

In collaborazione con



# SUMMER SCHOOL EU-MED CLIMATE

12 - 23 SETTEMBRE 2022



Co-funded by the  
Erasmus+ Programme  
of the European Union

Summer School EU-MED Climate  
13 Settembre 2022

# AZIONI PER UNA EUROPA A ZERO IMPATTO CLIMATICO E AMBIENTALE

**Gianni Tartari\***

European Climate Pact Ambassador

**Associazione EuCliPa.IT**

*\* Ex Dirigente di Ricerca del Consiglio Nazionale delle Ricerche è esperto di qualità delle acque e dell'ambiente. Studia gli effetti dei cambiamenti climatici sulle caratteristiche fisiche e chimiche dei corpi idrici. Attualmente è: coordinatore di un GdL sui Microinquinanti Emergenti (Cluster LE2C), ambasciatore del Patto Europeo per il Clima e membro di diverse associazioni, nelle quali è presente nei consigli scientifici di alcune di esse.*



[www.euclipa.it](http://www.euclipa.it)

#MyWorldOurPlanet  
#EUClimatePact

# Sommario

- Parte I - *Il cambiamento climatico e ambientale: l'approccio olistico*
- Parte II - *Il cambiamento climatico e ambientale: le evidenze*
- Parte III - *Il cambiamento climatico (e non solo): le azioni in Europa*
- Parte IV - *Il Patto Europeo per il Clima e gli Ambasciatori del Patto per il Clima*
- Parte V - *Ce la faremo?*
- Parte VI - *Nuove e vecchie preoccupazioni*



PARTE: Prima

***Il cambiamento climatico e ambientale:  
l'approccio olistico***



# A che punto siamo?

## Patterns

### Anthroponumbers.org: A quantitative database of human impacts on Planet Earth

Griffin Chure,<sup>1,2,10,11,\*</sup> Rachel A. Banks,<sup>3,4,5,10</sup> Avi I. Flamholz,<sup>3,4</sup> Nicholas S. Sarai,<sup>6</sup> Mason Kamb,<sup>5</sup> Ignacio Lopez-Gomez,<sup>4,7</sup> Yinon Bar-On,<sup>8</sup> Ron Milo,<sup>8</sup> and Rob Phillips<sup>3,5,9,\*</sup>

<sup>1</sup>Department of Biology, Stanford University, Stanford, CA, USA

<sup>2</sup>Department of Applied Physics, California Institute of Technology, Pasadena, CA, USA

<sup>3</sup>Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, USA

<sup>4</sup>Resnick Sustainability Institute, California Institute of Technology, Pasadena, CA, USA

<sup>5</sup>Chan-Zuckerberg BioHub, San Francisco, CA, USA

<sup>6</sup>Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, USA

<sup>7</sup>Department of Environmental Science and Engineering, California Institute of Technology, Pasadena, CA, USA

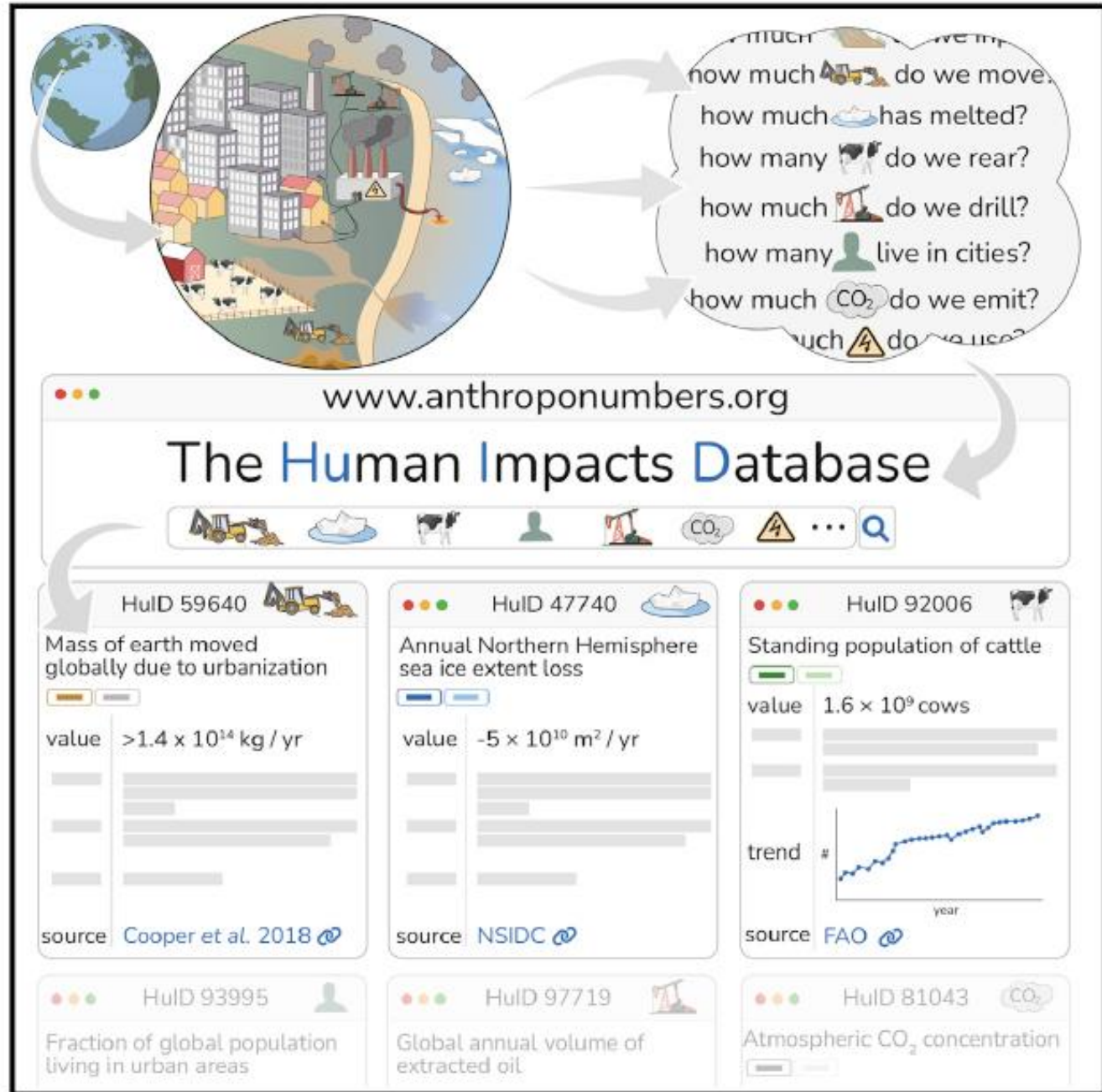
<sup>8</sup>Department of Plant and Environmental Sciences, Weizmann Institute of Science, Rehovot, Israel

<sup>9</sup>Department of Physics, California Institute of Technology, Pasadena, CA, USA

<https://doi.org/10.1016/j.patter.2022.100552>

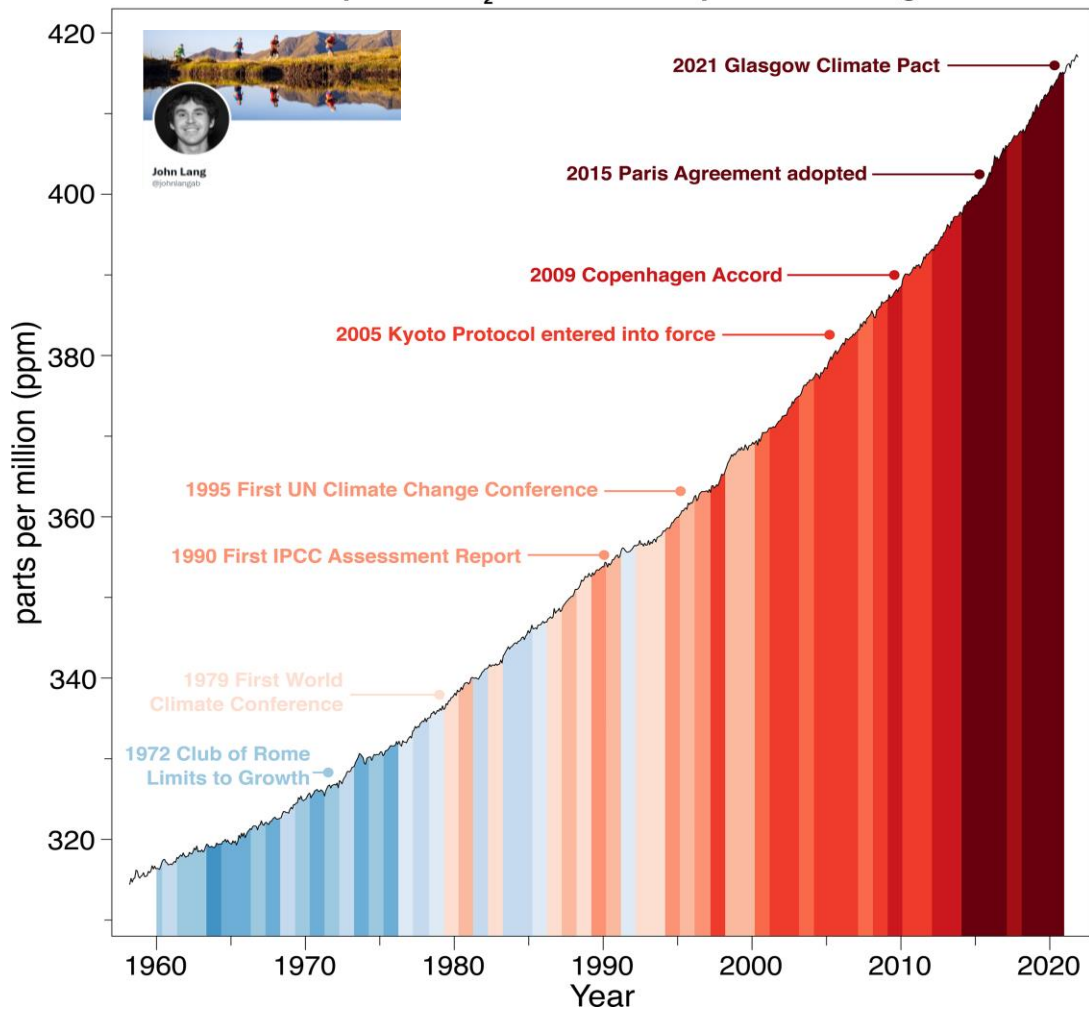
## Highlights

- We present a holistic view of the many ways humans alter Earth at a global scale
- We consider how these global quantities vary across geography
- We further explore the time- and population-dependent dynamics of these impacts
- We enumerate and describe key properties associated with each entry in the database



# Metriche che ci danno una sintesi temporale e quantitative dello stato

Trends in Atmospheric CO<sub>2</sub> vs Global Temperature Change



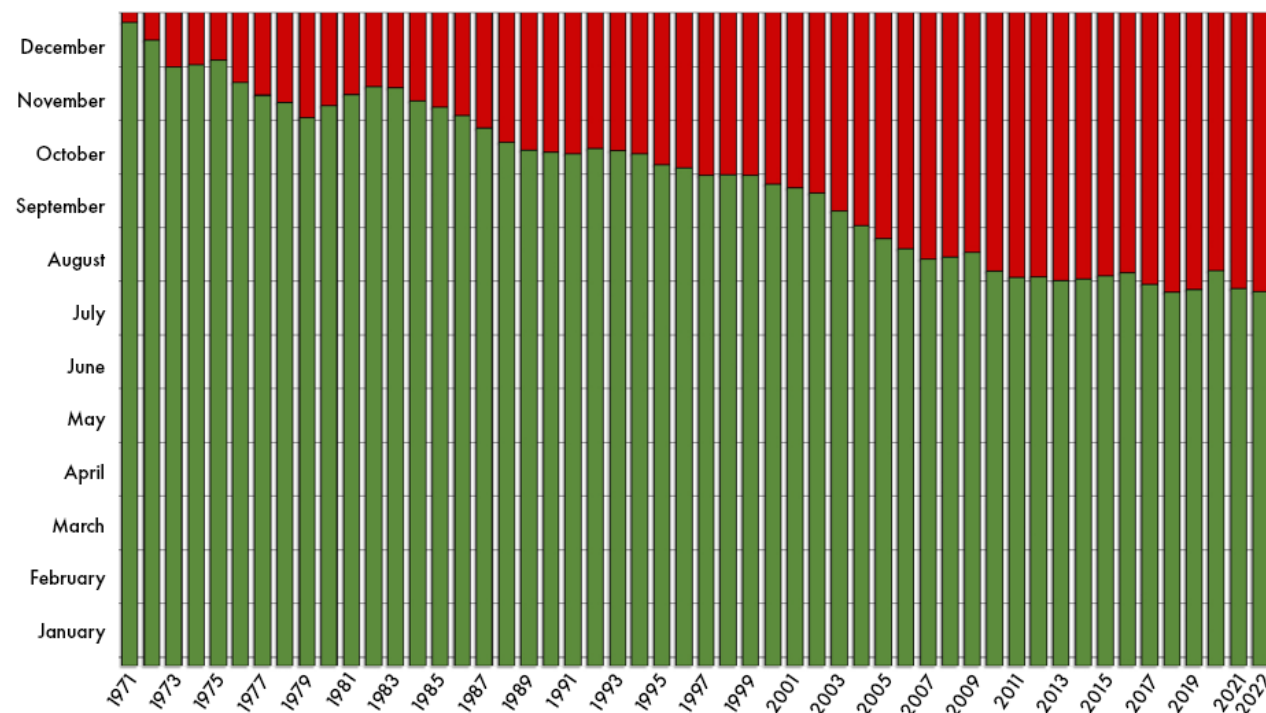
1 Earth

## Earth Overshoot Day

1971 - 2022



1.75 Earths



EARTH OVERSHOOT DAY

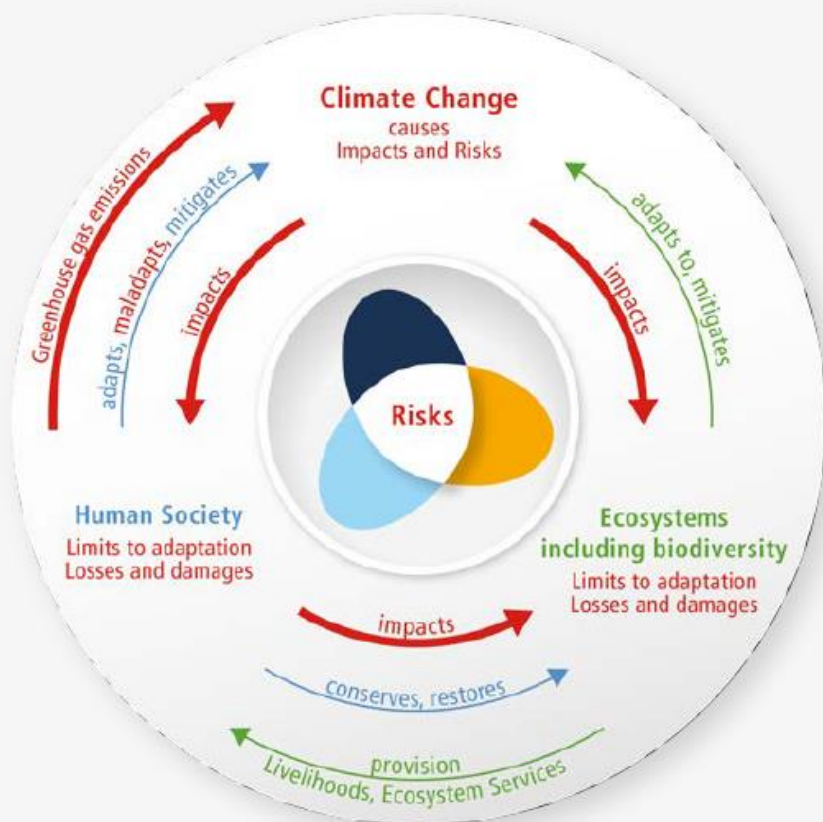


Source: National Footprint and Biocapacity Accounts 2022 Edition  
data.footprintnetwork.org



Co-funded by the Erasmus+ Programme of the European Union

# New understanding of interconnections



The risk propeller shows that risk emerges from the overlap of:

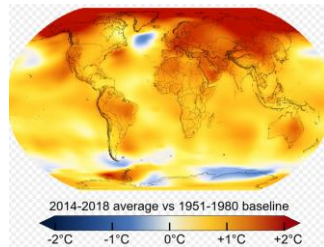
- Climate hazard(s)
  - Vulnerability
  - Exposure
- ...of human systems, ecosystems and their biodiversity



[Axel Guibourg CC BY-NC-ND 2.0; Hugh Han / Unsplash; Axel Fassio/CIFOR CC BY-NC-ND 2.0]

# Non cambia solo il clima: i 9 confini planetari

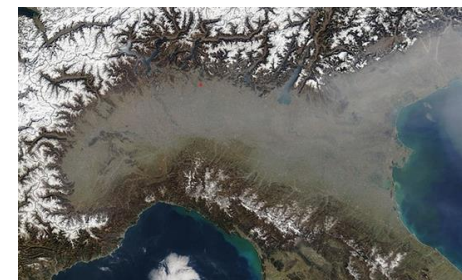
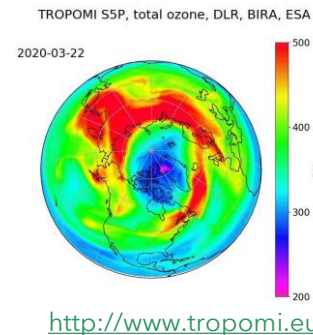
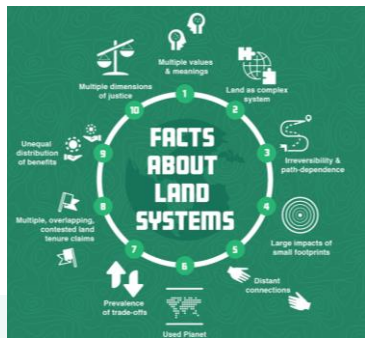
Copyright © 2009 by the author(s). Published here under license by the Resilience Alliance.  
 Rockström, J., W. Steffen, K. Noone, A. Persson, F. S. Chapin, III, E. Lambin, T. M. Lenton, M. Scheffer,  
 C. Folke, H. Schellnhuber, B. Nykvist, C. A. De Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P.  
 K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B.  
 Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley. 2009. Planetary boundaries: exploring the  
 safe operating space for humanity. *Ecology and Society* 14(2): 32. [online] URL: <http://www.ecologyandsociety.org/vol14/iss2/art32/>



**ENVIRONMENTAL Science & Technology**  
 pubscs.org/est Policy Analysis

**Outside the Safe Operating Space of the Planetary Boundary for Novel Entities**  
 Linn Persson,\* Bethanie M. Carney Almroth, Christopher D. Collins, Sarah Cornell, Cynthia A. de Wit,\*  
 Miriam L. Diamond, Peter Fantke, Martin Hasselöv, Matthew MacLeod, Morten W. Ryberg,  
 Peter Søgaard Jørgensen, Patricia Villarrubia-Gómez, Zhanjun Wang, and Michael Zwicky Hauschild

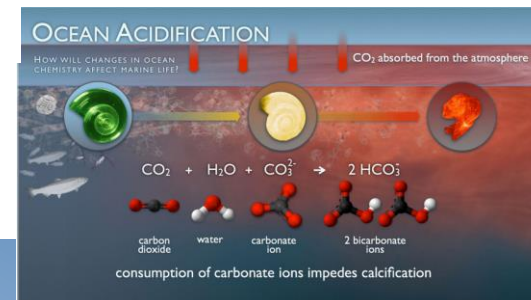
## Planetary Boundaries: Exploring the Safe Operating Space for Humanity



**REVIEW** SCIENCE sciencemag.org  
 8 MAY 2015 • VOL 348 ISSUE 6235

**SOIL SCIENCE**

**Soil and human security in the 21st century**  
 Ronald Amundson,<sup>1\*</sup> Asmeret Asefaw Berhe,<sup>2</sup> Jan W. Hopmans,<sup>3</sup> Carolyn Olson,<sup>4</sup>  
 A. Ester Satein,<sup>5</sup> Donald L. Sparks<sup>6</sup>



Co-funded by the Erasmus+ Programme of the European Union



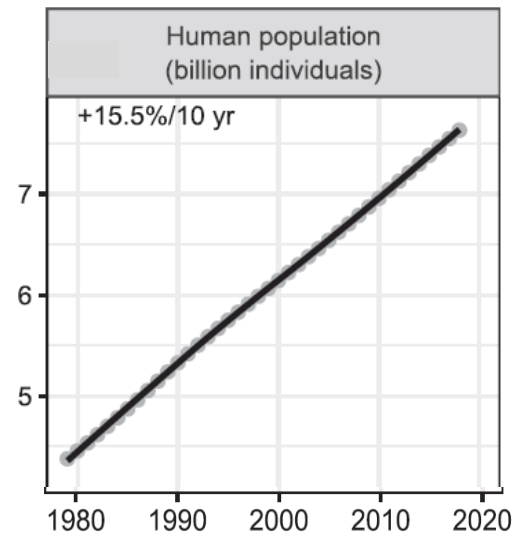
# L'emergenza climatica e le sue interconnessioni

Viewpoint

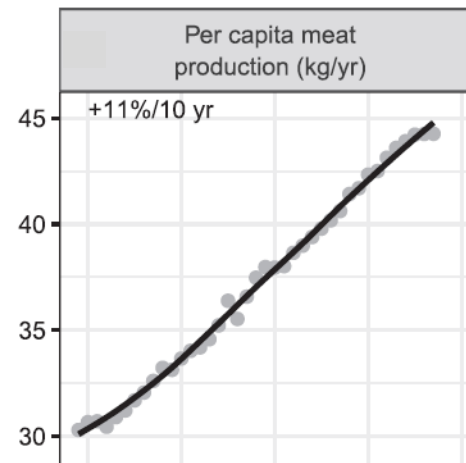
## World Scientists' Warning of a Climate Emergency

WILLIAM J. RIPPLE, CHRISTOPHER WOLF, THOMAS M. NEWSOME, PHOEBE BARNARD, WILLIAM R. MOOMAW, AND 11,258 SCIENTIST SIGNATORIES FROM 153 COUNTRIES (LIST IN SUPPLEMENTAL FILE S1)

BioScience • January 2020 / Vol. 70 No. 1



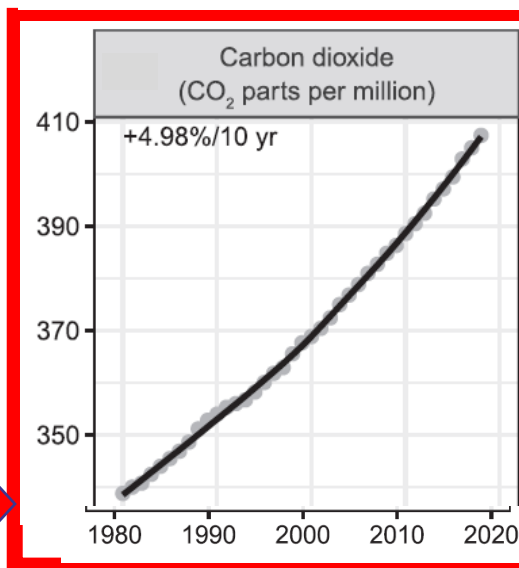
Crescita della domanda di proteine animali



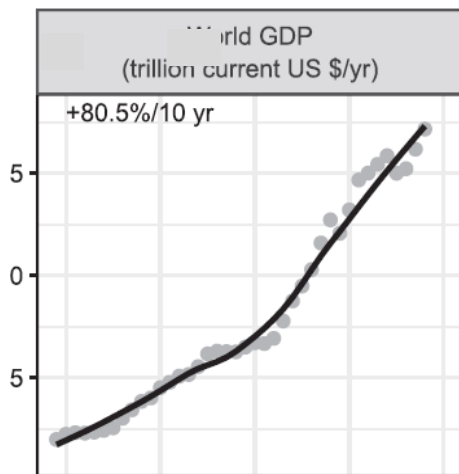
+ Emissioni di gas serra (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O)



+ Energia da fonti non rinnovabili



Crescita delle attività produttive



+ Energia da fonti non rinnovabili



+ Emissioni di gas serra (CO<sub>2</sub>)



# Quanto contiamo come singoli? Le emissioni di GHG con il cibo

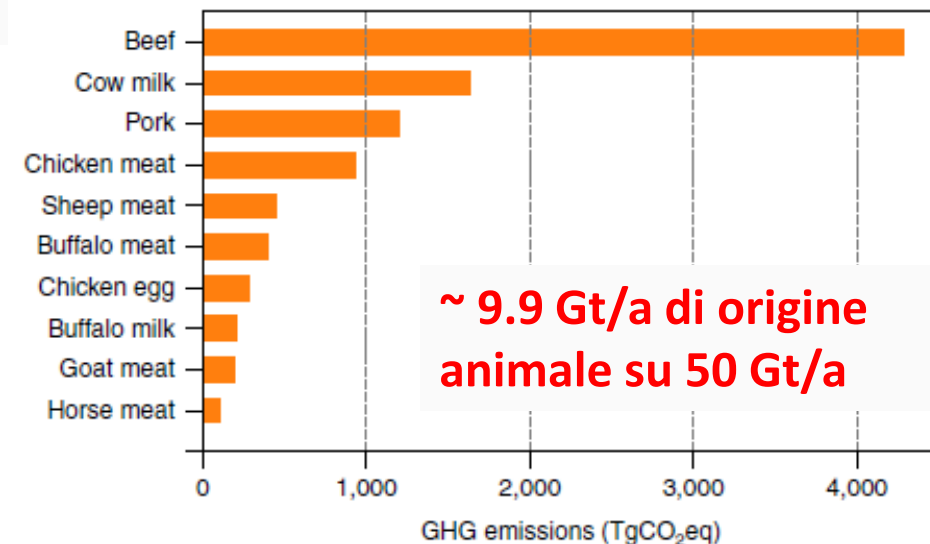
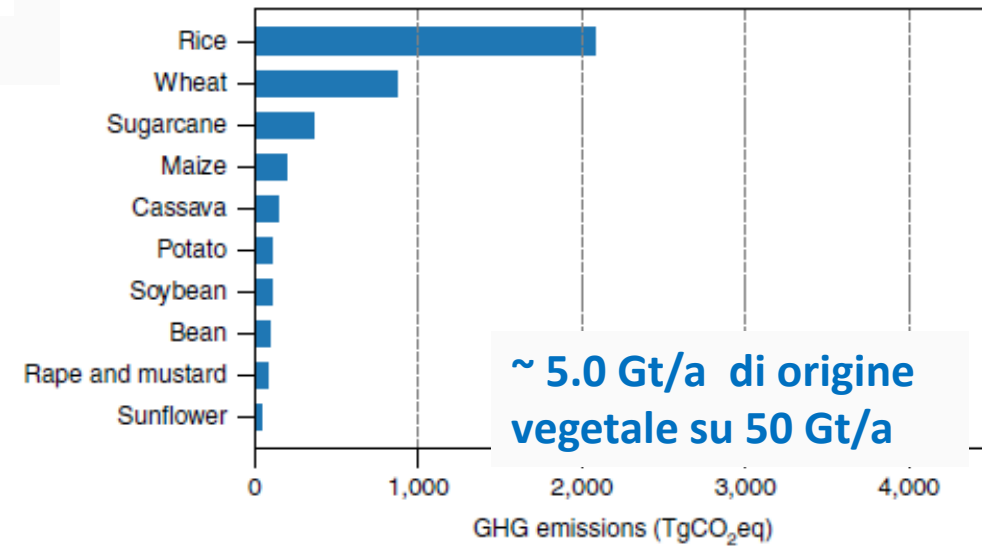
ARTICLES

<https://doi.org/10.1038/s43016-021-00358-x>

nature  
food



Le emissioni globali di GHG derivanti dalla produzione di alimenti sono risultate pari a **17,3 ± 1,7 TgCO<sub>2</sub>eq/a** (il **35%** del totale delle emissioni di GHG), di cui il **57%** corrisponde alla produzione di alimenti di origine animale (compreso il mangime per il bestiame), il **29%** agli alimenti di origine vegetale e il 14% ad altri utilizzi.



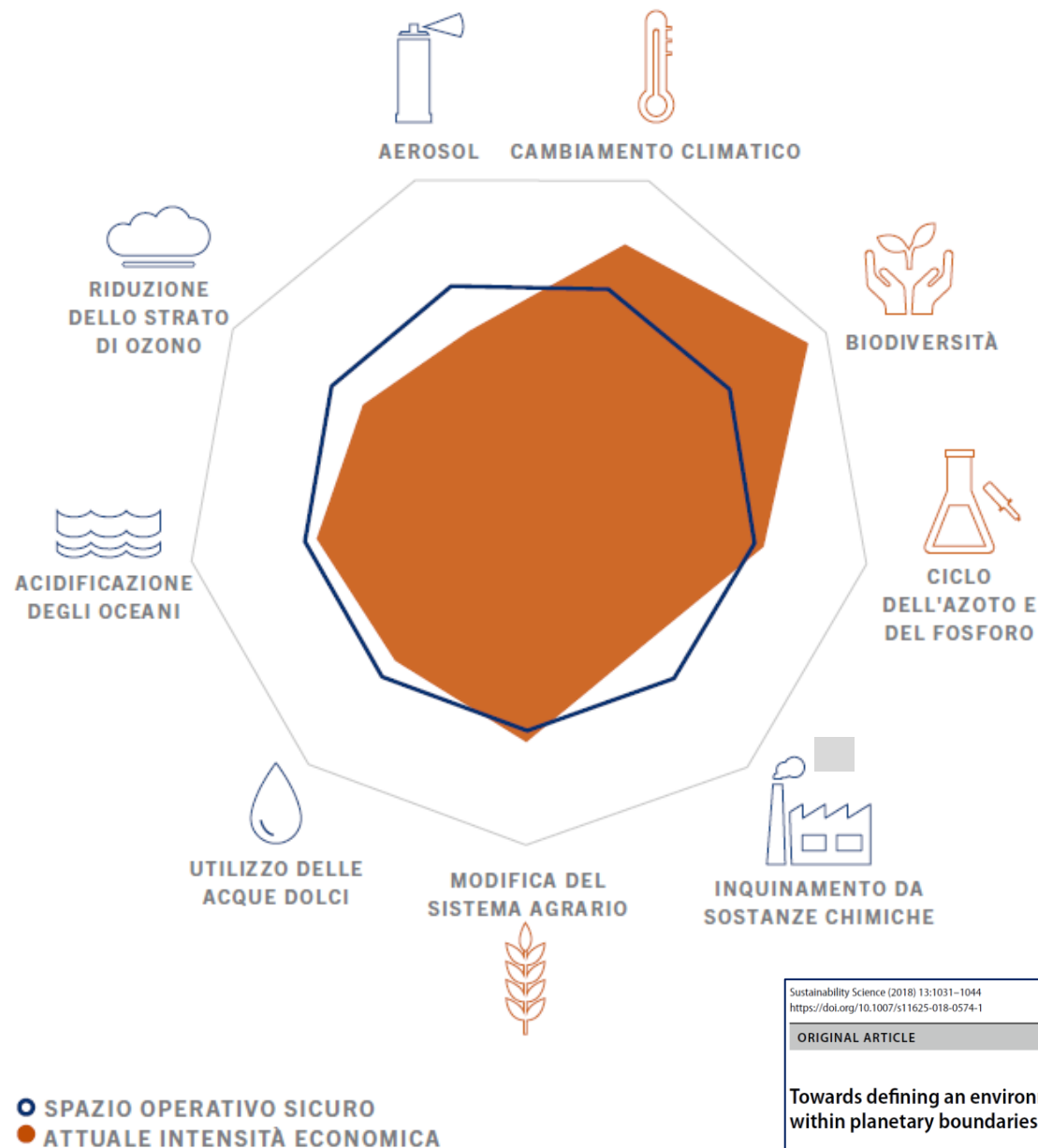
# L'impronta dell'attività economica



Le aziende svolgono un ruolo importante nel contenere i rischi ambientali globali. E poiché hanno un forte potere sulle aziende, lo stesso vale per gli investitori.

L'idea di investimento "etico" o "green" si è andata affermando negli ultimi anni, ma è frenata dalla mancanza di definizioni quantitative

Pensiamo che il modello dei **Limiti Planetari**, esposto da Rockstrom et al. (2009), sia un buon punto di partenza.



Sustainability Science (2018) 13:1031–1044  
<https://doi.org/10.1007/s11625-018-0574-1>

ORIGINAL ARTICLE

Towards defining an environmental investment universe within planetary boundaries

Christoph Butz<sup>1</sup> · Jürg Liechti<sup>2</sup> · Julia Bodin<sup>3</sup> · Sarah E. Cornell<sup>4</sup>



PARTE: Seconda

***Il cambiamento climatico e ambientale:  
le evidenze***

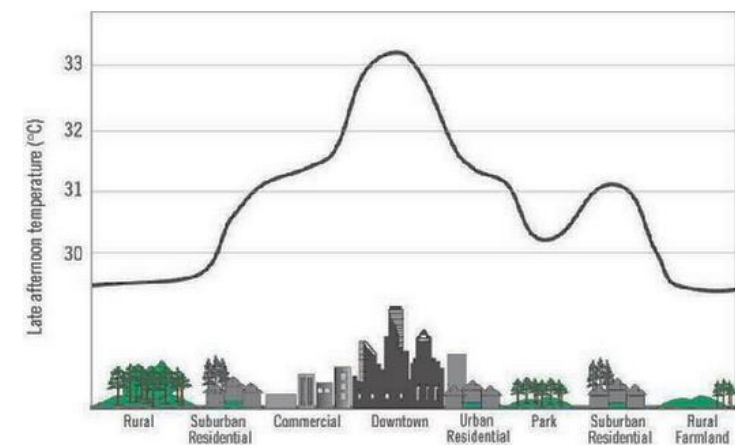


# Scenarios: evidence on effects of climate on citizens [temperature] (1)

## City heat extremes

ESA / Applications / Observing the Earth / Copernicus

[https://www.esa.int/Applications/Observing\\_the\\_Earth/Copernicus/City heat extremes](https://www.esa.int/Applications/Observing_the_Earth/Copernicus/City_heat_extremes)



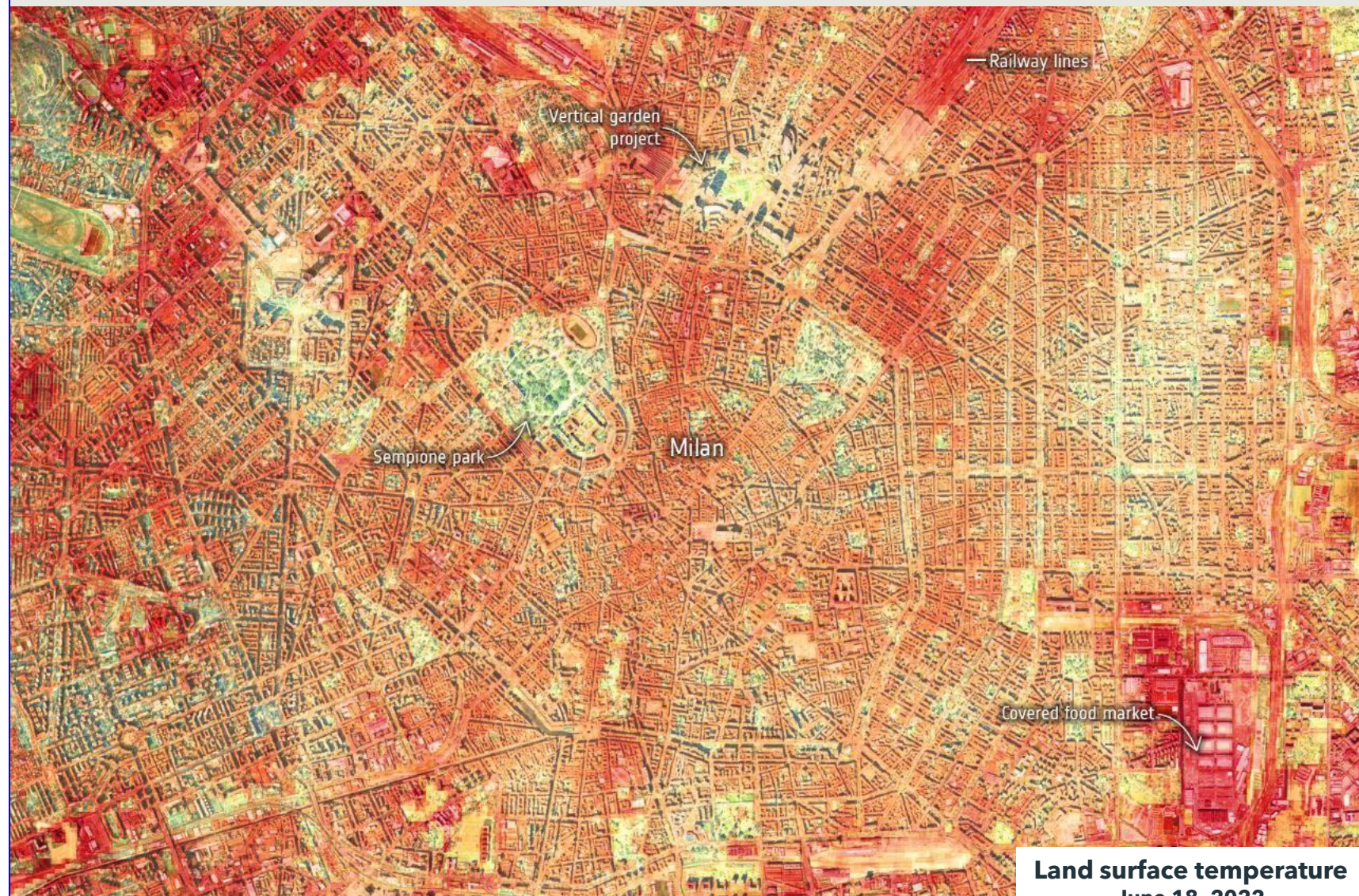
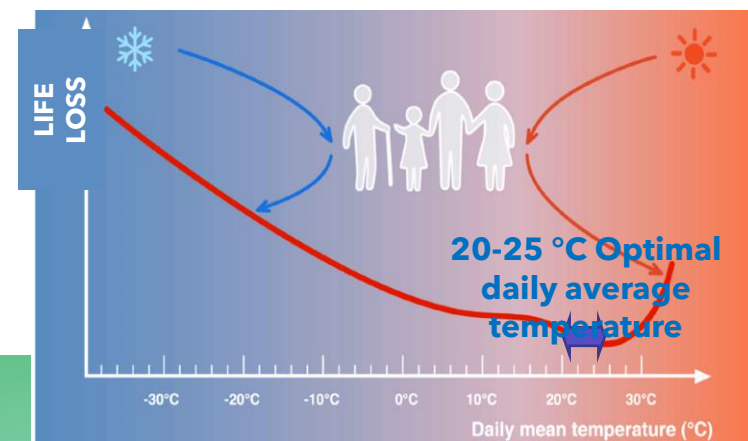
### Ambient Temperature and Years of Life Lost: A National Study in China

2020

Tao Liu,<sup>1,12</sup> Chunliang Zhou,<sup>2,12</sup> Haoming Zhang,<sup>3,12</sup> Biao Huang,<sup>3,12</sup> Yanjun Xu,<sup>5</sup> Lifeng Lin,<sup>5</sup> Lijun Wang,<sup>4</sup> Ruying Hu,<sup>7</sup> Zhulin Hou,<sup>4</sup> Yize Xiao,<sup>7</sup> Junhua Li,<sup>2</sup> Xiaojun Xu,<sup>5</sup> Donghui Jin,<sup>2</sup> Mingfang Qin,<sup>3</sup> Qinglong Zhao,<sup>4</sup> Weiwei Gong,<sup>7</sup> Peng Yin,<sup>6</sup> Yiqing Xu,<sup>2</sup> Jianxiang Hu,<sup>1</sup> Jianpeng Xiao,<sup>1</sup> Weilin Zeng,<sup>1</sup> Xing Li,<sup>1</sup> Siqi Chen,<sup>1</sup> Lingchuan Guo,<sup>1</sup> Zuhua Rong,<sup>1</sup> Yonghui Zhang,<sup>3</sup> Cunrui Huang,<sup>8</sup> Yaodong Du,<sup>9</sup> Yuming Guo,<sup>10</sup> Shannon Rutherford,<sup>11</sup> Min Yu,<sup>7,8</sup> Maigeng Zhou,<sup>6,8</sup> and Wenjun Ma<sup>1,8</sup>

Report

The Innovation



Land surface temperature June 18, 2022

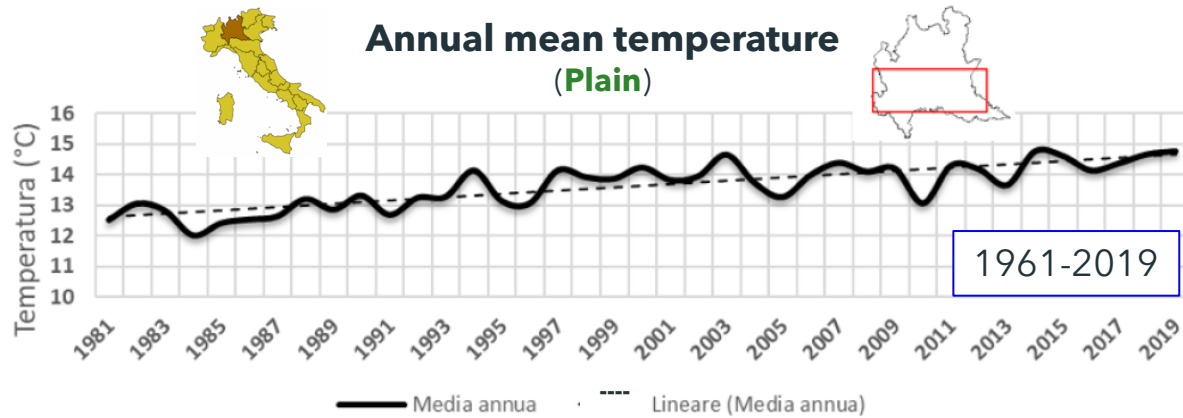
Heat waves in cities: **Milan**

35 41.5 48

# Scenarios: forecasts on effects of climate on citizens [temperature] (2)

Credits: Mario Gregorio Piri, Senior Physicist- ARPA Lombardia

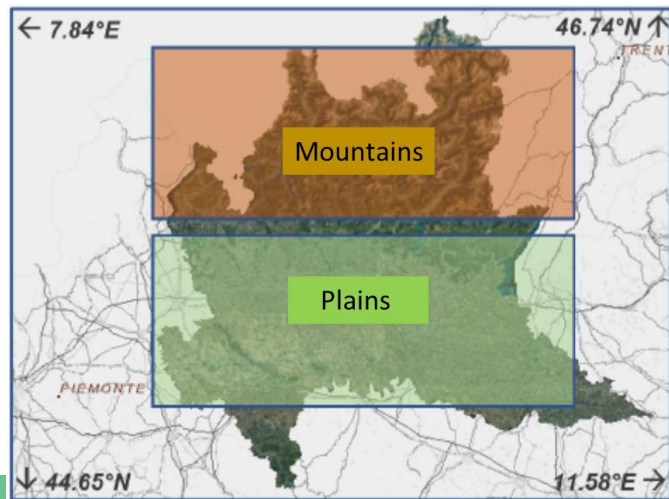
## Temperature evolution in Lombardy



**In 2060 the cooling demand in mountain areas will be up to 8 times lower than that on the plain.**

## Future (2060) cooling demand difference in mountains and plain

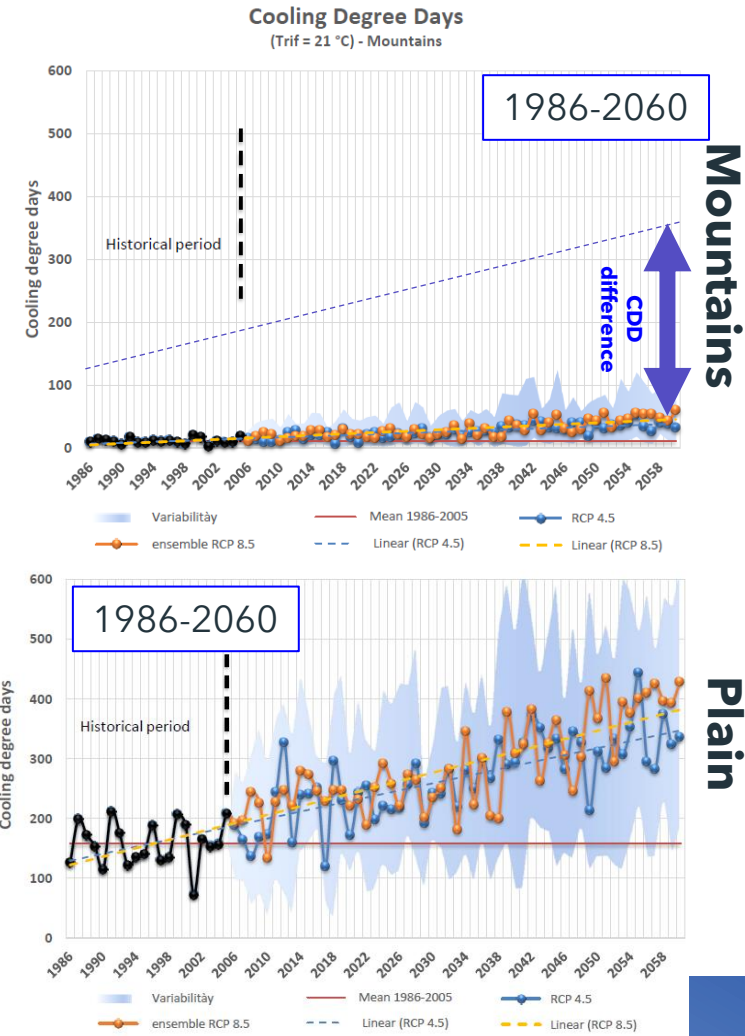
### Territorial morphometry



### Measure the cooling demand

The **cooling degree day (CDD)** of a location is the sum extended to all days of only the daily positive differences between the average daily temperature and a reference temperature (21 °C, in t

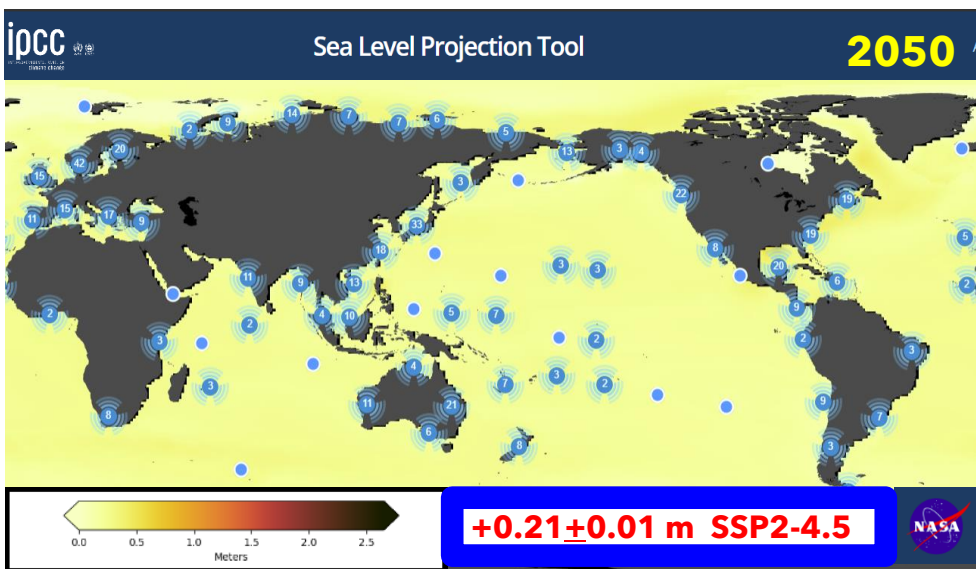
$$CDD = \sum_{j=1}^N (t_{Mean} - 21)^+$$



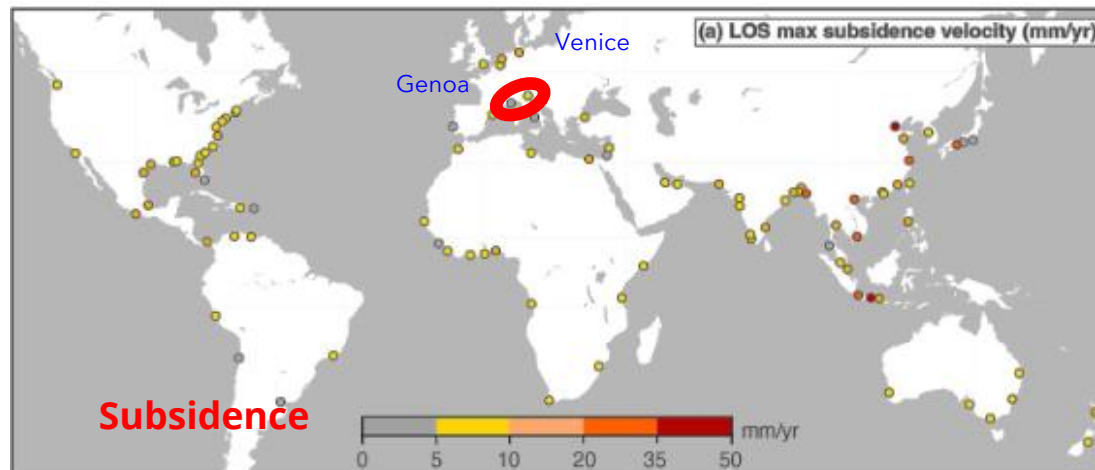
# Scenarios: forecasts on effects of climate on citizens [sea level rise]

**Regional Relative Sea Level = f** [Short-Term Effects + Sterodynamic Variability +Glaciers + Land Water Storage + Ice Sheets + **Subsidence**]

**Subsidence** (land sink to a lower level) = **f** [Natural (geology, earthquake, faulting, isostatic) + **Anthropic** (fossil fuel & groundwater extractions)]



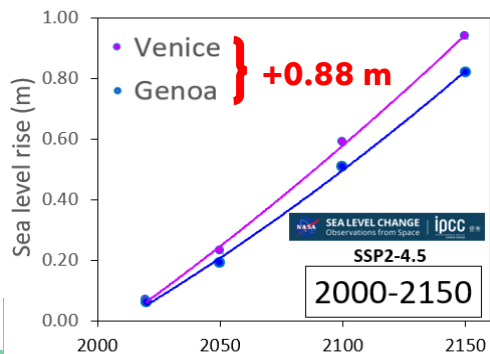
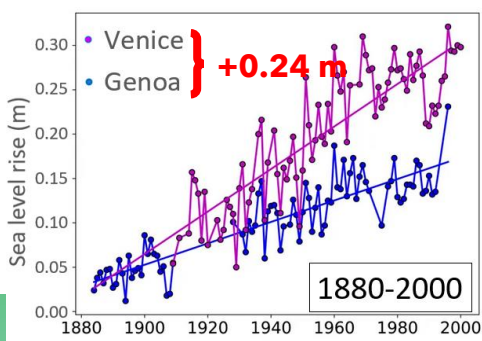
Wu, et al. 2022. Subsidence in coastal cities throughout the world observed by InSAR. Geophysical Research Letters, 49, e2022GL098477.



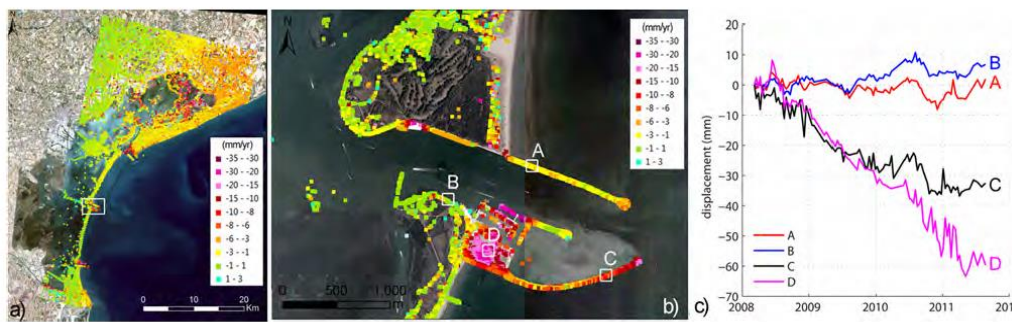
**1.5 10<sup>9</sup> Inhab of the global population may face a high probability of subsidence.**

Credits: Herrea-Garcia et al. 2021. Mapping the global threat of land subsidence. science.abb8549

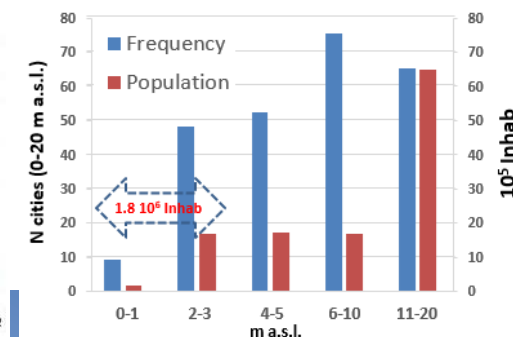
## Sea level: Venice/Genoa 1880-2150



## Subsidence: Venice 2008-2012



## Italian coastal population (0-20 m a.s.l. [2011])



# Internal mobility (internal migration) as an adaptation action [pollution]

Germani et al. (2021) investigate whether population moves away from provinces with higher levels of air pollution emissions toward those characterized by lower levels, net of the other contextual factors associated with migration streams. This suggests that the increased concerns with environmental risks may be influential in shaping internal migration choices.



Does air pollution influence internal migration? An empirical investigation on Italian provinces

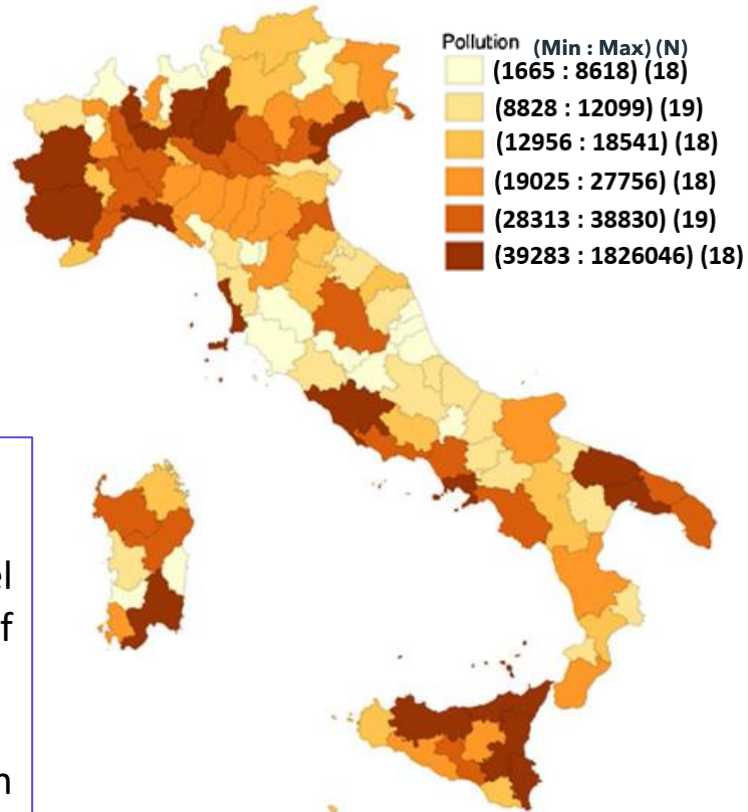
Anna Rita Germani<sup>a,\*</sup>, Pasquale Scaramozzino<sup>b</sup>, Angelo Castaldo<sup>c</sup>, Giuseppina Talamo<sup>d</sup>

<sup>a</sup> Department of Juridical and Economic Studies, Institute of Economics and Finance, Sapienza University of Rome, Italy

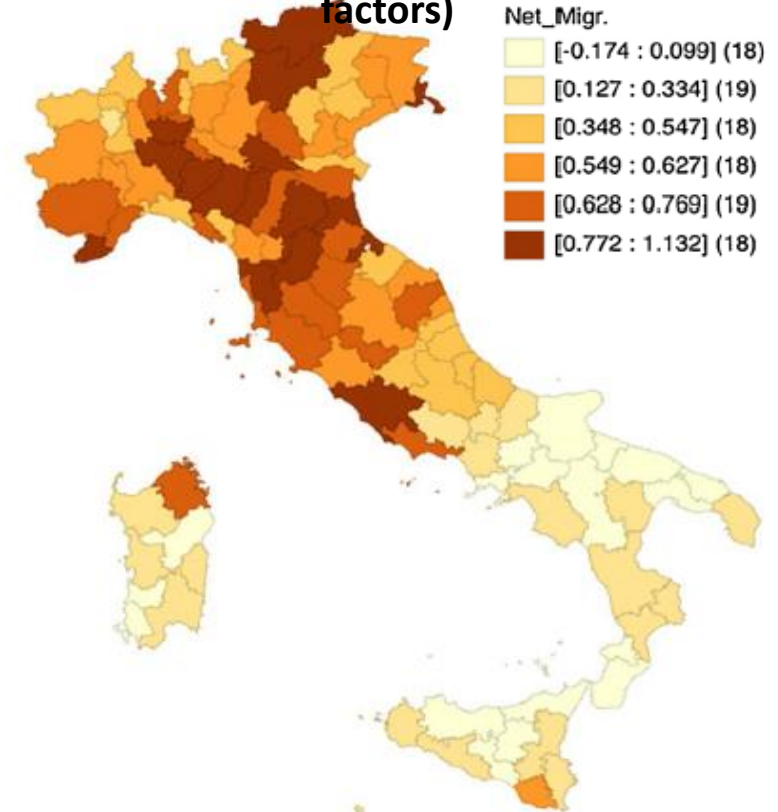
<sup>b</sup> School of Finance and Management, SOAS University of London, U.K., and Department of Economics and Finance, University of Bari, Italy

<sup>c</sup> Faculty of Economics and Law, Koc University of Istanbul, Turkey

Local **air pollution** index  
=  $f(\text{NO}_x + \text{VOC} + \text{CO} + \text{PM}_{10})$



Net migration rate  
=  $f(\text{air pollution, socio-economic factors})$



Net migration rate is:

- **positively associated** with local: income, level of education, entrepreneurial density, level of infrastructure
- **negatively associated** with local: air pollution and unemployment.



PARTE: Terza

***Il cambiamento climatico (e non solo):  
le azioni in Europa***

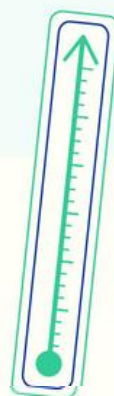


# I costi del cambiamento climatico: vite umane e denaro (1)

<https://www.consilium.europa.eu/it/infographics/climate-costs/>

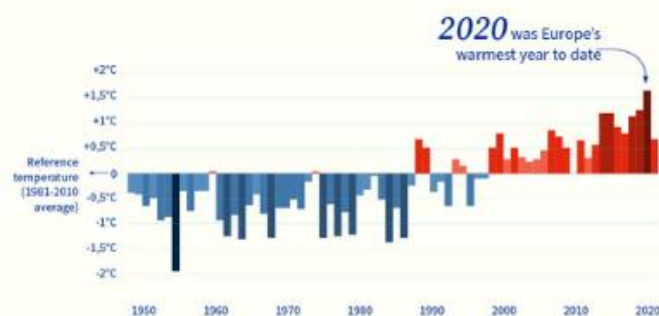
Over the past 40 years, Europe has seen a sharp increase in temperatures.

Warmer temperatures have exacerbated extreme weather events across the continent, with dire consequences for large numbers of people and the economy.



## The temperature is increasing faster than ever

The average temperature in Europe has been **2.2°C higher** over the last five years than it was at the end of 19th century.



Source: Copernicus Climate Data Store, inspired by #showhourStings by Ed Hawkins (University of Reading)

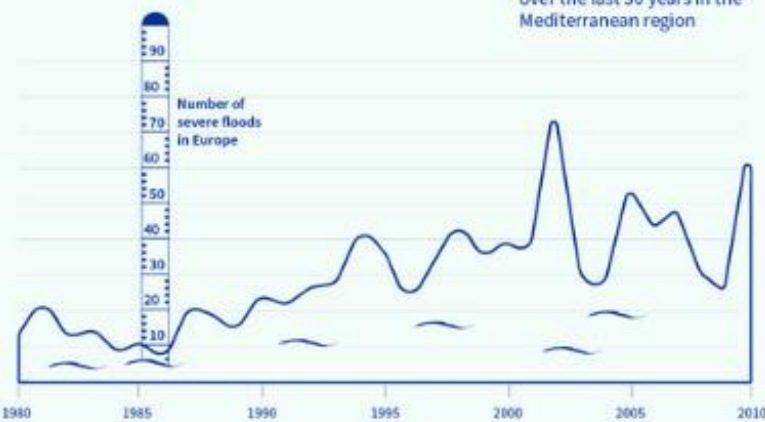
## Climate change causes extreme weather

The number of severe floods in Europe is increasing

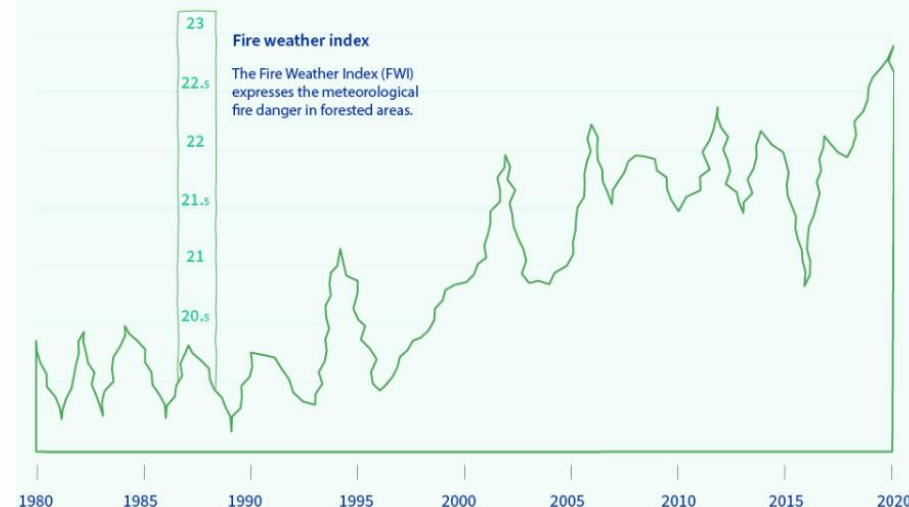


**+22%**

The intensity of rainfall over the last 50 years in the Mediterranean region.



Since 1980 in Europe, forest fires have burned more than **190.000 km<sup>2</sup>** = **2x** area of Portugal

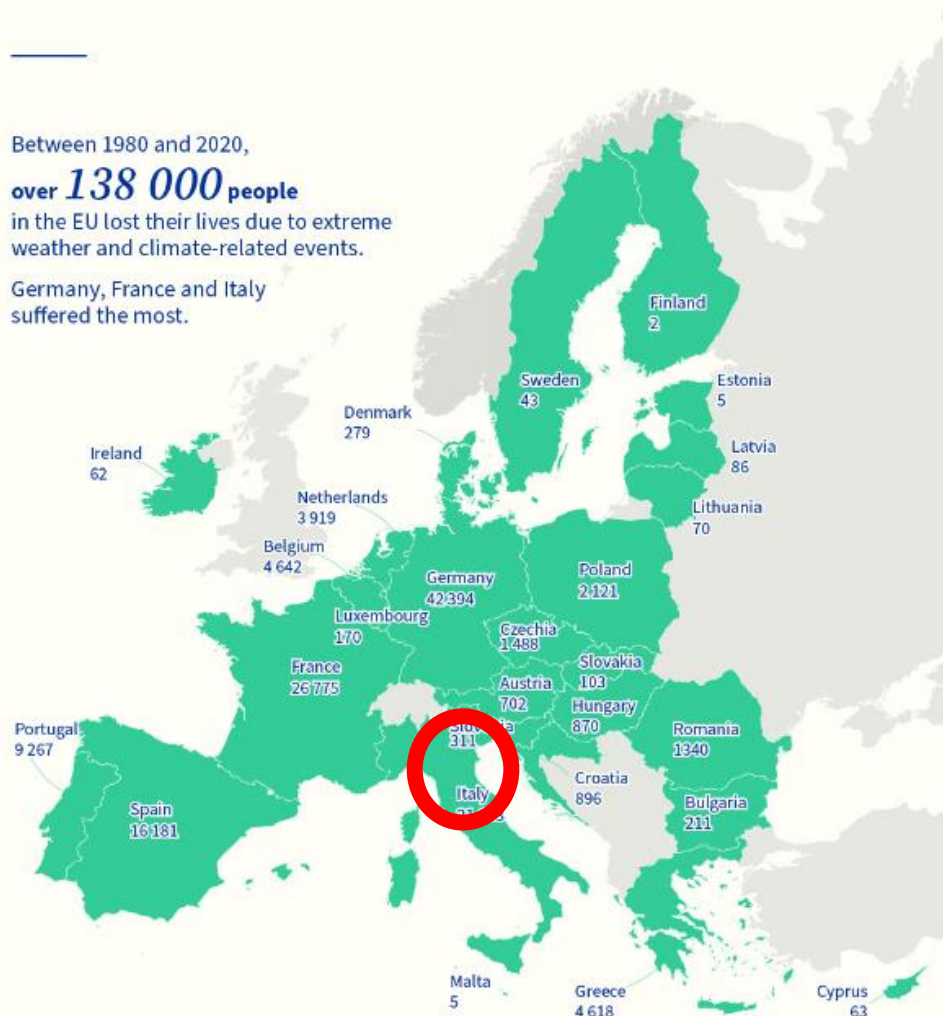


# I costi del cambiamento climatico: vite umane e denaro (2)

## People are dying because of extreme weather

Between 1980 and 2020,  
**over 138 000 people**  
in the EU lost their lives due to extreme weather and climate-related events.

Germany, France and Italy suffered the most.



**Italia: ~ 540 morti/anno**

Source: European Environment Agency

## Climate change leads to economic losses

The financial losses caused by extreme weather and climate-related events exceeded  
**€487 billion**  
in the EU27 over the last 40 years.

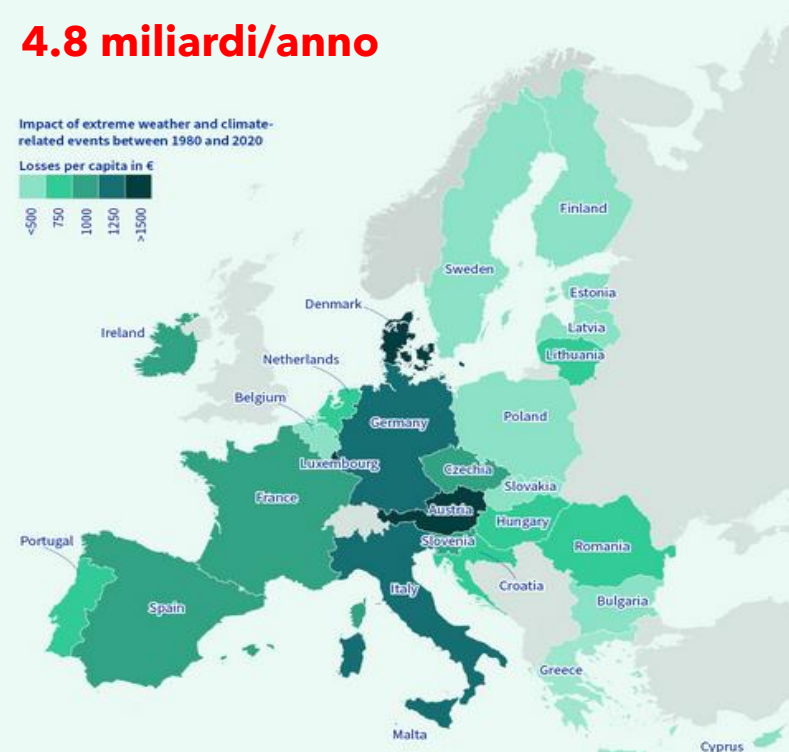
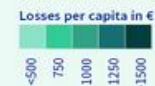
This is significantly more than what the EU spends over two years on all its policies and programmes.

The overall cost was the highest for Germany, Italy and France.



**4.8 miliardi/anno**

Impact of extreme weather and climate-related events between 1980 and 2020



# Mitigazione



**Riduzione delle cause**

**Green Deal**

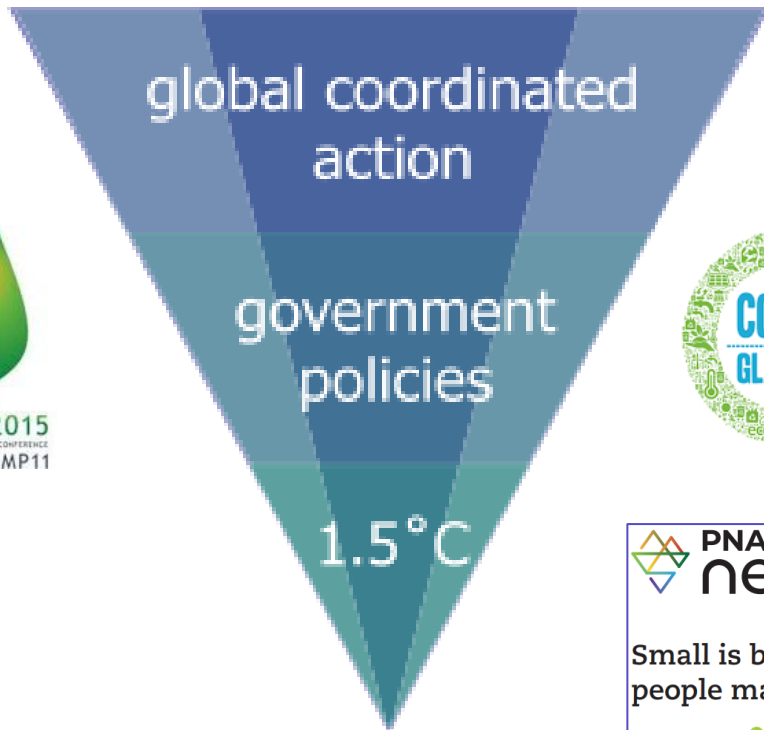


# Adattamento



**Riduzione del rischio e dei danni**

**Nuova strategia Climate ADAPT**



PNAS Nexus, 2022, 1, 1-9  
<https://doi.org/10.1093/pnasnexus/pgac009>  
Perspective

Small is beautiful: climate-change science as if people mattered

Regina R. Rodrigues and Theodore G. Shepherd



# Le quattro decisioni della Unione Europea che la rendono leader mondiale per il clima e l'ambiente

2019 - 2021



COMMISSIONE  
EUROPEA

## Green Deal

Bruxelles, 11.12.2019  
COM(2019) 640 final

COMUNICAZIONE DELLA COMMISSIONE AL PARLAMENTO EUROPEO, AL  
CONSIGLIO, AL COMITATO ECONOMICO E SOCIALE EUROPEO E AL  
COMITATO DELLE REGIONI

**Il Green Deal europeo**



COMMISSIONE  
EUROPEA

## Biodiversity

Bruxelles, 20.5.2020  
COM(2020) 380 final

COMUNICAZIONE DELLA COMMISSIONE AL PARLAMENTO EUROPEO,  
AL CONSIGLIO, AL COMITATO ECONOMICO E SOCIALE EUROPEO E  
AL COMITATO DELLE REGIONI

Strategia dell'UE sulla biodiversità per il 2030

**Riportare la natura nella nostra vita**



COMMISSIONE  
EUROPEA

## Adaptation

Bruxelles, 24.2.2021  
COM(2021) 82 final

COMUNICAZIONE DELLA COMMISSIONE AL PARLAMENTO EUROPEO,  
AL CONSIGLIO, AL COMITATO ECONOMICO E SOCIALE EUROPEO E  
AL COMITATO DELLE REGIONI

**Plasmare un'Europa resiliente ai cambiamenti climatici – La nuova strategia dell'UE di  
adattamento ai cambiamenti climatici**



COMMISSIONE  
EUROPEA

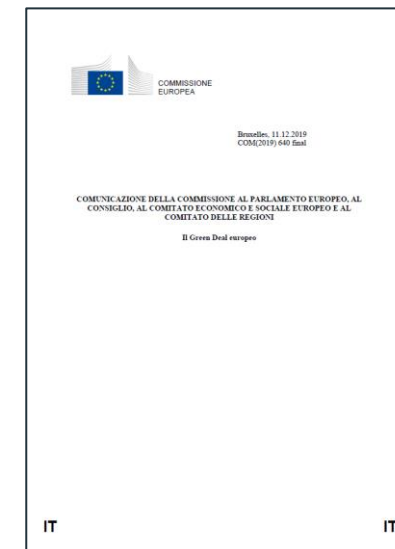
## Zero pollution

Bruxelles, 12.5.2021  
COM(2021) 400 final

COMUNICAZIONE DELLA COMMISSIONE AL PARLAMENTO EUROPEO,  
AL CONSIGLIO, AL COMITATO ECONOMICO E SOCIALE EUROPEO E  
AL COMITATO DELLE REGIONI

**Un percorso verso un pianeta più sano per tutti  
Piano d'azione dell'UE: "Verso l'inquinamento zero per l'aria, l'acqua e il suolo"**





COM(2019) 640

# Il Green Deal Europeo: alcuni punti salienti

L'Unione Europea punta a essere il **primo continente** a impatto climatico zero.

Questo è l'obiettivo del **Green Deal**, che mira a **raggiungere la neutralità climatica entro il 2050**.



**più trasporti pubblici**



**energia più pulita e innovazione tecnologica pulita d'avanguardia**



**aria e acqua pulite, un suolo sano e biodiversità**



**edifici rinnovati ed efficienti dal punto di vista energetico**



**cibo sano e a prezzi accessibili**



**prodotti che durano più a lungo, che possono essere riparati, riciclati e riutilizzati**



**posti di lavoro adeguati alle esigenze future: e formazione delle competenze per la transizione**



**un'industria competitiva e resiliente a livello globale**

Gli **8 vantaggi** che il Green Deal si propone di raggiungere sono:



# La legge europea per il clima

## The European Climate Law

**21 April 2021**

March 2020  
#EUGreenDeal

The European Climate Law will transform political promises into a binding legal obligation, and send a strong political signal to our partners and business. It will write our climate neutrality target for 2050 into law, and propose the path to get there. It will give European citizens and businesses the predictability, transparency and accountability which they need for this collective transformation.

**What is included in the European Climate Law?**

- An EU-wide legal target for climate neutrality by 2050 that binds the EU Institutions and national governments.
- Creating a predictable business environment for industry and investors, with the pace of emission reductions mapped out from 2030 to 2050, showing them what needs to be done, and at what speed.
- A process to include in the Climate Law the updated 2030 emissions reduction target.
- A mechanism for keeping everybody on track – with regular reporting on progress and tools to catch up if anyone falls behind.
- A focus on the effective transition towards a fair and prosperous society, with a modern, resource efficient and competitive economy.
- A renewed focus on adapting to the impacts of climate change to strengthen Europe's resilience, including for its vulnerable communities.



**-55% CO<sub>2</sub>  
2030  
respect 1990**



9.7.2021 EN Official Journal of the European Union L 243/1

I  
(Legislative acts)

REGULATIONS

REGULATION (EU) 2021/1119 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 30 June 2021  
establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')



## European Climate Law

Achieving Climate Neutrality by 2050

Read our views on the European Commission proposal, part of the Green Deal

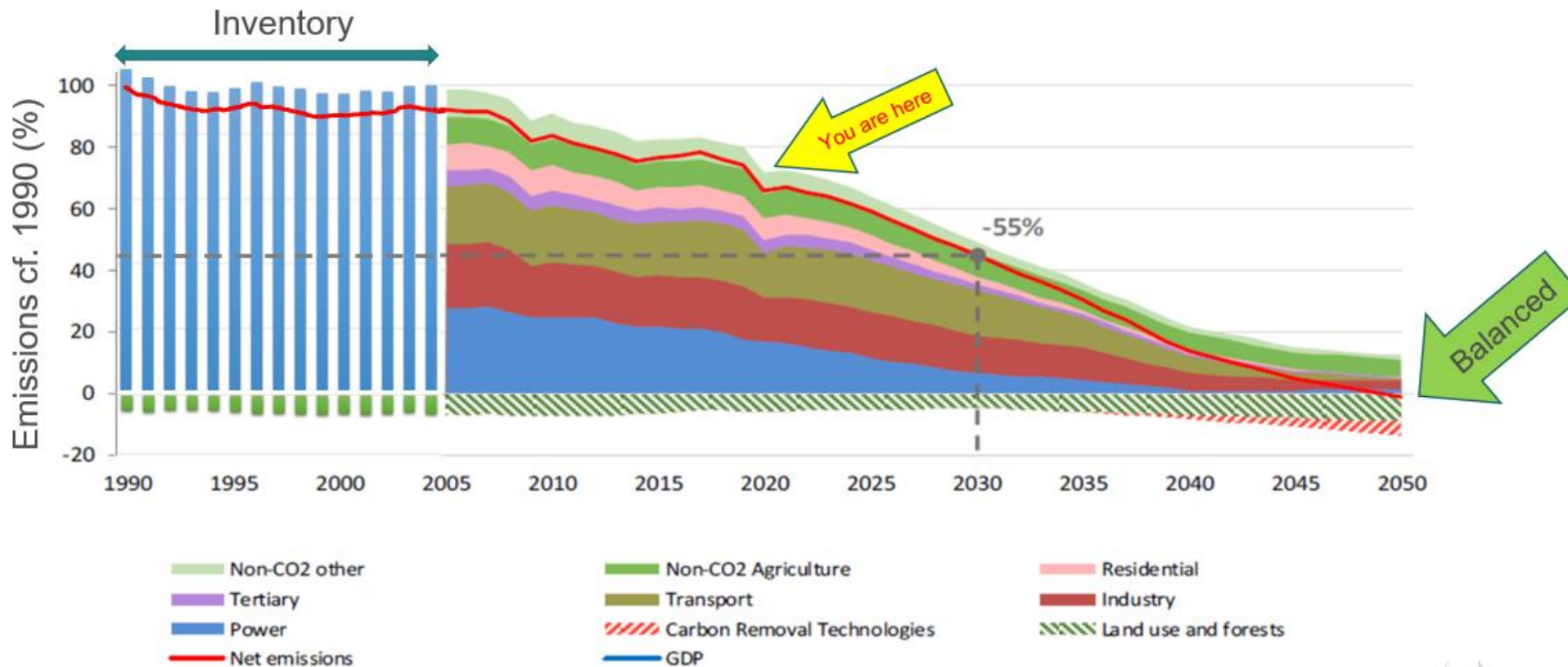




## Not only aspirations: European Climate Law!

- The European Climate Law Regulation of 30 June 2021
- EU climate-neutral by 2050
- New **2030** target of at **least 55% net** greenhouse gas emissions reduction (from -40%)
- Implementation through binding legislation across all Member States and sectors of the economy

# Pathway to climate neutrality

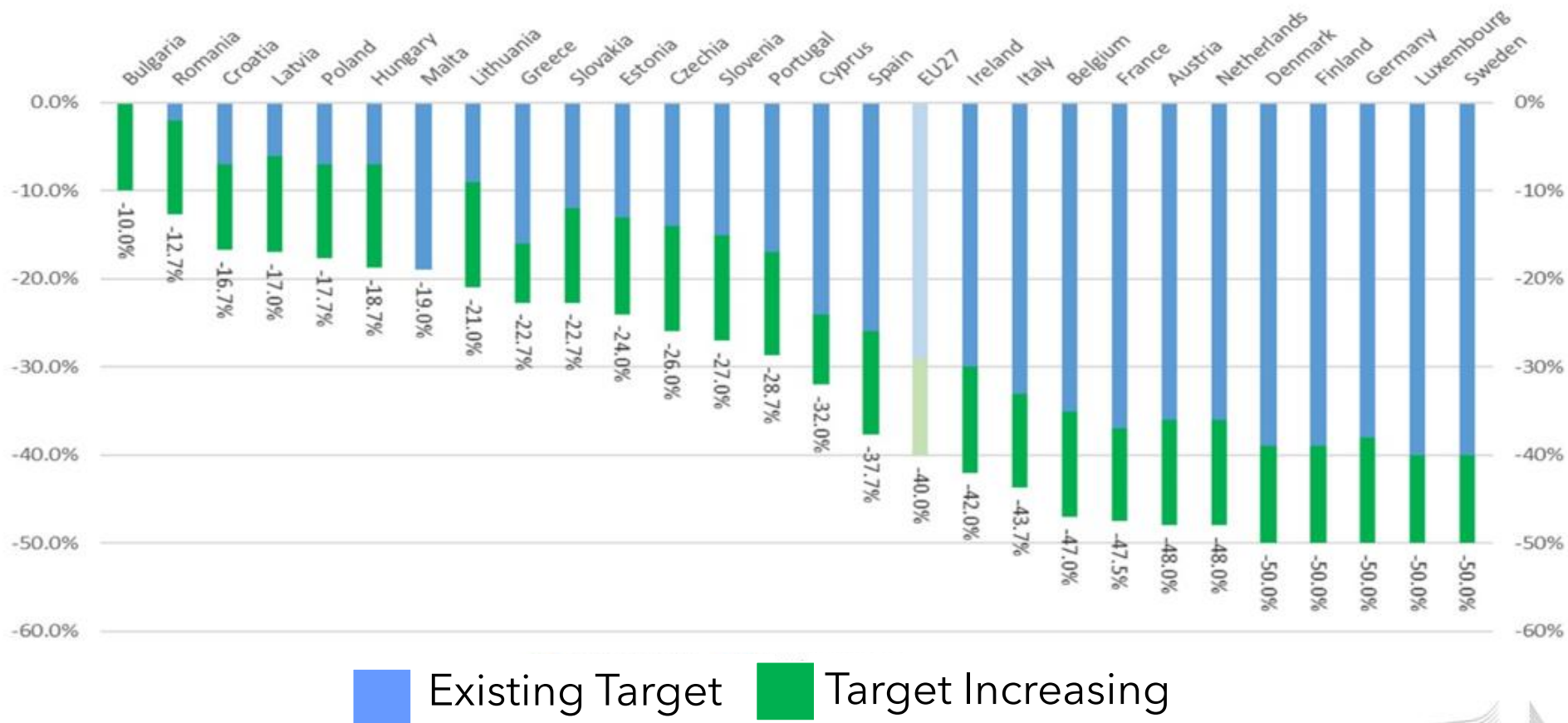


# Cosa ci resta da fare per raggiungere gli obiettivi del -55% di emissioni al 2030?

(Previsioni fatte prima del 24/02/2022)

Comunicazioni della DG Clima agli  
ambasciatori dell'European Climate Pact  
(ottobre 2021)

## Burden sharing



# 100 città europee «climate-neutral» per il 2030

## EU CITIES



28 Aprile 2022



ITALY .....  
 Bergamo  
 Bologna  
 Florence  
 Milan  
 Padova  
 Parma  
 Prato  
 Rome  
 Turin

## What are EU Missions?



[EU Missions](#) are a new way to bring concrete solutions to some of our greatest challenges. They have ambitious goals and will deliver tangible results by 2030.

They will deliver impact by putting research and innovation into a new role, combined with new forms of governance and collaboration, as well as by engaging citizens.

→ EU Missions are a novelty of the Horizon Europe research and innovation programme for the years 2021-2027.

## What this EU Mission deals with

### The importance of climate-neutral and smart cities

→ Cities play a pivotal role in achieving climate neutrality by 2050, the goal of the European Green Deal. They take up only 4% of the EU's land area, but they are home to 75% of EU citizens. Furthermore, cities consume over 65% of the world's energy and account for more than 70% of global CO2 emissions.

Since climate mitigation is heavily dependent on urban action, we need to support cities in accelerating their green and digital transformation. In particular, European cities can substantially contribute to the Green Deal target of reducing emissions by 55% by 2030 and, in more practical terms, to offer cleaner air, safer transport and less congestion and noise to their citizens.

### Aims of the Mission

The Cities Mission will involve local authorities, citizens, businesses, investors as well as regional and national authorities to

- 1. Deliver 100 climate-neutral and smart cities by 2030
- 2. Ensure that these cities act as experimentation and innovation hubs to enable all European cities to follow suit by 2050

As foreseen in its implementation plan, the Cities Mission takes a cross-sectoral and demand-led approach, creating synergies between existing initiatives and basing its activities on the actual needs of cities.



# Ma qualche cosa può andare storto ... RePowerEU



COMMISSIONE  
EUROPEA

Strasburgo, 8.3.2022  
COM(2022) 108 final

COMUNICAZIONE DELLA COMMISSIONE AL PARLAMENTO EUROPEO, AL  
CONSIGLIO EUROPEO, AL CONSIGLIO, AL COMITATO ECONOMICO E  
SOCIALE EUROPEO E AL COMITATO DELLE REGIONI

REPowerEU: azione europea comune per un'energia più sicura,  
più sostenibile e a prezzi più accessibili

**L'invasione dell'Ucraina da parte della Russia ha reso evidente e forte come mai prima d'ora la necessità di una transizione rapida verso l'energia pulita.** L'UE importa il 90 % del gas che consuma, e oltre il 40 % del suo consumo totale di gas proviene dalla Russia. Dalla Russia provengono anche il 27 % delle importazioni di petrolio e il 46 % delle importazioni di carbone.

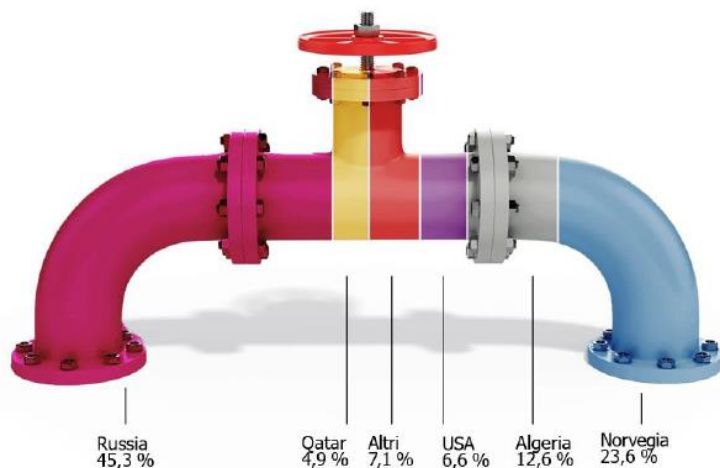
## II. REPOWEREU: AFFRANCARCI DALLA DIPENDENZA DAI COMBUSTIBILI FOSSILI RUSSI

**Uscire gradualmente dalla dipendenza dai combustibili fossili provenienti dalla Russia è possibile ben prima del 2030. In quest'ottica, e per aumentare la resilienza del sistema energetico UE, la Commissione propone un piano REPowerEU basato su due pilastri:**

- **diversificare gli approvvigionamenti di gas**, grazie all'aumento delle importazioni (GNL e via gasdotto) da fornitori non russi e all'aumento dei livelli di biometano e idrogeno;
- **ridurre più rapidamente la dipendenza da combustibili fossili** nell'edilizia, anche abitativa, nell'industria e a livello di sistema energetico grazie a miglioramenti dell'efficienza energetica, a maggiori quote di energie rinnovabili e superando le strozzature infrastrutturali.

L'attuazione completa delle proposte del pacchetto "Pronti per il 55 %" (Fit for 55 o FF55) ridurrebbe il nostro consumo di gas del 30 %, equivalente a 100 miliardi di m<sup>3</sup>, entro il 2030. Insieme a un'ulteriore diversificazione del gas e a un maggior numero di gas rinnovabili, l'anticipazione dei risparmi energetici e l'elettrificazione sono potenzialmente in grado di fornire, congiuntamente, almeno l'equivalente dei 155 miliardi di m<sup>3</sup> d'importazioni di gas russo.

*Provenienza delle importazioni di gas naturale dell'UE, 2021*



Fonte: Commissione europea



Co-funded by the  
Erasmus+ Programme  
of the European Union

# Ma l'Europa resta comunque fedele alla sua road map

## Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on nature restoration

### CHAPTER II - RESTORATION TARGETS AND OBLIGATIONS

*Article 4* **Restoration of terrestrial, coastal and freshwater ecosystems**

*Article 5* **Restoration of marine ecosystems**

*Article 6* **Restoration of urban ecosystems**

*Article 7* **Restoration of the natural connectivity of rivers and natural functions of the related floodplains**

*Article 8* **Restoration of pollinator populations**

*Article 9* **Restoration of agricultural ecosystems**

*Article 10* **Restoration of forest ecosystems**

### CHAPTER III - NATIONAL RESTORATION PLANS

*Article 11-16*

### CHAPTER IV - MONITORING AND REPORTING

*Article 17-18*

### CHAPTER V - DELEGATED POWERS AND COMMITTEE PROCEDURE

*Article 19-21*

### CHAPTER VI - FINAL PROVISIONS

*Article 22-23*



Brussels, 22.6.2022  
COM(2022) 304 final  
2022/0195 (COD)

Proposal for a  
REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
on nature restoration

(Text with EEA relevance)

{SEC(2022) 256 final} - {SWD(2022) 167 final} - {SWD(2022) 168 final}

*Article 1*

#### Subject matter

This Regulation lays down rules to contribute to:

- (a) the continuous, long-term and sustained recovery of biodiverse and resilient nature across the Union's land and sea areas through the restoration of ecosystems;
- (b) achieving the Union's overarching objectives concerning climate change mitigation and climate change adaptation;
- (c) meeting the Union's international commitments.

EN

EN



**Proposal for a  
REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
on nature restoration**



**Recommendation:**

- 1 - Prepare for a resilient future
- 2 - Incorporate remediation into the Nature Restoration Law
- 3 - Include soil as a reliable restoration target
- 4 - Strengthen and clarify ecosystem targets
  - 4.1 Strengthen urban ecosystem targets
  - 4.2 Maintain or strengthen peatland restoration targets
  - 4.3 Create restoration milestones and extend targets
- 5 - Enhance the connection between ecosystems and promote multidisciplinary
- 6 - Knowledge transfer and documentation
  - 6.1 Support the scientific community in providing advice
  - 6.2 Continue to publish strong guidance documents
- 7 - Effectively engage with society
  - 7.1 Drive citizen engagement through evidence-informed initiatives
  - 7.2 Work with local knowledge
  - 7.3 Encourage a diversity in produce and crop varieties

PARTE: Quarta

***Il Patto Europeo per il Clima  
e gli  
Ambasciatori del Patto per il Clima***





# Il Patto Europeo per il Clima



COMMISSIONE  
EUROPEA

Bruxelles, 9.12.2020  
COM(2020) 788 final

**COMUNICAZIONE DELLA COMMISSIONE AL PARLAMENTO EUROPEO,  
AL CONSIGLIO, AL COMITATO ECONOMICO E SOCIALE EUROPEO E  
AL COMITATO DELLE REGIONI**

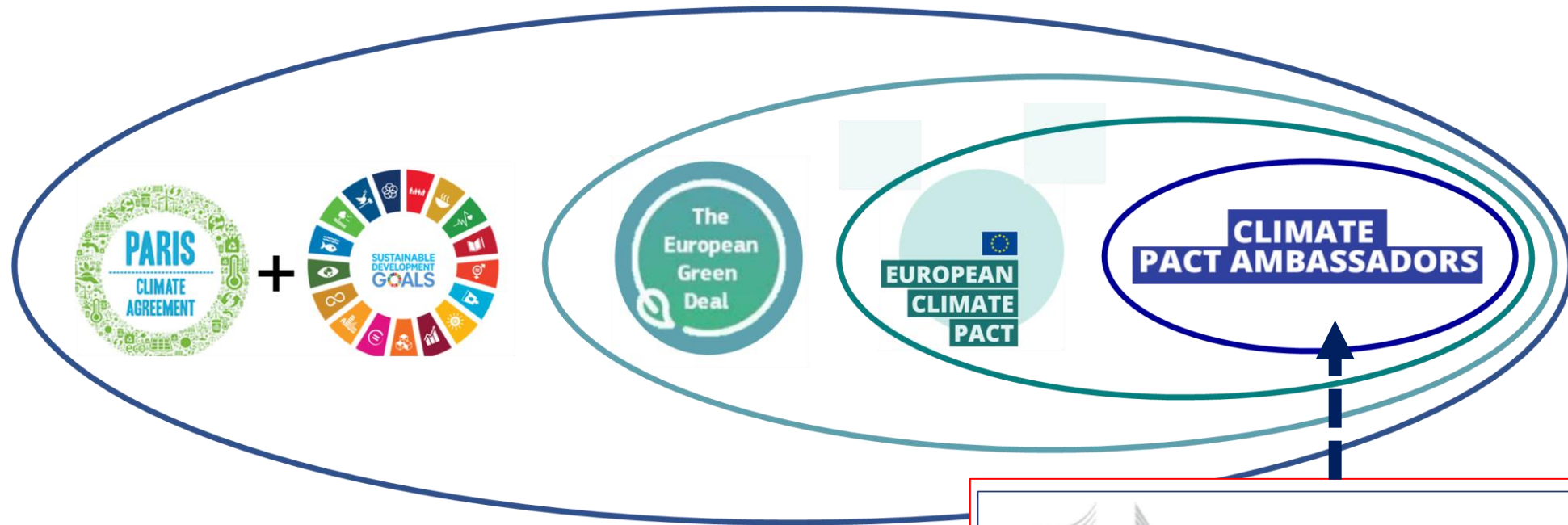
**Patto europeo per il clima**

<https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:52020DC0788&from=DA>



Co-funded by the  
Erasmus+ Programme  
of the European Union

# Gli Ambasciatori del Patto per il Clima



**European Climate Pact**  
COM(2020) 788



# A chi è rivolto il Patto?

**IL MIO MONDO.  
IL MIO CONTRIBUTO.  
IL NOSTRO PIANETA.**

## **IL PATTO EUROPEO PER IL CLIMA**

Ognuno di noi ha il proprio mondo: può essere la casa in cui viviamo o la comunità della quale facciamo parte, o ancora la famiglia che amiamo, il lavoro che svolgiamo o l'area da cui proveniamo.

Qualunque sia il nostro mondo, percepiamo gli effetti del cambiamento climatico: non solo ne stiamo vivendo l'impatto sull'ambiente, ma ci dobbiamo adoperare come società per garantire un futuro migliore per tutti.

La buona notizia è che ognuno di noi può fare qualcosa nel proprio mondo, ogni giorno, per ridurre gli effetti sull'ambiente e orientarsi verso una vita più sostenibile, che porti con sé benefici e nuove opportunità. Anche se molte delle nostre azioni possono sembrare piccole, considerate nel loro insieme diventano molto più grandi.

### **Il Patto europeo per il clima invita tutti ad agire.**

È un movimento di persone accomunate dalla stessa causa, che adottano misure nel proprio mondo per costruire un'Europa più sostenibile per tutti.

Lanciato dalla Commissione europea, il Patto fa parte del Green Deal europeo, che sostiene l'obiettivo UE di diventare il primo continente al mondo a impatto climatico zero entro il 2050.

## A chi è rivolto il Patto?

A tutti, da chi ha appena iniziato il proprio percorso di cambiamento a favore del clima, a chi si impegna già da tempo per fare la differenza nel proprio mondo. È possibile partecipare anche come individuo o come organizzazione, per esempio, come città, azienda o associazione.

Chunque siate, il Patto aiuta a:

- Scoprire che cosa significa il cambiamento climatico nel proprio mondo.
- Apportare modifiche pratiche, grandi o piccole, per ridurre il proprio impatto sull'ambiente.
- Condividere idee ed esperienze con gli altri.
- Essere un attore del cambiamento nel proprio mondo e ispirare gli altri ad agire.
- Agire insieme alle persone attorno a noi, come amici, colleghi o vicini di casa, per massimizzare il proprio impatto.

### Ecco alcuni modi per impegnarsi nel Patto:

Darsi da fare per il pianeta e impegnarsi sul sito web di [Count Us In](#)

Convincere la propria azienda a [intraprendere un'azione](#) per il clima

Diventare [ambasciatori del Patto europeo per il clima](#)

Partecipare o organizzare [eventi, workshop e discussioni](#)

Parlare di un futuro più sostenibile contribuendo alla [Conferenza sul futuro dell'Europa](#)

Visitare il [sito web del Patto](#) e seguirci sui social media per rimanere aggiornati

**Il Patto è specificatamente rivolto ai cittadini per renderli direttamente partecipi al raggiungimento degli obiettivi del Green Deal**

#MyWorldOurPlanet  
#EUClimatePact

## Come diventare Ambasciatore

[europa.eu/!tY76wf](https://europa.eu/!tY76wf)  
#EUGreenDeal



## VUOI FARNE PARTE?

A seconda della tua disponibilità di tempo, puoi candidarti a diventare **Ambassador** o **Friend** del Patto Europeo per il Clima.

Compila il modulo di richiesta su:  
[europa.eu/!tY76wf](https://europa.eu/!tY76wf)



SCAN ME



PARTE: Quinta

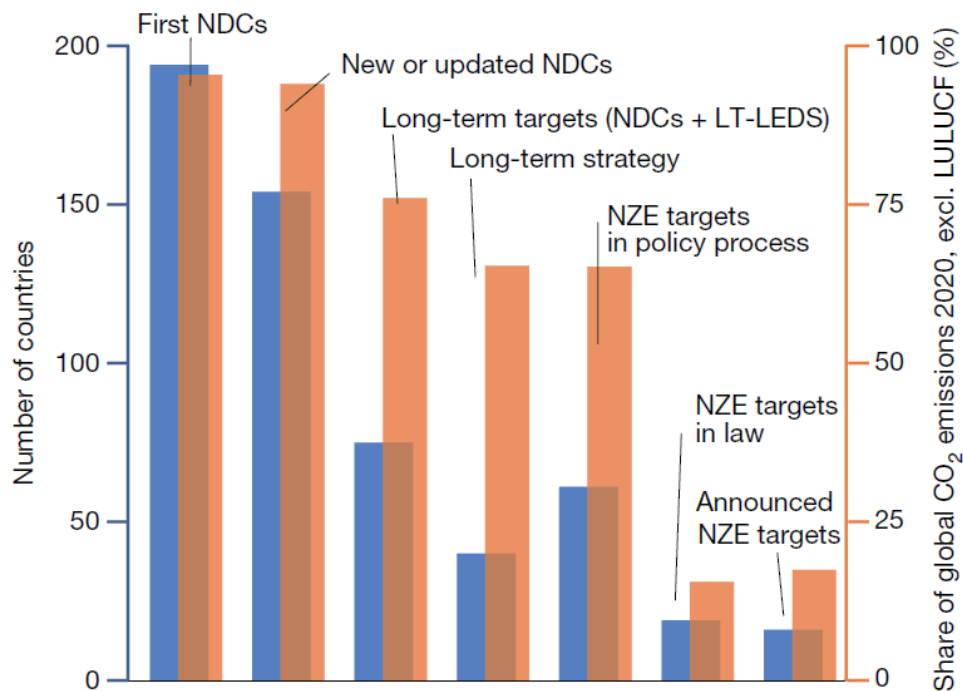
*Ce la faremo?*



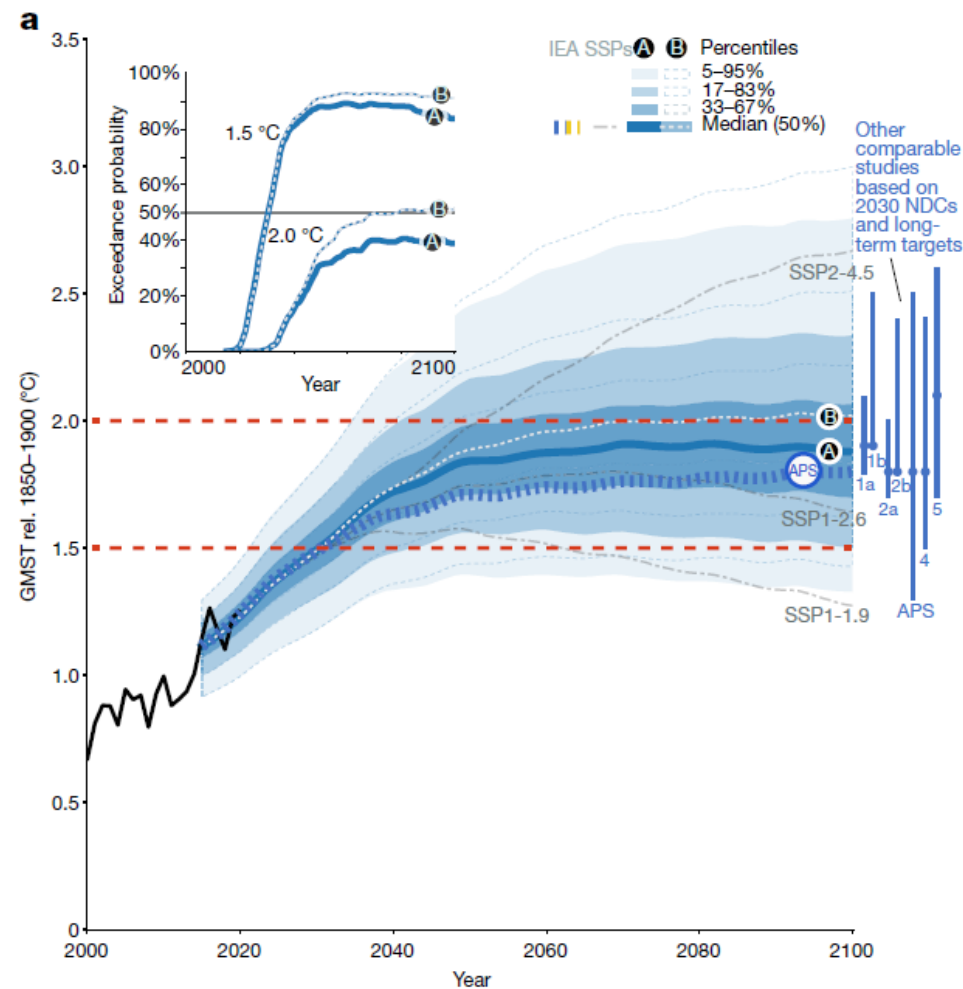
## Realization of Paris Agreement pledges may limit warming just below 2 °C

<https://doi.org/10.1038/s41586-022-04553-z> Malte Meinshausen<sup>1,2</sup>, Jared Lewis<sup>2,3</sup>, Christophe McGlade<sup>4</sup>, Johannes Gütschow<sup>2,5</sup>, Zebedee Nicholls<sup>1,2,3</sup>, Rebecca Burdon<sup>2,6</sup>, Laura Cozzl<sup>1</sup> & Bernd Hackmann<sup>7</sup>

Numero di paesi che hanno NDC (obiettivi a lungo termine) e LT-LEDS (obiettivi di emissioni nette zero a lungo termine) e loro quota di emissioni globali di CO<sub>2</sub>.



Le proiezioni della temperatura media globale basate sugli NDC del 2030 mostrano un ampio intervallo, mentre **quelle basate su obiettivi a lungo termine rimangono appena intorno o al di sotto dei 2 °C**, con effetti aggiuntivi limitati dalle GMP



**NDCs** = Nationally Determined contributions; **LT-LEDS** = Long-Term Low-Emission Development Strategies; **LULUCF** = Land Use, Land-Use Change and forestry; **GMP** = Global Methane Pledge



PARTE: Sesta

## *Nuove e vecchie preoccupazioni*



# Le nuove preoccupazioni ...

WE HUMANS

## Why the war in Ukraine is also a make-or-break moment for climate change

Mar 16, 2022 / Bruno Giussani

NATURE

## The climate crisis and the invasion of Ukraine 'have the same roots', says expert



Graves dug in Ukraine, amid the Russian invasion. - Copyright: AFP

ENVIRONMENT

## Russia-Ukraine war risks greater carbon pollution despite boost to clean energy

WAR AND ENERGY CRISIS UPSET GERMANY'S RENEWABLES REVOLUTION

Plans to quit Russian oil and gas could push emissions higher if it slows down the phase-out of coal and locks in reliance on liquefied natural gas.

SCIENTIFIC AMERICAN

Coronavirus Health Mind & Brain Environment Technology Space & Physics Video Podcasts Opinion Store

Get Unlimited. Save 40% [Subscribe](#)

## E&ENews CLIMATE CHANGE

# War in Ukraine and Climate Change Could Combine to Create a Food Crisis

Russia's invasion is halting the delivery of wheat to areas suffering from drought and other climate impacts



The Guardian

Ukraine war threatens global heating goals, warns UN chief | Climate crisis | The Guardian

Avvenire.it

## Ucraina. La "guerra chimica" senza armi chimiche. Raid su stabilimenti tossici

Nella Scapa venerdì 22 aprile 2022

Si ripetono i raid deliberati su infrastrutture altamente inquinanti. Nell'aria gas, acidi e veleni. Civili intossicati e uccisi. Un'escomatage per non essere accusati di addeperare armi vietate



COLUMBIA CLIMATE SCHOOL  
Climate, Earth, and Society

## State of the Planet

AGRICULTURE CLIMATE EARTH SCIENCES ECOLOGY ENERGY HEALTH SUSTAINABILITY

FROM THE FIELD  
**Russia-Ukraine Crisis**

ENERGY, PEACE AND CONFLICT, SUSTAINABILITY

### The Impact of Russia's Invasion of Ukraine on Climate Change Policy

BY STEVE COHEN | MARCH 7, 2022 [f](#) [t](#) [e](#) [+](#) 30 [Comments](#)

The Guardian

## Ukraine war threatens global heating goals, warns UN chief

António Guterres says countries seeking alternatives to Russian energy may increase use of fossil fuels

[Russia-Ukraine war: latest updates](#)

CARNEGIE EUROPE

RESEARCH AREAS PUBLICATIONS EXPERTS EVENTS

## Russia's Ukraine Invasion and Climate Change Go Hand in Hand

OLIVIA LAZARD

MARCH 04, 2022 COMMENTARY

Geopolitics and climate transitions were never separate.





Discussion

Russian-Ukrainian war impacts the total environment

Paulo Pereira <sup>a,e,\*</sup>, Ferdo Bašić <sup>b</sup>, Igor Bogunović <sup>c</sup>, Damia Barcelo <sup>d,e</sup>

<sup>a</sup> Environmental Management Laboratory, Mykolas Romeris University, Vilnius, Lithuania

<sup>b</sup> Croatian Academy of Sciences and Arts, Zagreb, Croatia

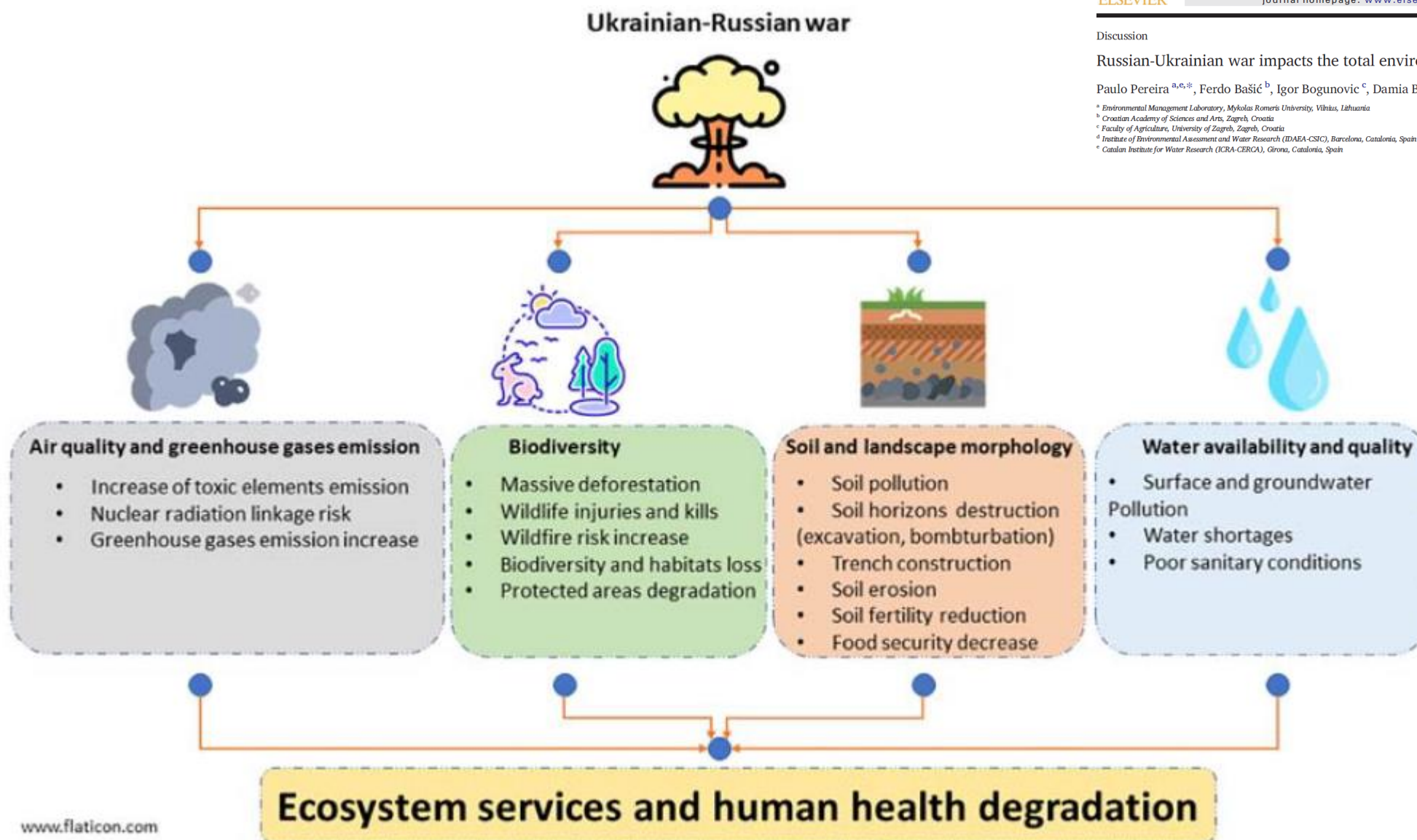
<sup>c</sup> Faculty of Agriculture, University of Zagreb, Zagreb, Croatia

<sup>d</sup> Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Catalonia, Spain

<sup>e</sup> Catalan Institute for Water Research (ICRA-CERCA), Girona, Catalonia, Spain



01 Settembre 2022



[www.flaticon.com](http://www.flaticon.com)



# Le immagini ambientali del/dei conflitto/i



<https://www.instagram.com/p/CfJkhX9odhZ/>



## 2. Water



<https://ceobs.org/ukrain-e-conflict-environmental-briefing-water/>

Ukraine water infrastructure, resources, risks and impacts.

# EXPONENTIAL CLIMATE SUMMIT V

## NATURE IN THE RACE TO ZERO

  
SECTION 1: ENVIRONMENT IN TIME OF WAR  
18:00 CST || 12:00 PM EDT

SECTION 2: REGENERATIVE AGRICULTURE  
18:00 CST || 12:00 PM EDT

  
0:00 / 3:15:30 **April 22, 2022** 14:00 CEST || 8:00 AM EDT

Earth Day Livestream – Nature in the Race to Zero

3.638 visualizzazioni • Trasmesso in live streaming il giorno 22 apr 2022

# Grazie per l'attenzione



[https://europa.eu/climate-pact/index\\_en](https://europa.eu/climate-pact/index_en)



[@ourplanet\\_eu](https://www.instagram.com/ourplanet_eu)



[@EUClimateAction](https://www.facebook.com/EUClimateAction)



[@EUClimateAction](https://www.twitter.com/EUClimateAction)



<https://www.euclipa.it/>



[contatti@euclipa.it](mailto:contatti@euclipa.it)



Canale YouTube [EuCliPa Italy](https://www.youtube.com/EuCliPa Italy)



[gianni.tartari@gmail.com](mailto:gianni.tartari@gmail.com)

