Towards a Real Blue Ecological Transition

Verso una transizione ecologica blu

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The grand environmental crisis

75%
of lands significantly altered, with negative impacts on the wellbeing of 3.2 billion of people

66%
Of the oceans exposed to growing cumulative impacts and only 3% is pristine

90%
of land altered by 2050

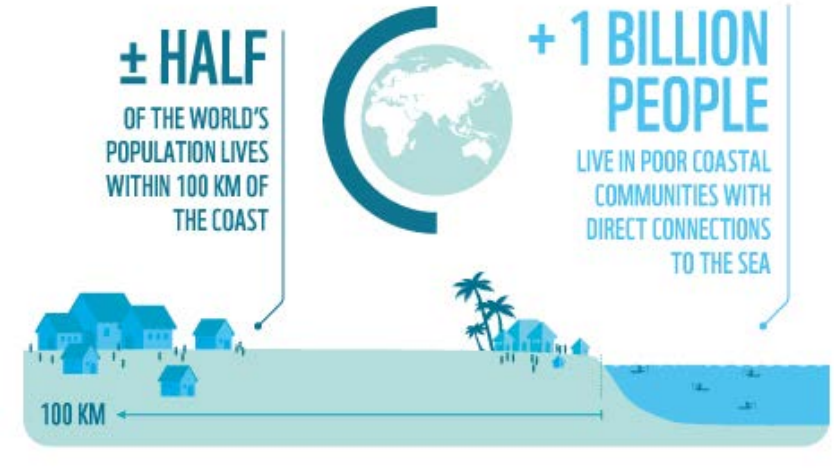
1 million species
(500,000 species of animals and plants and 500,000 species of insects) at risk of extinction on 2.5 millions (known) and 8.1 millions species possibly existing

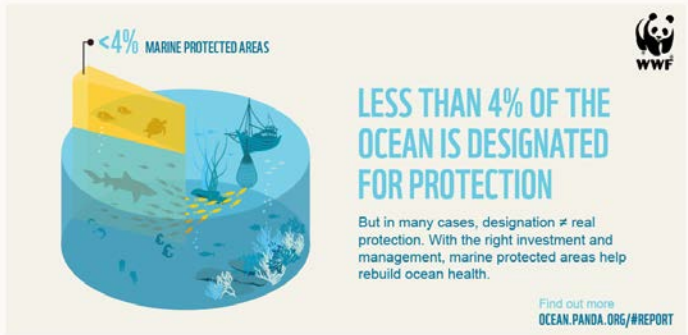
>85%
of wetlands has been lost

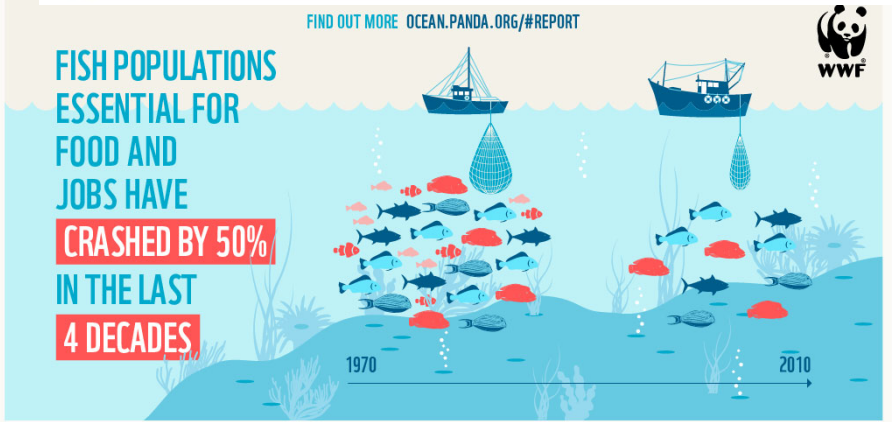
Why are the oceans at risk?

Climate change, non-sustainable resource extraction, land-based pollution, and habitat degradation are threatening the productivity and health of the ocean in alarming ways.

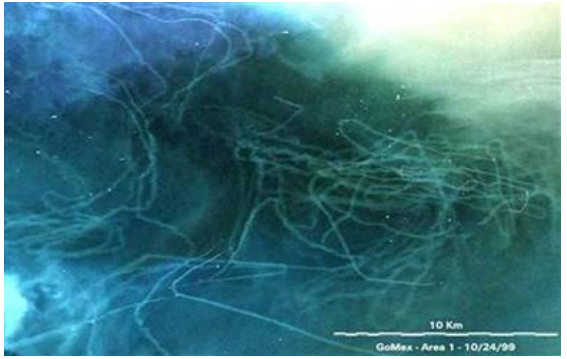
Societal demands for resources often go hand in hand with massive alterations of marine habitats.







And the Mediterranean Sea ….



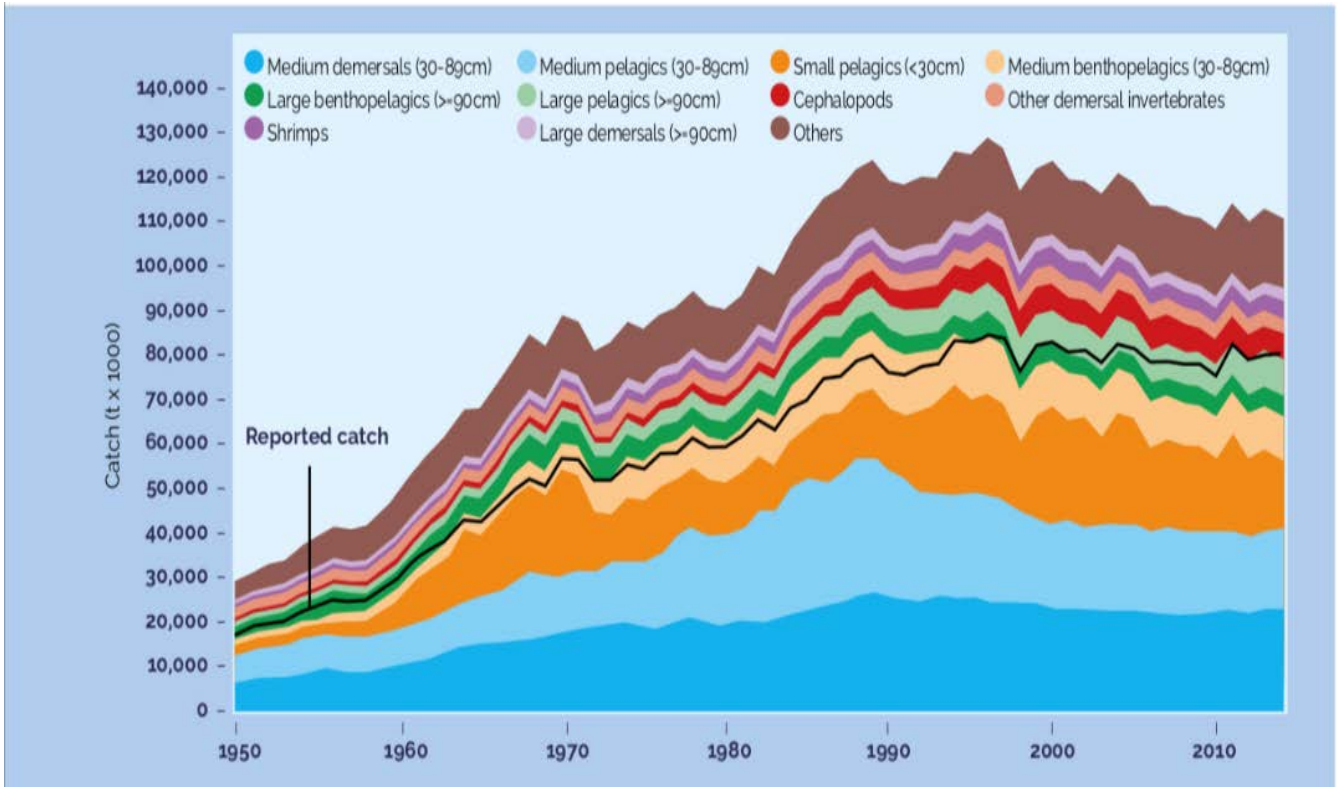
- Oil spills and platforms
- Marine Litter
- Bottom trawling
- Contamination
- Desalination?

Seas and Oceans' decline and habitat destruction

Over recent decades to centuries, continued declines of coastal ecosystems have occurred globally such that the global coverage of **saltmarshes, mangroves, seagrasses, oyster reefs, kelp beds and coral reefs has been reduced by 35-85%.**

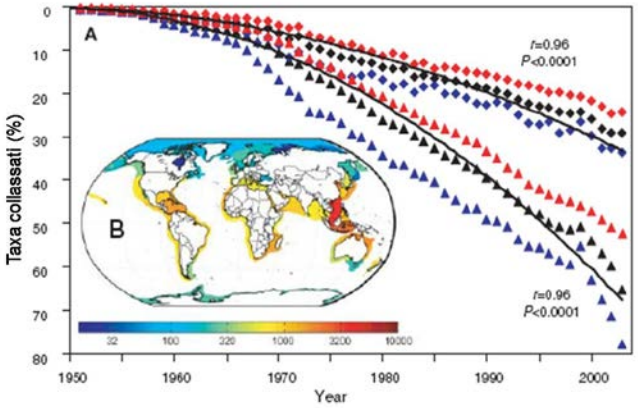
Such environmental degradation results in drastic declines in the value of marine ecosystem services and, subsequently, increasing costs to society.

Current fishery is unsustainable



The overall decline of catches of about 1 Mt per year since 1995.

Collapse of natural populations and exploited species



Collapse of the Natural Capital

Marine forests are being lost at a rate 4 times higher that pluvial forests "Science solution in front of the worsening of the environmental quality has been clear: **Wee need to reduce the human impacts on Nature and protect pristine *habitats***

Loss of goods and ecosystem services

DRINKABLE WATER
HEALTHY FOOD
CLEAN AIR

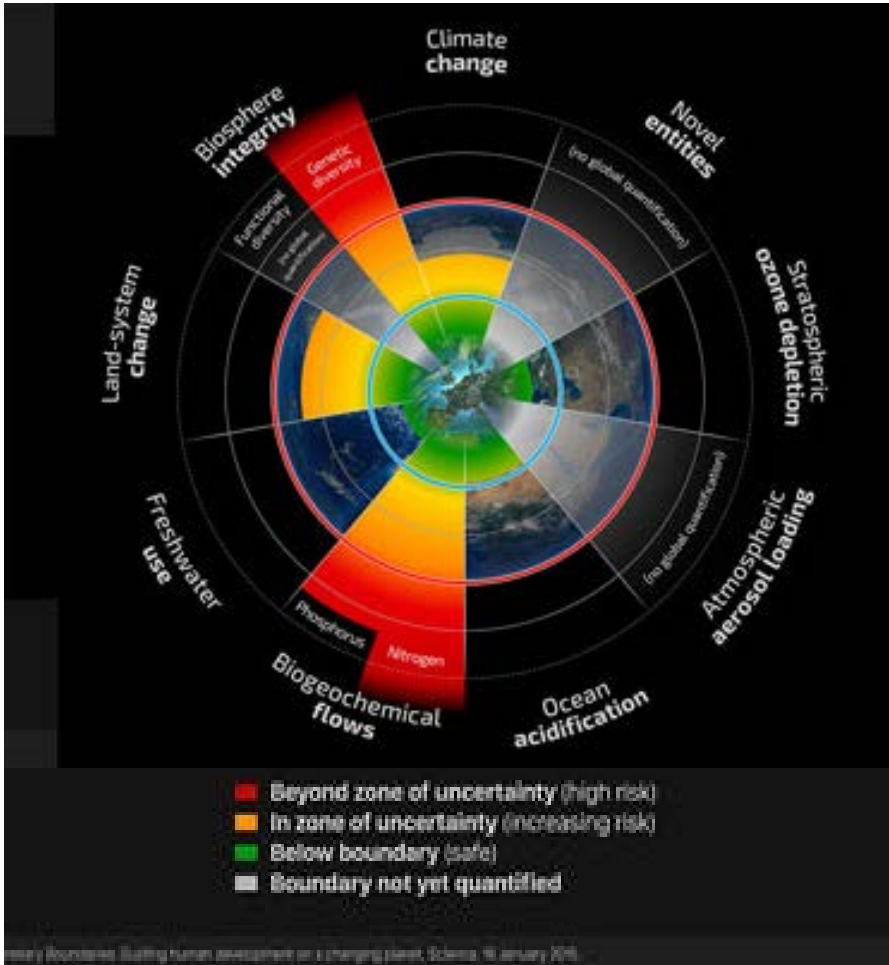
«resistance»
«restoration»
«resilience»
«complexity /holism»

The Agenda 2030 and the EU *Biodiversity Strategy*

Planet Boundaries

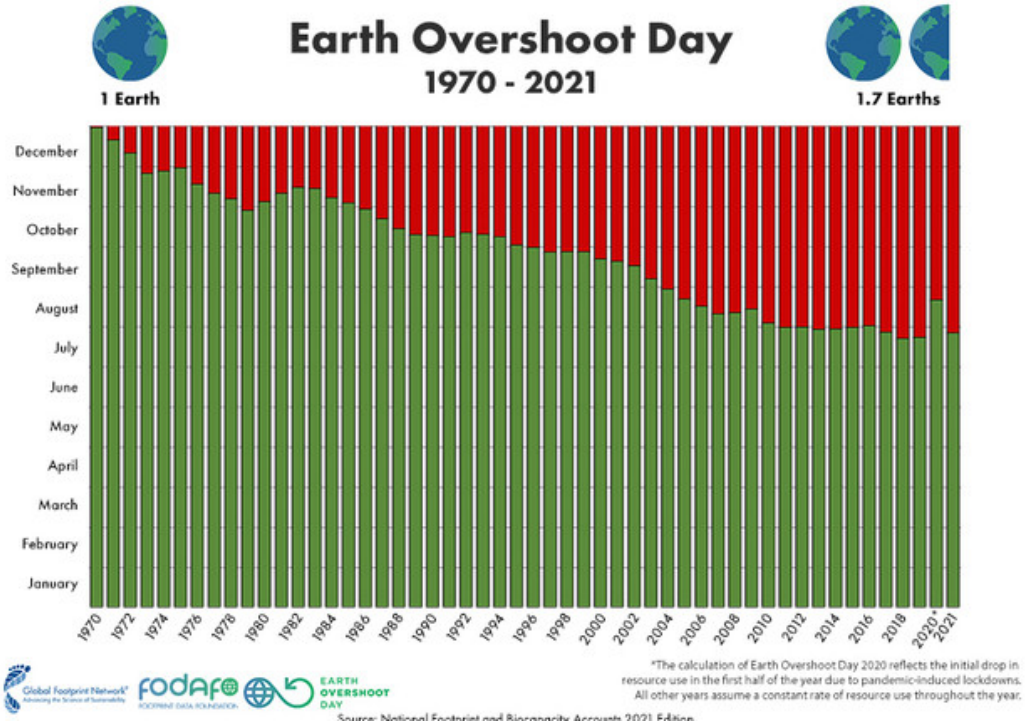
Biosphere integrity (either marine and terrestrial) and **Biogeochemical** flows are beyond the boundaries

Land use and **Climate change** are approaching the boundaries



An anticipating overshooting day

What Man has been able to destroy, Man can repair: he can Restore Ecosystems, repopulate them with life

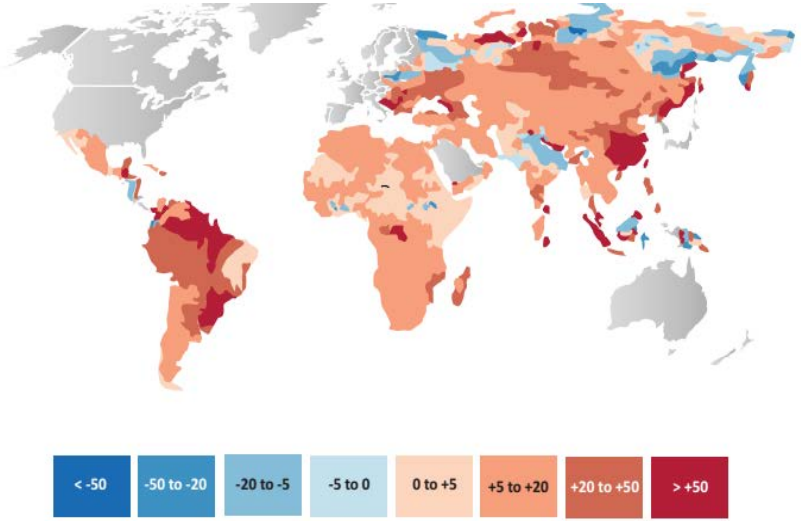


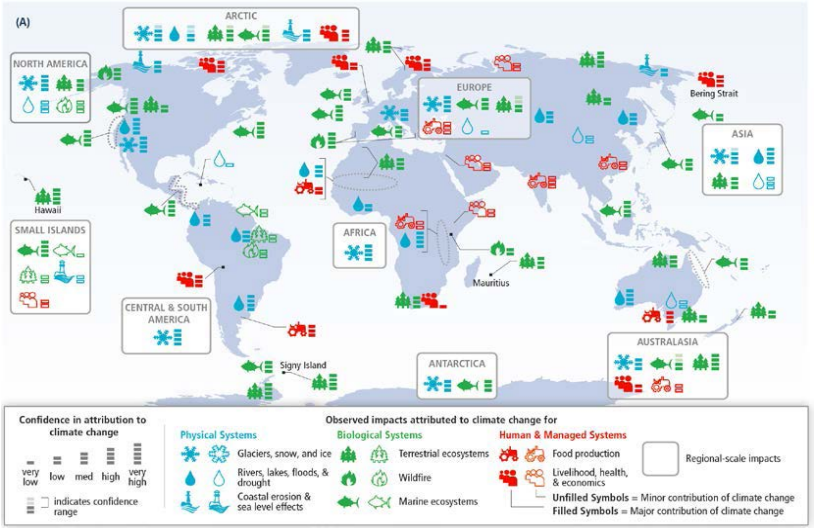
It marks the date when humanity's demand for ecological resources and services in a given year exceeds what Earth can regenerate in that year. In 2021, it falls on ***July 29***.

We need to combine the sustainability of the use of resources with active interventions aimed at the recovery of that Natural Capital that guarantees life on the Planet.

Climate Emergency

Impact of global climate change

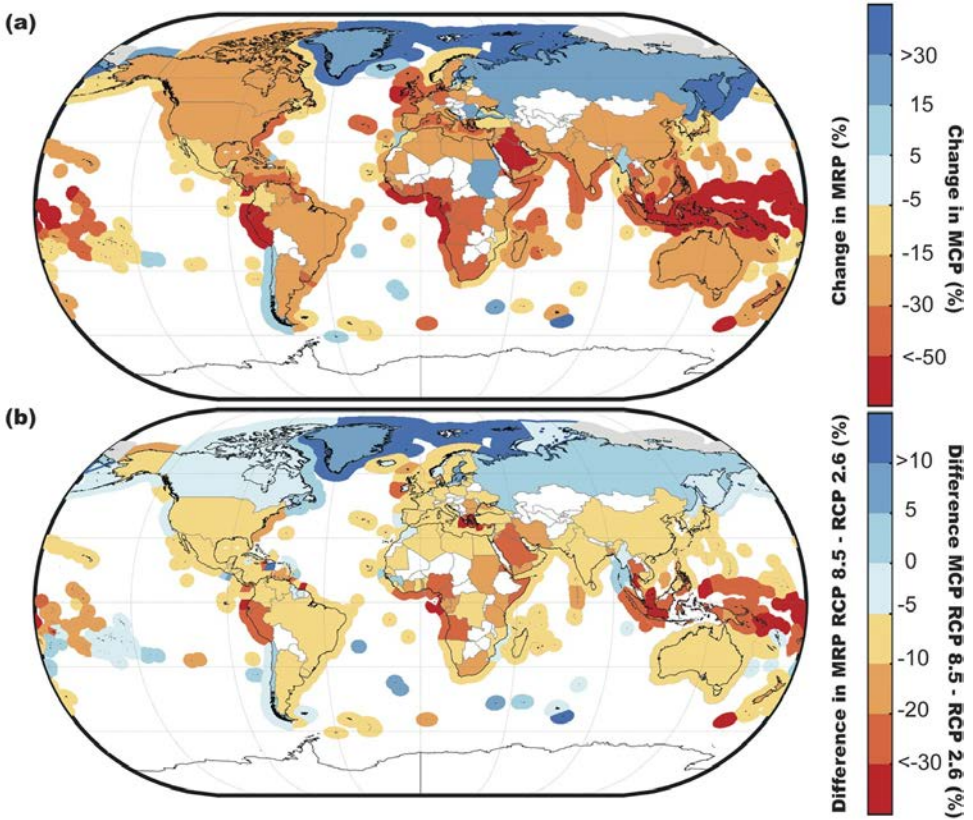




EU declares the Climate Emergency (2019)

EU should commit to net-zero greenhouse gas emissions by 2050 at the UN Conference, says Parliament. *Ahead of the UN COP25 Climate Change Conference in Madrid 2-13 December, the Parliament on Thursday approved a resolution declaring a climate and environmental emergency in Europe and globally. They also want the Commission to ensure that all relevant legislative and budgetary proposals are fully aligned with the objective of limiting global warming to under 1.5 °C.*

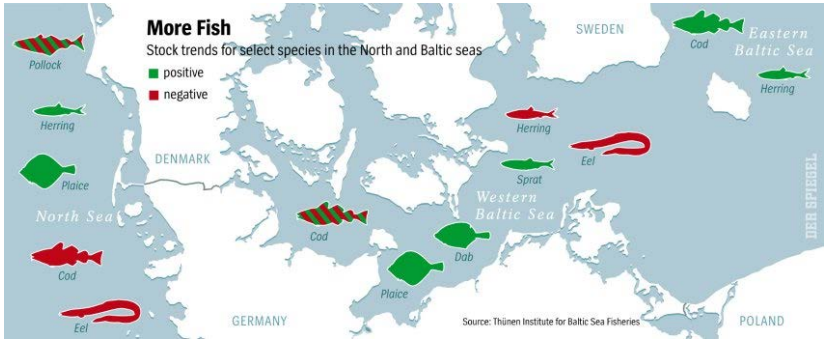
The lower the food production the lower the fish biomass



Up to >50% fihery decline by 2050

Less food in poorer countries

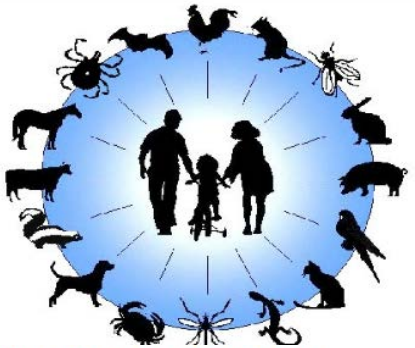
More in the north and less in the south of the world



Environmental Crisis affects the weakest

"The negative effects of an erosion of Natural Capital are first of all social and secondly economic, and then return again and differently to have further social impacts"

- PANDEMICS PROMOTED BY THE LOADING OF NATURAL ECOSYSTEMS
- "ENVIRONMENTAL" PATHOLOGIES LINKED TO LOSS OF SOIL, FOOD, AIR, CONTAMINATED WATER
- Climate change and water crisis: 300 million migrants of the ecological crisis
- The populations of poor countries have a greater dependence on natural resources
- In poor countries, growth pays little attention to environmental quality and therefore has more impact
- Less technological resources to cope with natural crises

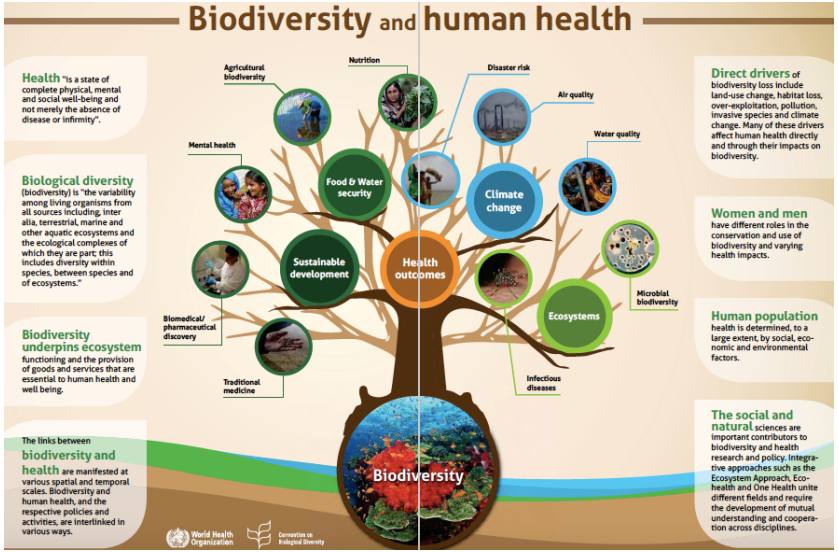


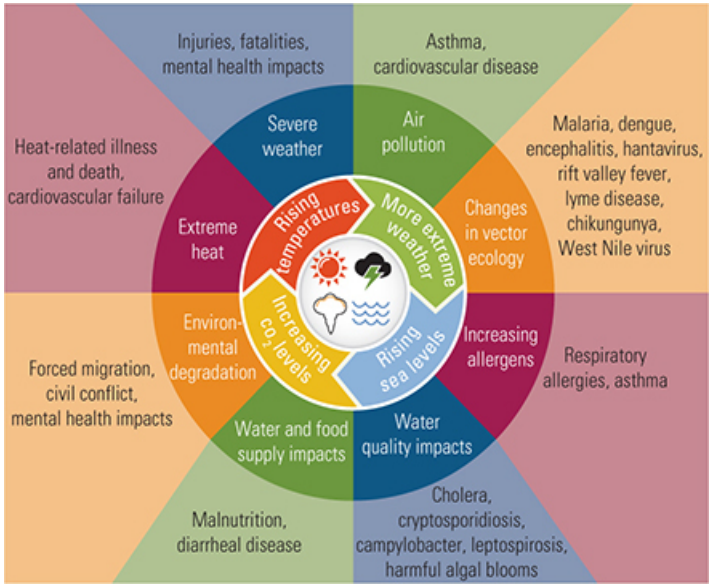
United Nations Decade of Ocean Science for Sustainable Development (2021-2030)

One Health Approach

protect Humans protecting Nature

The One Health concept is a worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment.





"Human or livestock or wildlife health can't be discussed in isolation anymore. There is just one health. And the solutions require everyone working together on all the different levels."

The potential of the blue economy

THE AIR WE BREATHE

>50% The ocean produces over half of the world's oxygen and stores 50 times more carbon dioxide than our atmosphere.

CLIMATE REGULATION

70% Covering 70% of the Earth's surface, the ocean transports heat from the equator to the poles, regulating our climate and weather patterns.

TRANSPORTATION

76% Percent of all U.S. trade involving some form of marine transportation.

RECREATION

From fishing to boating to kayaking and whale watching, the ocean provides us with so many unique activities.

ECONOMY

$282 billion Amount the U.S. ocean economy produces in goods and services. Ocean-dependent businesses employ almost 3 million people.

90% for EU

FOOD

The ocean provides much more than just seafood. Ingredients from the sea are found in surprising foods such as peanut butter and soymilk.

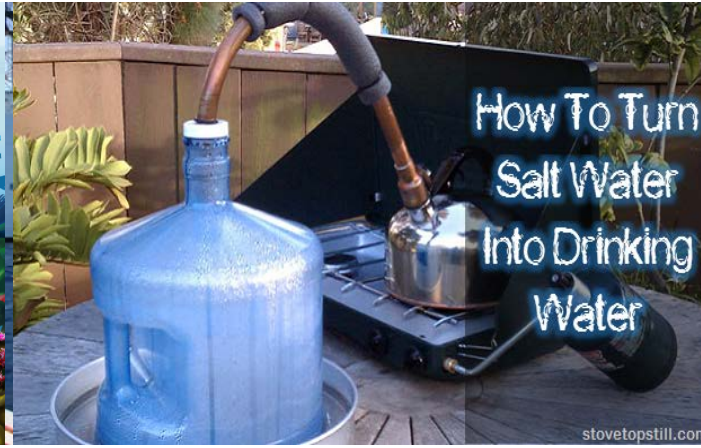
MEDICINE

Many medicinal products come from the ocean, including ingredients that help fight cancer, arthritis, Alzheimer's disease, and heart disease.

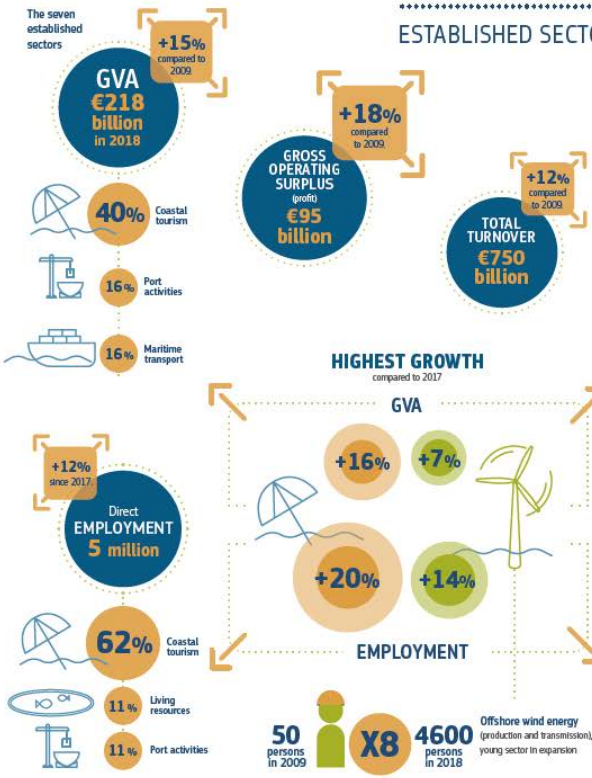
€500 billion for EU; 5.4 million people

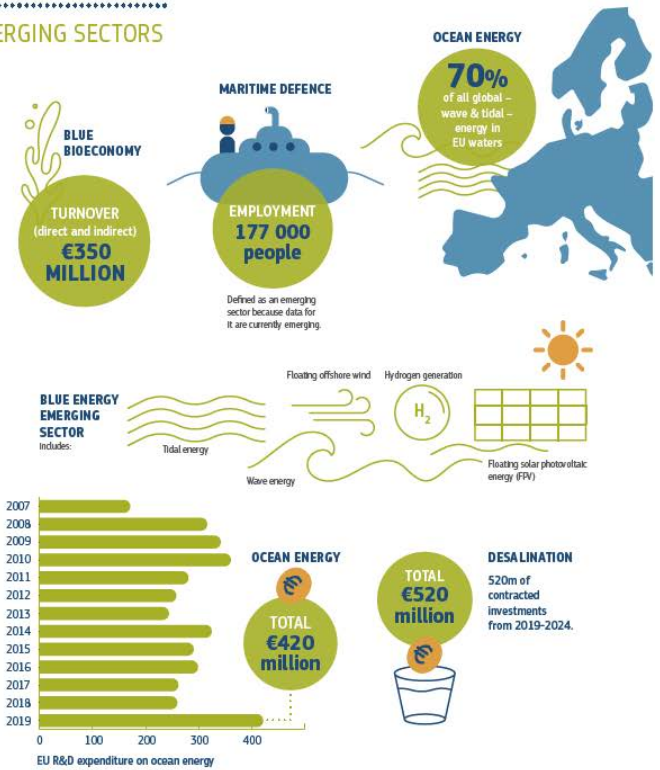
Oceans of Strengths

- Lots of space + Lots of water
- Lots of resources = Food, feed, pharmaceuticals, energy, transport, ingredients, materials, minerals, nature, climate buffer
- Lots of possibilities



The EU Blue Economy





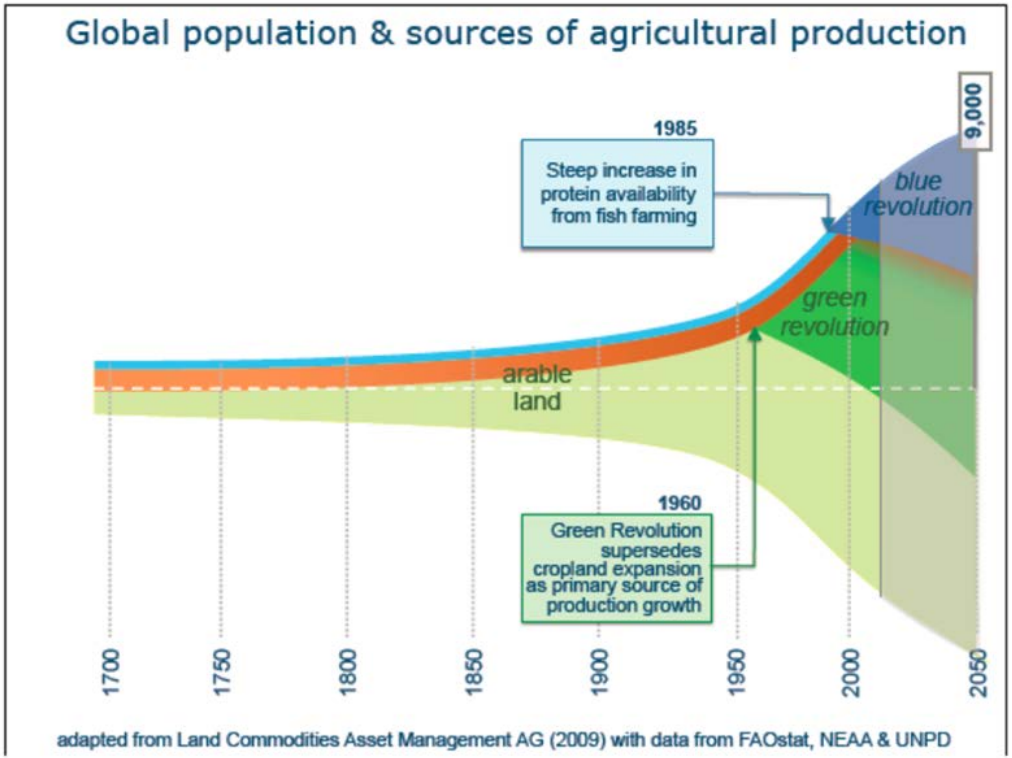
How to feed (well and sustainably) the future humanity?

The human population from 7.3 to 9.7 billion in the period from 2015 to 2050

Food from the sea is currently feeds one billion people (17%)
It may increase by 74% by 2050.

The sea can supply about 25% of the food needed to feed 9.8 billion people.

Time for a blue revolution



Sustainable food and renewable energy

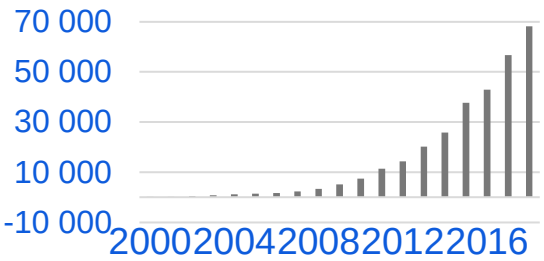
FOOD - Land expansion increases climate change and biodiversity loss. Eco-sustainable mariculture could fill the gap.

RENEWAL ENERGIES - The expansion of wind power to the ground is increasingly difficult. Floating offshore plants are the sustainable future of renewable energy (2 GW plants)

ABIOTIC RESOURCES (HYDROCARBONS AND MINERALS)

Abyss source of enormous hydrocarbon resources (> 50% of the planet) - Polymetallic nodules (significant impacts)

Off shore plants



Recommendations for a **real** blue ecological transition

Using marine space for the production of renewable resources

Stopping progressively the use of fossil fuels (starting from oil)

Coupling offshore wind and solar farms with marine protected areas / fishery restricted areas

Exploiting the potential of eco-sustainable marine biotechnologies

Converting the fisheries into integrated aquaculture plants

Using the deep-sea exhausted wells for carbon storage

Developing eco-sustainable technologies to reduce the impact of economic activities at sea

Developing a national and international plan for biosphere restoration