accelerate the transition

The Mission will support citizens, communities and regions, to:

## Target:

**By 2030, 200 European communities and regions will have developed their own transformative vision;** co-created adaptation pathways; co-designed and tested actionable solutions; and created favourable conditions for societal transformations.

- **design vision and objectives**, and build consensus around transformative social change enshrined in a community resilience contract;
- **co-create adaptation pathways**, and define possible courses of policy and innovation actions to deliver on the vision, resulting in a portfolio brief for action;
- **co-design and test actionable solutions**, and share learning within and across the communities and regions; and
- **create favourable conditions for societal transformations**

# Build deep resilience

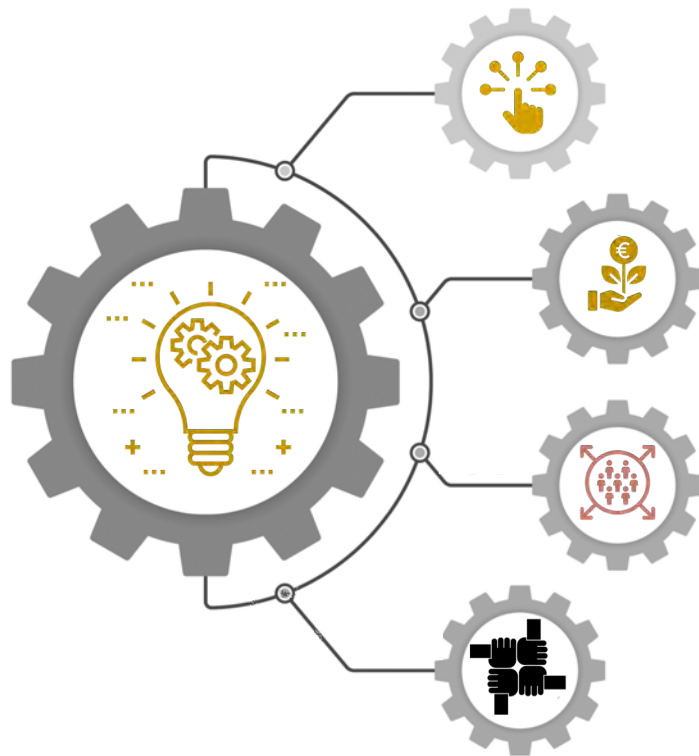
## Target:

By 2030, 100 deep demonstrations have scaled-up actionable solutions that have triggered societal transformation, building deeper resilience

Scaling up actionable solutions triggering societal transformations through **100 deep demonstrations of resilience**, the Mission will

- **create impact at scale**, building of resilience in single regions and communities focusing on key community systems;
- **create cross-border value**, building of resilience and shared value creation across cross-border systems and services;
- **foster systemic and citizen-centred co-evaluation**, measuring progress made, assessing what has been accomplished and communicating the processes and outcomes

# Enabling environment



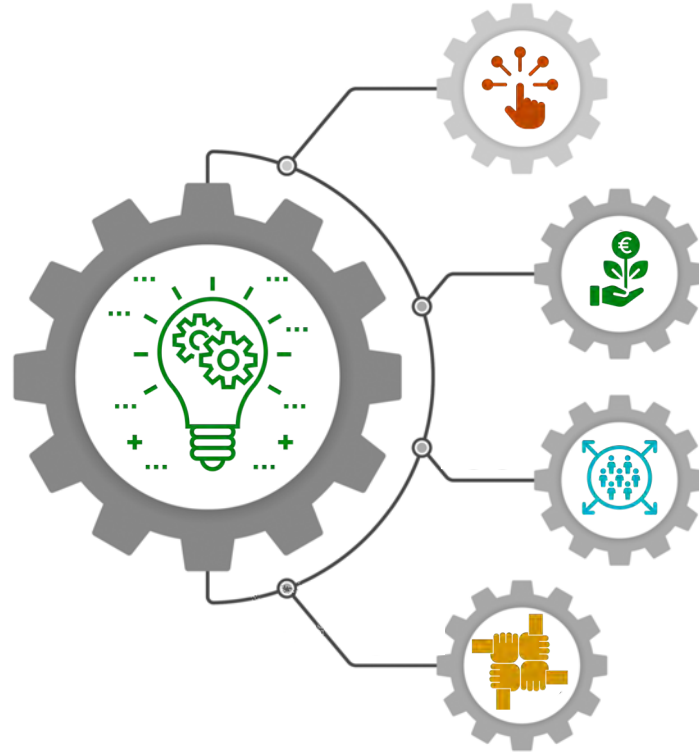
access to data,  
knowledge, digital  
services

local economies,  
economic resources

inclusive and fair  
transition

shared learning and  
policy coherence

# Key Community Systems



Community and Social  
Infrastructure

Health and Wellbeing

Nature, Biodiversity and  
Ecosystem Services

Water

Rural Landscapes and  
Food Systems



## SOCIAL INFRASTRUCTURE

Regenerating **community and social infrastructure**: renovating public spaces and facilities for inclusive, healthy and climate-resilient neighbourhoods

- renovate public buildings and social housing, making them energy efficient, healthy and compliant with principles of circular economy,
- invest in making community infrastructure safe, resilient and climate-proof,
- ensure access to social infrastructure for all and making residential areas attractive, resilient and sustainable neighbourhoods and communities.



Protecting **human health and wellbeing**:  
preparing communities to stay healthy in a  
changing climate (early warning and  
surveillance systems)

- adopt health plans and adequate response to address relevant hazards in the regions and integrate projected climate risks into health preparedness systems, capacity building and research,
- establish enhanced early warning systems to ensure a rapid response from health services, and protect people at high risk,
- develop robust epidemiological surveillance and modelling tools for assessing and predicting impact of extreme events and disasters associated with climate change.



**SAVING LIVES  
AND WELLBEING**



## HARNESSING THE POWER OF NATURE

Restoring **nature, biodiversity and ecosystem services**: boosting nature-based solutions and green-blue multipurpose infrastructure investments in ecosystems

- halt land degradation and restore at least 30% of the most degraded ecosystems across land and sea with a high potential for climate adaptation and mitigation and control spread of invasive alien species and pathogens,
- designate multi-layered, high quality and well-connected green and blue infrastructure networks,
- adapt x % of the regions' existing forests to climate change and restoring natural habitats to favourable conservation status.

Rethinking **water management**: fostering innovations towards smart, reliable, and efficient access to water and reduced vulnerability to water-related risks

- realise transparent water balances and accounts, and adjust water allocations across environmental and human uses to long-term water availability,
- adopt inclusive, forward looking and climate risk-informed water planning and management processes, foster adoption of digital water technologies, and make equitable and ecologically sound water sharing agreement and strategies across borders and during drought-driven shortages and floods,
- identify and reduce water efficiency and protection gaps by at least 50% by 2030, in regions under water stress, now or in the future, and for water bodies at risk of failing to achieve good ecological status.



**EMBRACING NEW  
WATER REALITIES**



## SUSTAINING THE DIVERSITY AND PRODUCTIVITY OF RURAL LANDSCAPES

Reviving **rural landscapes and sustainable food systems**: shifting to resilient food system, mindful of the interrelations between human and ecosystem health, supply chains, sustainable consumption, and cultural heritage

- endorse strategies for climate neutrality [reducing GHG by 50% by 2030] and resilience;
- strengthen environmental stewardship by increasing the area of high nature value farmland, organic farming, and nature-based solutions to control soil erosion, pollution, pest and diseases,
- promoting shifts to sustainable consumption, and increased consumption of regionally produced, seasonal and healthy agricultural products.

# Citizen Engagement

An integral part of Horizon Europe Missions.

Citizen engagement - understood as deliberative democracy and as a new form of governance

Different yet complementary to stakeholder engagement

Three phases:

- co-design
- co-implementation
- co-assessment



**John Holdren, Former science adviser of President Obama, and former President of the American Association for the Advancement of Science**

- *'We basically have three choices – mitigation, adaptation, and suffering.*
- *We're going to do some of each. The question is what the mix is going to be.*
- *The more mitigation we do, the less adaptation will be required, and the less suffering there will be.'*

# References

- **My slides:** [www.climate.be/vanyp/conferences](http://www.climate.be/vanyp/conferences)
- **EU Mission Board Adaptation**
  - **report:** <https://op.europa.eu/s/oHgE>
  - **contact:** [RTD-HORIZON-EUROPE-MISSION-ADAPTATION@ec.europa.eu](mailto:RTD-HORIZON-EUROPE-MISSION-ADAPTATION@ec.europa.eu)
- **JRC Peseta IV Final Report (2020) « Climate change impacts and adaptation in Europe »:**  
<https://op.europa.eu>
- **Twitter: @JPvanYpersele**