Discover SEADOTs

Pioneering Solutions for Sustainable Ocean Management

The SEADOTs project is advancing the concept of holistic ocean management by integrating social ecologica data into Digital Ocean Twins (DOTs). This innovative approach provides policymakers, scientists, and industries with the tools **to visualize, predict, and manage** the intricate interactions between human activities and marine ecosystems.

Key Objectives

Apply predictive models that account for human impact on marine environments.

Demonstrate actionable, scenario-based applications in the North Sea and Baltic Sea regions.

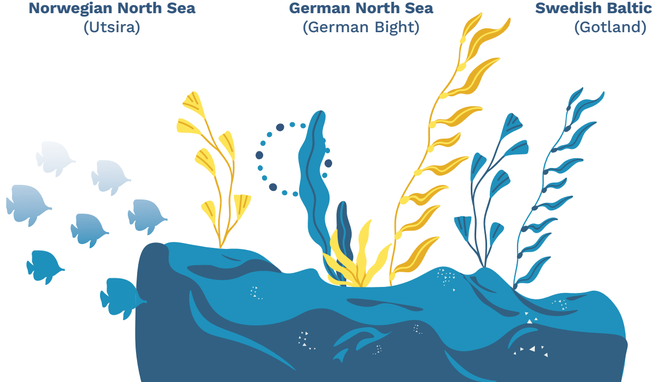
Foster sustainable ocean use while safeguarding marine biodiversity and promoting economic growth.

Target Regions

Norwegian North Sea
(Utsira)

German North Sea
(German Bight)

Swedish Baltic Sea
(Gotland)



Looking Ahead

SEADOTs is more than just a research project—it is a part of the Mission toward a sustainable future for our oceans. By building on partnerships, fostering innovation, and promoting cross-disciplinary collaboration, SEADOTs is paving the way for a new era of ocean governance. We invite policymakers, marine industries, researchers, and the public to join us on this journey.

Get involved

Stay connected. Visit our website or follow us on social media to learn more about our progress, events, and findings.

- seadots-project.eu
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Consortium Partners

SEADOTs unites a consortium of **9 partners from 8 countries**, blending expertise from leading research institutions, universities, and innovative companies. Together, they drive the project's mission to develop sustainable ocean management solutions using cutting-edge Digital Ocean Twin technology.

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Socio-Ecological Ocean Management Applications using Digital Ocean Twins

Empowering Sustainable Ocean Governance Through Digital Innovation

Welcome to the SEADOTs Project, where advanced technology meets environmental stewardship.

Social-**E**cological Ocean Management **A**pplications using **D**igital **O**cean **T**wins aims to revolutionize the way we manage ocean ecosystems by merging socio-ecological and socio-economic data with loose modern **Digital Ocean Twins** (DOTs).

Why SEADOTs Matters - A Holistic Approach

Bringing Together Science, Technology, and Communities

The SEADOTs project is advancing the concept of holistic ocean management by integrating social-ecological data into **Digital Ocean Twins (DOTs)**. This innovative approach provides policymakers, scientists, and industries with the tools to **visualize, predict, and manage** the intricate interactions between human activities and marine ecosystems.

Our oceans are the backbone of global ecosystems, **providing food, energy, and transport** while facing numerous threats such as climate change, pollution, and resource exploitation. Addressing these complex challenges requires an integrated, data-driven approach.

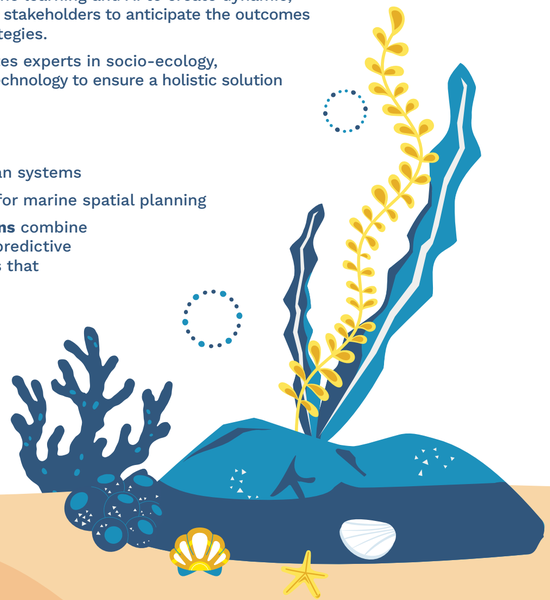
SEADOTs is built on the foundation of **Digital Ocean Twins (DOTs)**, which combine real-time data with advanced models to simulate ocean systems. What sets SEADOTs apart is its ability to incorporate social-ecological and socio-economic factors into these virtual models, providing a more complete picture of ocean health and human impacts.

SEADOTs integrates Elinor Ostrom's principles of participatory governance, tailored rules, and adaptive management into its Digital Ocean Twins, **fostering equitable and sustainable management** of shared marine resources.

- **Innovation:** We utilize machine learning and AI to create dynamic, 'what-if' scenarios that allow stakeholders to anticipate the outcomes of various management strategies.
- **Collaboration:** SEADOTs unites experts in socio-ecology, socio-economics, and data technology to ensure a holistic solution

Core Benefits

- **Enhance** simulations of ocean systems
- **Enhanced decision-making** for marine spatial planning
- **SEADOTs' Digital Ocean Twins** combine social-ecological data with predictive models to support decisions that balance economic growth with marine conservation.



Our Vision for the Future

Building a Digital Future for Ocean Sustainability

In SEADOTs, we envision a future where Digital Ocean Twins become essential tools for safeguarding the ocean's health while balancing human activities. Our mission is to support decision-makers at all levels—from local communities to international policy bodies—by providing a comprehensive understanding of marine ecosystems.

SEADOTs Vision

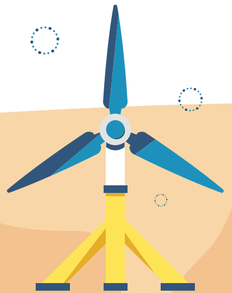
- To **empower stakeholders** to make informed decisions based on accurate, real-time data and simulations.
- To **ensure long-term sustainability** of marine resources while enhancing social and economic well-being.

SEADOTs Impact: A Blueprint for Sustainable Ocean Governance

Shaping Policy, Empowering Communities

What are SEADOTs Goals and Future Impact:

- **Policy Influence:** SEADOTs will deliver tools and models that directly inform EU-level marine governance, helping policymakers create balanced, effective strategies for ocean resource management.
- **Sustainability Gains:** By combining social and ecological data, SEADOTs will provide insights into how human activities can coexist with marine conservation, ensuring that future ocean use remains sustainable and resilient.
- **Technological Innovation:** SEADOTs will enhance the capabilities of the EU Digital Twin Ocean framework by integrating advanced socio-economic models, allowing for holistic assessments in marine spatial planning.



Real-World Applications: SEADOTs Demonstrators

Shaping the Future of Ocean Management

Norwegian North Sea Case

Focusing on Utsira, this pilot studies the social-ecological effects of offshore windfarm development on this small island community.

By integrating social data streams, we aim to harmonize renewable energy development with local community well-being and ecosystem preservation.

German North Sea Case

Exploring the coexistence of offshore wind farms, fisheries, and lower-trophic aquaculture in one of Europe's most intensively used marine regions.

SEADOTs will investigate economic and social benefits from coexistence in the ocean space.

Swedish Baltic Sea Case

In the Baltic Case, SEADOTs will develop an agent-based model to assist as a decision-support tool to manage socio-economic trade-offs of using ocean space for fisheries and wind farms under various what-if scenarios, including effects of climate change.