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From Observation to Impact:
Co-created tools emphasize the role of data management in global biodiversity observing systems

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DATOS VIVOS 2025

UPPSALA UNIVERSITET

OBIS OCEAN BIODIVERSITY INFORMATION SYSTEM

unesco Intergovernmental Oceanographic Commission

IODE International Oceanographic Data and Information Exchange

BioEco cean

Ocean observations are fundamental to society

No **one** country can observe the ocean effectively on its own

Towards a more integrated Ocean observing system

OBIS
OCEAN BIODIVERSITY INFORMATION SYSTEM

GOOS
Global Ocean Observing System

How?

Global Ocean Observing System

- Identification of 36 GOOS **Essential Ocean Variables (EOVs)** by ocean experts
- Development of **EOV Specification sheets**

OBIS
OCEAN BIODIVERSITY INFORMATION SYSTEM

- Makes marine biodiversity **data accessible and interoperable**
- Standardize, quality control and integrate marine biodiversity & EOV (meta)data

BioEcOcean

OBIS
OCEAN BIODIVERSITY INFORMATION SYSTEM

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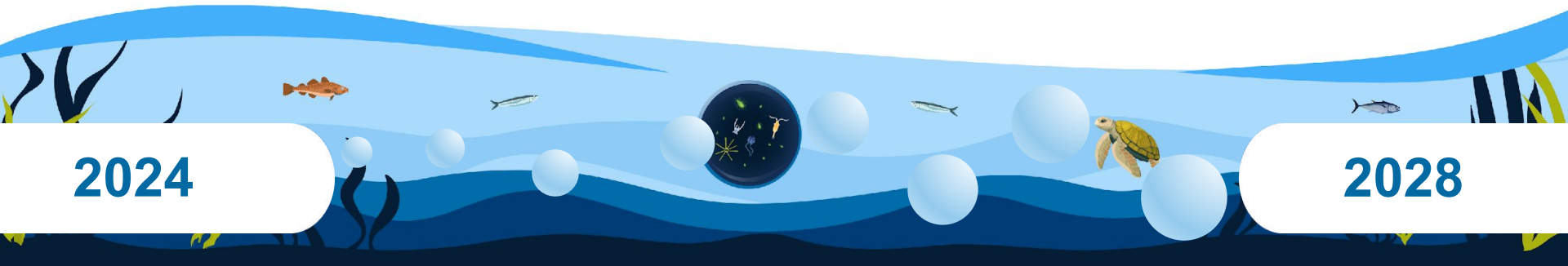
Objectives

- Enhance BioEco ocean observing capacity
- Increase utility of ocean observations
- Accelerate and improve BioEco EOV implementation
- Co-create a **Blueprint for Integrated Ocean Science**



2024 — **2028**

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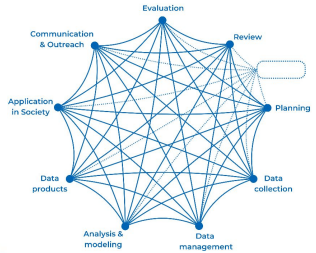
What is the Blueprint?

- Question-based **“support tool”**
- To spark and encourage **collaboration**
- **Communication** support across sectors
- Identifies areas where collaboration is advantageous
- Enable future visions with more **integrated approaches**

BLUEPRINT	SUPPORTING RESOURCES	LEARNING RESOURCES
Document Workflow Guiding questions Quick start	Case studies EOV spec sheets Vocabularies	Instruction videos Teacher materials

Blueprint Platform & Resources



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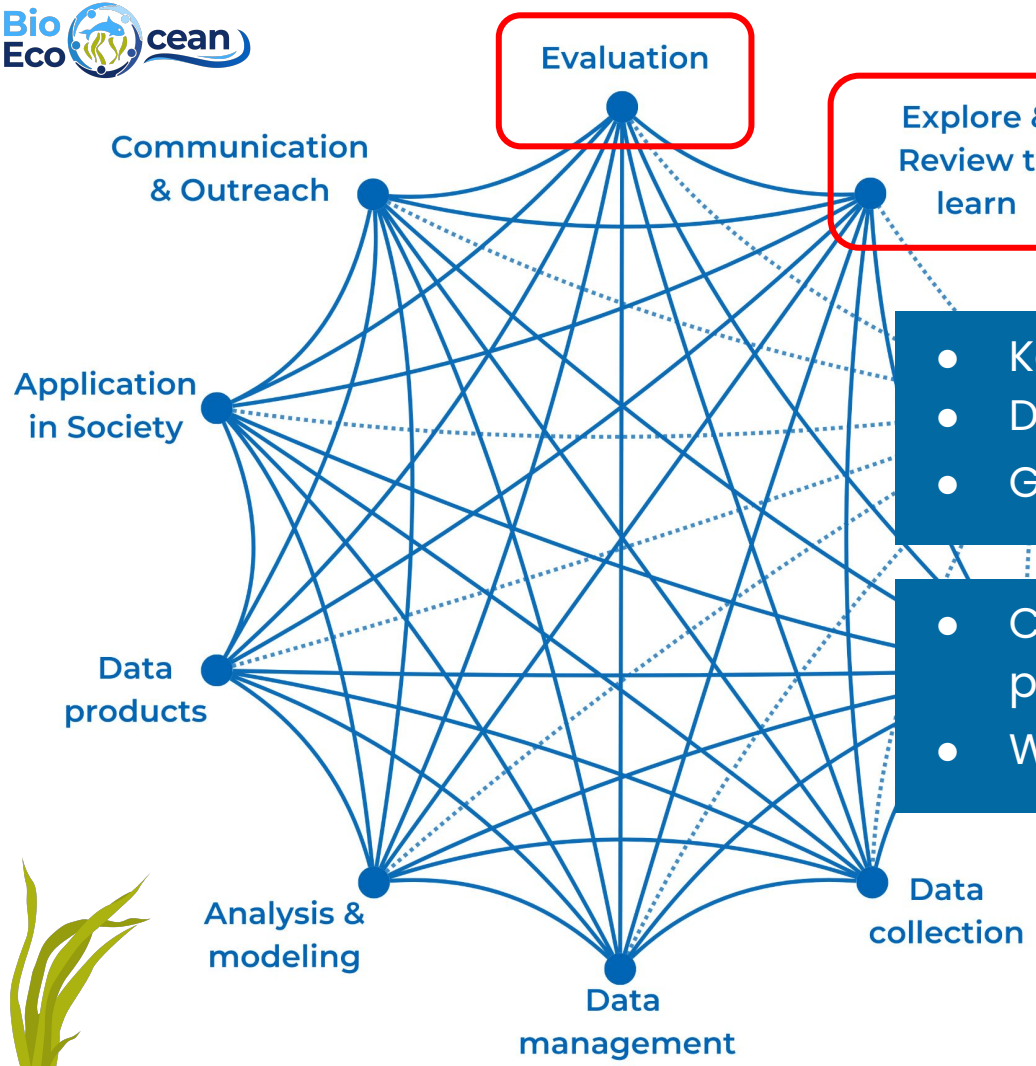
Applying OBIS Data to the Blueprint



- Key metrics to track effectiveness?
- Diverse perspective included?
- Goals achieved?

- Changes to data management Best practices?
- Where are gaps in data?

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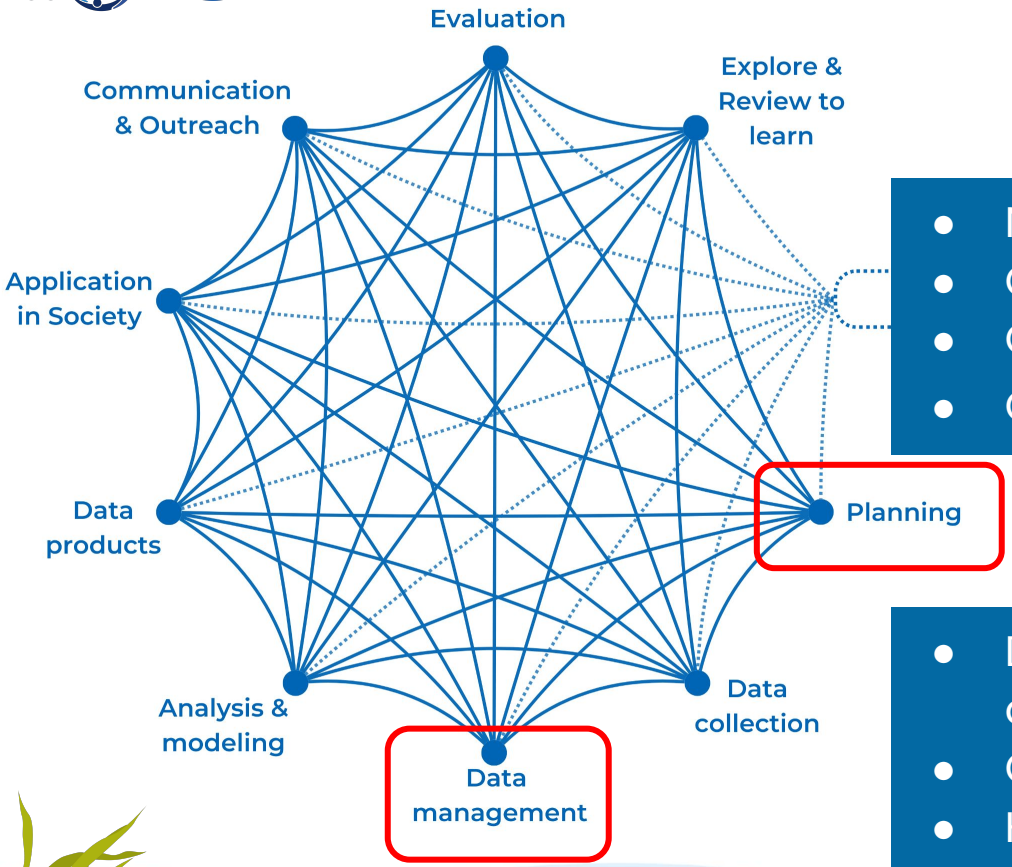
Applying OBIS Data to the Blueprint



- New technologies to be implemented?
- Changes in data standards?
- Collaborations to strengthen?
- Clearly delineated objectives?

- Data management practices clearly outlined?
- Current infrastructure up to date?
- How are backups implemented?

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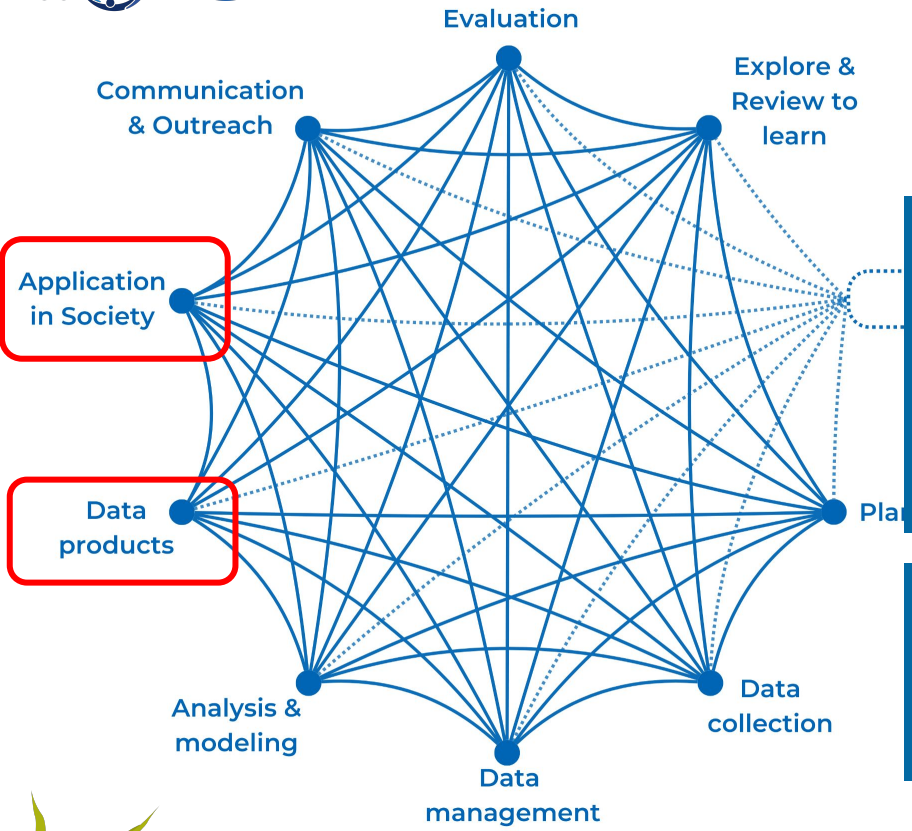
Applying OBIS Data to the Blueprint



- Indicators?
- Community wants/needs?
- Products appropriately understandable?
- Is uncertainty communicated?

- Are we meeting societal needs?
- How can we (better) integrate with decision-makers?

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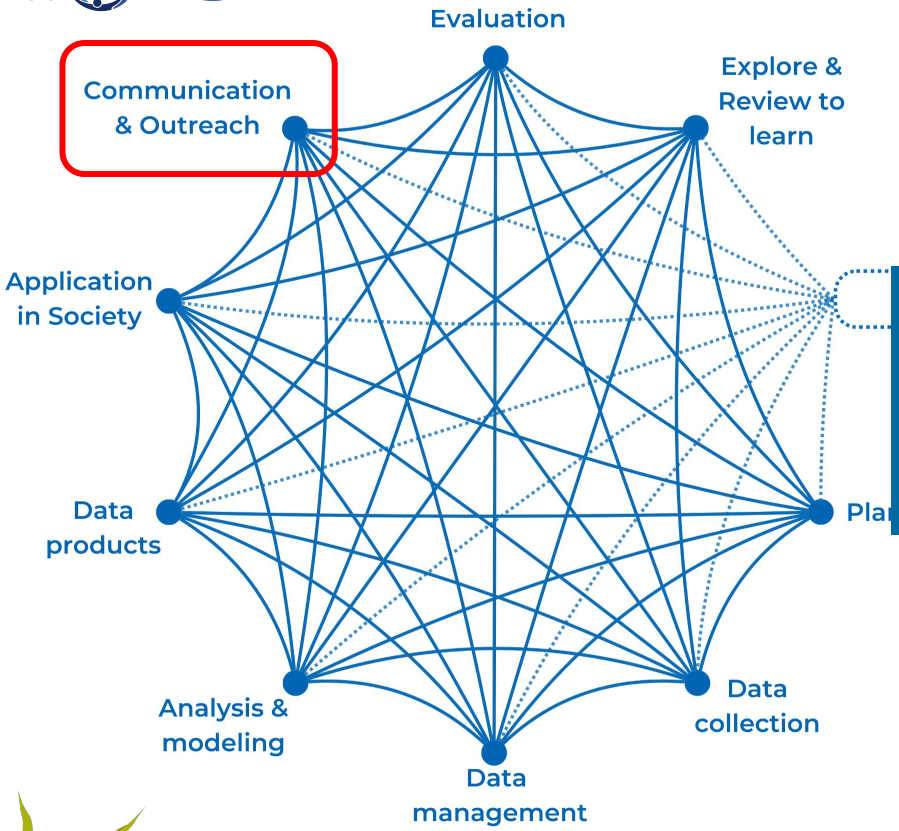
Applying OBIS Data to the Blueprint



- Reaching target audience(s)?
- How can we track communication efficiency?
- Audience language(s)?

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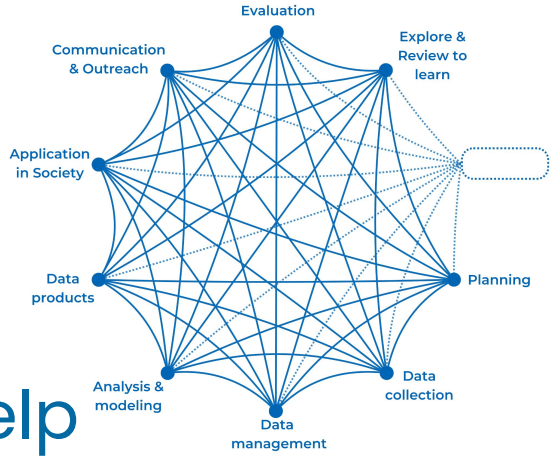
Summary



- **Data management** is critical for turning observations into action
  - OBIS & GOOS lead data workflows
- **Holistic, reflective thinking** can help design & strengthen ocean observing systems
- Blueprint is **co-created**
  - See **bioecoocean.org** for collaboration opportunities

BioEcOcean

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Partners

UPPSALA UNIVERSITET

DTU

EuroGOOS
European Global Ocean Observing System

UNIVERSITÀ DI PISA

unesco
Intergovernmental Oceanographic Commission

ciimar
Centro Interdisciplinar de Investigação Marinha e Ambiental

Institute of Oceanology Polish Academy of Sciences

MERCATOR OCEAN INTERNATIONAL

AIR CENTRE

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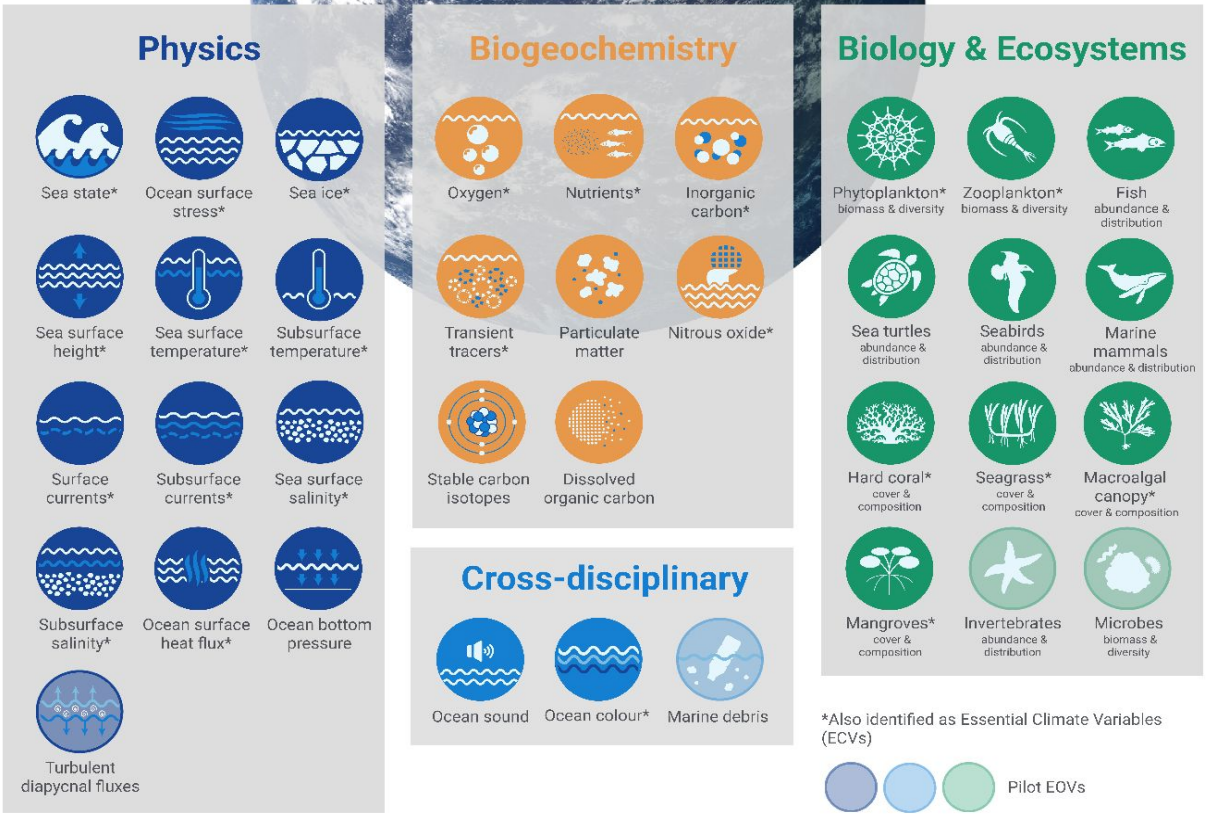

Unify data collection methodologies and data sharing practices

Comparable observations

Improved understanding of ocean processes

Informed decision-making

THE LAW OF THE SEA

Convention on Biological Diversity

36 Essential Ocean Variables (EOVs)

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We need **coordination** and **interoperability**

but *how*?

…more consistent communication and collaboration among sectors and stakeholders

BLUEPRINT

Document
Workflow
Guiding questions
Quick start

SUPPORTING RESOURCES

Case studies
EOV spec sheets
Vocabularies

LEARNING RESOURCES

Instruction videos
Teacher materials

Blueprint Platform & Resources

Global Ocean Observing System

OBIS
OCEAN BIODIVERSITY INFORMATION SYSTEM

Leading the ocean observing community

Together:

- **Support & connect** a community of ocean observing community partners
- Ensure ocean data is turned into actionable information
- Promote **best practices, data and metadata standards**

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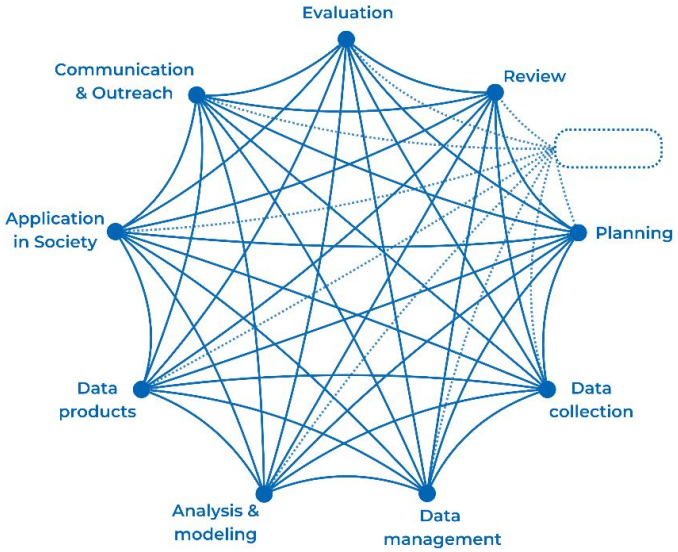
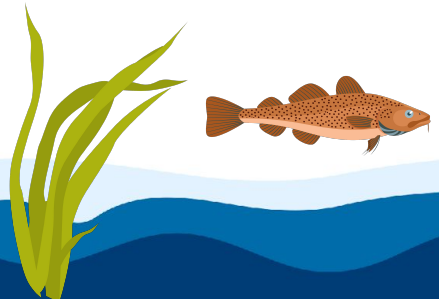
Building on and connecting

Co-creative approach useful in identifying and realising challenges in the workflow and creating new, more effective solutions and pathways





Leading the ocean observing community

Ecosystem of providers
Observation infrastructure

Ocean observing community & partners

Global Ocean Observing System

Global Ocean Observing System

GOOS management and system

Beneficiaries of ocean information

WORLD METEOROLOGICAL ORGANIZATION
UNEP
SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015-2030
Convention on Biological Diversity
United Nations Climate Change

Research, Policy, Users, Investors

Strategic Alliance

GOOS

Biology and Ecosystems Panel

OBJECTIVE:
Develop and implement a coordinated, sustained, and integrated ocean observing system.

DATA FOCUS:
Essential Ocean Variables (EOVs)

DATA FOCUS:
Essential Biodiversity Variables (EBVs)

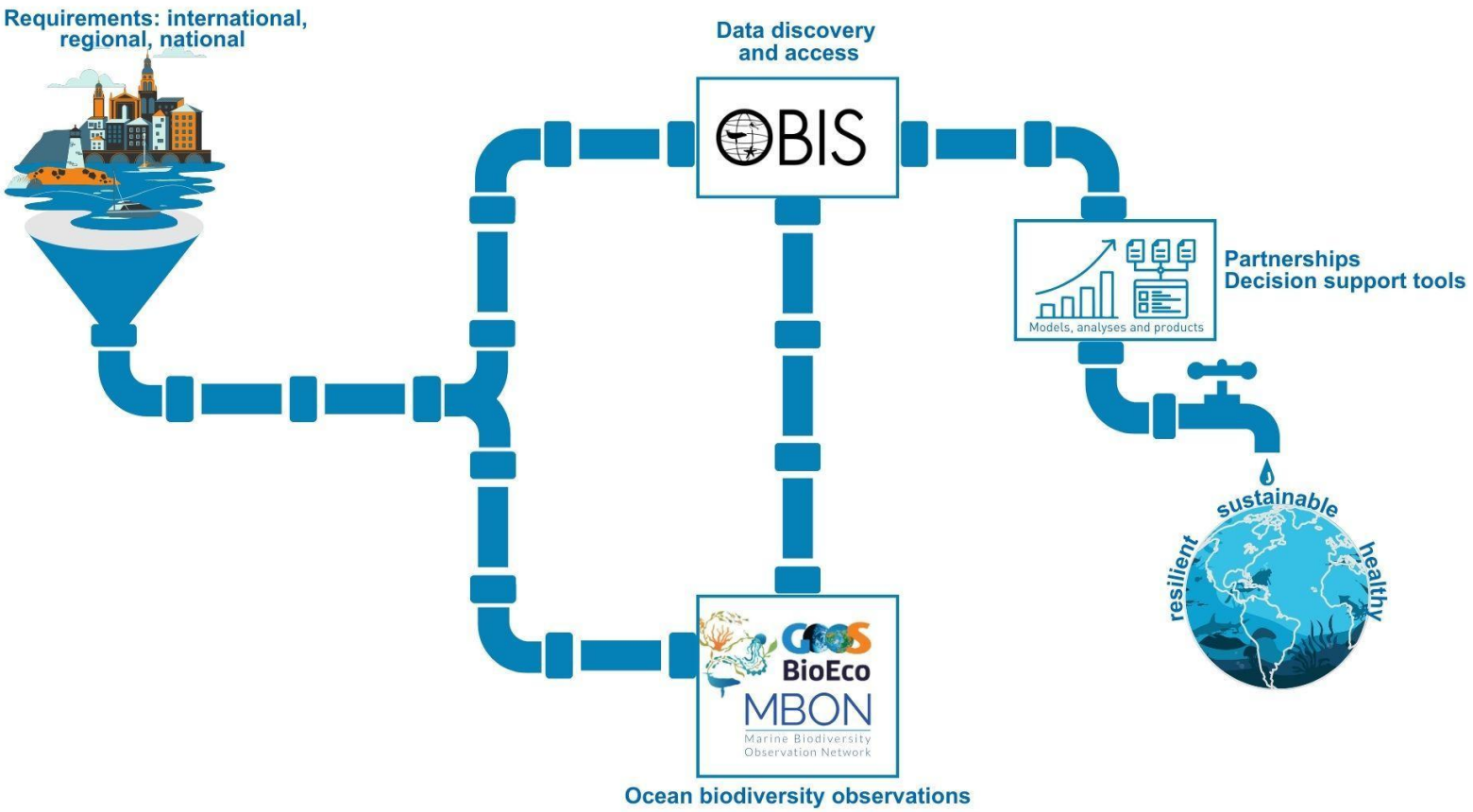
MBON
Marine Biodiversity Observation Network

OBJECTIVE:
Establish a global, standardized approach to monitoring marine biodiversity.

Other examples

OBIS
OCEAN BIODIVERSITY INFORMATION SYSTEM

OBJECTIVE:
Collect, curate, and provide access to data on marine species and their distribution, supporting a wide range of research and policy initiatives.

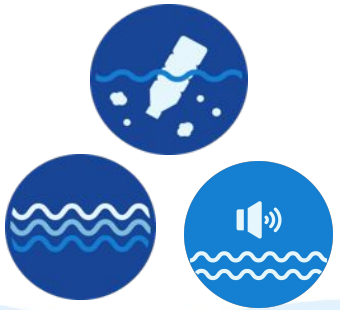

Requirements: international, regional, national
Data discovery and access
OBIS
Models, analyses and products
Partnerships
Decision support tools
sustainable
resilient
healthy
GOOS
BioEco
MBON
Marine Biodiversity Observation Network
Ocean biodiversity observations

Funded by the European Union

Key Project Objectives

Accelerate and improve the implementation and usage of EOVs for biology and ecosystems, while ensuring seamless interoperability with Essential Climate and Biodiversity Variables (ECVs and EBVs), to drive progress towards global biodiversity, ecosystem and climate assessments.

GOOS Biology and Ecosystems Panel



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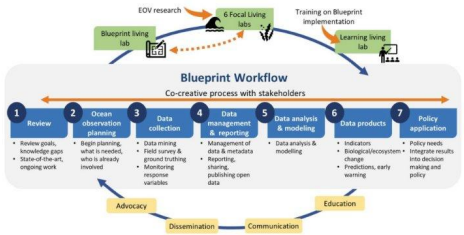
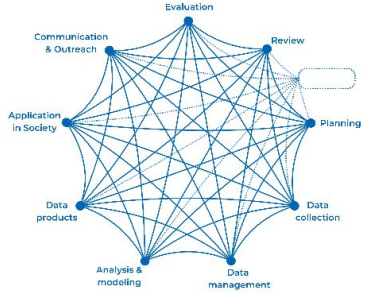
Key Project Objectives

Co-create a comprehensive, fit-for-purpose, and inclusive Blueprint for Integrated Ocean Science (BIOS) that promotes a holistic approach, fosters effective communication and collaboration among stakeholders and sectors, and enables interoperability.





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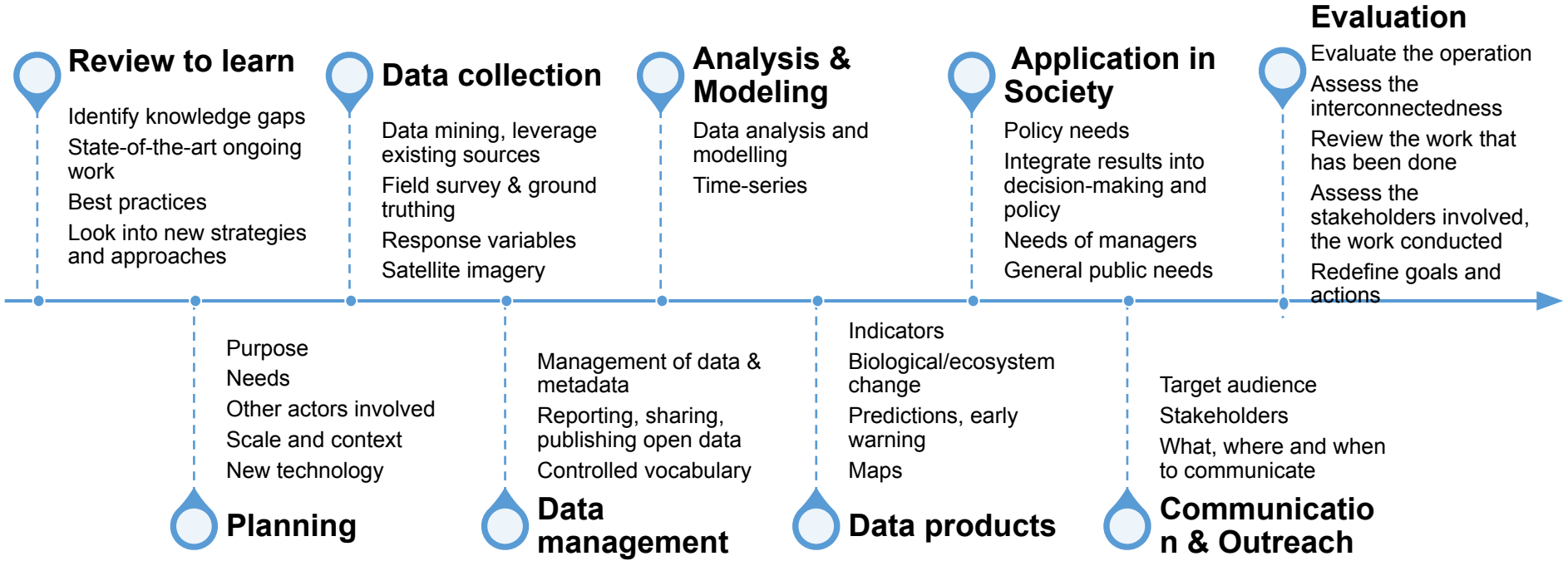
The Blueprint components



Bio Eco cean

IH
Ocean InfoHub

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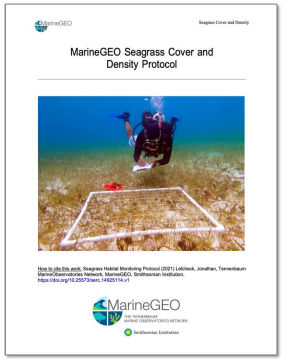
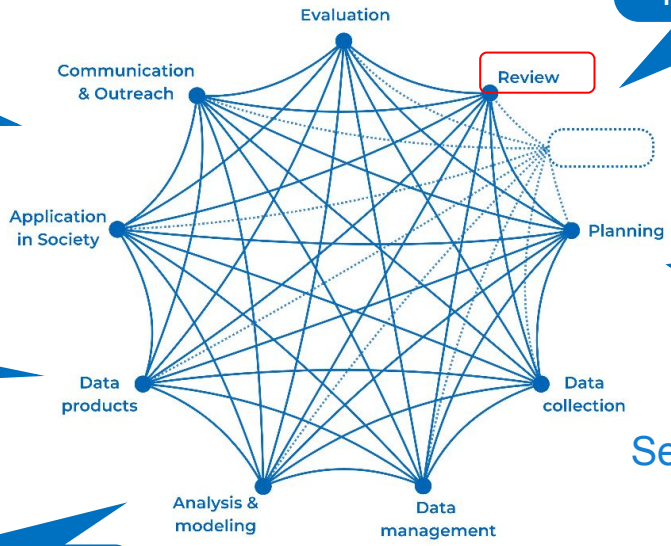
Are we getting the info we need?

Best practices
Drivers of change
New technologies

Standardized protocols



Needs of managers, policy?
Global assessments

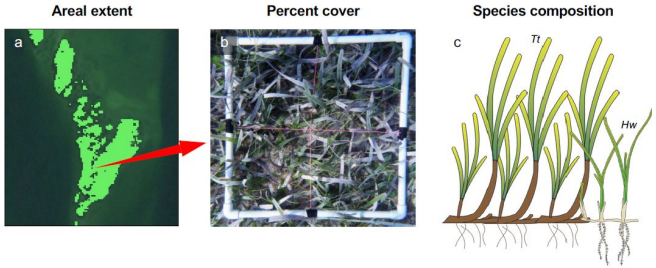


Who else?
When?
Where?

Distribution maps
Maps with cover change

Time series analysis?
Change in cover?

Seagrass EOV + other variables



Where? Standards?

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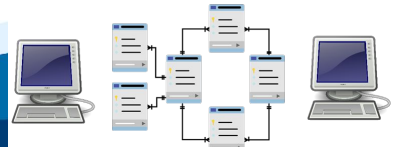

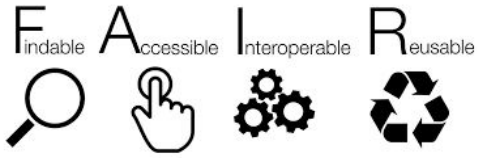

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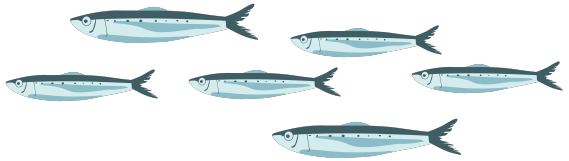
How to participate in the co-creative process?



- BioEcoOcean website
  - Find the most up-to-date version of the Blueprint
  - Feedback forms
  - Surveys
  - Upcoming workshops etc.

bioecoocean.org

- Possibility to be a Blueprint tester