Project Title: The Blue Growth Initiative for Research and Innovation in the Black Sea, Funded under Horizon 2020 as a Coordination and Support Action
Acronym: Black Sea CONNECT

BSUN Master Courses on Blue Growth:

"Thermodynamics & Sustainability"

Date: June 2nd, 2021 Venue: Online

THE RELATION BETWEEN THE IMPLEMENTATION OF SDG 7 AND THE PRIORITIES ON BLUE GROWTH THE CASE OF ROMANIA

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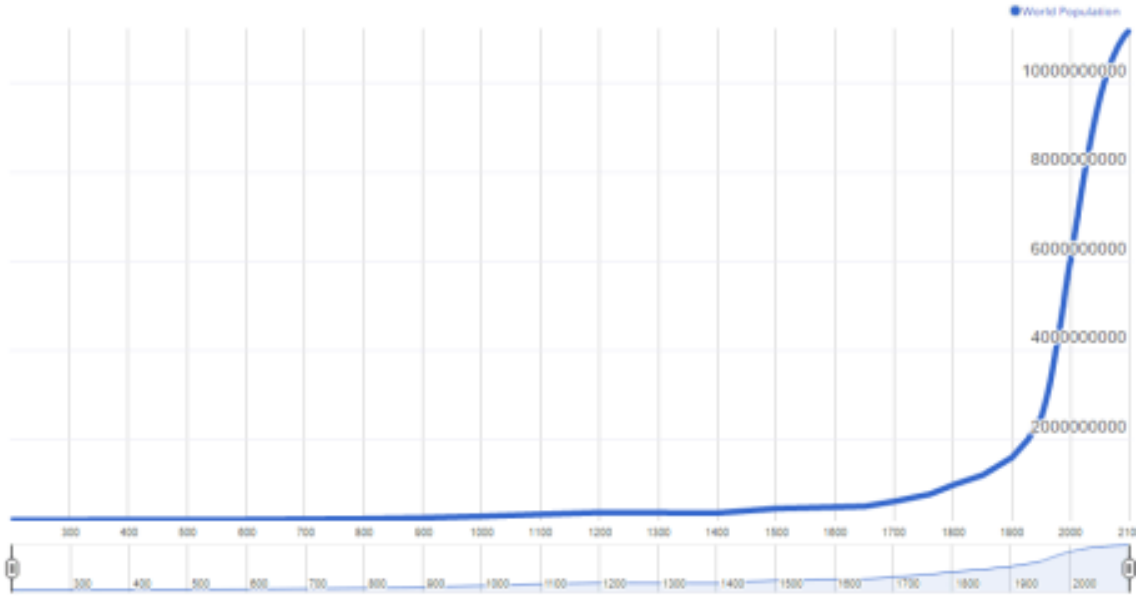
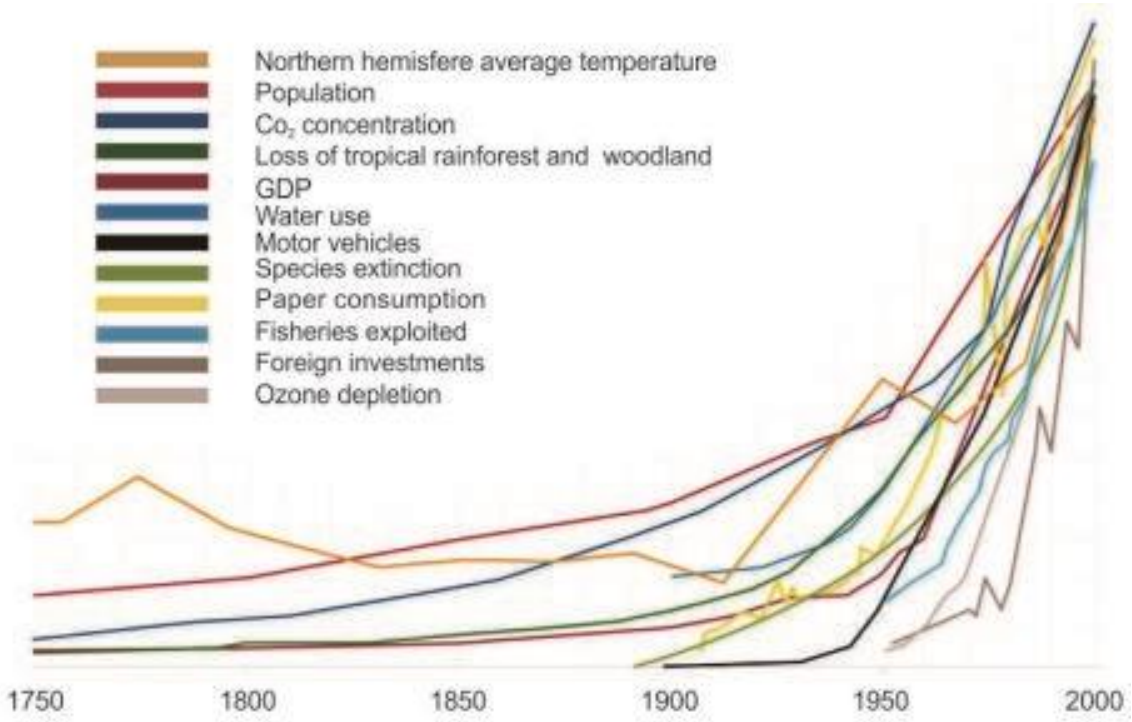
Summary

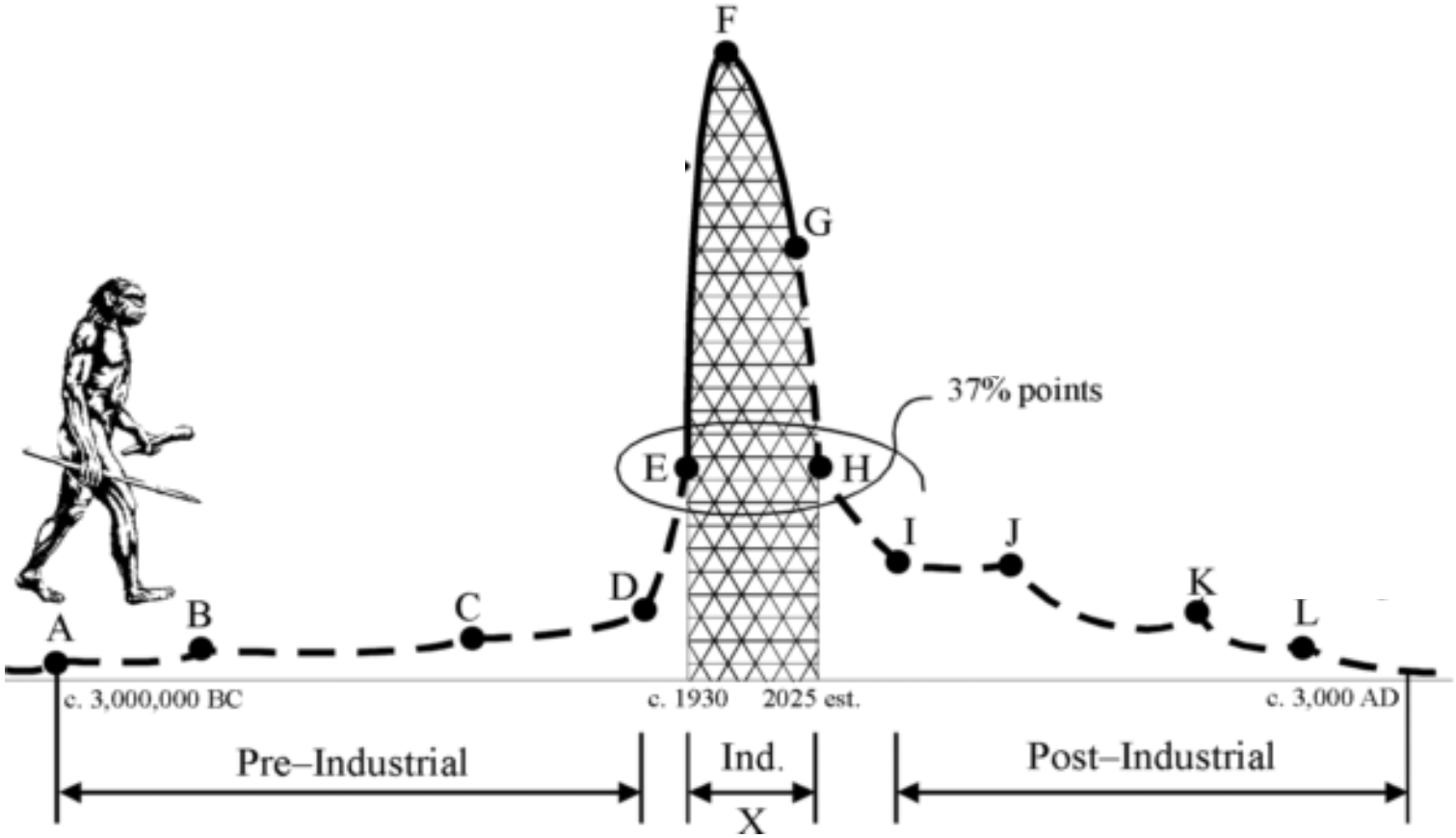
- Energy consumption and the global context
- Impact of Carbon on Climate Change
- UN 2030 SDGs
- SDG 7 - Affordable and Clean Energy
- Impact of Energy Consumption on the coastal areas
- Blue Growth
- Conclusions

WORLD POPULATION GROWTH & THE PROBLEMS





The Olduvai Theory of Industrial Civilization
The transient-pulse theory

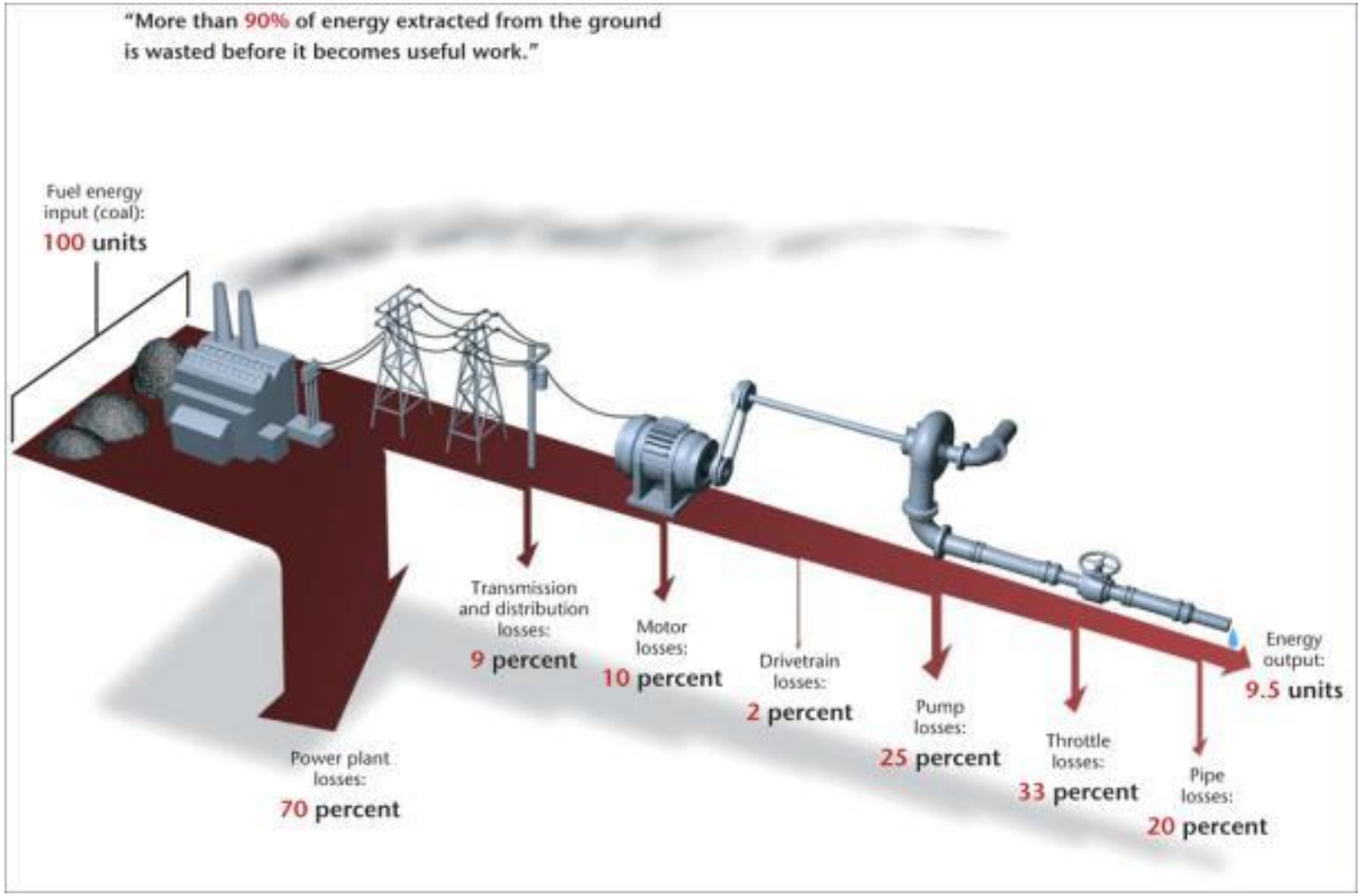


1. Pre Industrial Phase [c. 3 000 000 BC to 1765] **A** - Tool making (c. 3 000 000 BC); **B** - Fire used (c. 1 000 000 BC); **C** - Neolithic agricultural revolution (c. 8 000 BC); **D** - Watts steam engine of 1765 starting the Industrial Phase (1930-2025)

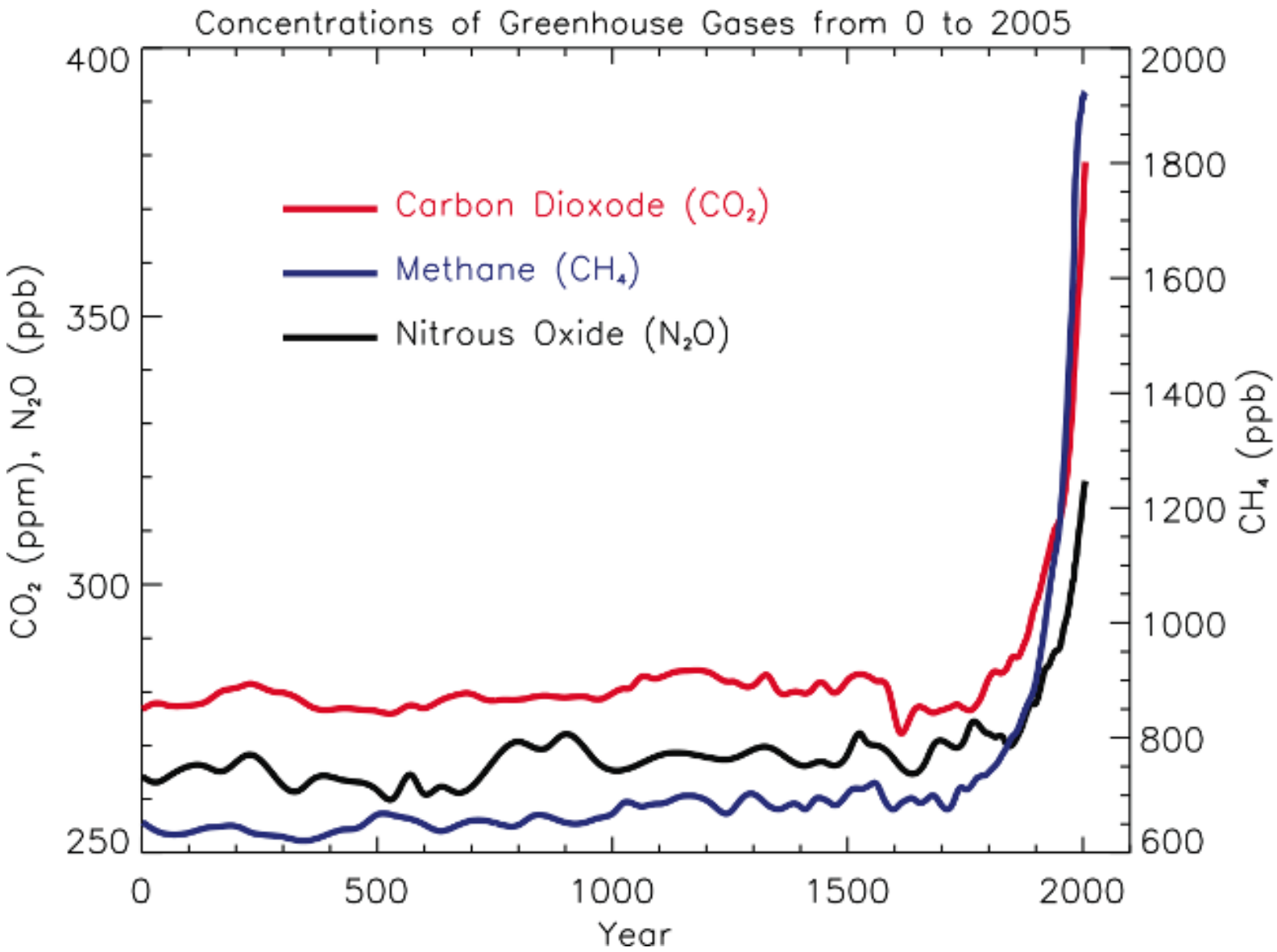
2. Industrial Phase [1930 to 2025, estimated] **E** - Per capita energy-use 37% of peak value; **F** - Peak energy-use; **G** - Present energy-use; **H** - Per capita energy-use 37% of peak value

3. Post Industrial Phase [c. 2100 and beyond] **J**, **K**, and **L** = Recurring future attempts at industrialization fail. 2008 Assessment; Duncan, R. C. (1989). Evolution, technology, and the natural environment: A unified theory of human history. Proceedings of the Annual Meeting, American Society of Engineering Educators: Science, Technology, & Society, 14B1-11 to 14B1-20

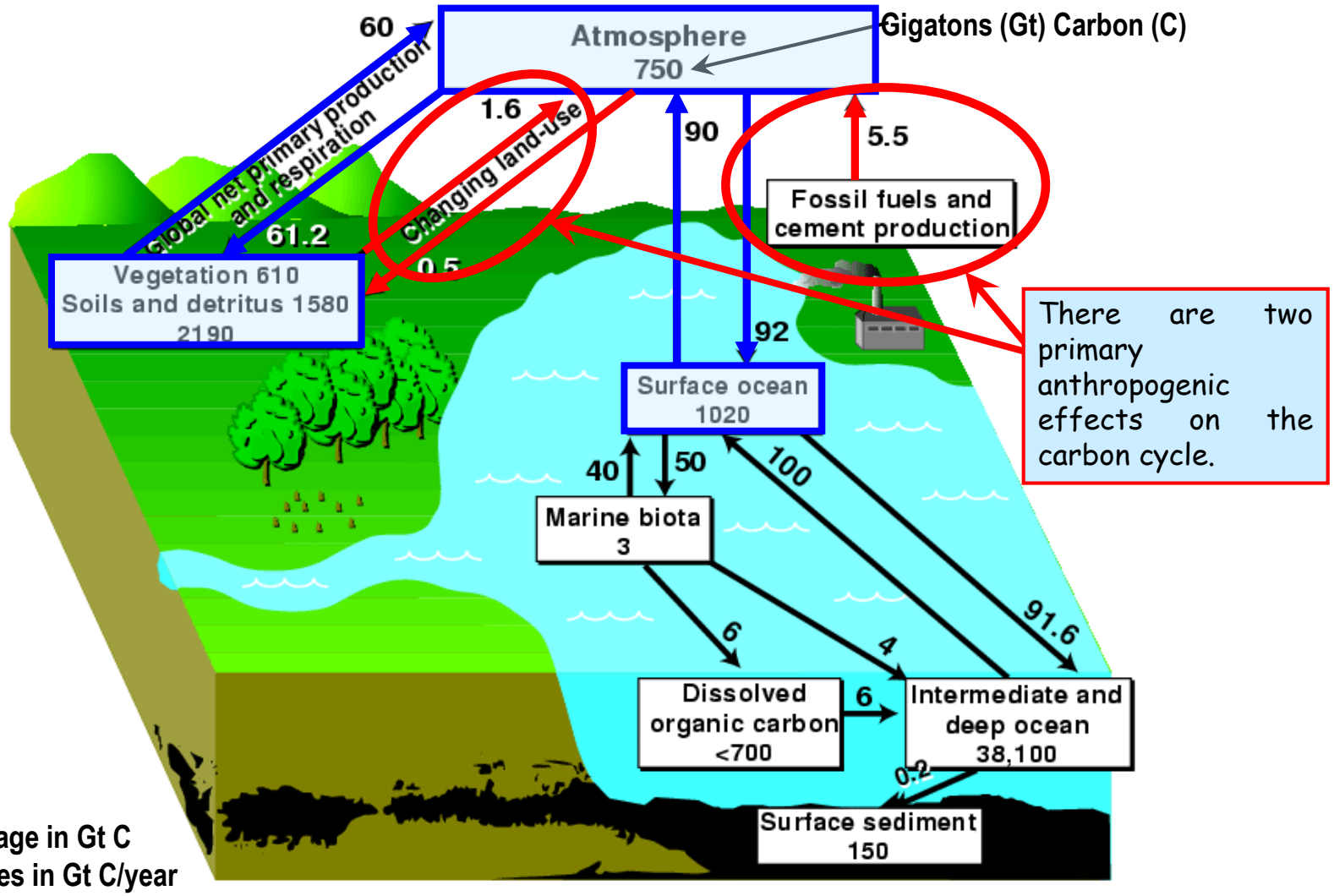
HOW WE PRODUCE ENERGY?



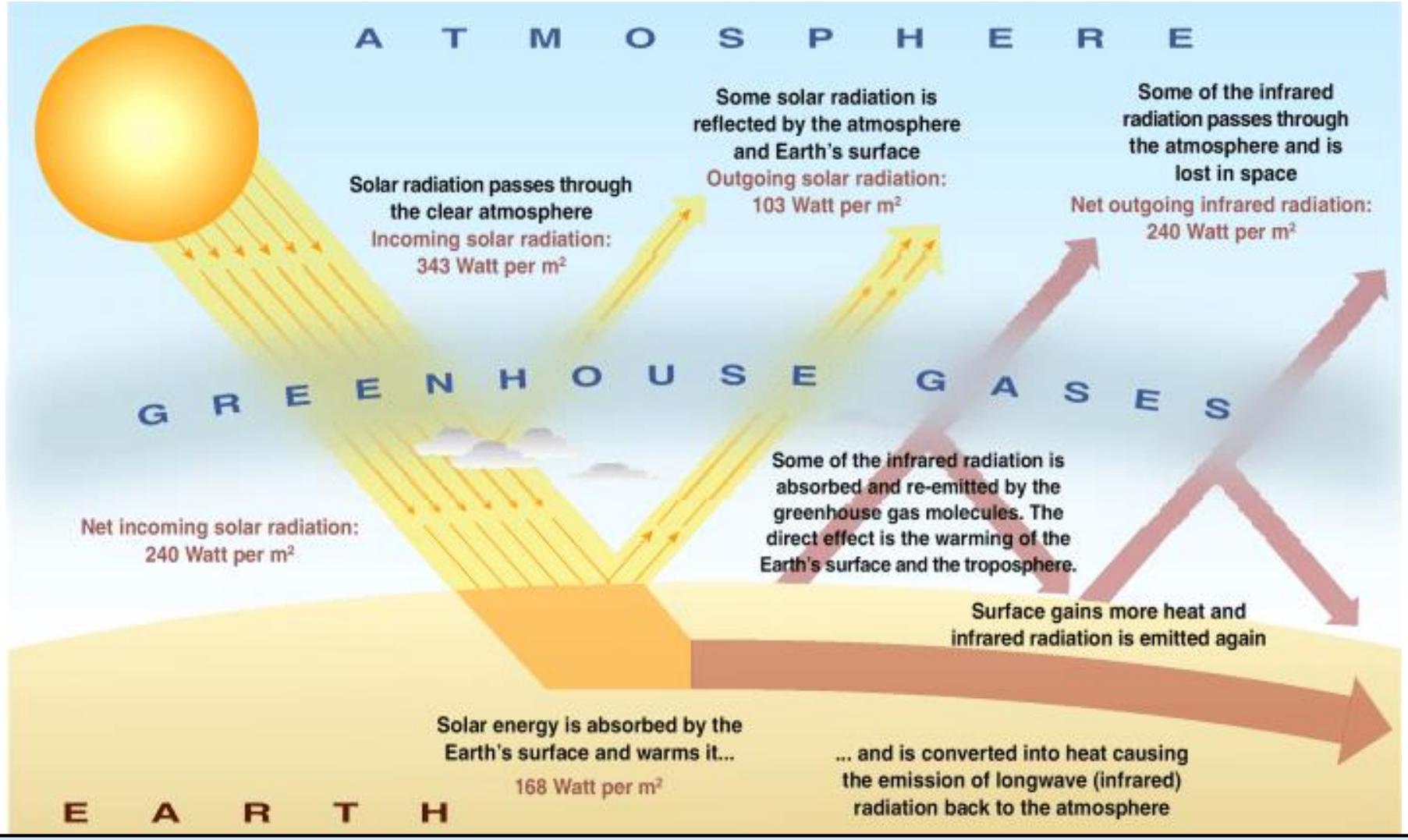
CO2 CONCENTRATION



THE CARBON CYCLE ON EARTH

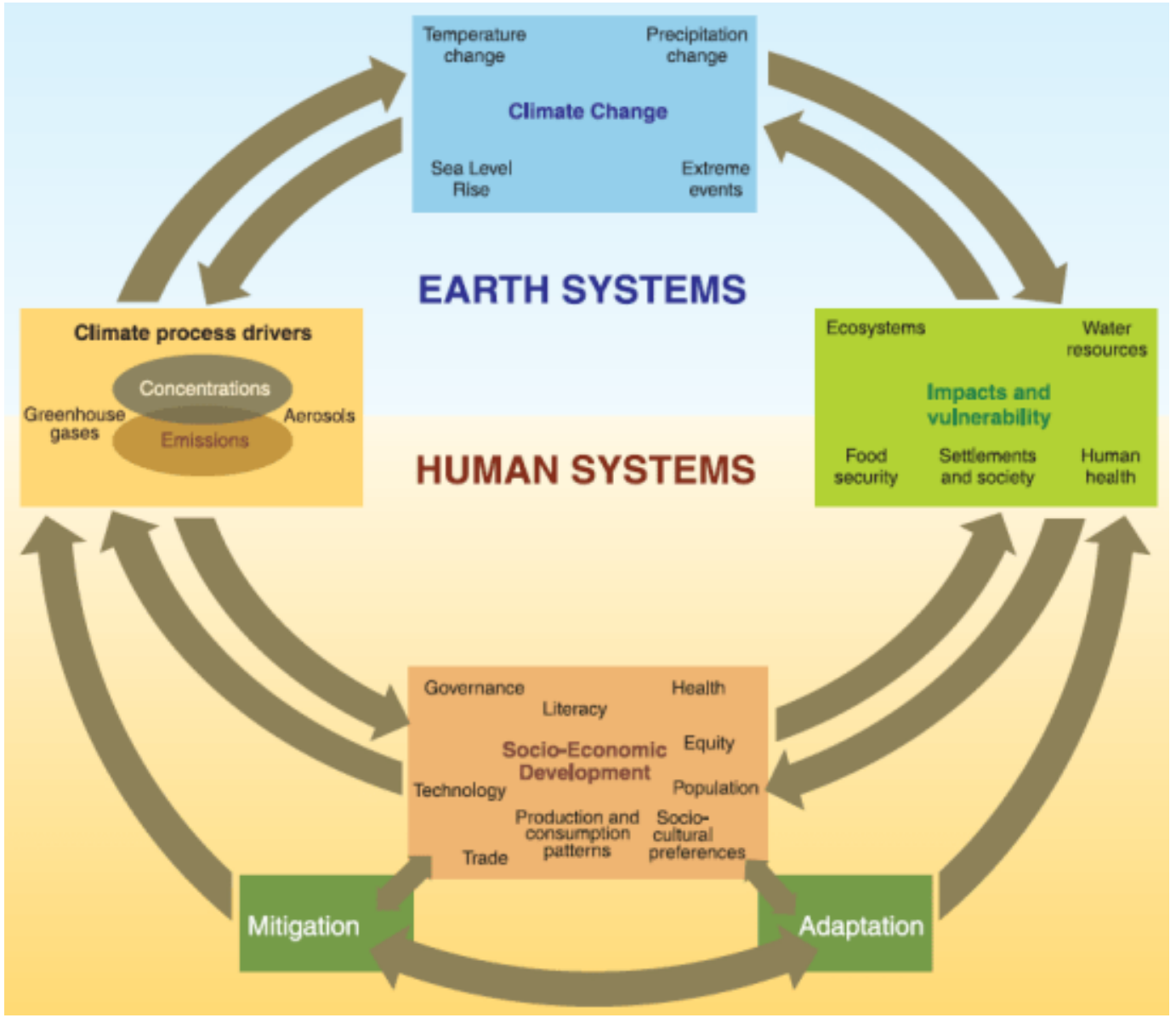


THE GREENHOUSE EFFECT

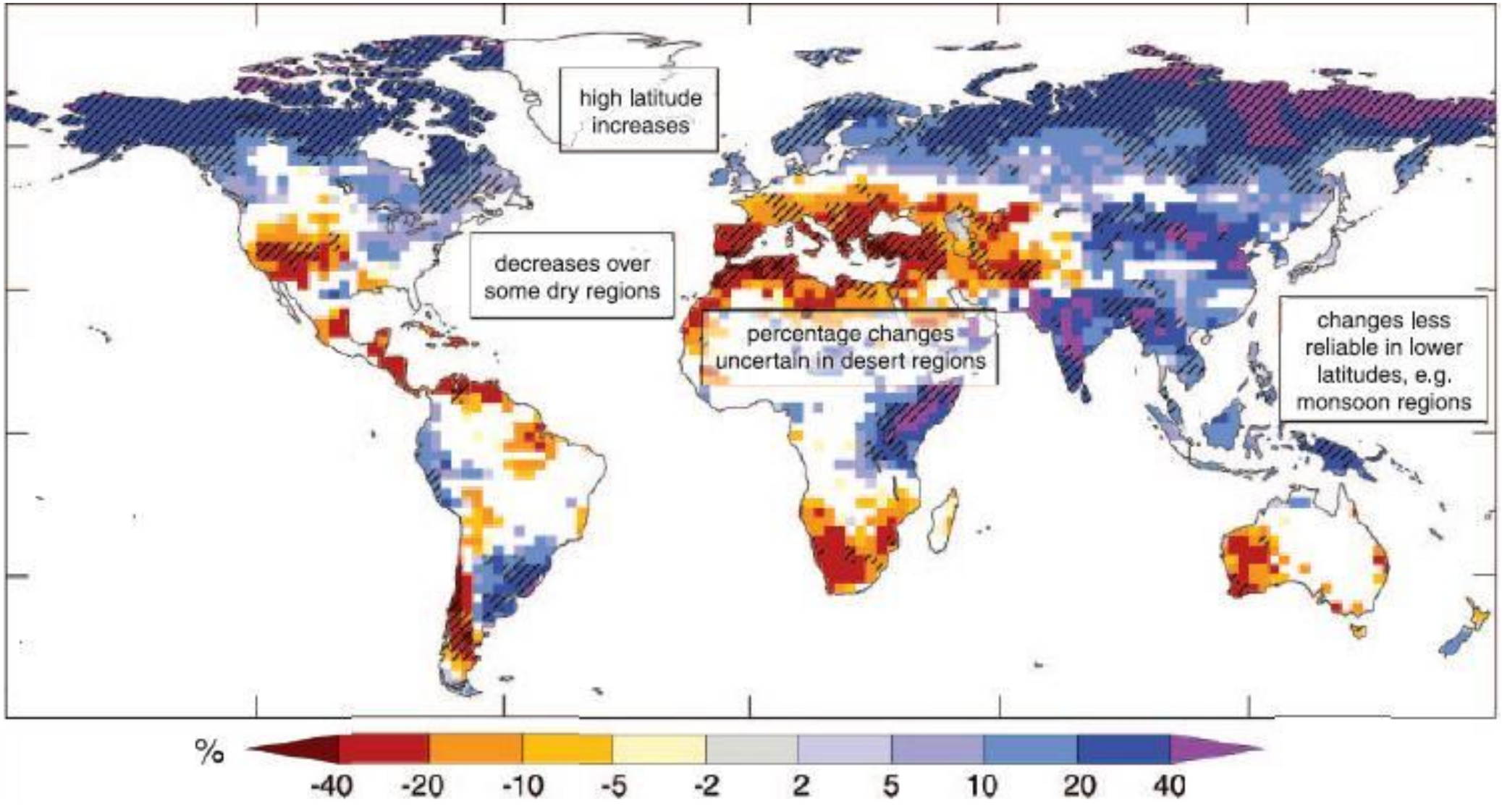


Human actions – burning fossil fuels and land clearing – are increasing the concentrations of greenhouse gases. This is known as the enhanced greenhouse effect. Naturally occurring greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Greenhouse gases that are not naturally occurring include hydro-fluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), which are generated in a variety of industrial processes.

CLIMATE CHANGE I

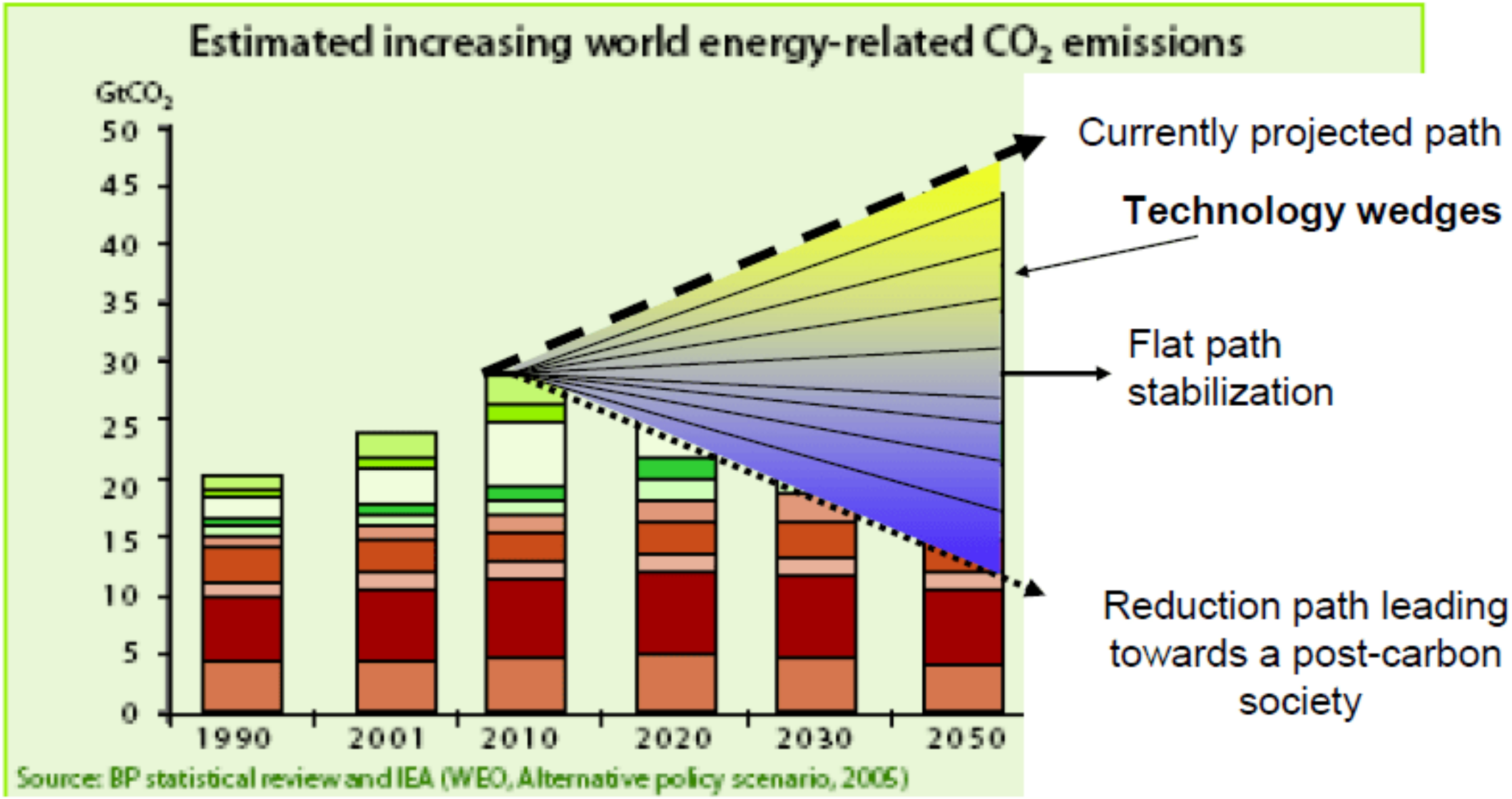


CLIMATE CHANGE II



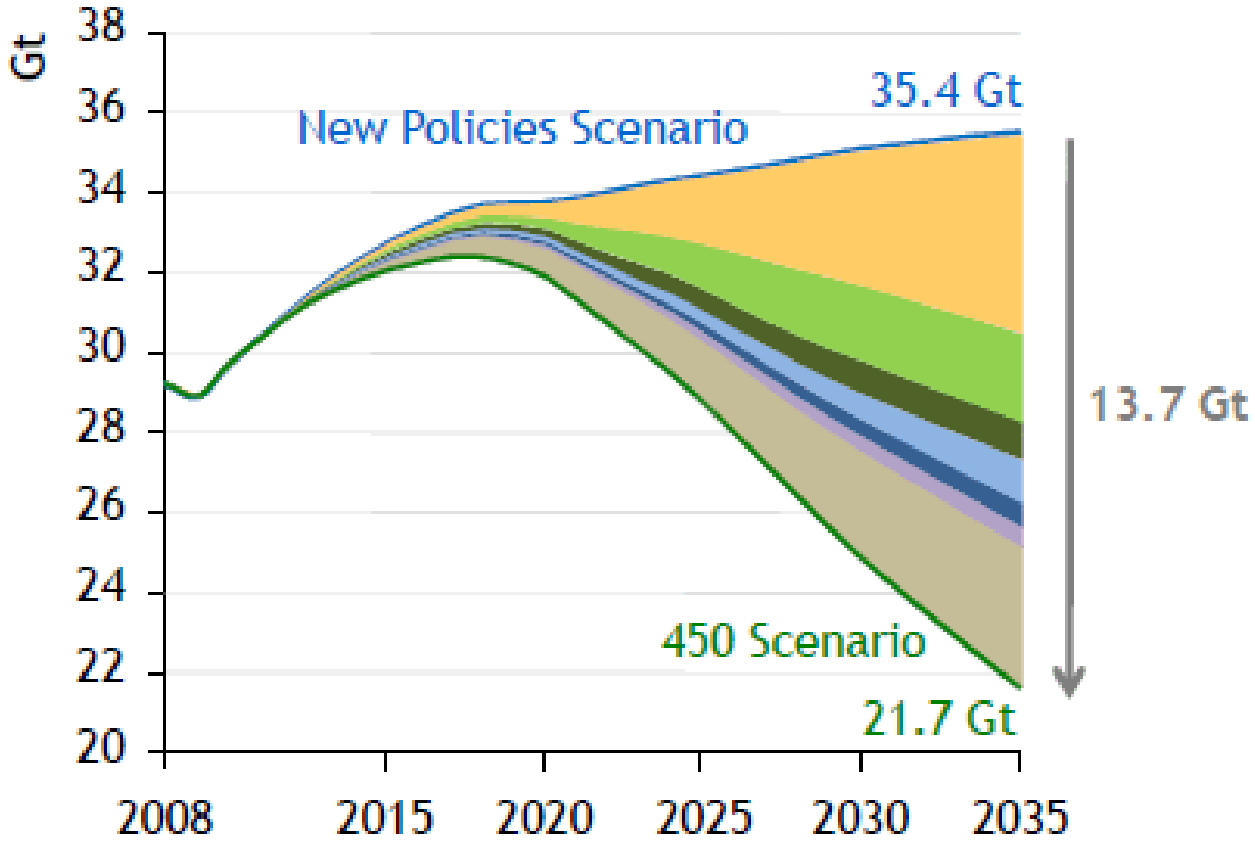
CLIMATE CHANGE III

CLIMATE CHANGE IV



CLIMATE CHANGE V

World energy-related CO_2 emission savings by country in the 450 Scenario



Share of cumulative abatement between 2010-2035	
China	32%
United States	18%
European Union	8%
India	7%
Middle East	4%
Russia	4%
Rest of world	27%

GREEN ECONOMY

Improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.

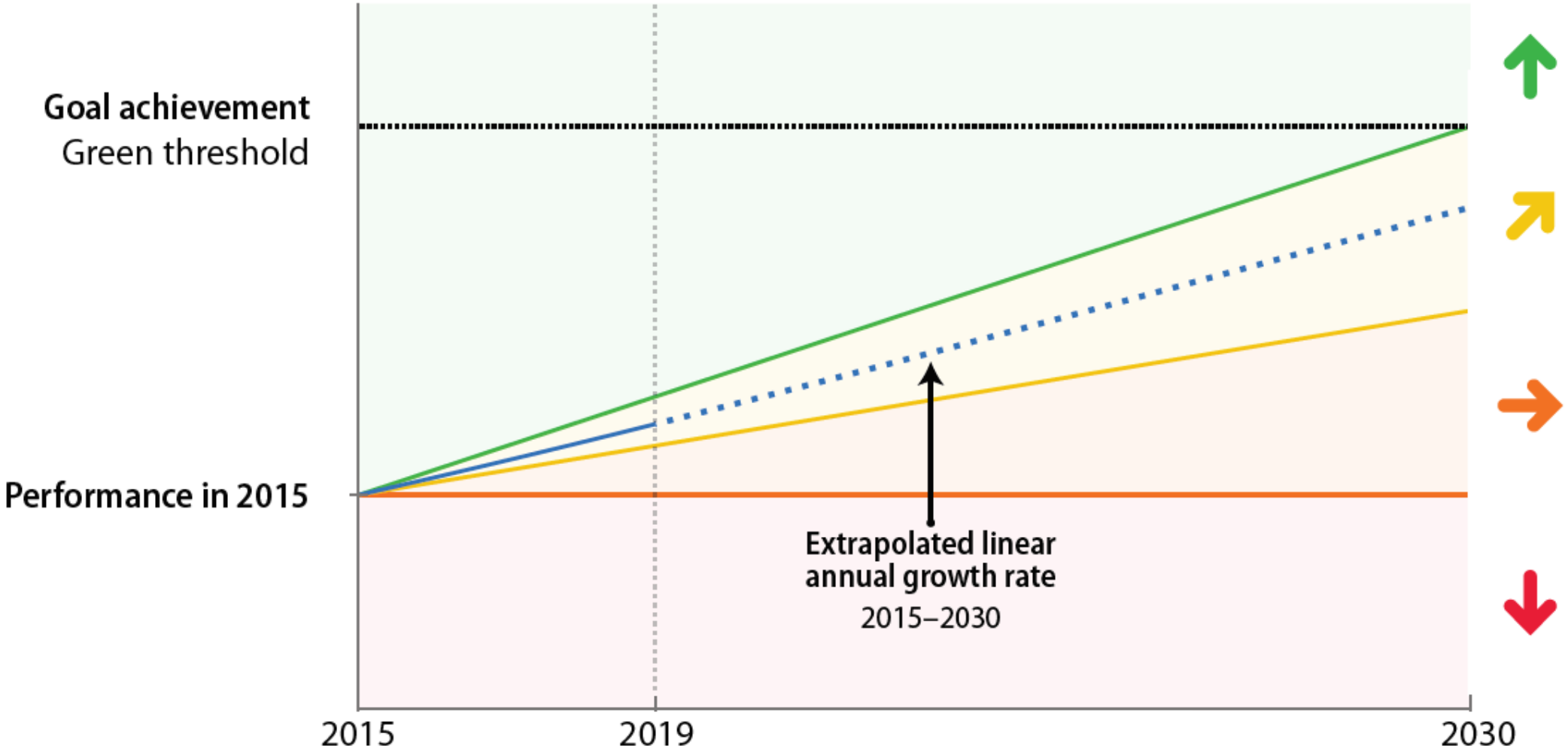
In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive.

Practically speaking, a green economy is one whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

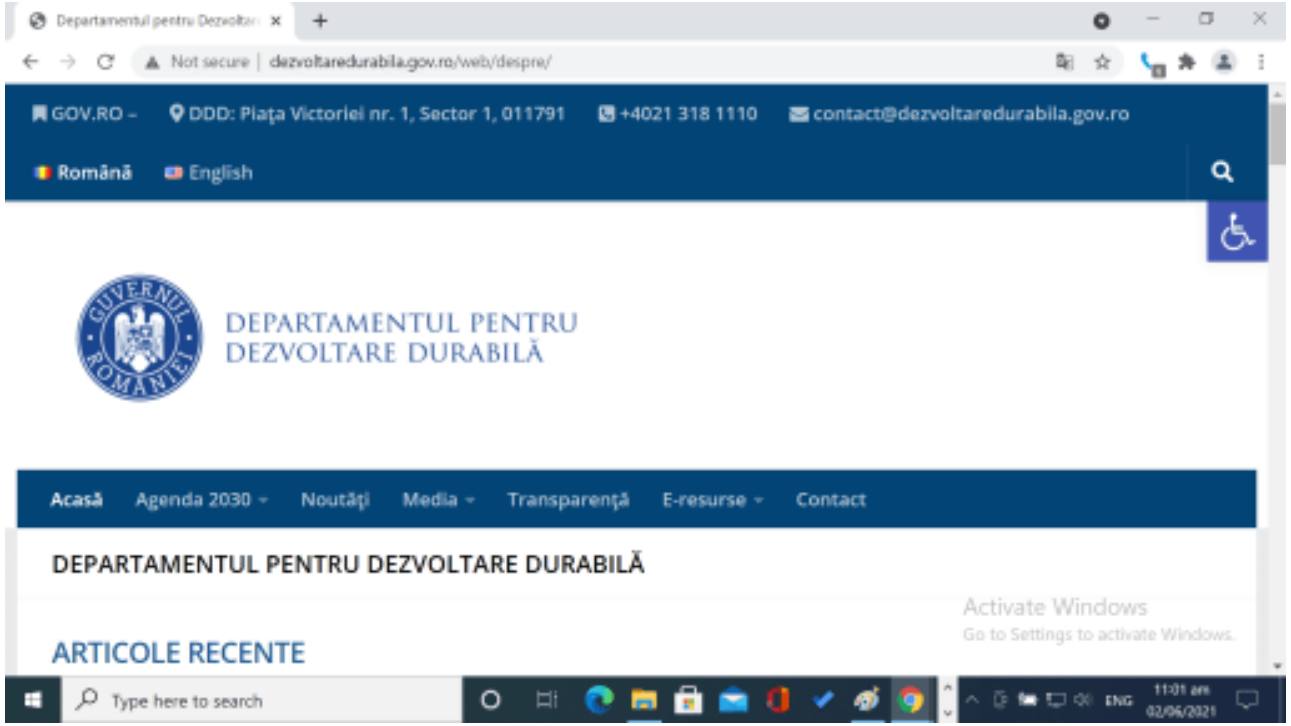
Targets and Indicators for SDG 7

7.1. By 2030, ensure universal access to affordable, reliable and modern energy services
Indicator 7.1.1: Percentage of population with access to electricity
Indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology
7.2. By 2030, increase substantially the share of renewable energy in the global energy mix
Indicator 7.2.1: Renewable energy share in the total final energy consumption
7.3. By 2030, double the global rate of improvement in energy efficiency
Indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP
7.a. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
Indicator 7.a.1: Mobilized amount of United States dollars per year starting in 2020 accountable towards the $100 billion commitment
7.b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support
Indicator 7.b.1: Investments in energy efficiency as a percentage of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

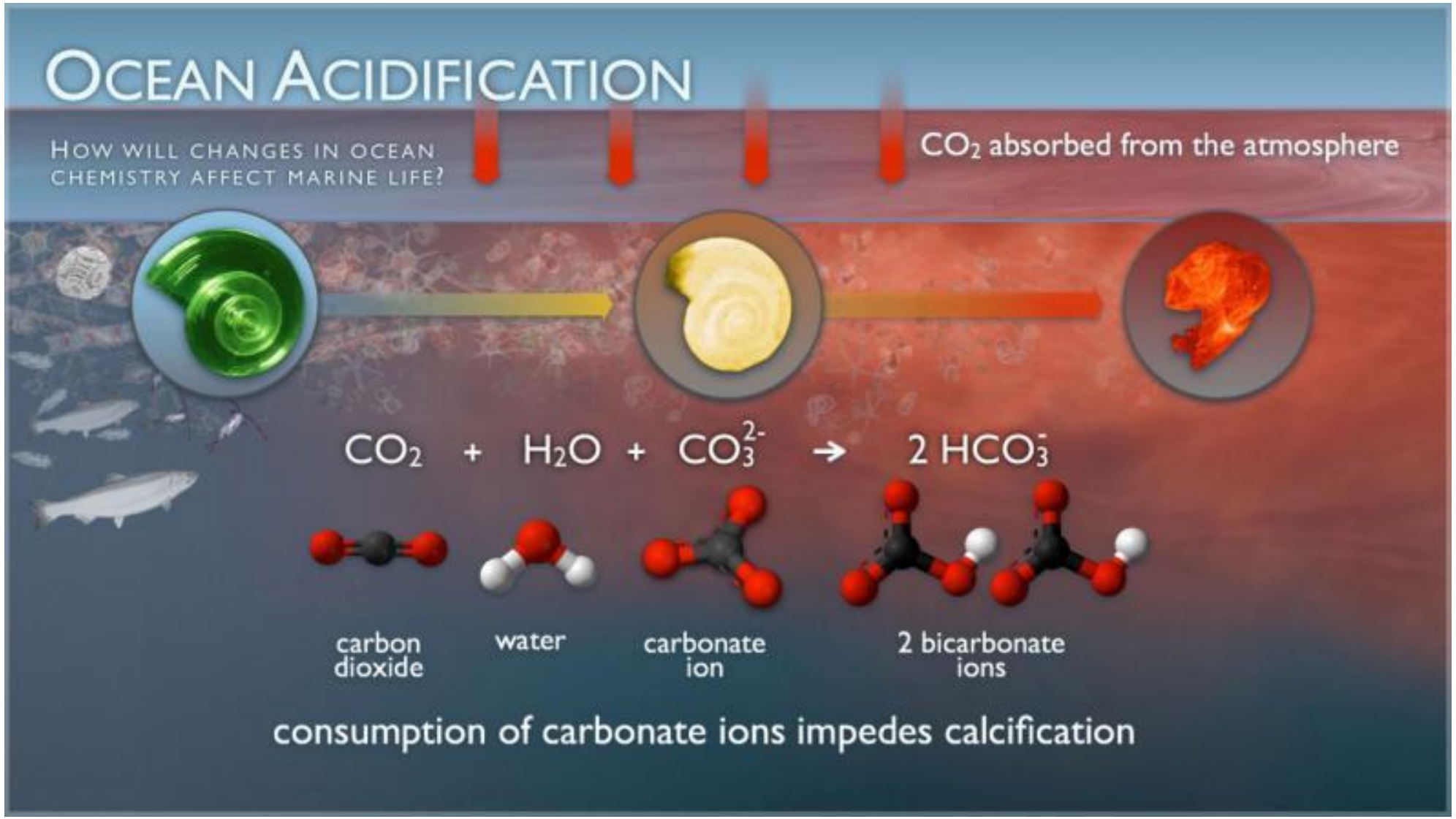
The evaluation process of achievements of SDGs



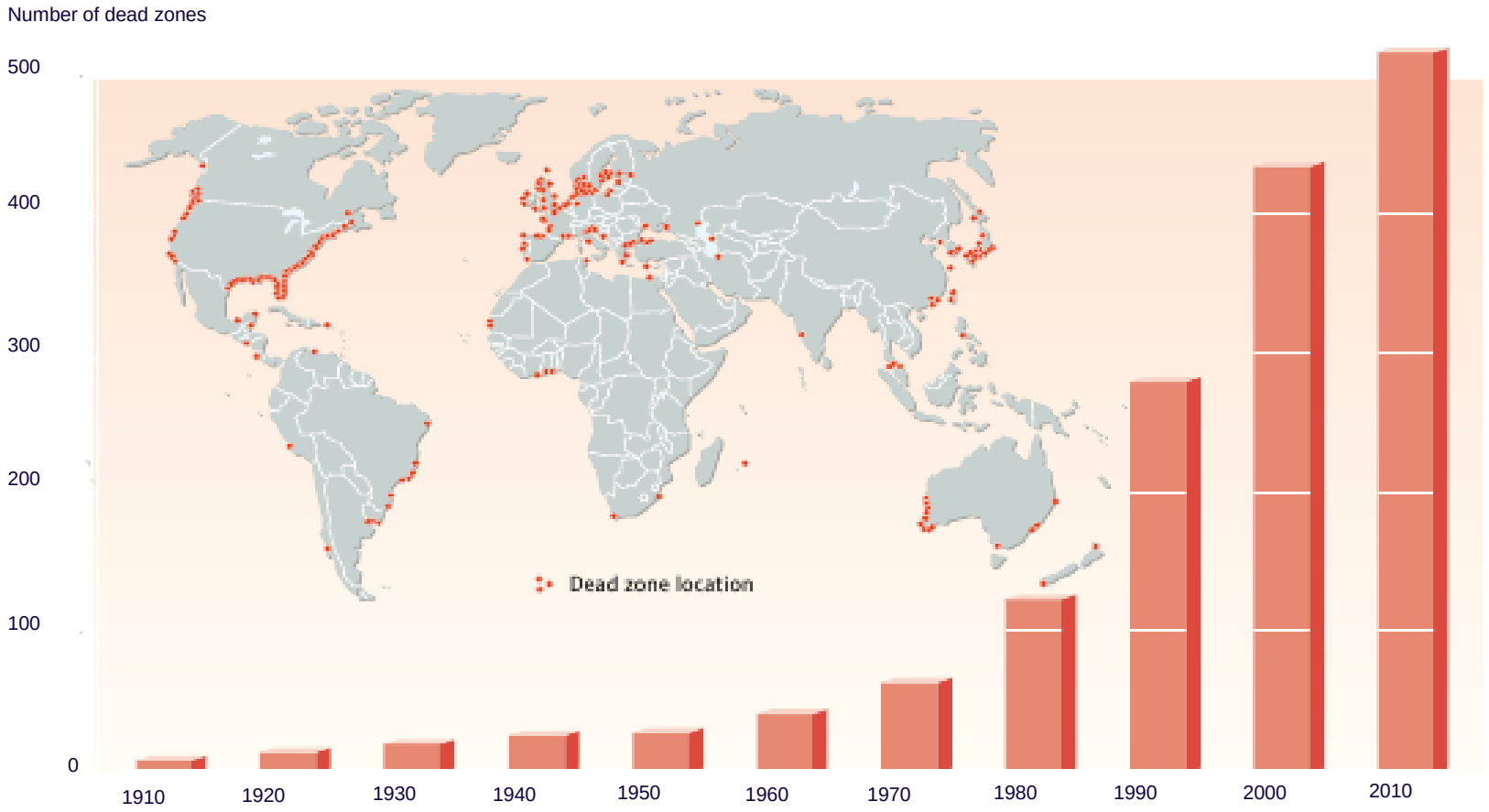
The Case of ROMANIA



ENERGY CONSUMPTION & COASTAL AREAS: Sea Water Acidification

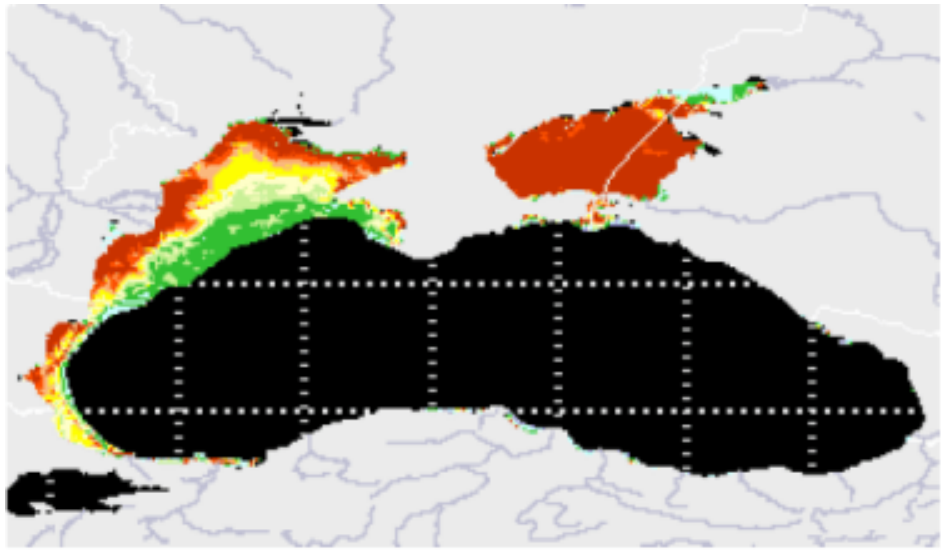


ENERGY CONSUMPTION & COASTAL AREAS: EUTROPHICATION

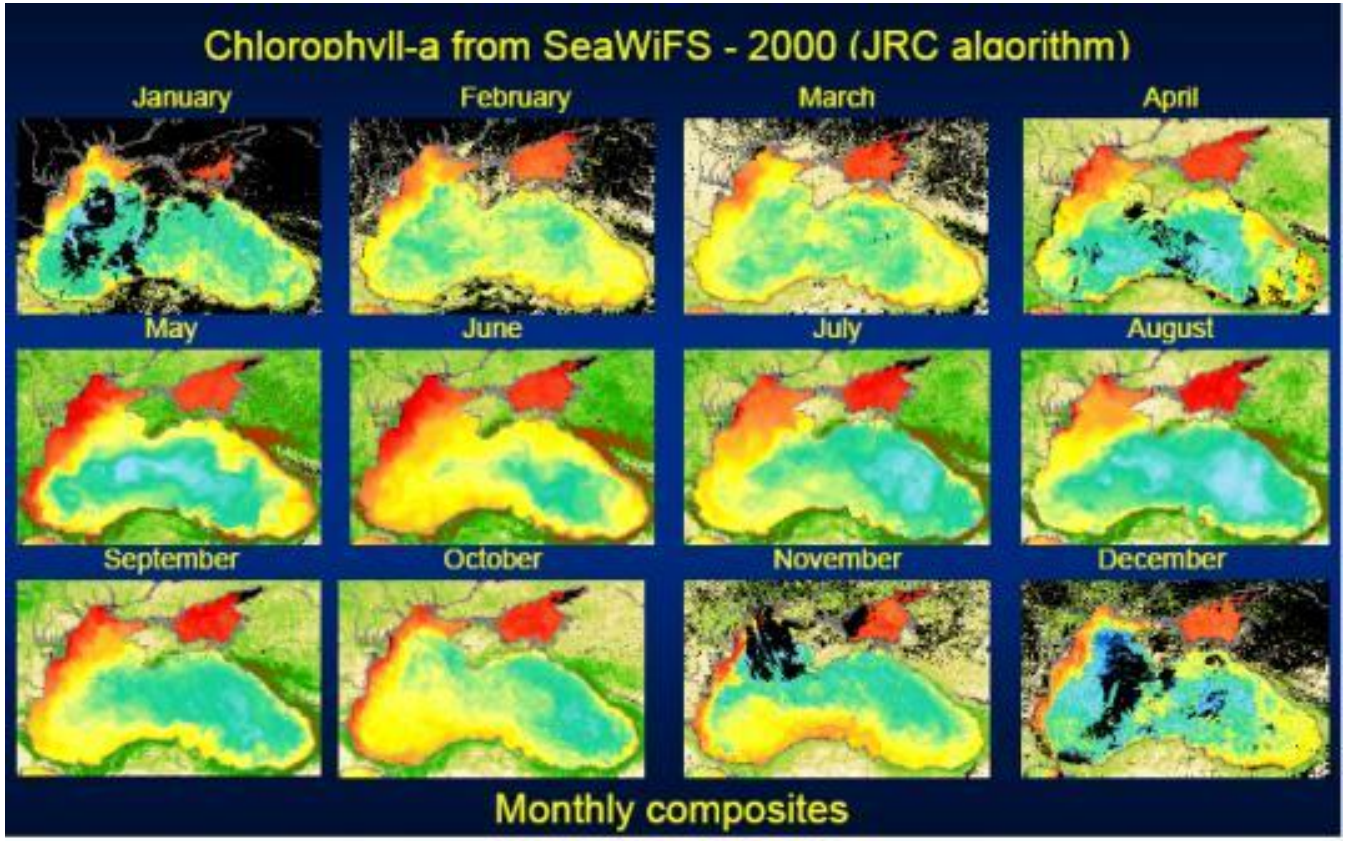


Source: WaterDoc.org, Hart Productions Inc., 2005

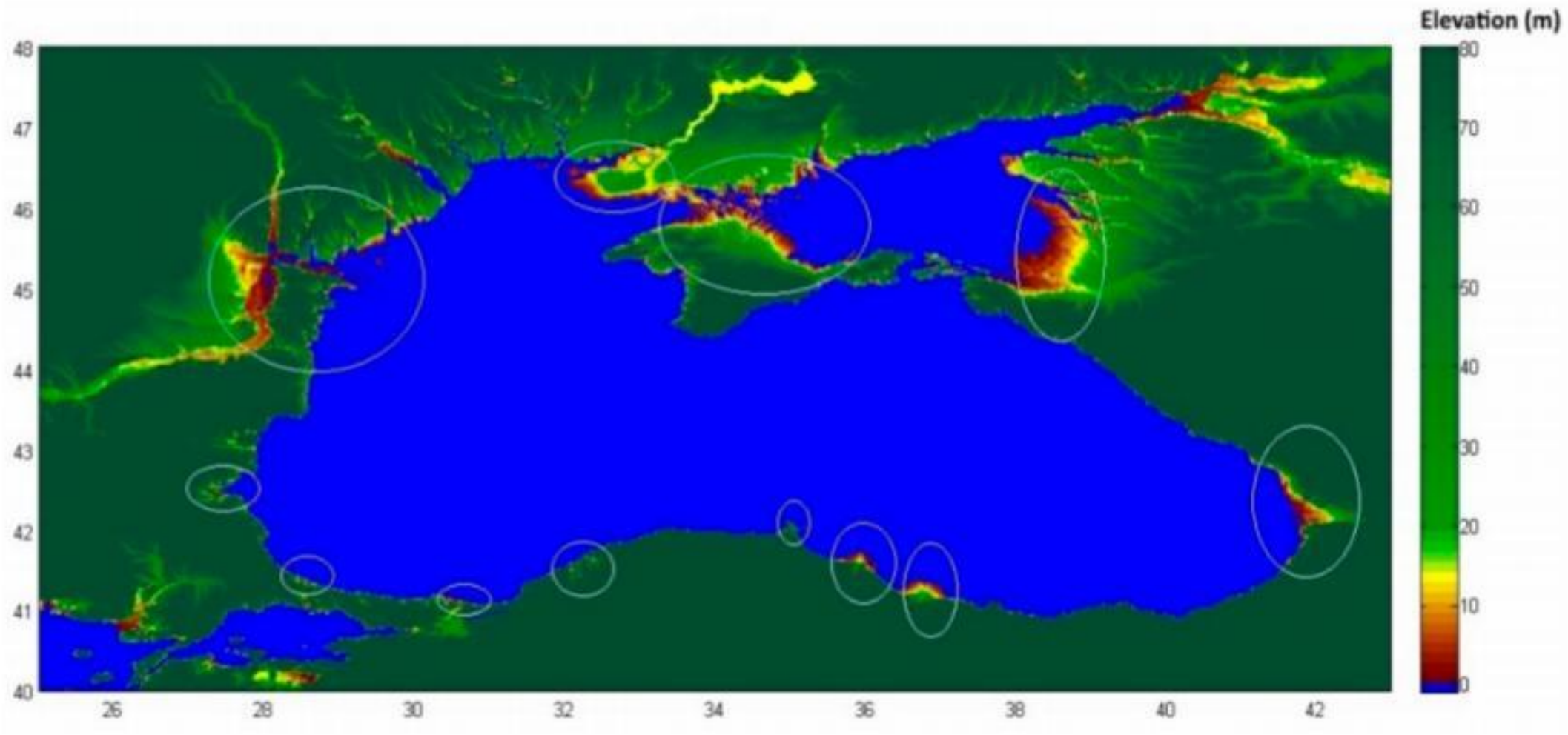
ENERGY CONSUMPTION & COASTAL AREAS: EUTROPHICATION



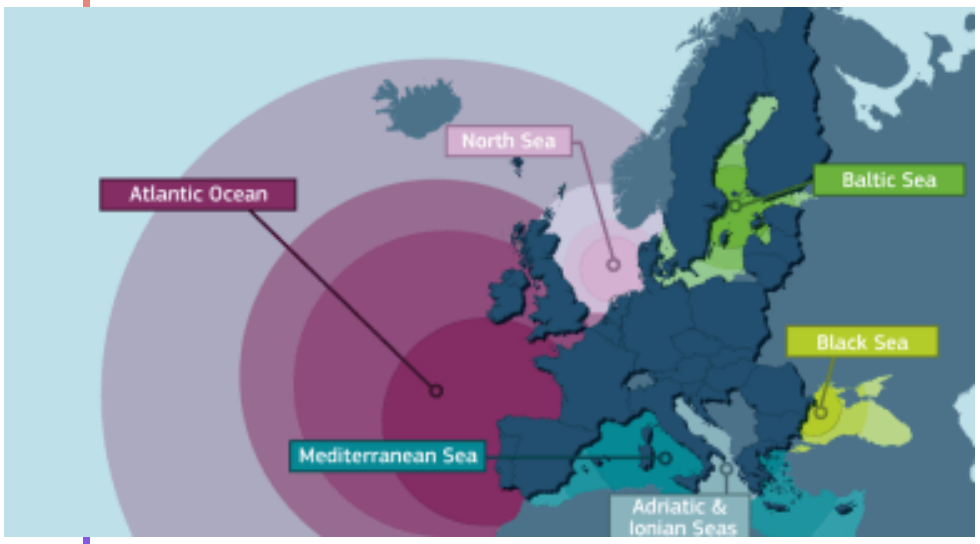
Oxygen depletion risk index

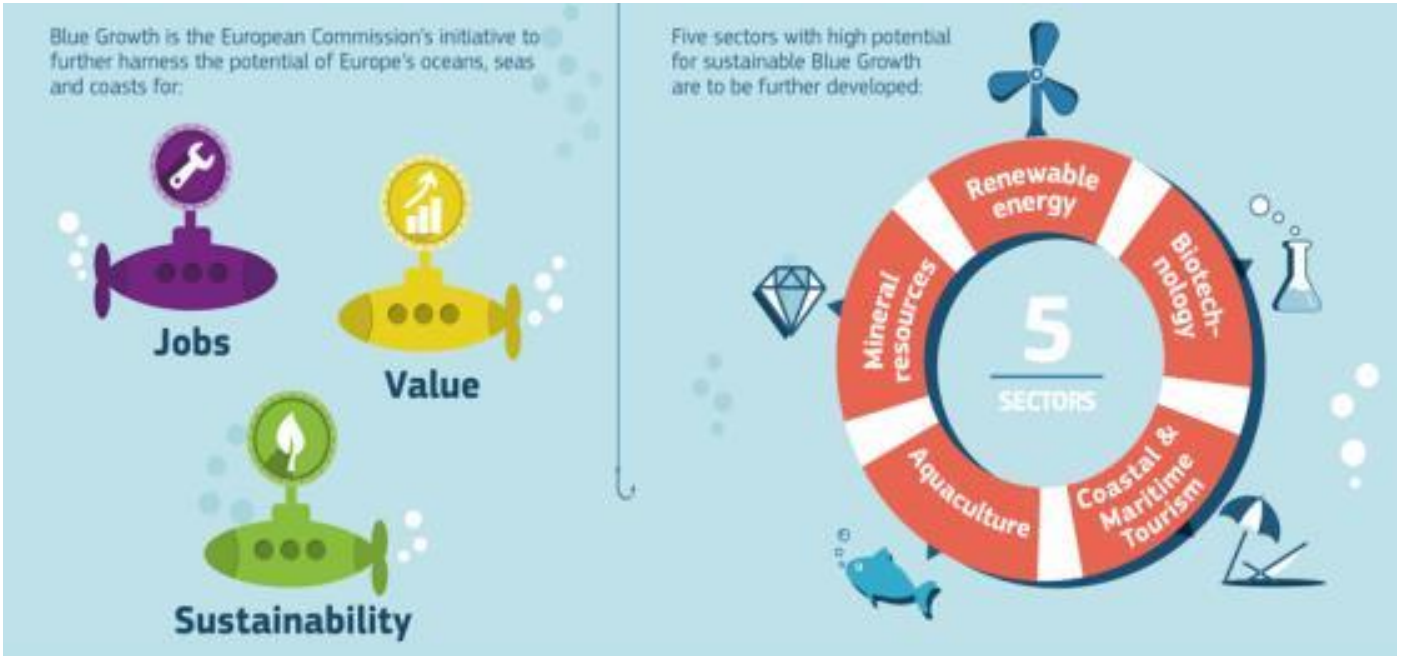


ENERGY CONSUMPTION & COASTAL AREAS: Sea Level



BLUE GROWTH

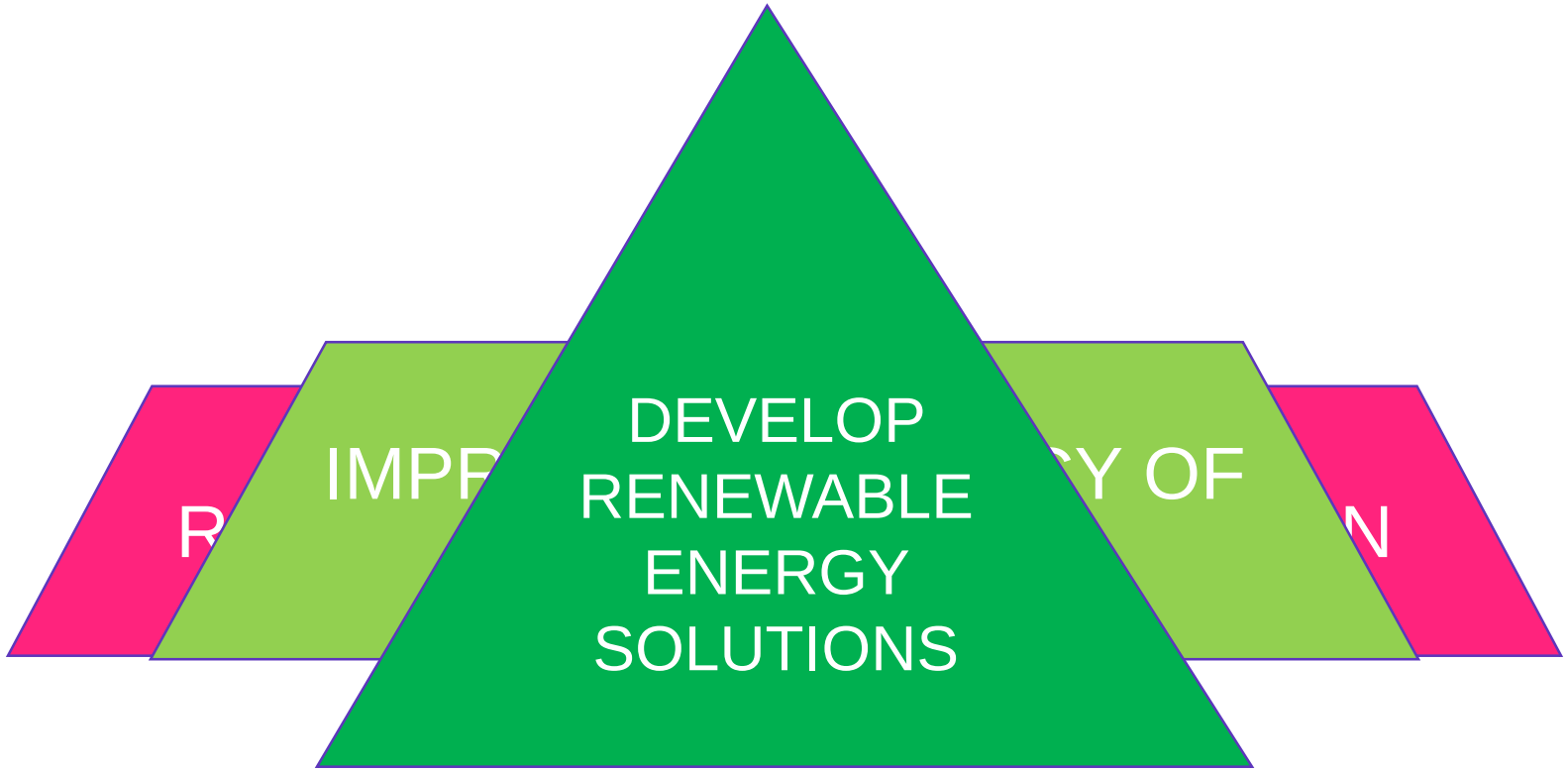

North Sea
Atlantic Ocean
Baltic Sea
Black Sea
Mediterranean Sea
Adriatic &
Ionian Seas


Blue Growth is the European Commission's initiative to further harness the potential of Europe's oceans, seas and coasts for:
Jobs
Value
Sustainability
Five sectors with high potential for sustainable Blue Growth are to be further developed:
Renewable energy
Biotech-nology
Coastal & Maritime Tourism
Aquaculture
Mineral resources
5
SECTORS


Shipbuilding & Ship repair
Transport (cargo & ferry)
Fisheries
Offshore oil & gas

Living Labs: Faleza Nord & Constanta Blue Bay

IN STEAD OF CONCLUSIONS



Thank you for your attention!