

MAKING SENSE OF THE OCEAN: FROM OBSERVATION TO ACTIONABLE KNOWLEDGE



Citizen Science for our Ocean:

Scuba Schools International (SSI): 10 Million temperature data from divers

Frank Schweikert, German Ocean Foundation, EU Ocean Mission Board

Research and Broadcast Vessel ALDEBARAN

Since 1992

100,000 n. miles – 500 projects – 250 expeditions – 1 mission



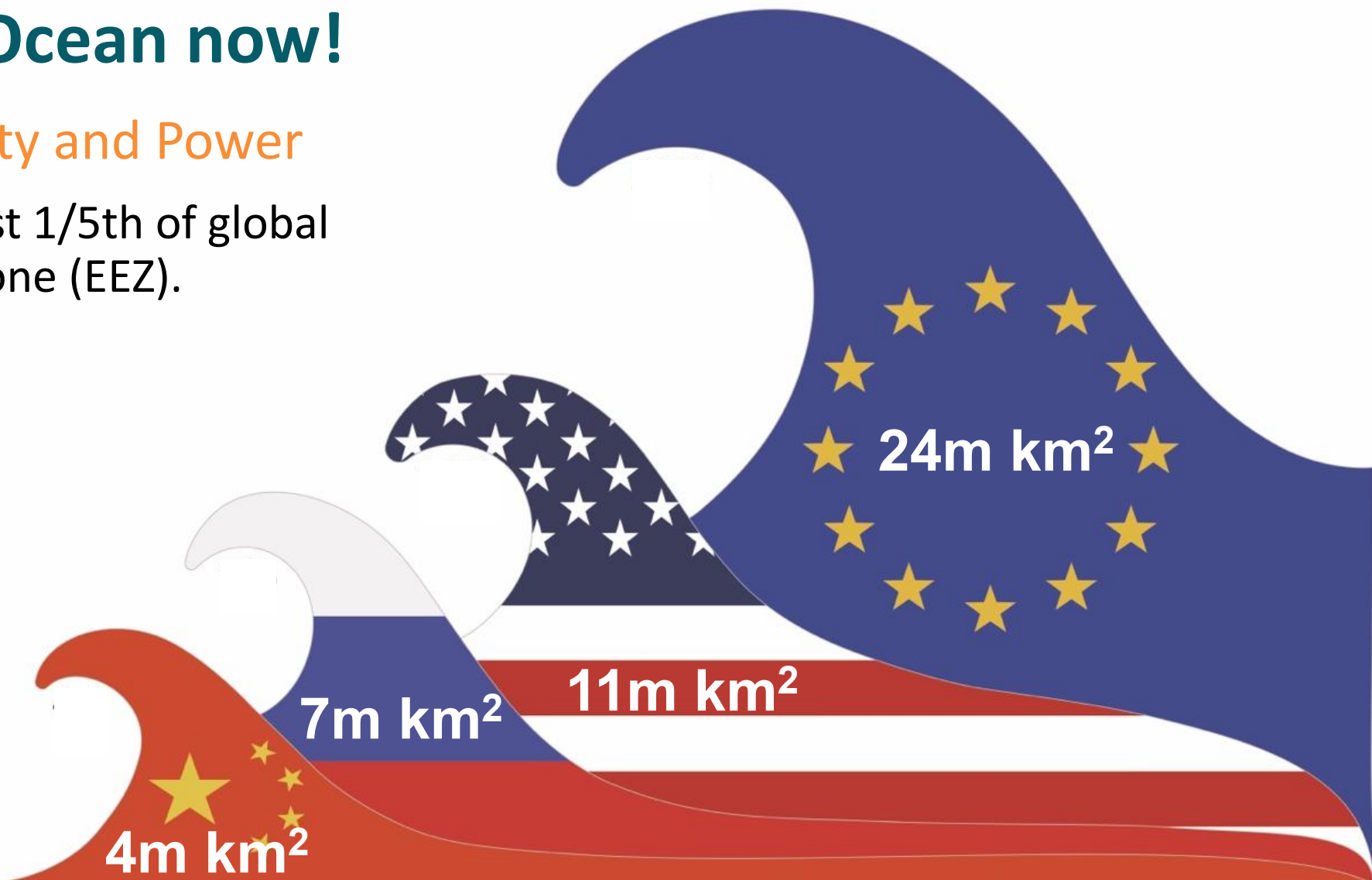
DATA FOR THE
UN OCEAN DECADE
A EUROPEAN FOCUS

**We are in a historically
unique position to make Europe
the global leader for the ocean,
with massive benefits.**

Prioritize the Ocean now!

Geopolitical Security and Power

Europe governs almost 1/5th of global Exclusive Economic Zone (EEZ).



Geopolitical Security and Power



1. Geopolitical Security and Power

90% of global trade crosses the ocean. We govern almost 1/5th of its global Exclusive Economic Zone (EEZ). We have a massive geopolitical advantage.

2. Economic Security and Vision

The Ocean has the biggest untapped economic potential on the planet. A Sustainable Blue Economy of \$3tn is essential to make the EU future-ready.

3. Digital Security and Data Sovereignty

95% of data are routed through submarine cables. Europe must be a leader in ocean observation, AI-enabled forecasting, and dual-use technologies.

4. Energy Security and Autonomy

81% of renewable energies are cheaper than fossil fuels. Offshore wind farming, wave and tidal energy production guarantee a European energy future.

5. Infrastructure Security and Ocean Logistics

Real-time monitoring systems (Copernicus, EMODnet, and Digital Twins) protect from threats to the shipping industry and undersea infrastructure.

6. Food Security and Independence

70% of fishery and aquaculture products are imported to the EU. Sustainable fishing practices are key to increased EU food sovereignty.

7. Climate Stability and Biodiversity

The ocean absorbs 93% of excess planetary heat. Yet, only 10% of the Bloc's EEZs are protected areas. If we protect the ocean, we protect ourselves!

Europe's Action Now



1. Raise Public and Political Awareness

- Integrate ocean literacy into broader digital and economic dialogues.
- Frame Mission Ocean as critical infrastructure for European Progress. Marine investments are not a cost but an opportunity.
- Build on the ocean for your political campaigns.

2. Finance Mission Ocean as a Strategic Security Programme

- Include Mission Ocean in the next Multiannual Financial Framework (MFF).
- Integrate Mission Ocean targets into national security and resilience plans.
- Fund Digital Twin Ocean, Blue Parks, and regenerative basin projects as critical dual-use infrastructure for wide-ranging security guarantees.

3. Activate Transboundary Investment Mechanisms

- Launch crosscutting and transdisciplinary investment projects.
- Establish security innovation-to-implementation pipelines to close gaps.
- Use UNOC, the Blue Economy and Finance Forum, and the Ocean Act to show Europe is united, ambitious, and leading. Speak with one voice!

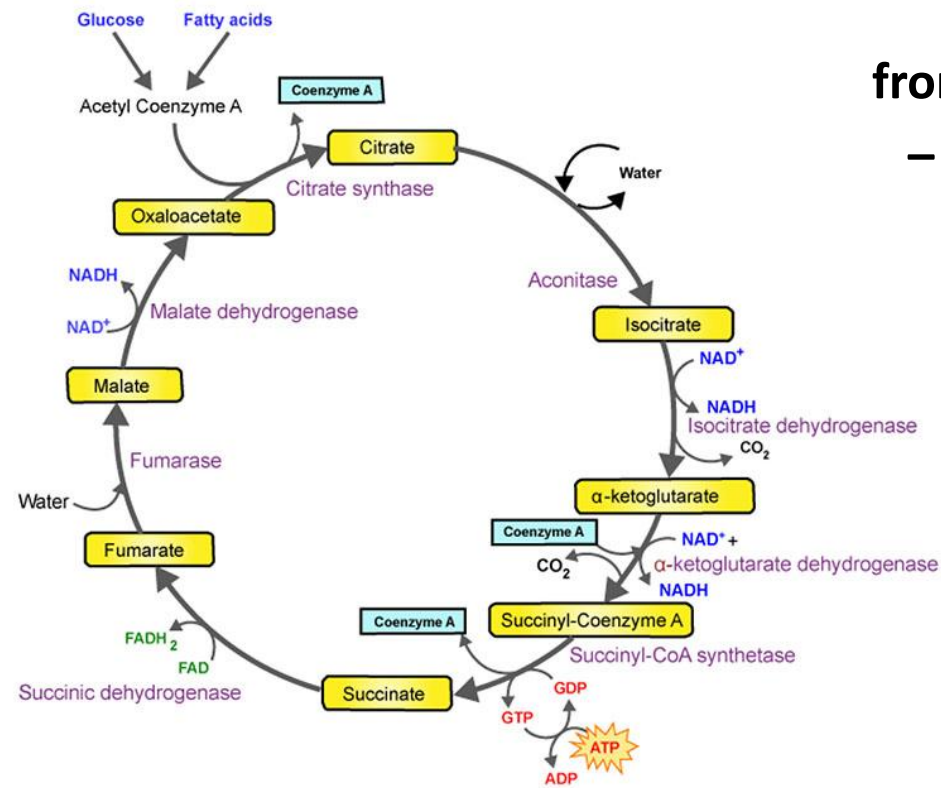
4. Frame the Ocean as Europe's Strategic Advantage

- Highlight the unique scale of Europe's Exclusive Economic Zones.
- Embed Mission Ocean outcomes into Europe's strategic positioning vis-à-vis China, the USA, and the Global South.
- Integrate the Mission's logic in trade, diplomacy, and public financing.

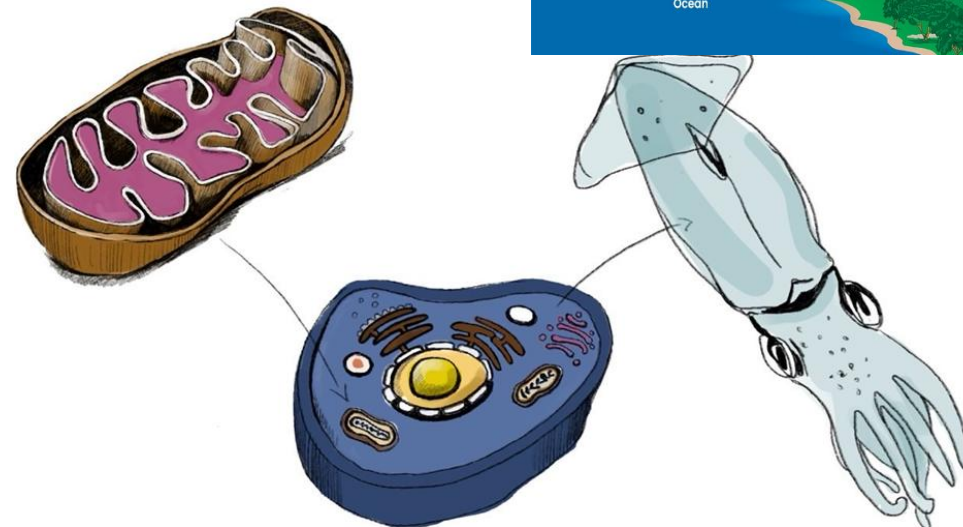
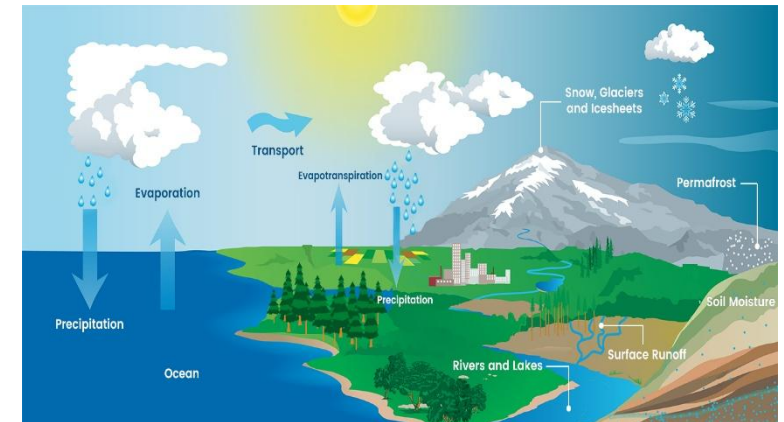
5. Transform Science into Action

- The ocean might be the least-understood ecosystem, but we know more than enough to understand how crucial it is to our survival.
- Fight scientific scepticism and support evidence-based policies.
- Turn Horizon outputs into cross-border infrastructure projects.

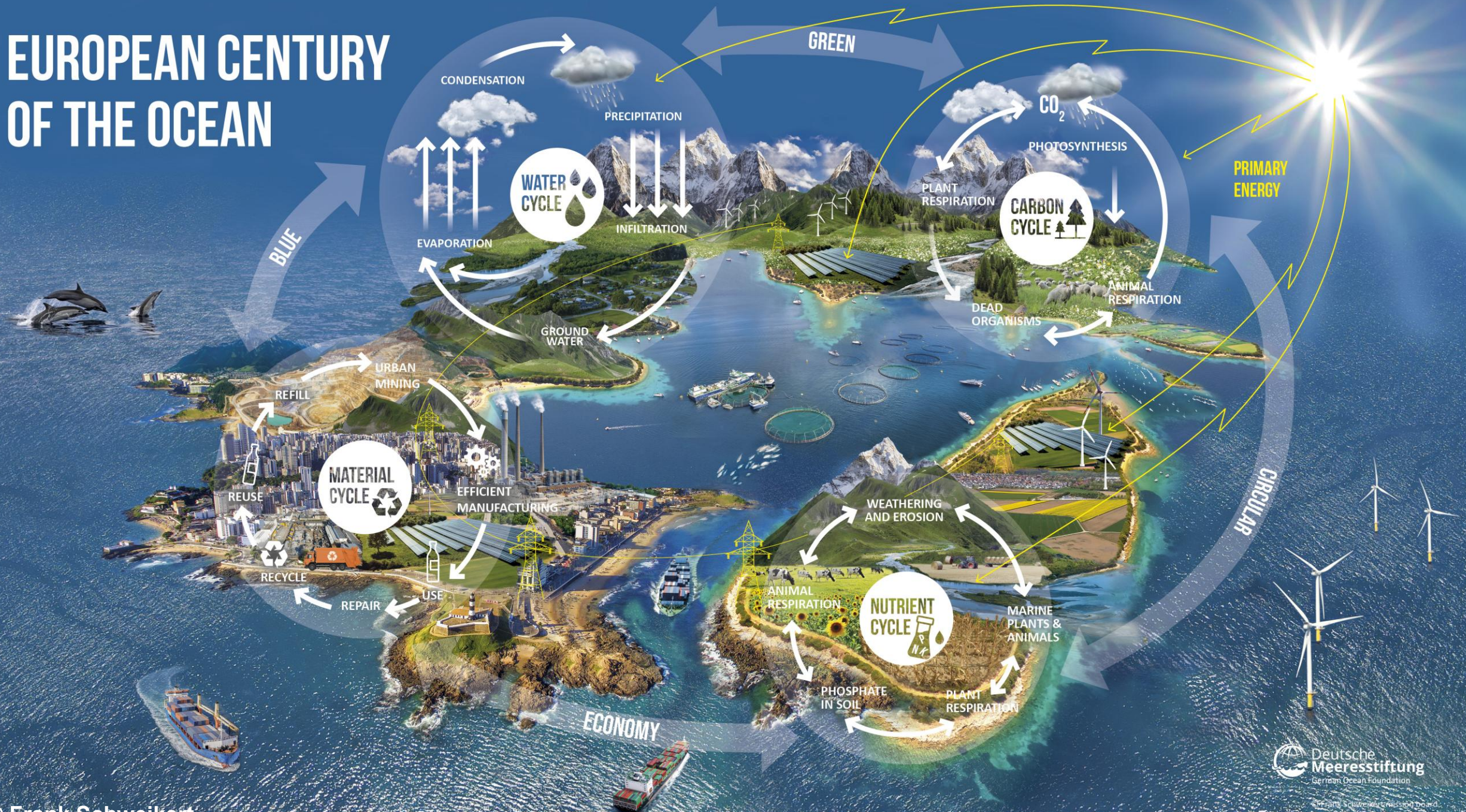
We need a holistic understanding of nature to address our security issues.



from mitochondria
– to cells
– to organisms
– to communities



EUROPEAN CENTURY OF THE OCEAN



The ocean will force us to collaborate. The ocean is a laboratory for humankind.

Elisabeth Mann Borgese –
The First Lady of the Oceans

The ocean as the common heritage of humankind.

- created UNCLOS (United Nations Convention on the Law of the Sea),
- the International Seabed Authority, and the International Ocean Institute (IOI).
- viewed the oceans as a platform for peaceful cooperation between nations.



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Humanity...

We profit from the oceans and use them as a:

Food provider
Fish, algae and bivalves constitute the staples of many people's diets.

Poverty reducer
In many developing countries, fish provides the only affordable source of protein.

Energy and resource supplier
From petroleum to offshore wind farms.

Employer
Up to 12% of all employed people worldwide are dependent on the fishing industry.

Transportation route
Billions of goods are transported across the oceans annually.

Medication provider
Several medications are produced with substances extracted from the ocean.

Oasis of rest and recreation
Beaches and coastal regions are popular recreational and vacation destinations.

How humanity threatens the oceans:



How we can contribute to protecting the oceans:



...and the sea

The oceans' major contributions are as:

Climate regulators
They control the weather in their constant exchange with the atmosphere.

Habitats
They facilitate a balanced biosphere through complex food chains.

Climate protectors
They provide a »buffer action« by absorbing CO₂ and heat from the atmosphere.

Oxygen providers
They convert our CO₂, providing oxygen, among other things.

Stabilisers
They provide stable ecosystems through biodiversity.

Coastal protection
Mangroves protect our coasts from erosion and flooding.

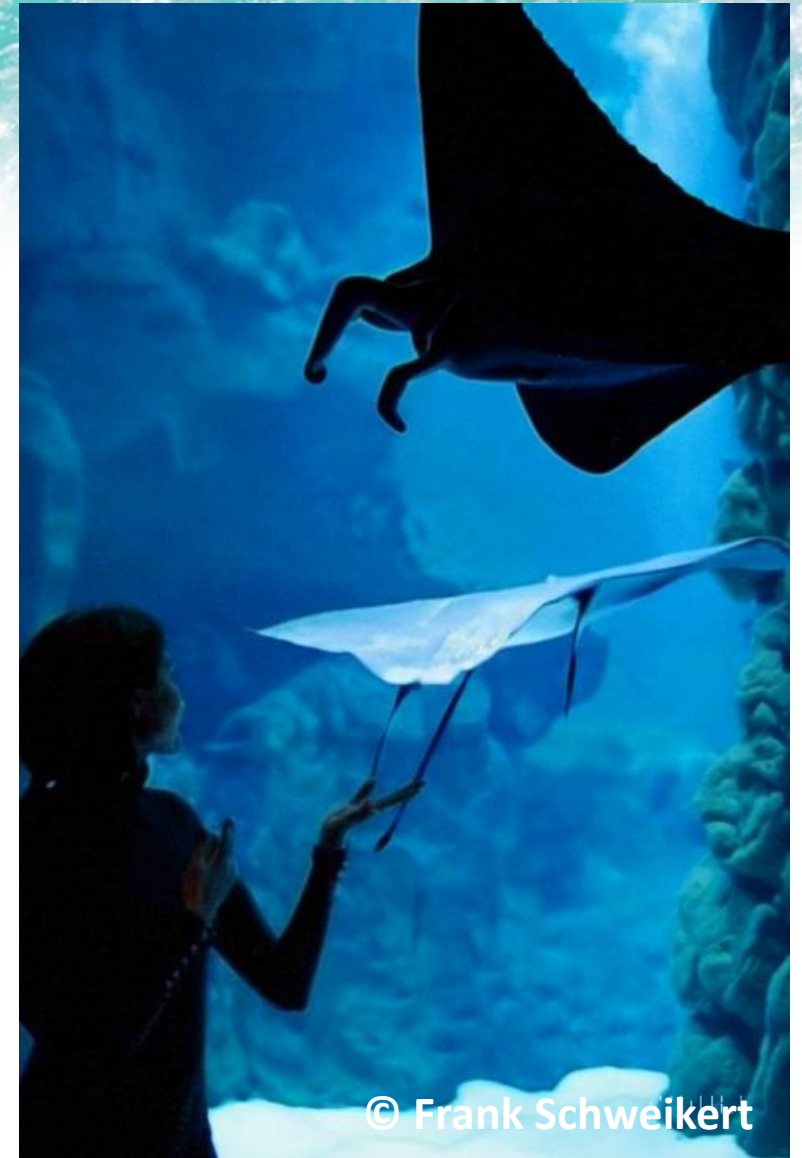
Source: HBS (2017)

The German Ocean Foundation



Mission: create synergies between society, business, science, and politics, for a strong, common voice for our ocean and real action.

For our ocean as a common heritage of humankind, based on scientific knowledge.



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UN Ocean Decade Actions

3 Contributions (until 2030)



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development



ALDEBARAN Media and Research Vessel



Ocean Science Exhibition



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Miniatur Wunderland

UN Ocean Decade Actions

2 Projects (until 2030)



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development

7 Activities (Yearly renewed)



Citizen Science



„love your ocean“



Ocean Lovers Education Initiative



Research at Sea



Ocean Knowledge Base



Ocean Conference Series



German Ocean Festival



Ocean Heroes



YOUMARES Conference

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#EUdata4OceanDecade

Love your ocean sustainability initiative of boot Düsseldorf

Geopolitical Security and Power
Since 2015

- Partners from business, science and society
- Innovations, pioneering projects and products.
- Workshops, hands-on activities and stage program.
- Mecca for sustainability in water sports.
- More than 200.000 visitors.



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#EUdata4OceanDecade

Nation-wide competition „Research at Sea“

Since 2005

- Young researchers experience their own ideas accompanied by an experienced scientist.
- 100 expeditions in North and Baltic Seas .
- Six teams have already been recognized as winners of “Jugend forscht” national contest.



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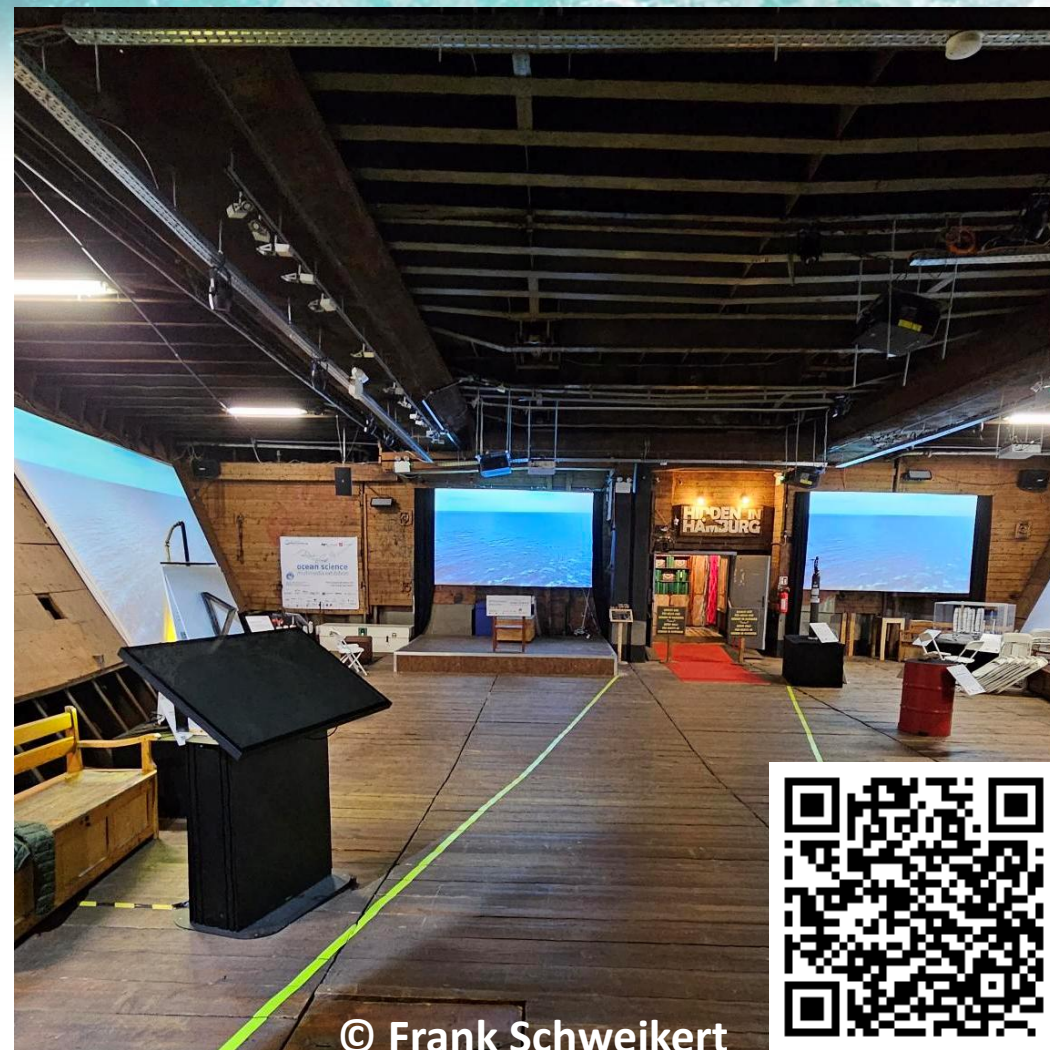




Ocean science exhibition on Cap San Diego

2022-2030

- 13 exhibits (microplastic collectors, underwater satellite..)
- Centerpiece of 17 additional locations Oceanographic Museum of Monaco, (Miniatur Wunderland, Hagenbecks Tierpark, Aquazoo Düsseldorf, 7 SeaLife Center..)
- Driven by solar energy!



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We are in a historically unique position to make Europe the global leader for the ocean, with massive benefits.



Citizen science for our ocean

Since 2025

- Largest citizen science initiative in the world.
- 10 million data points donated by divers
- improves the prediction of climate change and extreme weather events.
- Emotional and content-related link between water sports and science.



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One central map viewer

to visualise all EMODnet data



BATHYMETRY



HUMAN ACTIVITIES



PHYSICS



GEOLOGY



SEABED HABITATS



CHEMISTRY



BIOLOGY

1 OCEAN 1 EMODnet

One single portal

120
partners

One central metadata catalogue

to enhance data search and discovery

+100
use cases

Discover, visualise and
download marine data and products
across 7 thematics and hundreds of parameters



EMODNET.EC.EUROPA.EU



The European Marine Observation and Data Network (EMODnet) is financed by the European Union under regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

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YOUR GATEWAY TO *IN SITU* MARINE DATA IN EUROPE AND BEYOND



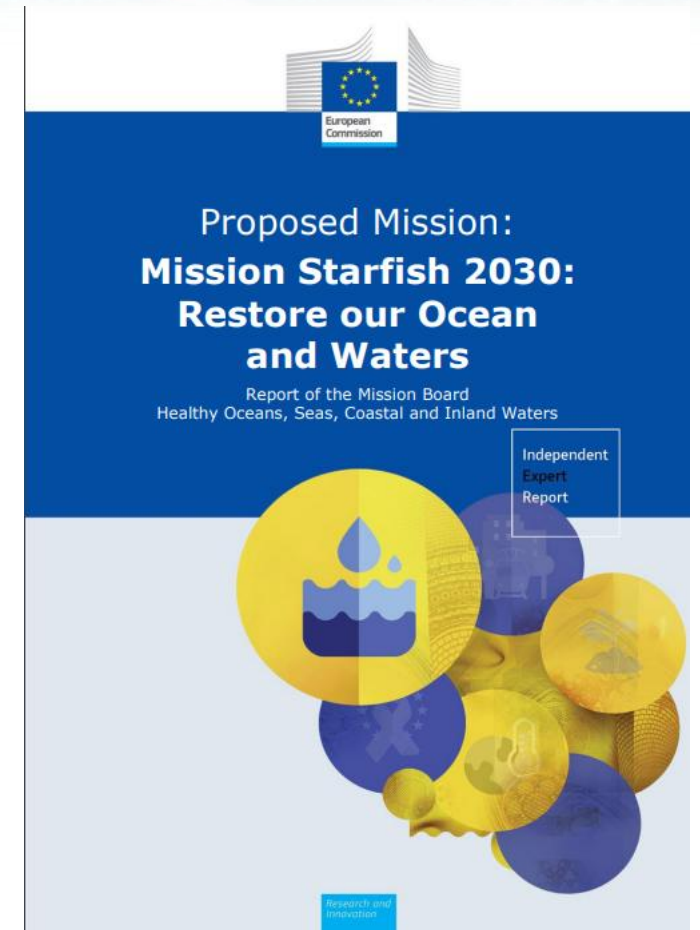
EMODnet: Citizen Science and low-cost sensors

Scuba Divers and more

CALL TO ACTION:

**EU requires 20% of the marine data to come from
citizen science by 2025**

https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/mission-starfish-2030-restore-our-ocean-and-waters_en



German Market Analysis: Watersports Industry Apps

	DSV	Up2Boat	DMYV	ADAC	Navionics Garmin	Windy	Wind- finder	Port Guide - DK	Deutscher Wetter- dienst	Boatpark	Boat24	Boot Düsseldorf	Messe Friedrichs- hafen
Navigation/ Plotter					X								
Electronic Logbook		X	X	X									
Trip Planning		X	X	X	X			X					
Boat Charter			X	X									
Weather Data			X			X	X		X				
Berth Bookings		X	X							X			
Boat Sensors													
Tips & Tricks for Boating	X	X	X										
Association News	X		X										
Networking with Harbor Admin		X	X										
Used Market/Fair Info											X	X	X

Takeaways

- Europe's chance to become the global leader for the ocean.
- We are intrinsically connected to the ocean through cycles and dependencies.
- Urgent need to raise awareness, and “ocean”-act now and engage water sports enthusiasts with citizen science.



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Journalist, Biologist, and Ocean Activist

- Founder and Director of German Ocean Foundation
- Member of EU Mission Board for Oceans and Waters
- Deputy Director of German Society for Marine Research
- Director of German Marine Litter Association
- Founder of Hamburg Climate Week
- Member of the German branch of the Club of Rome
- Member of Committee for Energy and Environment / Hamburg Chamber of Commerce
- Honorary member of Rotary Club Passport ECO Planet D1900



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A satellite with a large solar panel array is shown in orbit over a turbulent, blue-green ocean. The satellite is positioned on the left side of the frame, with its solar panels extended. The ocean below is characterized by white-capped waves and swirling currents, creating a dynamic and textured background. The overall color palette is dominated by various shades of blue and teal, with the orange text providing a strong contrast.

THANK YOU

#EUdata4OceanDecade

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