SAIHC20

GEBCO-SB2030

Agenda item 10.3

SAIHC20, Kisumu Kenya 17-19 September 2024

IHO

International Hydrographic Organization

Highlights

1. New GEBCO Strategy
2. GEBCO Governance Review
3. Celebration 120-year anniversary
4. Ocean Mapping focus at Barcelona April 2024 + Nice June 2025
5. SB2030
6. Sub-Committee highlights
7. GGC41 in Fiji, jointly with SB2030 Pacific RDACC

IHO

International Hydrographic Organization

New GEBCO strategy, endorsed by IHO + IOC

Vision:

To bring knowledge about our planet's seabed to everyone

Mission:

To produce free, open and complete seabed data and information for the world's oceans.

This is achieved by enabling and inspiring seabed mapping efforts through international collaboration, technological innovation, capacity development, and education.

International Hydrographic Organization

GEBCO Governance Review, endorsed by IHO + IOC

SCOPE

- Mapping of GEBCO organizational and functional structure, detailing the nature of any relationships, reporting lines, obligations or liabilities;
- Review of the legal structure and framework with a statement on the current and recommended future status (if change is deemed necessary);
- Review of financial arrangements with a statement on the current and recommended future status (if change is deemed necessary);
- A gap analysis of the current governance instruments (e.g. MoUs, ToRs etc.);

GGC has started to organize implementation (if + how + priority) of both strategy and governance review

IHO

International Hydrographic Organization

Ocean Mapping focus

…is increasing as more people from different disciplines, countries and decision levels are becoming more aware of the relationship between seabed knowledge and:

1. Improved climate modelling
2. Marine biodiversity discovery and monitoring
3. Offshore wind planning process

- UN Ocean Decade conference Barcelona April 2024
- UN Ocean Conference Nice June 2025
- New IOC Executive Secretary

International Hydrographic Organization

REVIEW OF USER REQUIREMENTS AND CONTRIBUTIONS TO GEBCO PRODUCTS 2024

- 63 responses from 38 countries
- Highly supportive of GEBCO, 90% valuing GEBCO gridded bathy sets, 70% GEBCO web-service, >60% undersea feature names + Cap. Dev. aspects of GEBCO
- Request for higher resolution products
- Interest in expanding scope of GEBCO products
- Request for greater choice of file formats, including better visualization tools
- Request for an international seabed data users group

IHO

International Hydrographic Organization

Highlights GEBCO Sub-Committees

- Improved cooperation / harmonization between SC's, work from new strategy
- SCUFN: max 25 naming proposals per country per year, max 250 total, South China Sea no-og area for undersea feature naming
- TSCOM: work on improving availability, discoverability and accessibility of bathymetric data
- SCRUM: Supporting regional CSB/SB2030 coordinators
- SCOPE: new tasks and comms strategy under development
- SCET: Identify relevant institutions that provide ocean mapping and oceanography courses, work in progress.

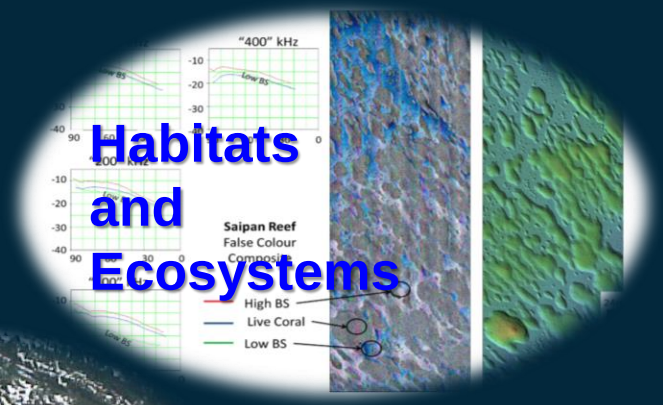
THE NIPPON FOUNDATION-GEBCO
SEABED 2030

SEABED 2030

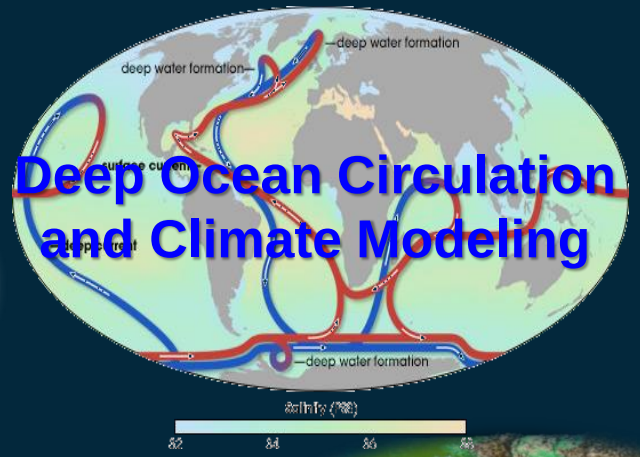
Energizing Ocean Floor Mapping

Jamie McMichael-Phillips
Seabed 2030 Director

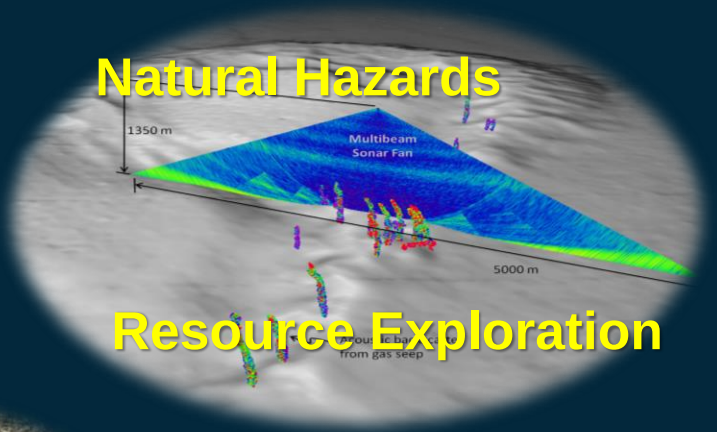
WHY MAP???



Habitats and Ecosystems



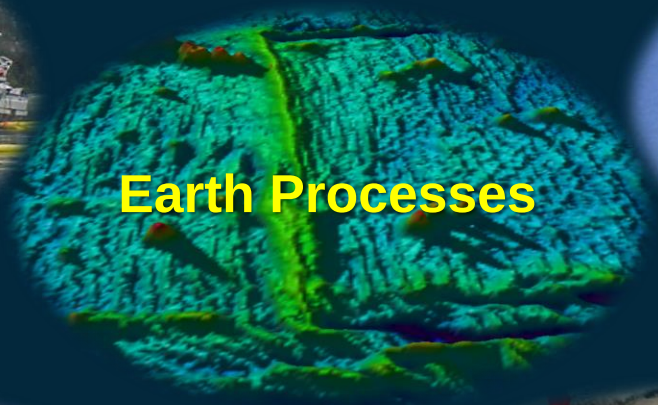
Deep Ocean Circulation and Climate Modeling



Natural Hazards

Resource Exploration

Safety of Navigation

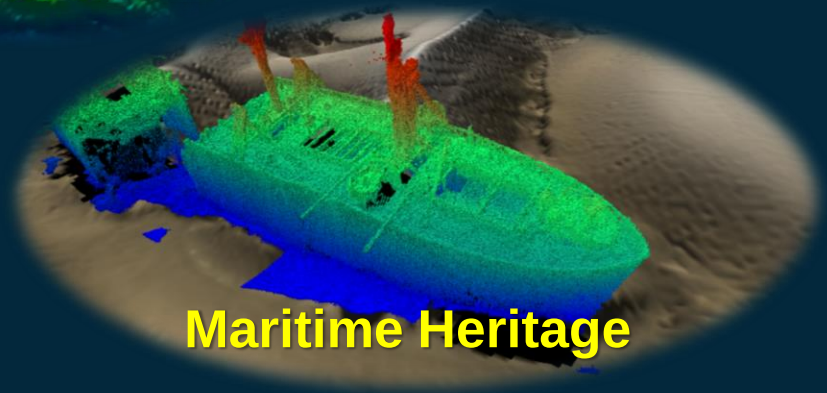


Earth Processes

Tsunami Inundation and Storm Surge

Cables, Pipelines and Infrastructure (Wind Farm Siting)

National Security



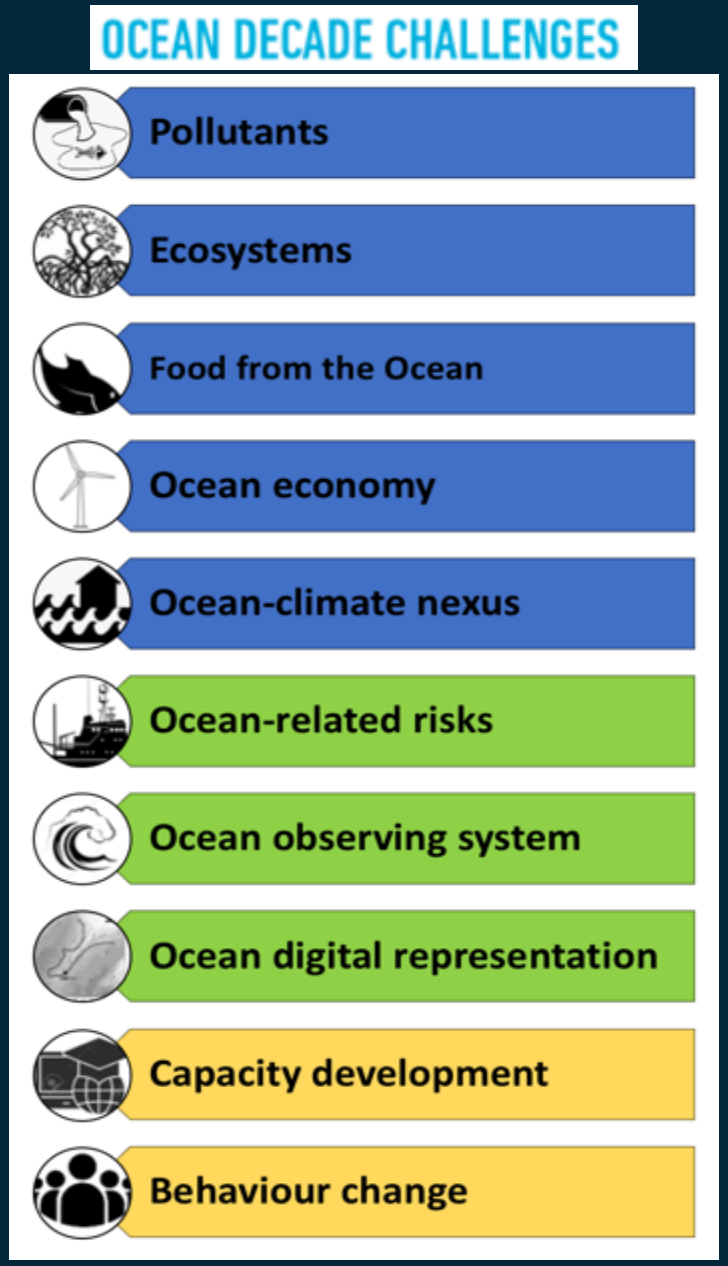
Maritime Heritage

Pure Exploration

?

Credit: UNH/CCOM-JHC

- **Clean**
- **Healthy & Resilient**
- **Productive**
- **Predicted**
- **Safe**
- **Accessible**
- **Inspiring & Engaging**



Coastal -bathymetry

Mapping central

Bathymetry dependent

Mapping intensive

Modelling, SLR, etc.

Bathymetry intensive

Georeferencing

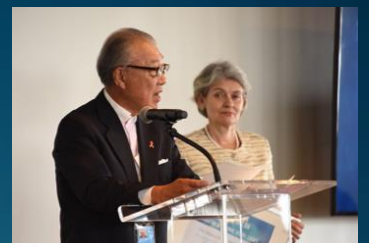
Central facility

Strongly needed

Resonates with people

The Nippon Foundation-GEBCO Seabed 2030 Project

Forum for Future Ocean Floor Mapping



THE OCEAN CONFERENCE
UNITED NATIONS, NEW YORK, 5-9 JUNE 2017

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

Flagship Programme

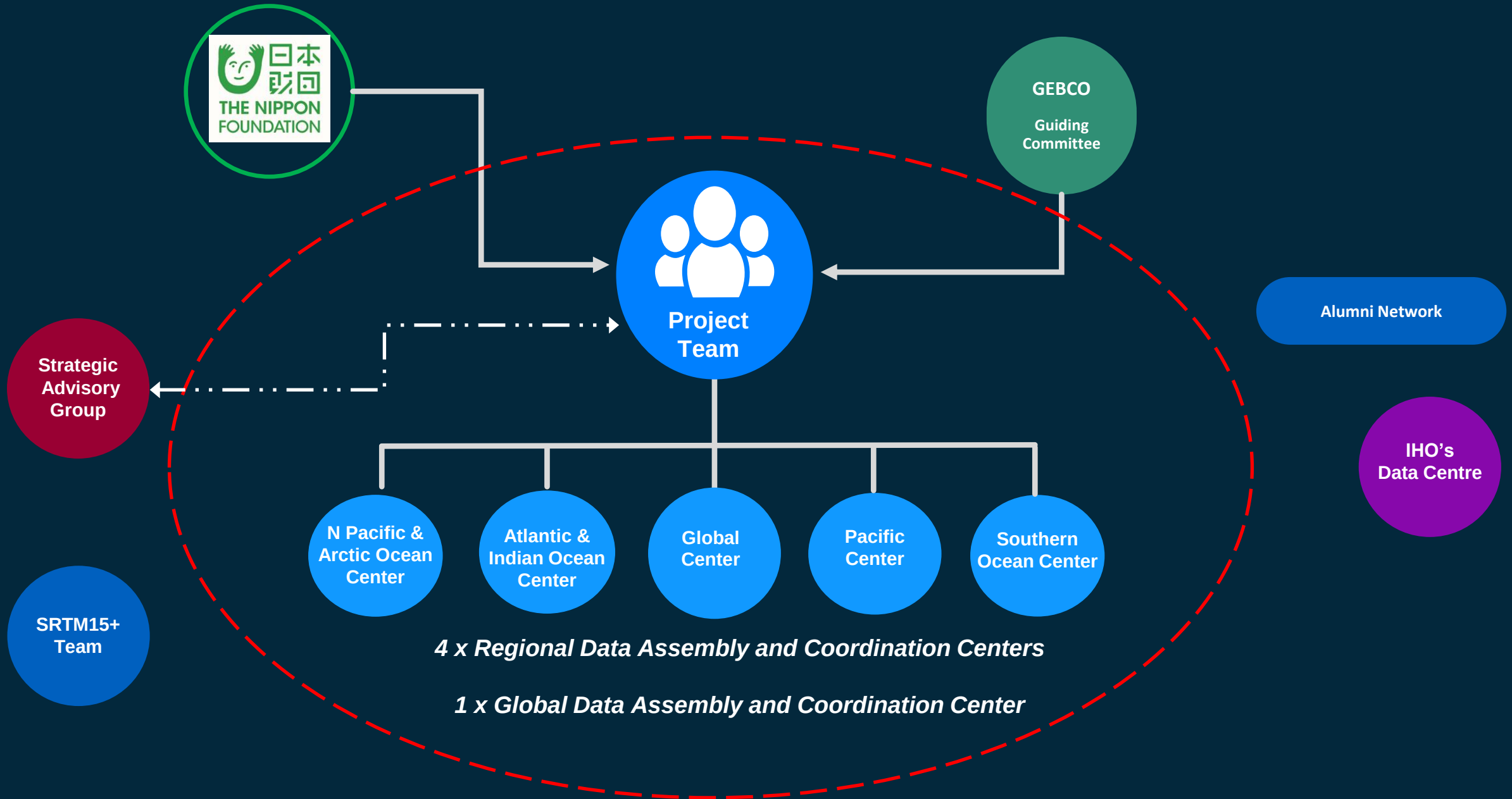
June 2016 → **June 2017** → **June 2021**

Seabed 2030 = accelerator to GEBCO's aim

Collaboration to:

- **inspire 100% seabed mapping by 2030**
- **compile the GEBCO Map**

Seabed 2030 Simplified Network

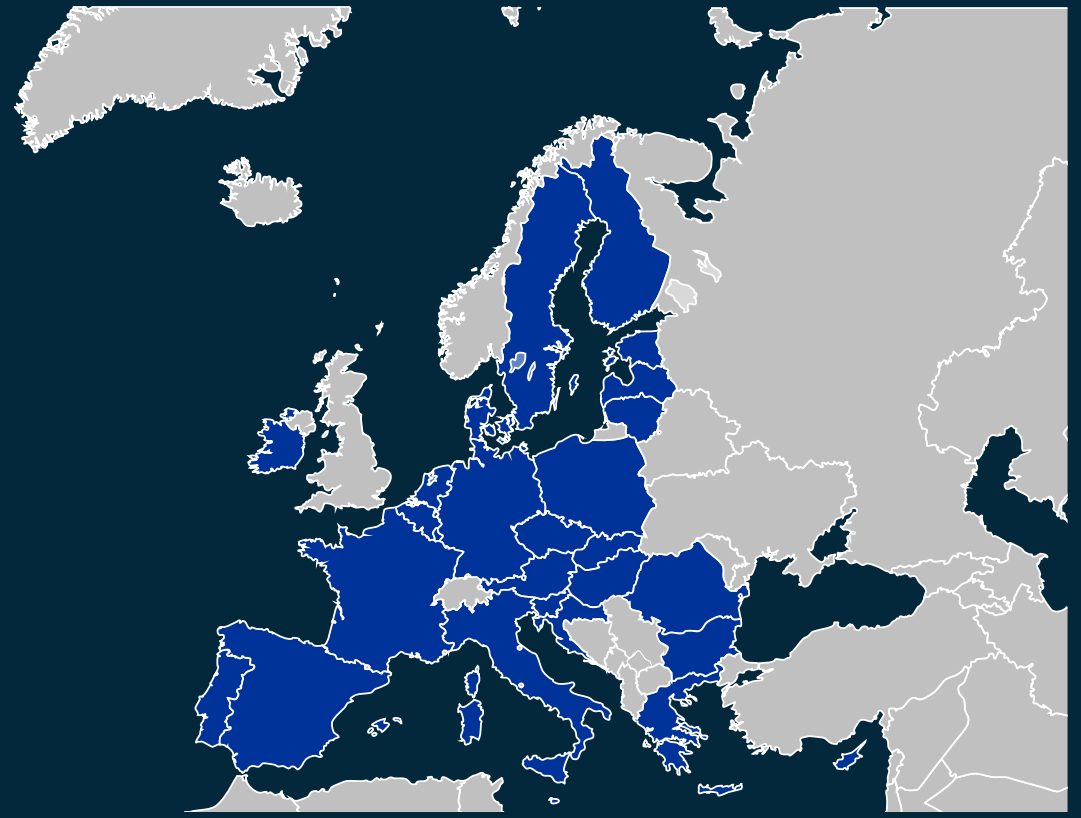


Progress so far …

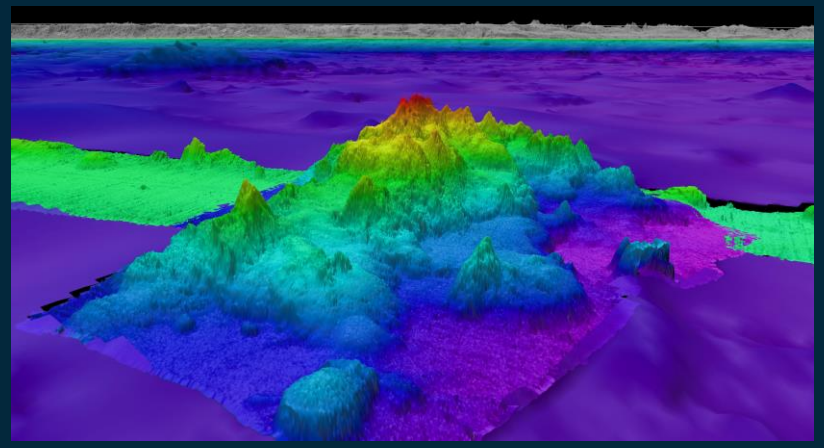
<u>Apr 23 to Jun 24</u>

4.34 million km^2 new bathymetry added

- **Equates to size of EU**



Credit: Wikipedia Kolja21



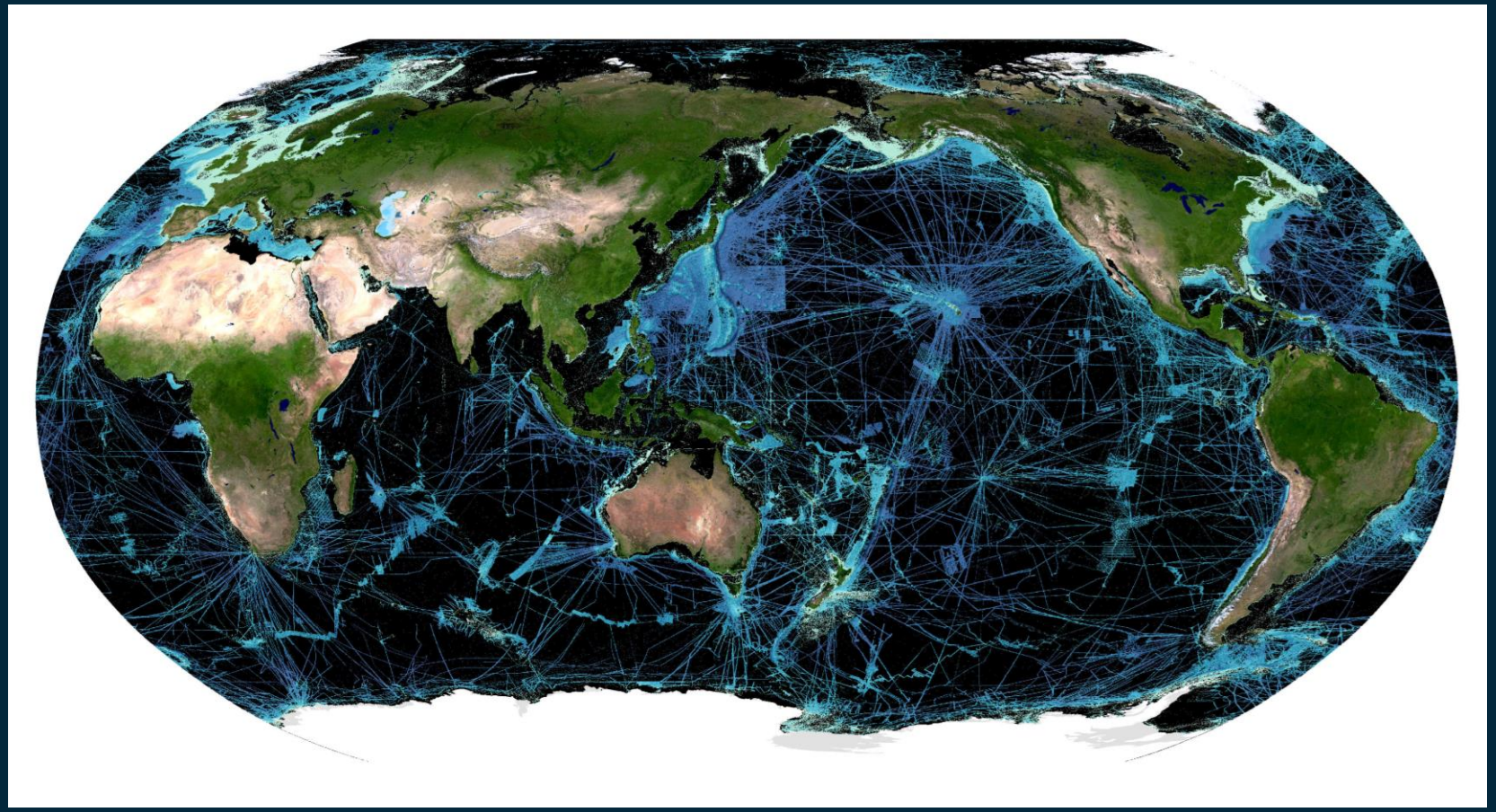
Courtesy: Martin Jakobsson, SU

…. a significant quantity of data ….

Progress so far … (cont'd)

GEBCO Map:

- *6% in 2017*
- Now **26.1%**



Courtesy: Martin Jakobsson, SU

Just under 3/4 of ocean floor still to go …..

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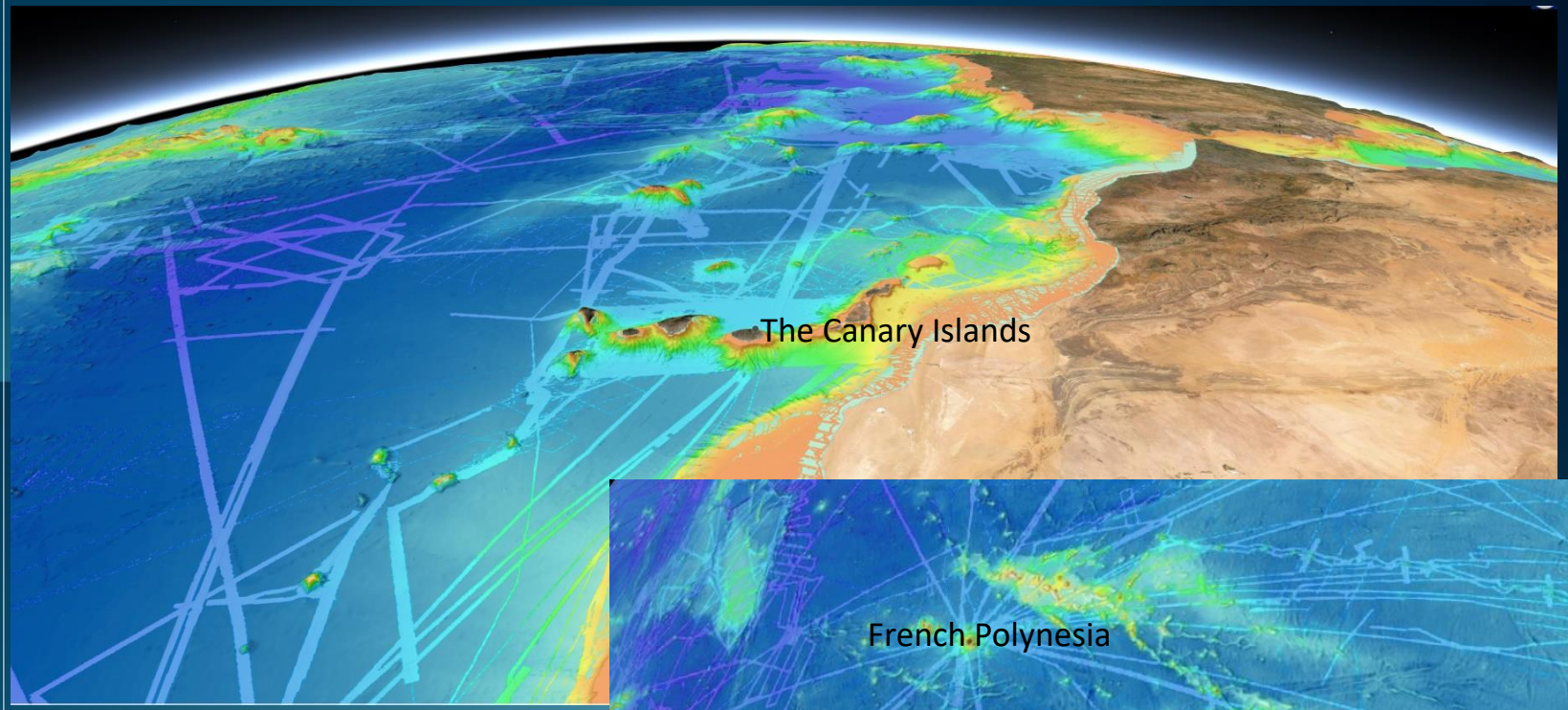
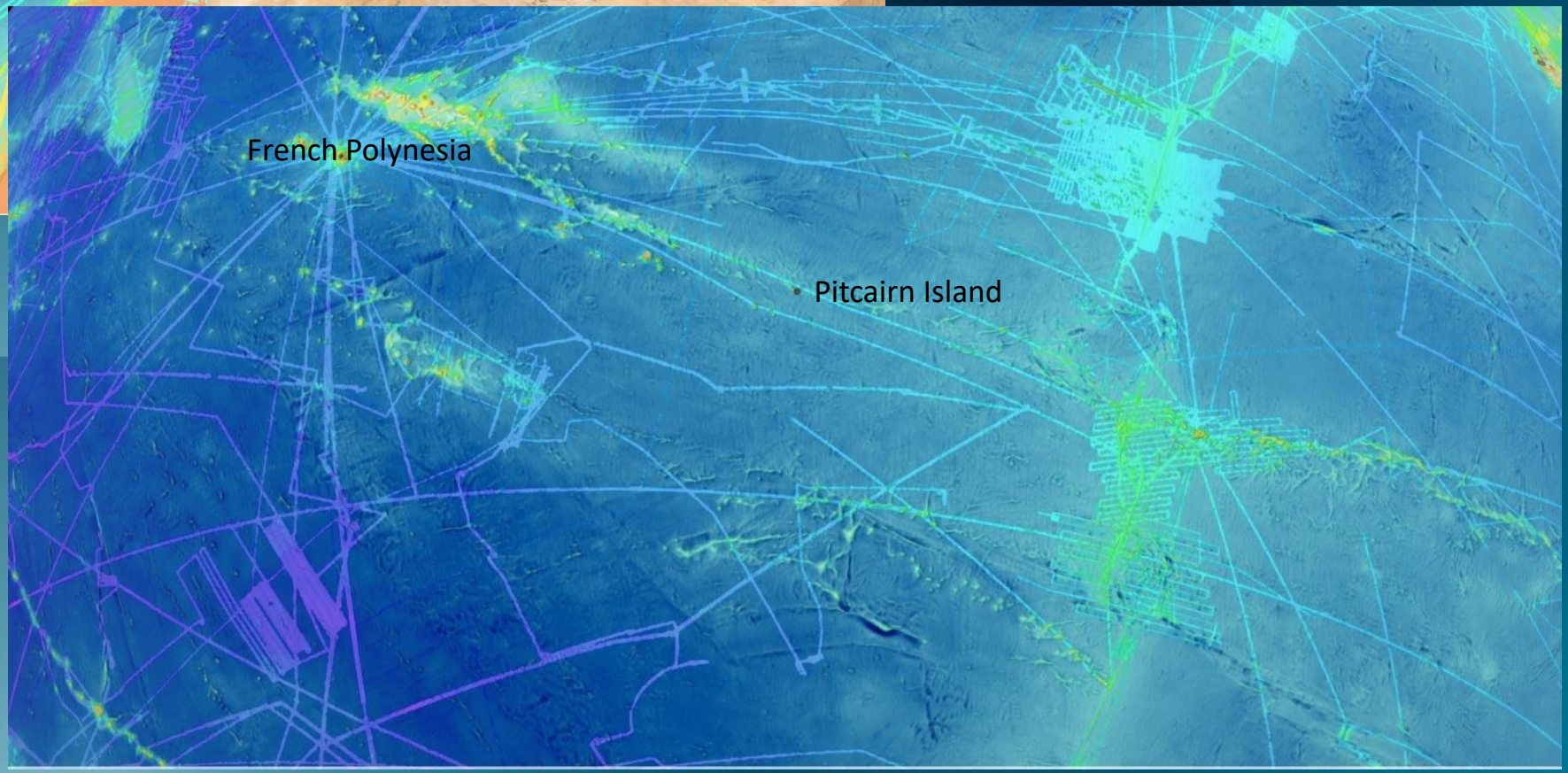
Paucity of Depth Information





To manage effectively …..

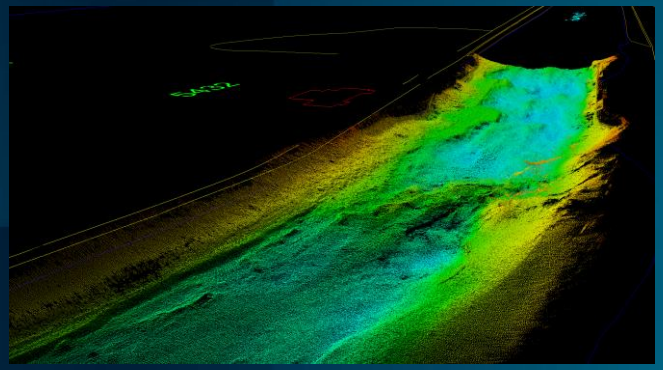
…we <u>must</u> map

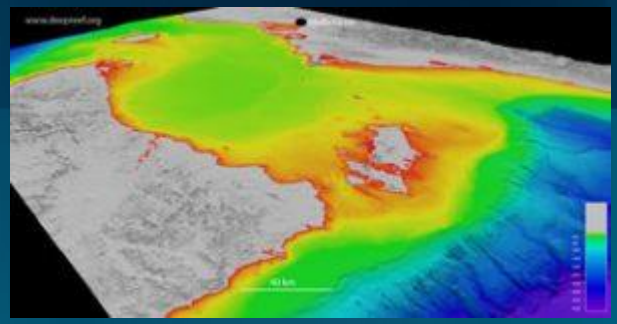
What is meant by data?

Any form of data that contains a bathymetric measurement is gratefully accepted by Seabed 2030 and by GEBCO!

Examples of data are:

- Sounding sheets
- Raw data from sounders
- NMEA data (e.g. from CSB data loggers)
- Processed data (e.g. GSF or XYZ)
- S-57 ENC
- Processed grids or bathymetric surfaces
- Regional bathymetric products



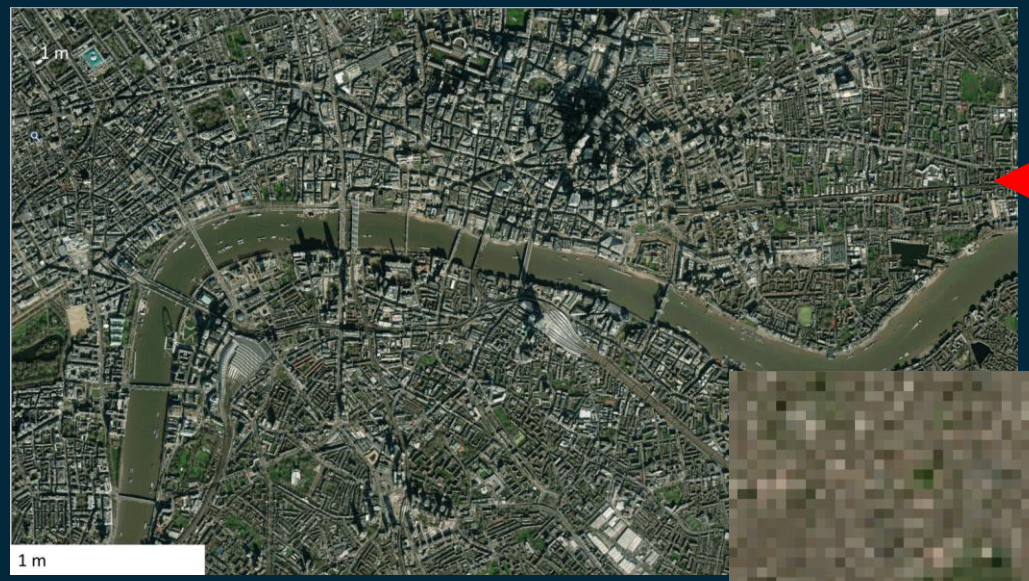


Target Resolutions

- Depth dependent
- We will never ask for data of any higher resolution than:
  - 1 x depth value in 100x100m box

At best only one depth value in area ~ size of a soccer pitch

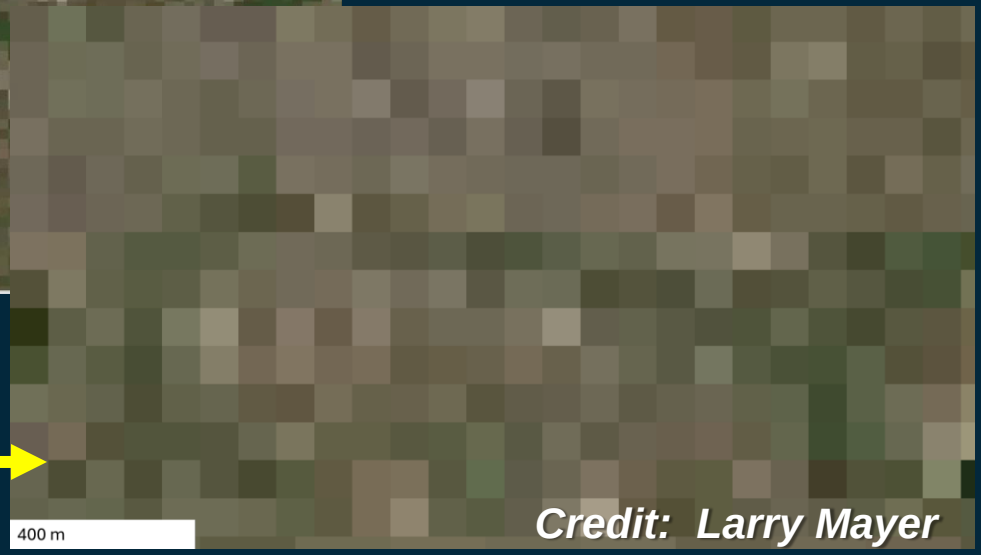
In Perspective



X Not this resolution

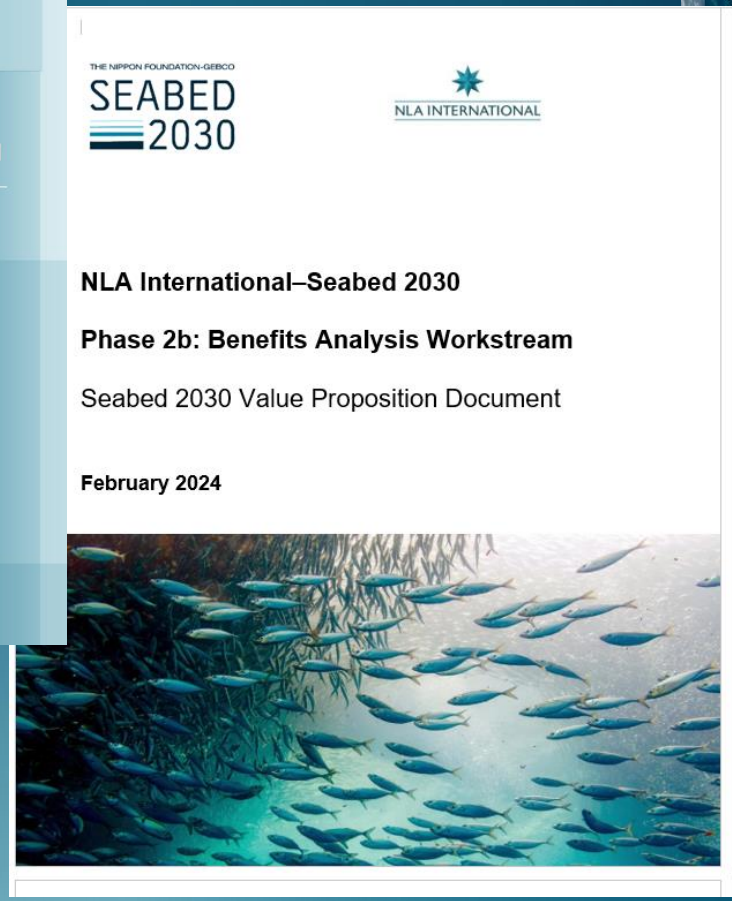
✓✓ We ask for this

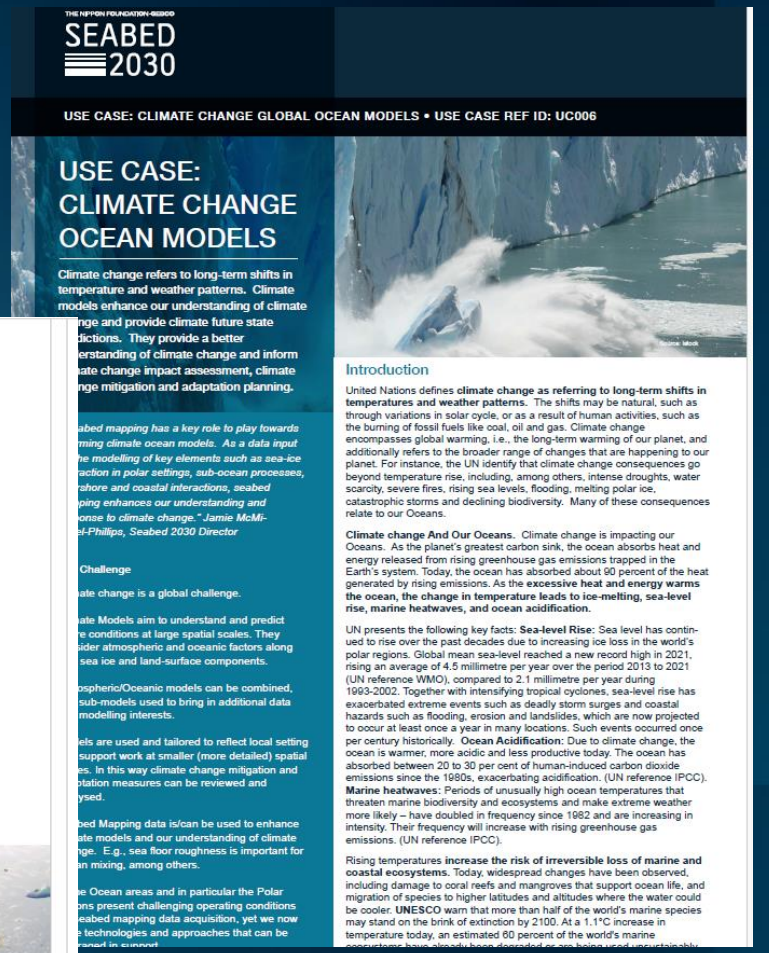
✓ But will work with lower resolution



Credit: Larry Mayer

Benefits Analysis





Detailed work based on research, interviews and surveys

Benefits Analysis – Use Cases

1: Seabed Mapping Innovation

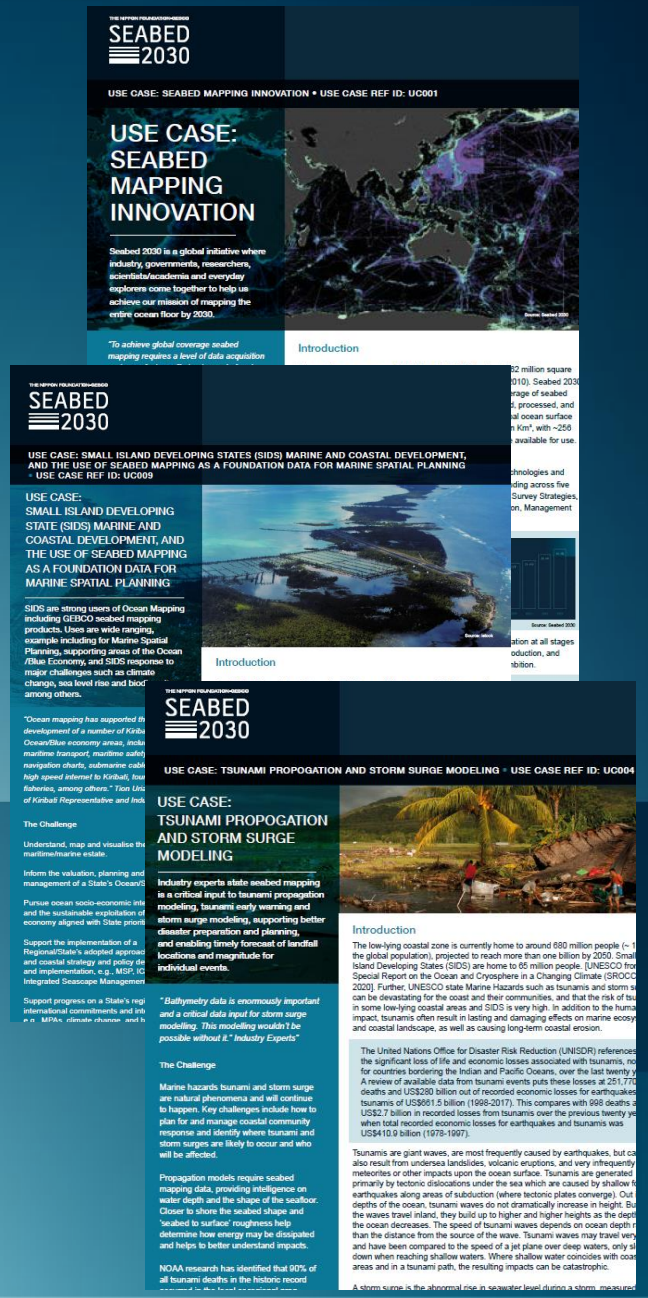
2: EEZ Seabed Mapping in the Absence of a National HO

3: Subsea Cable Planning & Design

4: Tsunami Propagation & Storm Surge Modeling

5: Renewable Energy - Offshore Wind Energy

6: Climate Change Ocean Models



7: SIDS* - Sea Level Rise and Coastal Inundation

8: Marine Biodiversity

9: SIDS* - Marine & Coastal Development, & Use of Seabed Mapping as Foundation Data for Marine Spatial Planning

10: Government Policy

11: Ocean Discovery &Ocean Exploration

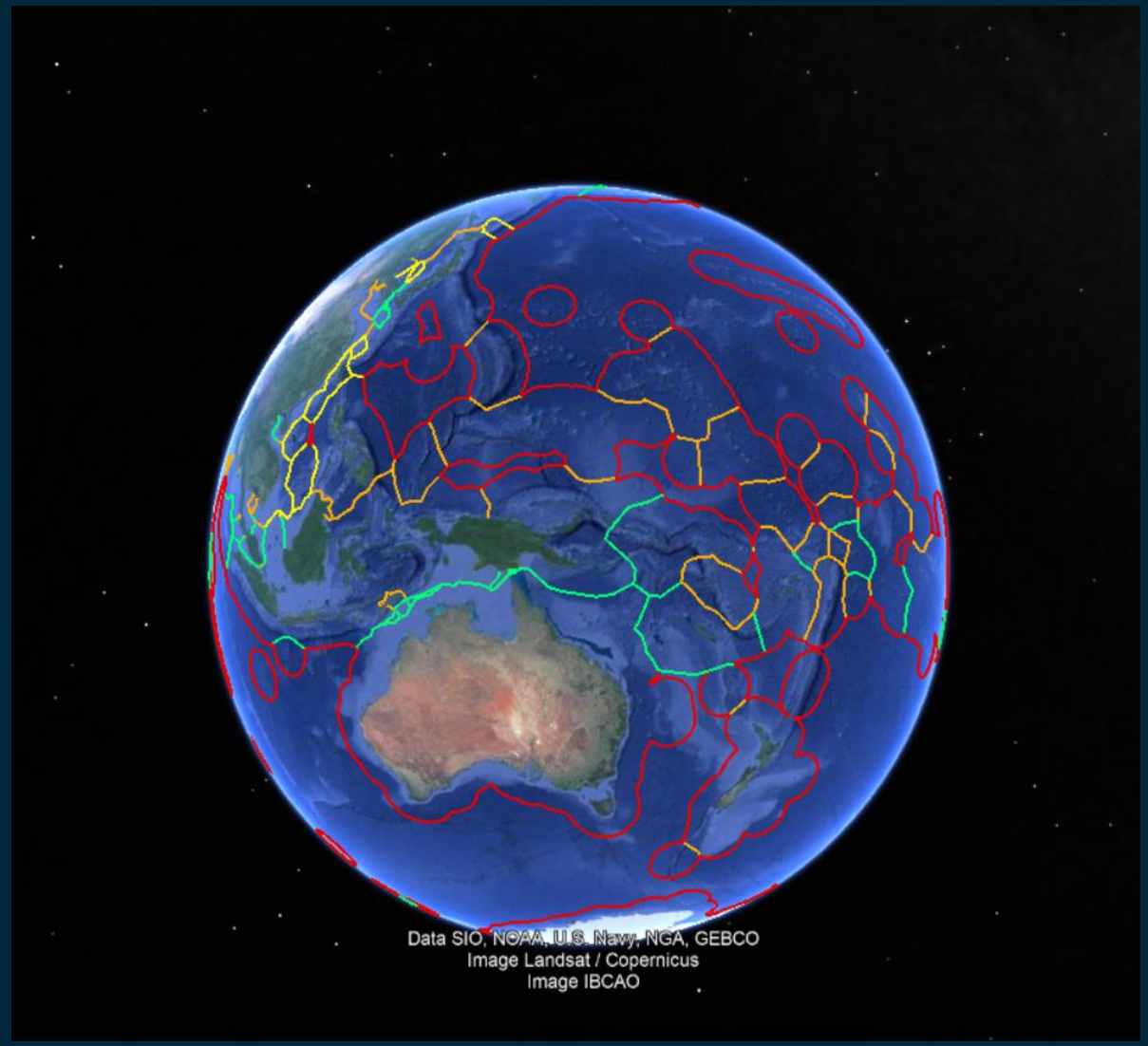
12: Driving Hydrographic Industry Expansion & Human Capital Benefits

*(*Small Island Developing States)*

SEABED 2030

CHALLENGES WE FACE:

- Reluctance to release existing data
- Who will pay for new data collection?
  - especially beyond national jurisdiction
- Even if someone pays – reluctance to grant permission - MSR

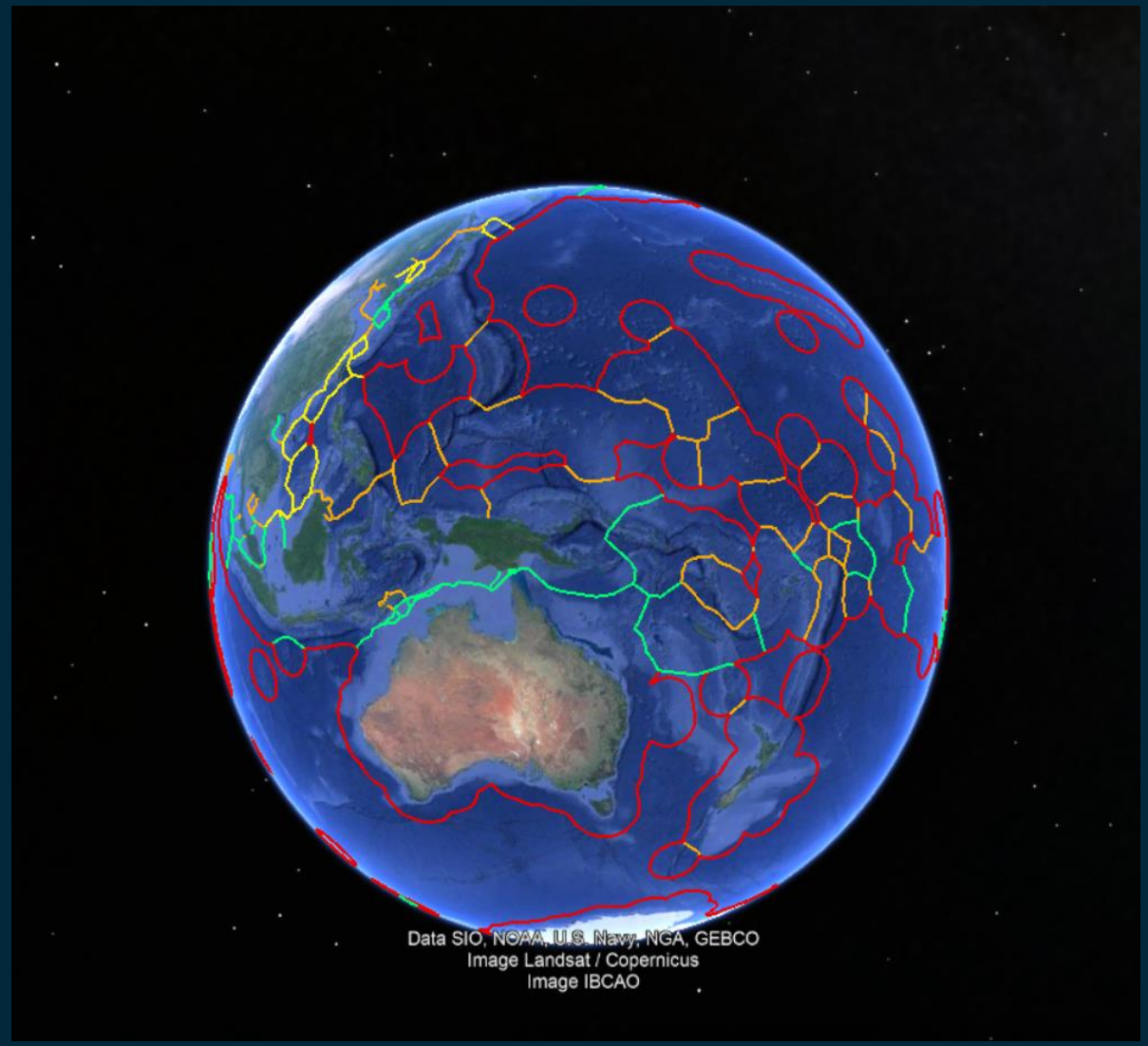


Credit: UNH/CCOM-JHC

OPPORTUNITIES:

- Collaborate in forming regional alliances
  - to encourage new mapping.

- Develop mechanism to allows bathymetry acquisition
  - in support of
    - SB2030
    - SDG14
    - Ocean Decade
  - without MSR regime constraints



Credit: UNH/CCOM-JHC

WIOBathy Project – Supporting Ocean Mapping

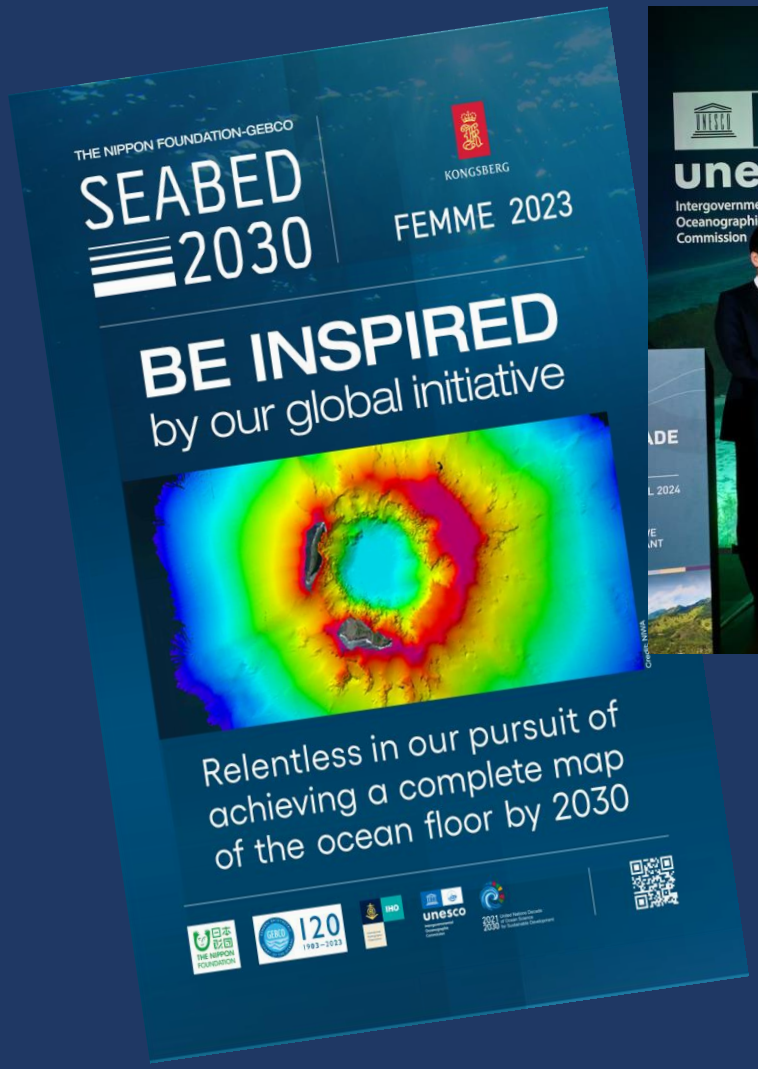
- **Bathymetry Collation & compilation in Western Indian Ocean (WIO)**
  - **Multi-scale & multi-resolution**
  - **First bathymetric map of WIO region**
- **Project Team of 8 Nippon Foundation-GEBCO Fellows:**
  - **Kenya, Tanzania, Mauritius & Madagascar**
- **Supported by Fellows from South Africa**
- **Championed by The Nippon Foundation**
- **Reaching out to other regional collaborators**

Credit: Amon Kimeli

THE NIPPON FOUNDATION-GEBCO SEABED 2030

Helping us make it happen …..

Outreach is vital, engage widely, & as early as possible.



Thank you

THE NIPPON FOUNDATION

GEBCO 120 1903–2023

IHO International Hydrographic Organization

unesco Intergovernmental Oceanographic Commission

University of New Hampshire

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

National Oceanography Centre

AWI ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG

Stockholm University

NIWA Taihoro Nukurangi

GNS SCIENCE

Land Information New Zealand

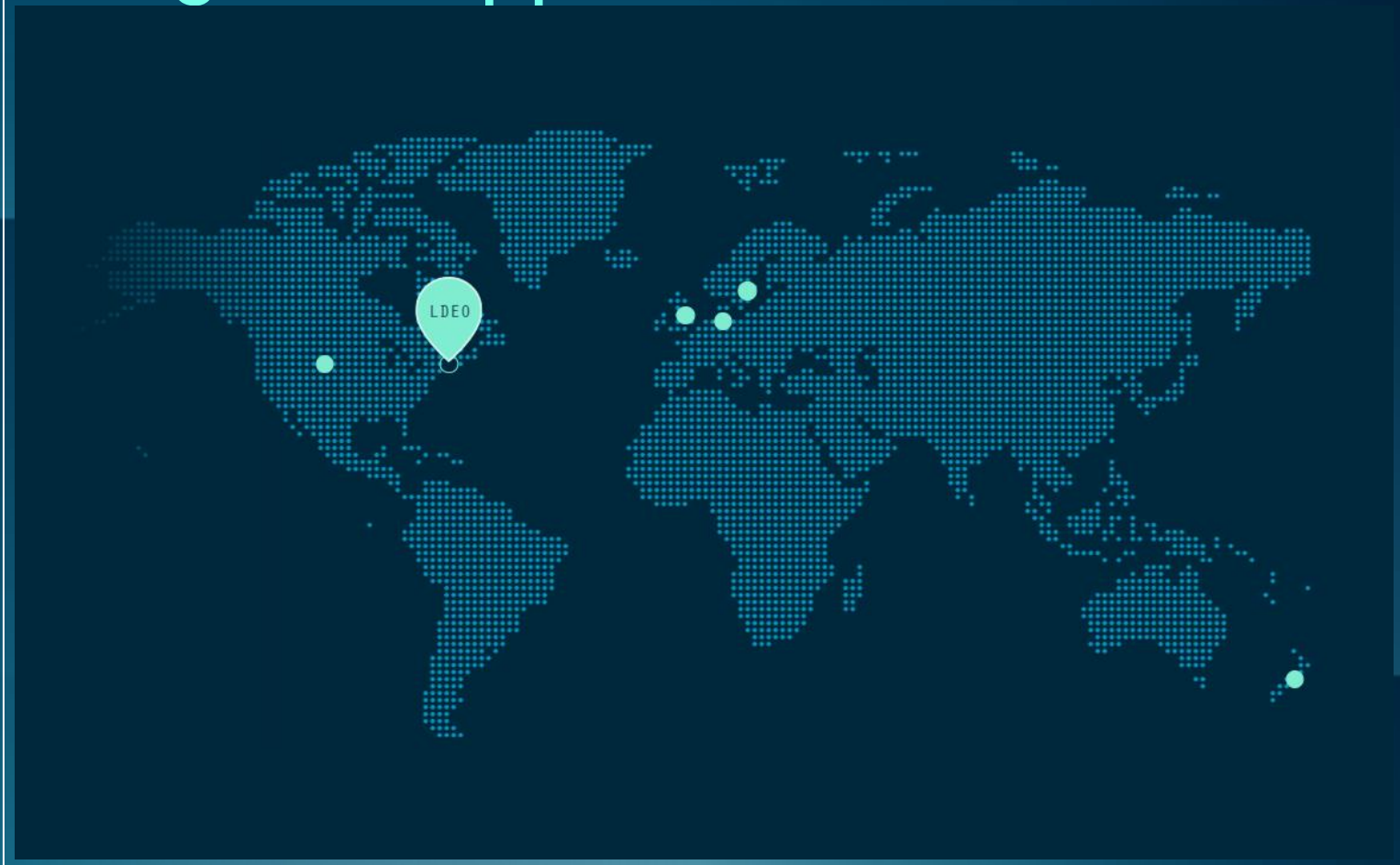
THE NIPPON FOUNDATION-GEBCO SEABED 2030

The Nippon Foundation-GEBCO Seabed 2030 Project
Atlantic and Indian Ocean Regional Center

Southern African and Islands Hydrographic Commission

2024 Southern African And Islands Hydrographic Commission (SAIHC20) VTC September 2024

A regional approach



Global Center (GDACC)

- Assemble global products
- Disseminate global products

Regional Centers (RDACCs)

- Engage with stakeholders
- Build upon existing efforts
- Assemble regional products
- Identify gaps

COLUMBIA CLIMATE SCHOOL
LAMONT-DOHERTY EARTH OBSERVATORY

ALFRED-WEGENER-INSTITUT
HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG

NIWA Taihoro Nukurangi

Land Information New Zealand

University of New Hampshire

National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

Atlantic and Indian Oceans Regional Center

- Engage with stakeholders
- Assemble regional products
- Identify gaps in data coverage
- Provide technical guidance and assistance

atlantic-Indian@seabed2030.org

COLUMBIA CLIMATE SCHOOL
LAMONT-DOHERTY EARTH OBSERVATORY

Vicki Ferrini, PhD
Center Head

Frank Nitsche, PhD
Research Scientist

Tinah Martin
Lead Data Manager, Indian Ocean

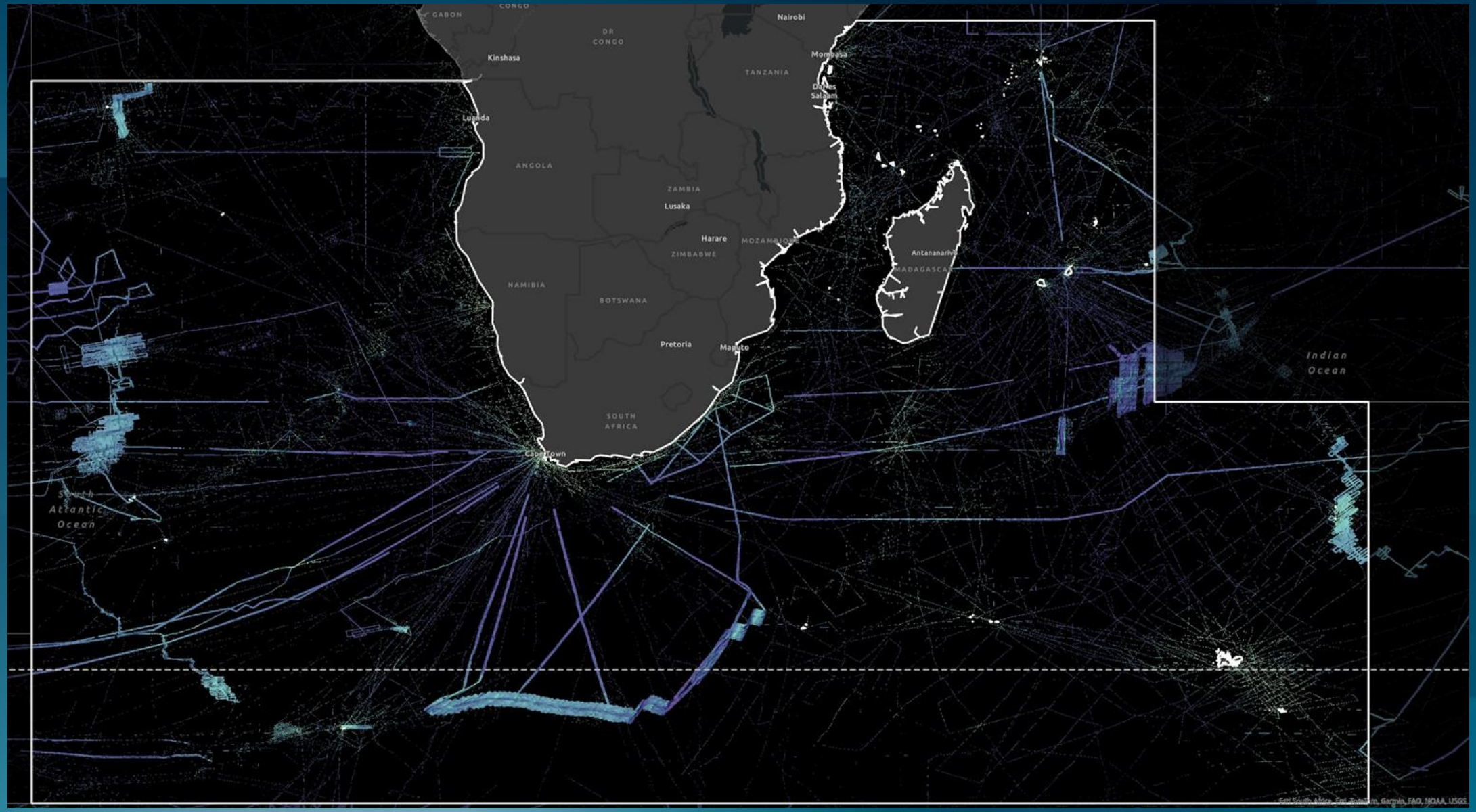
Hayley Drennon
Lead Data Manager, Atlantic Ocean

Sheila Caceres
Data Manager

John Morton
Applications Developer

Country of origin

Status of Mapping within the SAIHC



SEABED 2030

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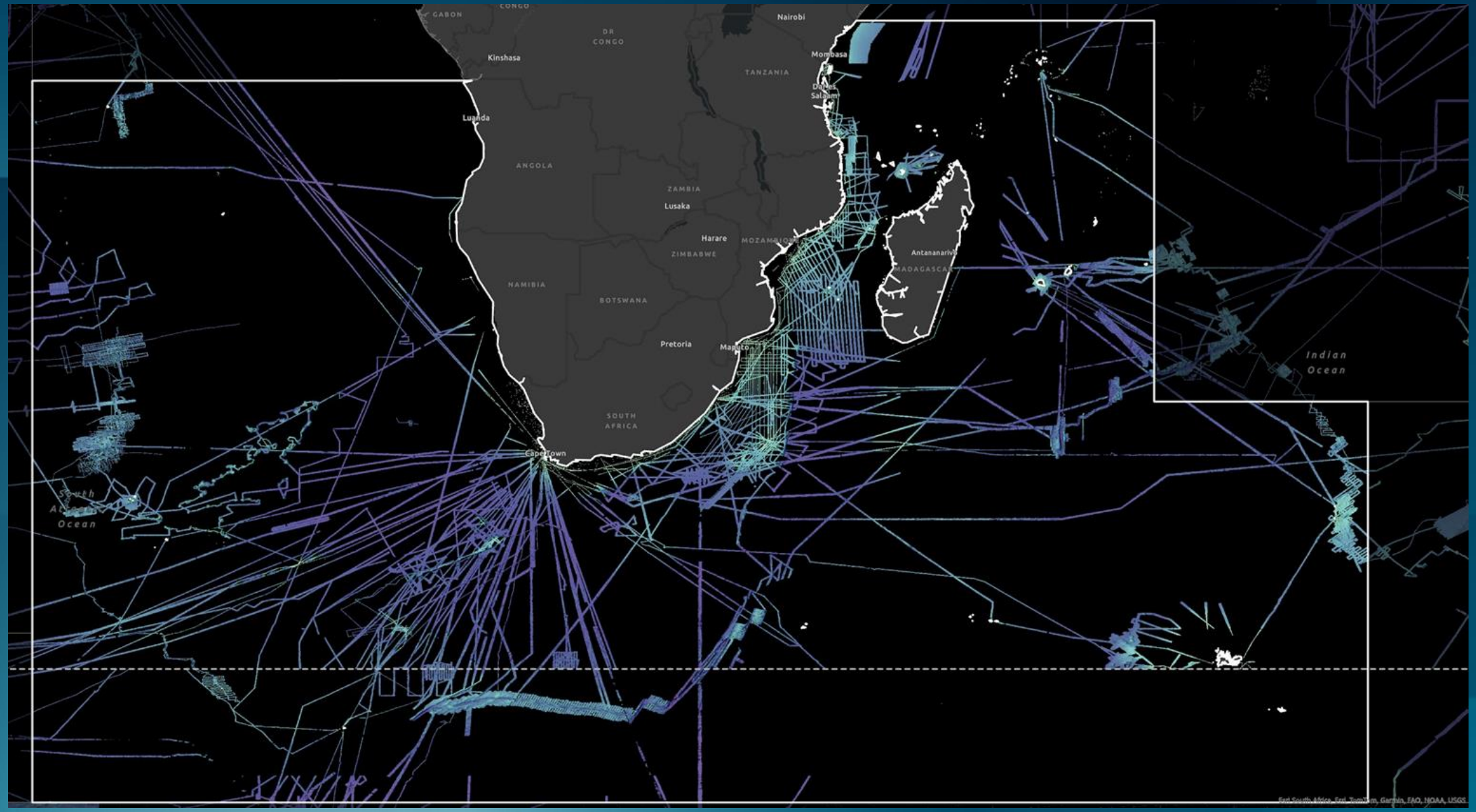
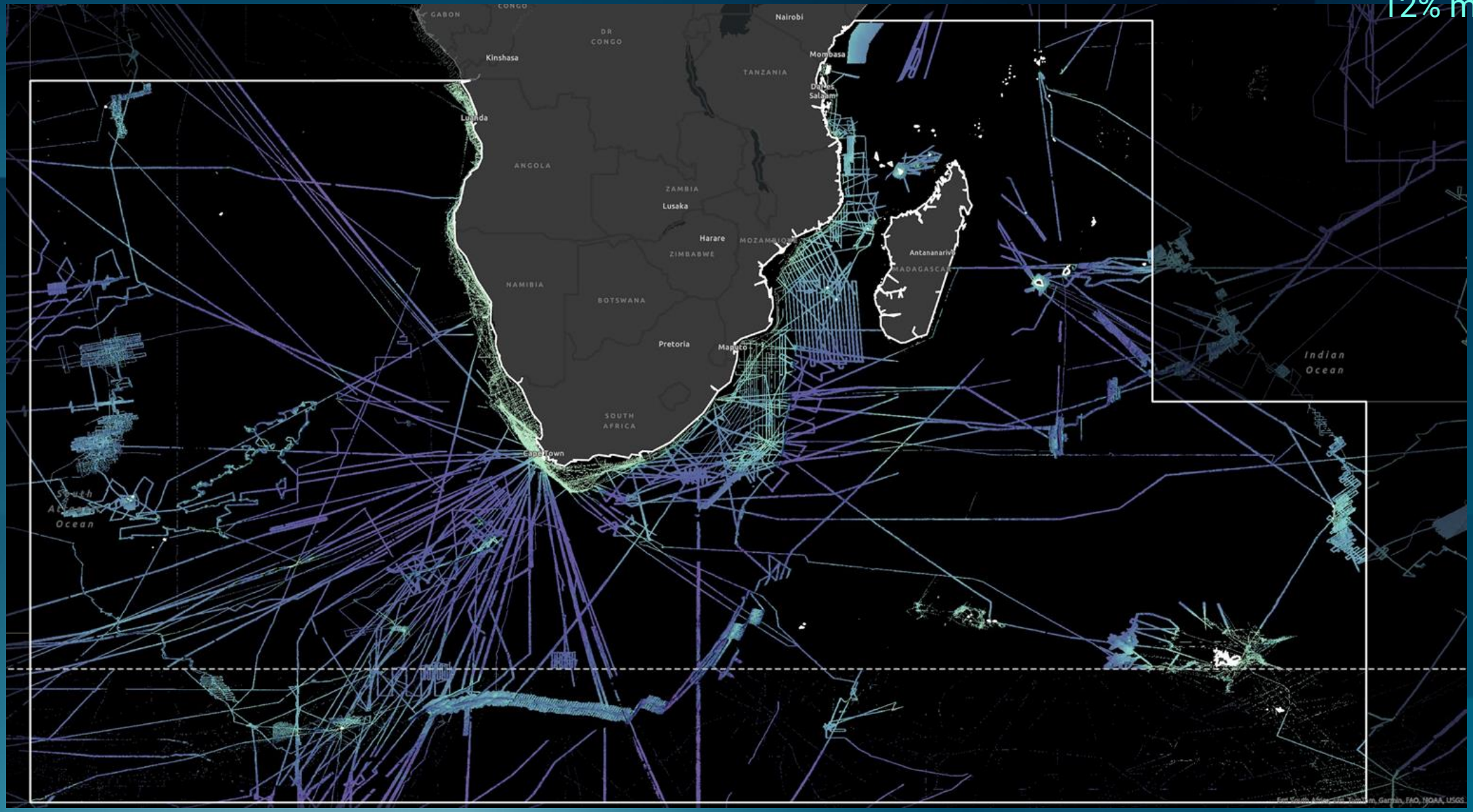


Status of Mapping within the SAIHC

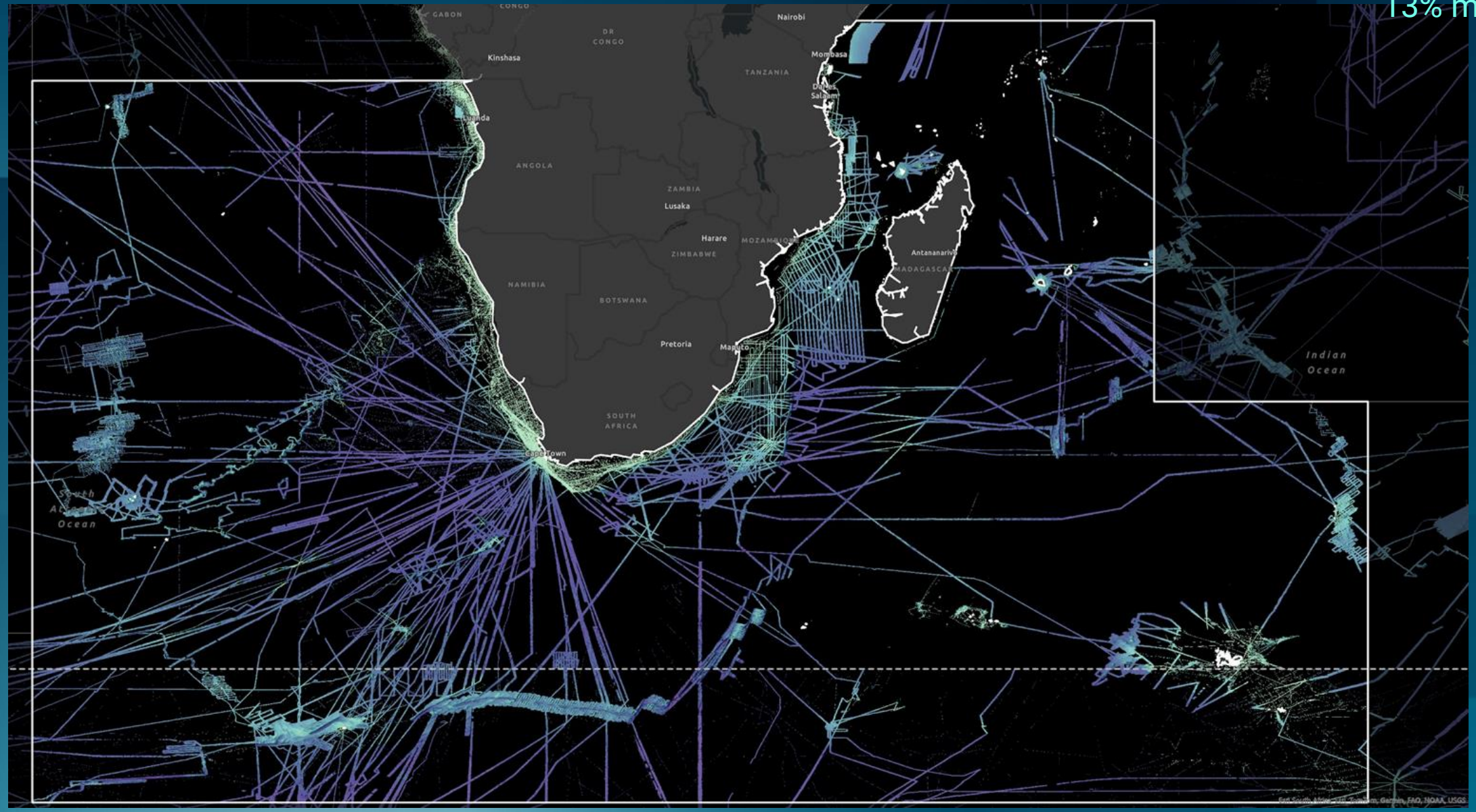
12% mapped



SEABED 2030

Status of Mapping within the SAIHC

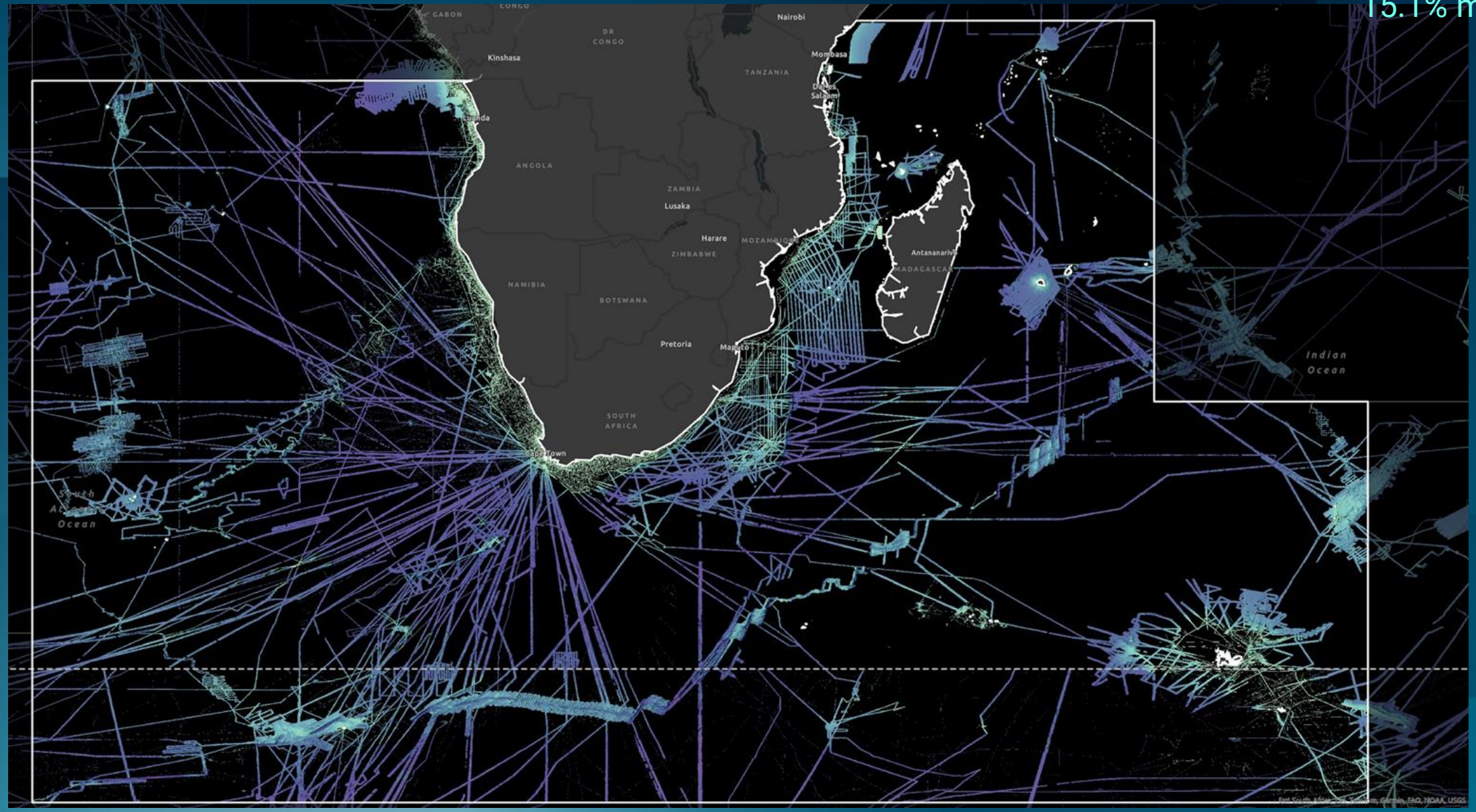
13% mapped



SEABED 2030

Status of Mapping within the SAIHC

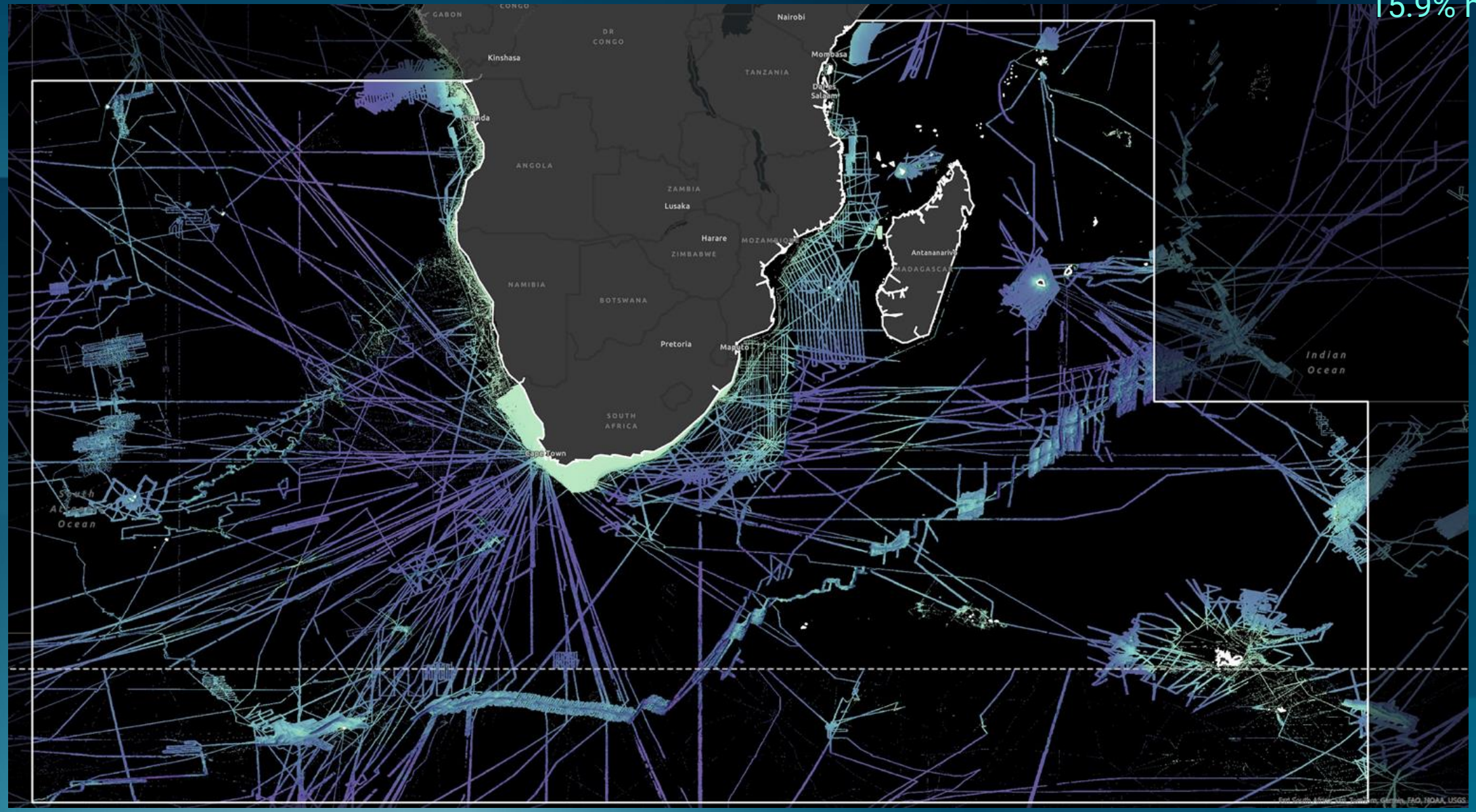
15.1% mapped



SEABED 2030

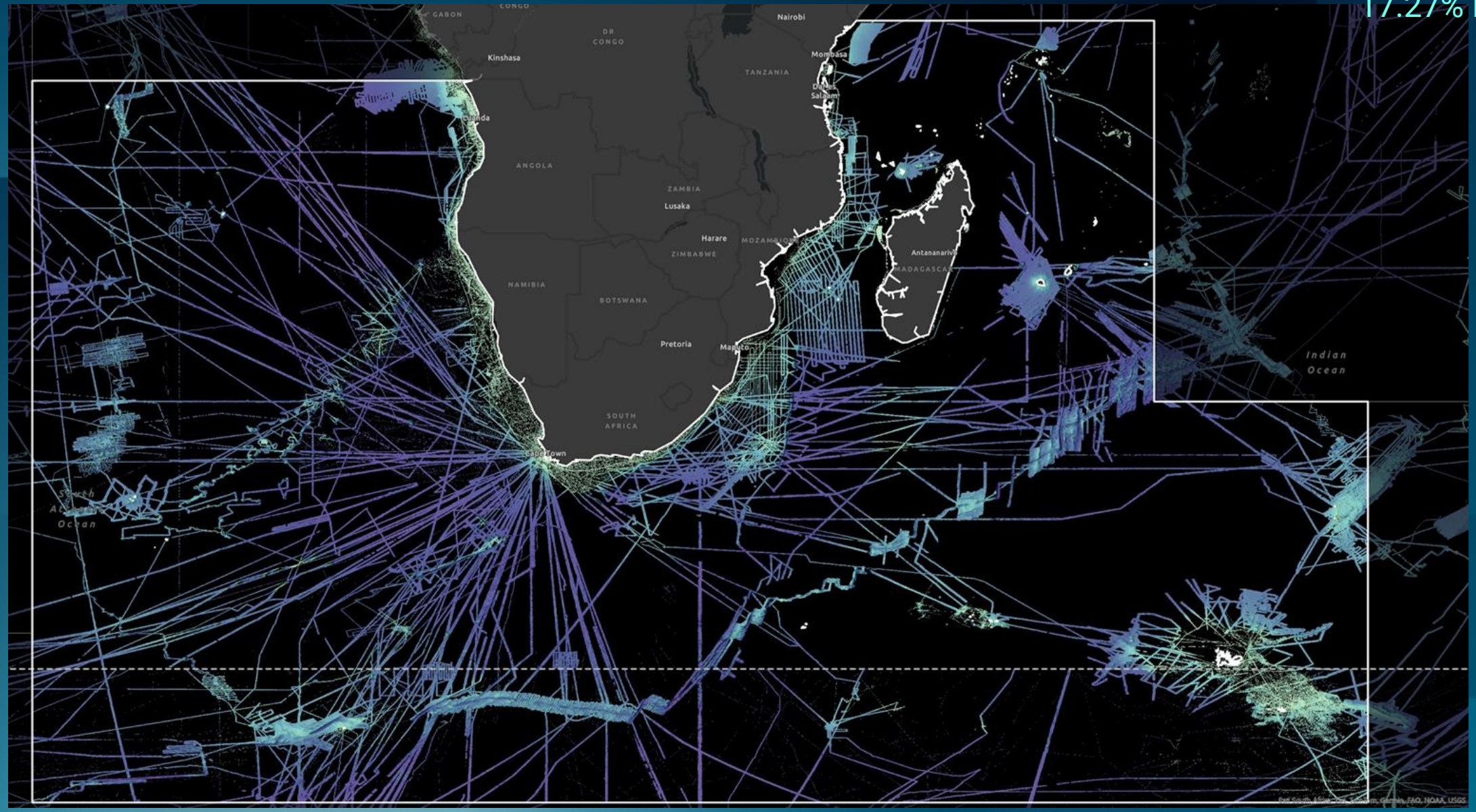
Status of Mapping within the SAIHC

15.9% mapped



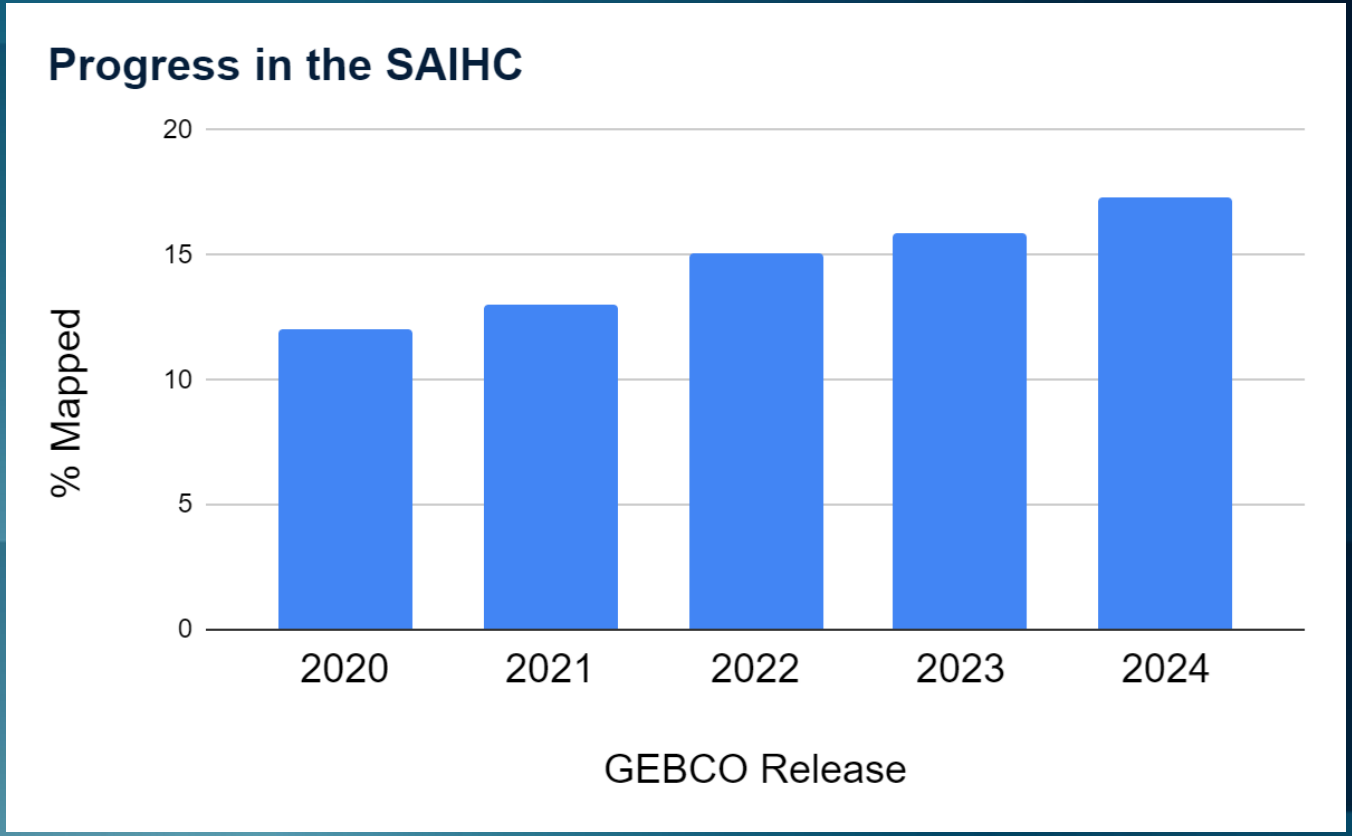
Status of Mapping within the SAIHC

17.27% mapped

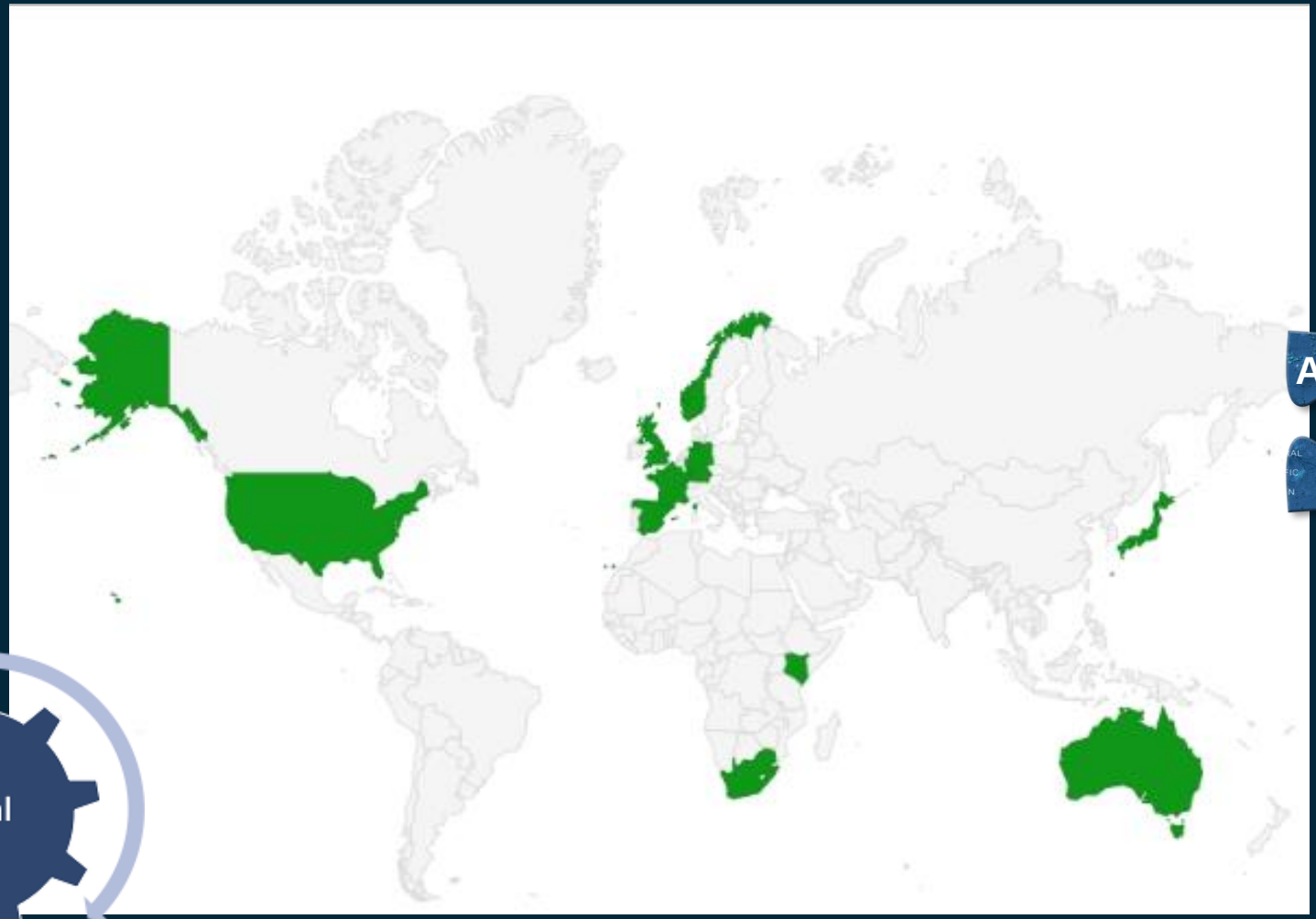


Progress within the SAIHC

SAIHC: 17.27% mapped (GEBCO 2024)



Data contributors within the SAIHC region

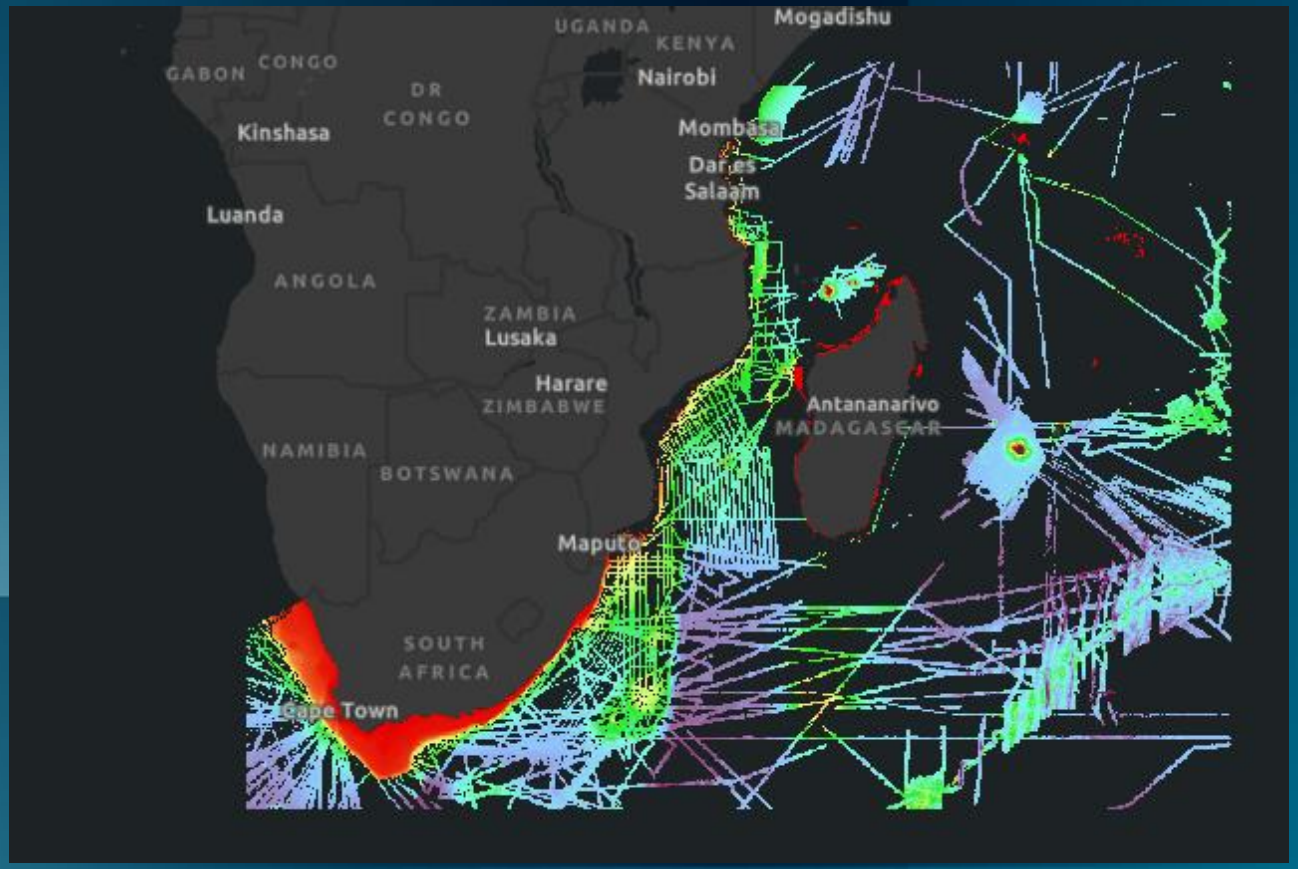


10 nations, > 22 organizations

Community Engagement Updates

Collation and Compilation of Multi-Scale and Multi-Resolution Bathymetric Data in the Western Indian Ocean (WIObathy)

- 9 WIO countries
- Alumni of the Nippon Foundation GEBCO Training from 5 countries
- Data Workshop focusing on data preparation/Assessment
- Coordination of data QA/QC
- Pathways to submit data



WIO Region coverage (AIORC 2024)

Community Engagement Updates

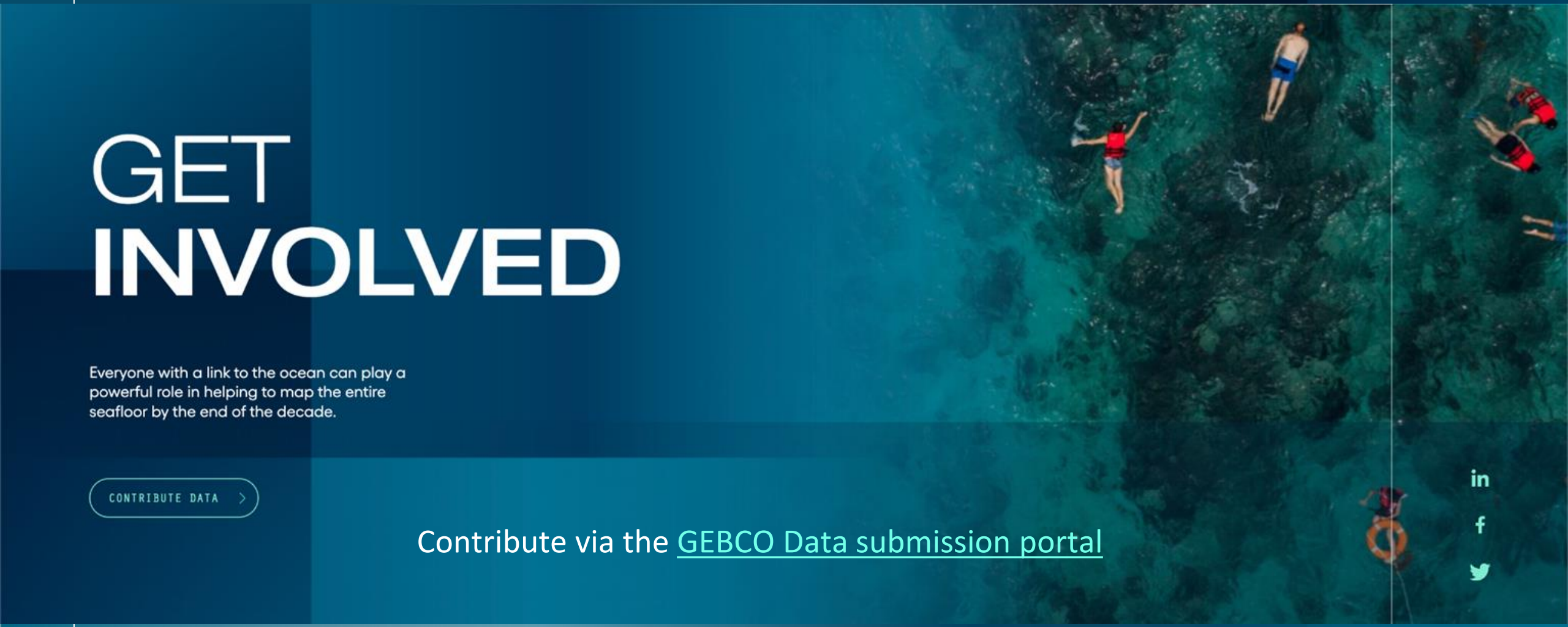
Next virtual AIORC Virtual RMC

January 14 -16, 2025

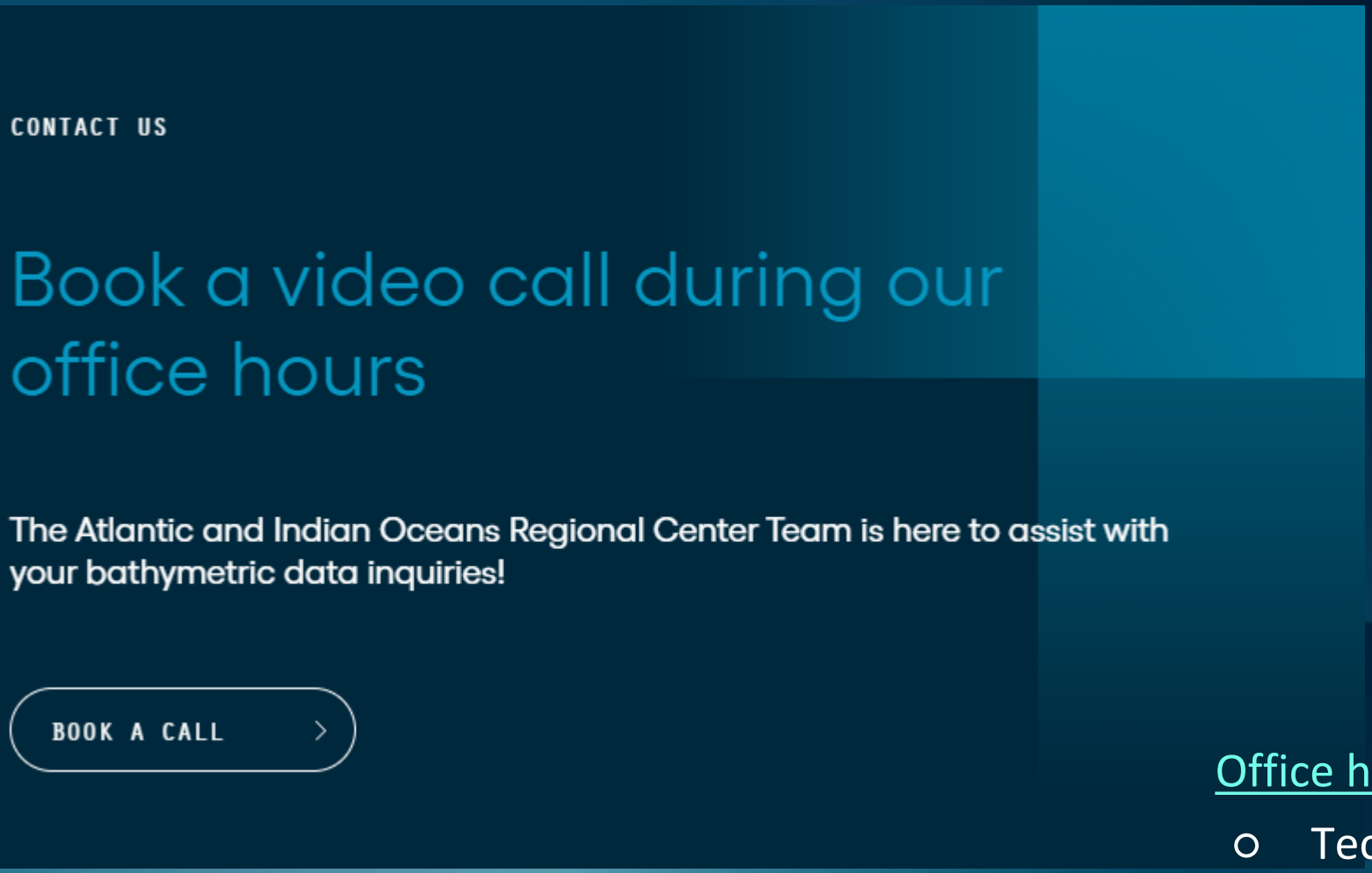
- Updates on mapping status within the region
- Technical session
- Regional Mapping Community initiatives and updates

Scan the QR code to express your interest in joining the virtual Community Mapping Meeting

Or contact the center at: atlantic-indian@seabed2030.org



Contribute via the [GEBCO Data submission portal]



Office hours with the AIORC

- Technical assistance
- Guidance regarding bathymetry data question


UNITED WE
DISCOVER

THE NIPPON FOUNDATION-GEBCO SEABED 2030

THANK YOU

Atlantic and Indian Oceans Regional Center: atlantic-indian@seabed2030.org

THE NIPPON FOUNDATION | GEBCO 120 1903–2023 | International Hydrographic Organization / Organisation Hydrographique Internationale IHO | unesco Intergovernmental Oceanographic Commission | 2021 2030 United Nations Decade of Ocean Science for Sustainable Development