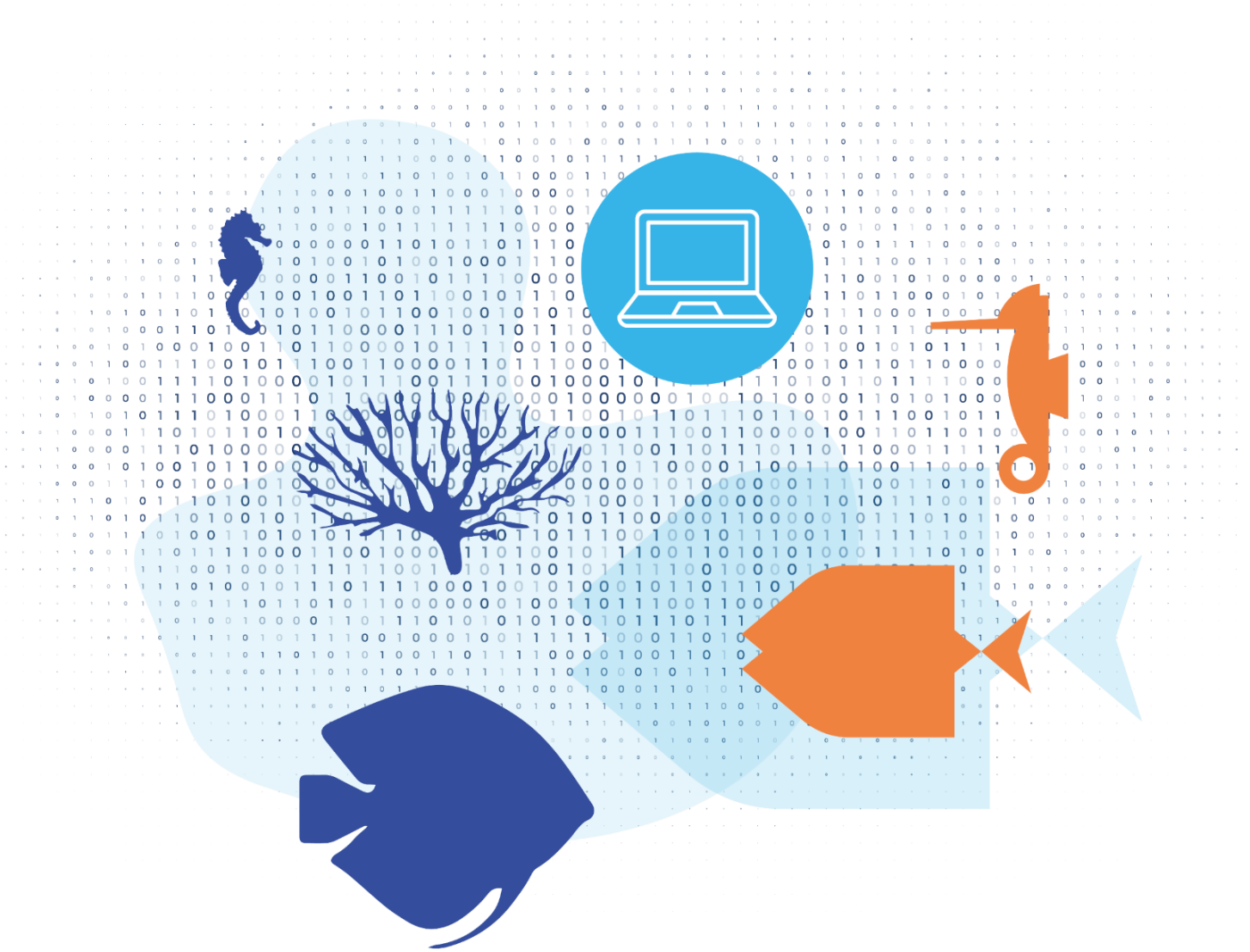
DIGITAL OCEAN FORUM 2024



EU MISSIONS
RESTORE OUR OCEAN & WATERS

EDITO European Digital Twin Ocean
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MERCATOR OCEAN
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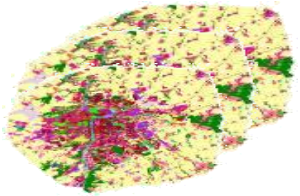
Coastal floods and adaptation in view of climate change

Can we predict and adapt in time against rising seas and changing weather?

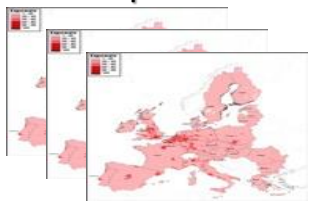
LISCoAsT – Large-scale Coastal Assessment Tool

Socio-economic drivers

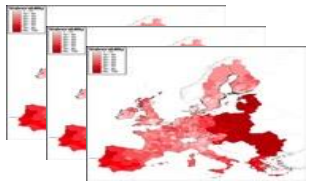
Land Use Scenarios



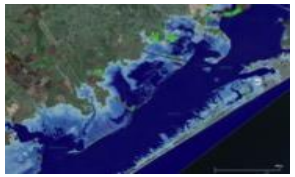
Exposure



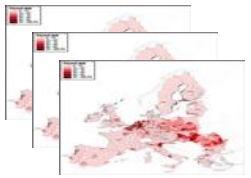
Vulnerability



Hazard

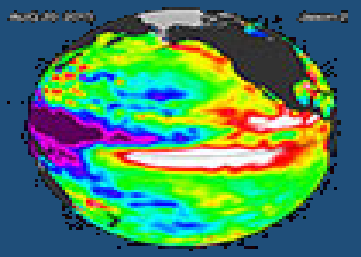


Impact



Adaptation

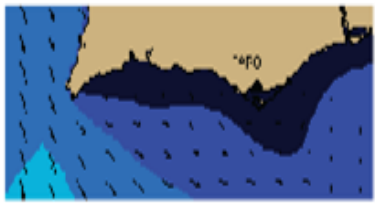
Climate



Weather | Tides | Flooding

Waves | Sea level Rise | Storm surge

Coastal erosion and inundation



Climate change threatens Europe's coasts

NO-ACTION SCENARIO

Global warming is driving sea-level rise and intensifies coastal storms, resulting in more frequent flooding. If no action is taken, coastal flood impacts will be severe.

130 Gt of CO_2eq emissions*

25 Gt of CO_2eq emissions*

MITIGATION AND ADAPTATION SCENARIO

Mitigation means limiting sea level rise by reducing emissions. ***Adaptation*** includes all measures to protect coastal communities through nature-based and engineered physical measures.

year 2100
HIGH EMISSIONS

SEA LEVEL +85 cm
[47 cm – 198 cm]

2.2 million
PEOPLE EXPOSED
per year

239 billion €
ECONOMIC LOSSES
per year

NOW

year 2100
WITH MITIGATION

552 thousand
PEOPLE EXPOSED
per year

12 billion €
ECONOMIC LOSSES
per year

SEA LEVEL +51 cm
[21 cm – 84 cm]

NOW

Raising flood defenses will cost up to 2 billion € per year

100 thousand
PEOPLE EXPOSED
per year in present

1.4 billion €
ECONOMIC LOSSES
per year in present

170-fold increase in economic losses
22-fold increase in exposed population

95% reduction of economic losses
73% fewer people exposed

*CO_2eq is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential (definition from Eurostat).

For more information, including assumptions of the modelling framework used, see: JRC PESETA IV project https://ec.europa.eu/jrc/en/peseta-iv

European Commission

Benefits of joining the EU DTO platform

- Transparency
- Repoducibility
- Easier access for end users
- Resource optimization

Thank you very much!

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