

SCIENCE OF SURPRISES

OCEAN TECHNOLOGIES

EXTREME EVENTS HAVE IMPACT ON LOCAL ECOSYSTEMS

Extreme events in the ocean are difficult to predict and prevent. Their impact on local ecosystems can be devastating.



HEAT WAVES



FLOODS



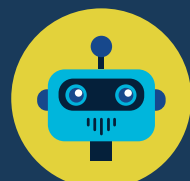
EARTHQUAKES



TSUNAMIS



NEW SENSORS



ARTIFICIAL INTELLIGENCE



DRONES

NOVEL TECHNOLOGIES

FUTURE TRENDS

SMALL CHANGES CAN TRIGGER BIG ONES!

Temperature changes can lead to full ecosystem shifts!



EXTREME EVENTS IMPACT THE MARINE ECOSYSTEM SERVICES

Examples
Changing fishing seasons
Reducing coastal protection

LOTS OF CASUALTIES!

We need to build strategies to take the impacts of extreme events into account!

REAL TIME DATA

All data to be openly available to everyone in real time.



MOBILE



COMPUTER

KEY RECOMMENDATIONS

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OBSERVATIONS IN THE RIGHT PLACE



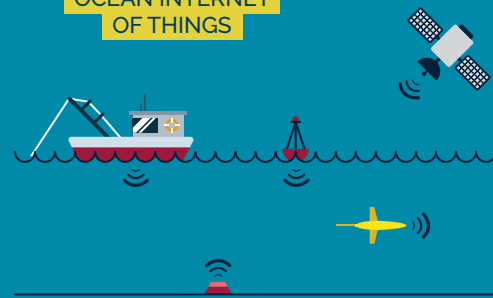
ENHANCED MODELLING AND FORECASTING



IMPROVED EARLY WARNING



OCEAN INTERNET OF THINGS



TOWARDS A DIGITAL OCEAN

In the future virtual reality software for diving into the sea would allow humans to explore the ocean.



Navigating the Future V

Marine science for a sustainable future

 #NFVOcean

 marineboard.eu/navigating-future

European
MARINE BOARD
Advancing Seas & Ocean Science



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A FOUR-DIMENSIONAL AND CONNECTED OCEAN

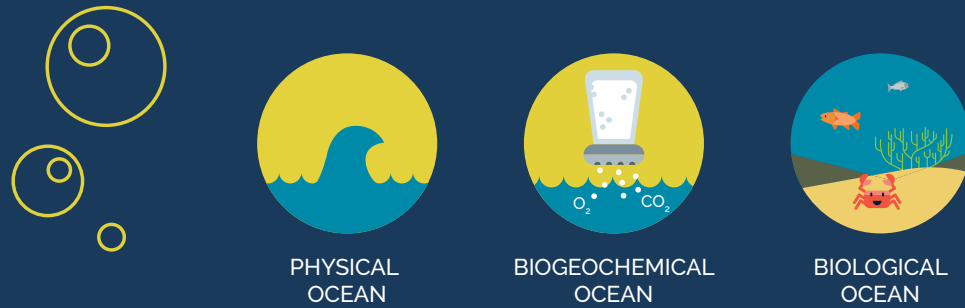
A MULTI-STRESSED AND RAPIDLY CHANGING OCEAN

SUSTAINABILITY SCIENCE FOR THE OCEAN

GLOBAL CHANGE AFFECTS

HUMAN ACTIVITIES HAVE AN IMPACT ON THE OCEAN

WORKING IN SILOS



OVER TIME

OUR EARTH IS CHANGING AND THE IMPACT ON OUR OCEANS IS EVIDENT

WHAT IS SUSTAINABILITY SCIENCE?

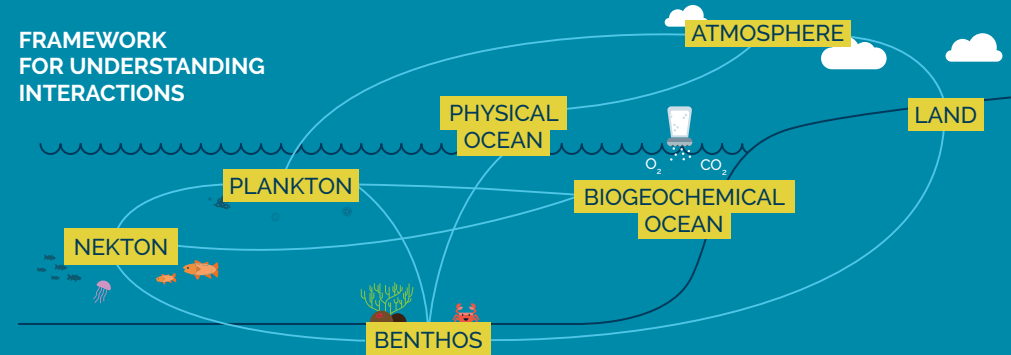


KEY RECOMMENDATIONS

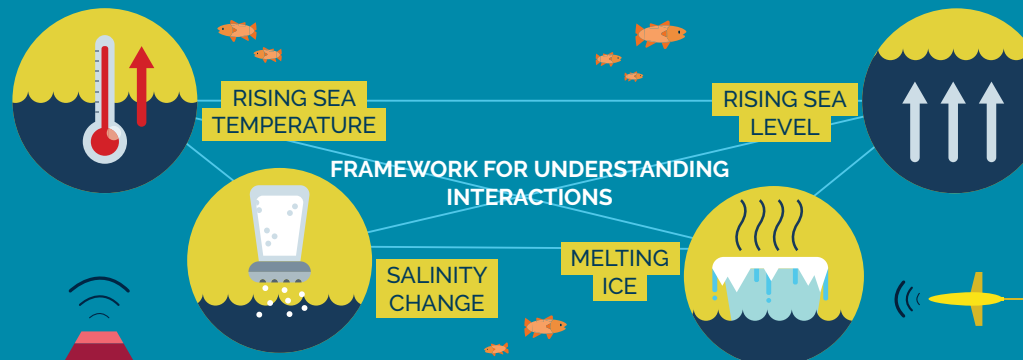
KEY RECOMMENDATIONS

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FRAMEWORK FOR UNDERSTANDING INTERACTIONS



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SUSTAINABILITY AT THE CORE OF MARINE RESEARCH AGENDA

NEW GENERATION OF SUSTAINABILITY SCIENTISTS

ESTABLISH MARINE SUSTAINABILITY FORUM

