The Global Ocean Observing System

GOOS: Building a fit-for-purpose global ocean observing system

Emma Heslop, Acting Director of the Global Ocean Observing System
International Marine Science Conference on IOCARIBE-GOOS
May 8th, 2023

Why observe the ocean?

Climate and weather

The ocean plays a huge role in our climate it absorbs 90% of excess heat, and 25% of anthropogenic carbon every year. At the same time the ocean and our weather patterns are being affected by climate change.

Ocean health

Life in the ocean gives us the oxygen we breathe and the food we eat. Overfishing, climate change and pollution are putting these vital natural services at risk, and their impacts are critically under-observed.

Coastal communities

Coastal communities are in the front line facing threats posed by changing oceans. Communities in many less developed areas are particularly at risk.

If we haven't got data underpinning our decisions, we might as well be guessing at solutions

THE LAW OF THE SEA

+ BBNJ

Convention on Biological Diversity

GPA Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

UNEP Regional Seas

United Nations Educational, Scientific and Cultural Organization

The Protection of the Underwater Cultural Heritage

New: ILBI on Plastic Pollution 2024

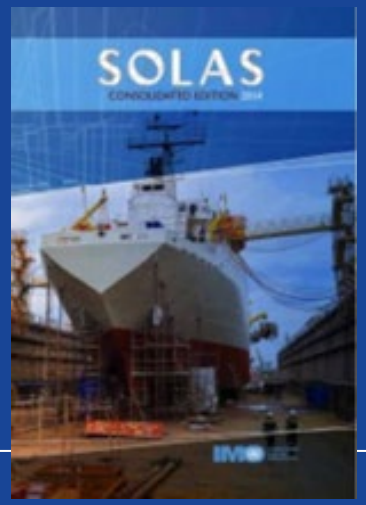
Sendai Framework for Disaster Risk Reduction

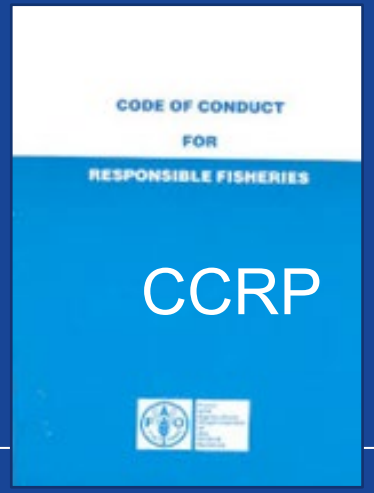
2015 - 2030

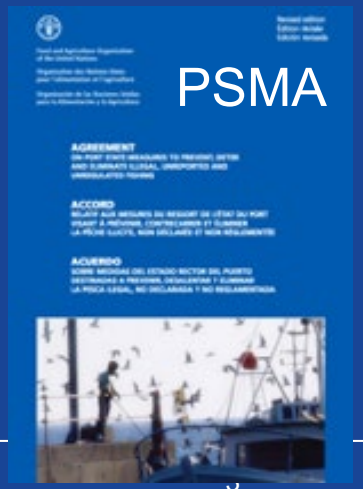
ISLAND VOICES GLOBAL CHOICES

UN Conference on Small Island Developing States

SAMOA PATHWAY







Ocean data creates opportunities

Climate and weather

Ocean health

Coastal communities

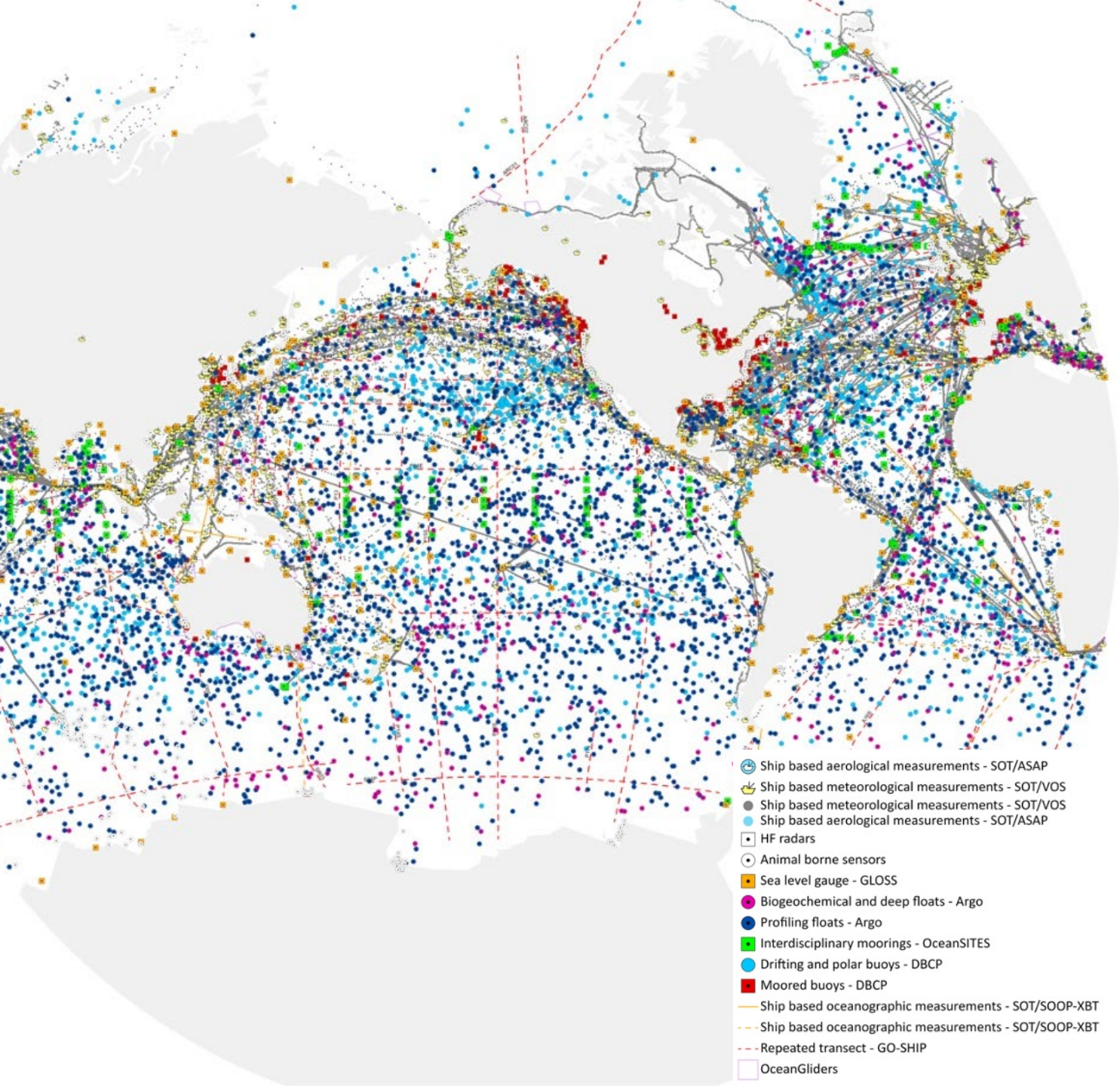
Enabling coastal communities to evolve and flourish

Supporting blue economic growth

Underpinning sustainable development

Underpinning a wide range of applications

Vision: A truly global ocean observing system that delivers the essential information needed for our sustainable development, safety, wellbeing and prosperity



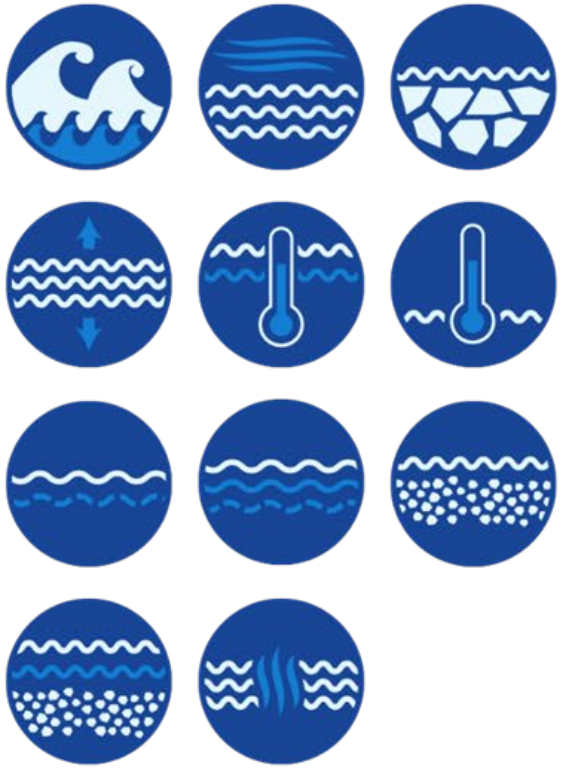
GOOS Today

- 84 countries, 8,700+ observing platforms, 13 global networks
- More than 100,000 observations per day

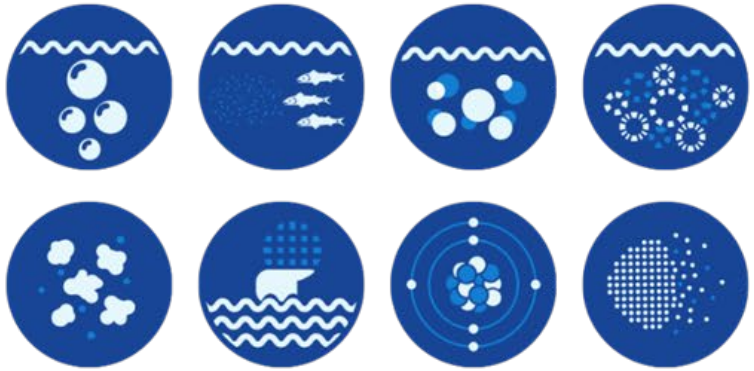
"The weather forecasting systems will run off the rails if they don't have the surface pressure information over the ocean to constrain them" - Lars Peter Riishojgaard, Director of the Earth System Branch WMO

34 Essential Ocean Variables (EOVs)

Physics



Biogeochemistry

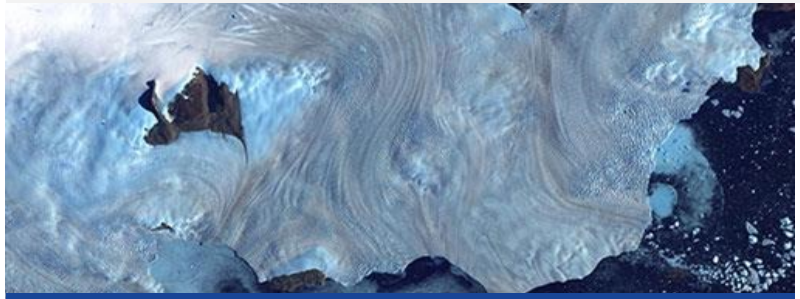


Cross-disciplinary

Biology & ecosystems

GOOS Core Coordination

GOOS Steering Committee



Expert Panels - EOVs

Physics and Climate Panel (OOPC)

Biology and Ecosystem (BioEco)

Biogeochemical Panel (IOCCP/BGC)

Observing

Observations Coordinating Group (OCG), OceanOPS and global observing networks

Global Regional Alliances (GRA)

BioEco EOV networks, BioEco Portal (OBIS)

GOOS National Focal Points

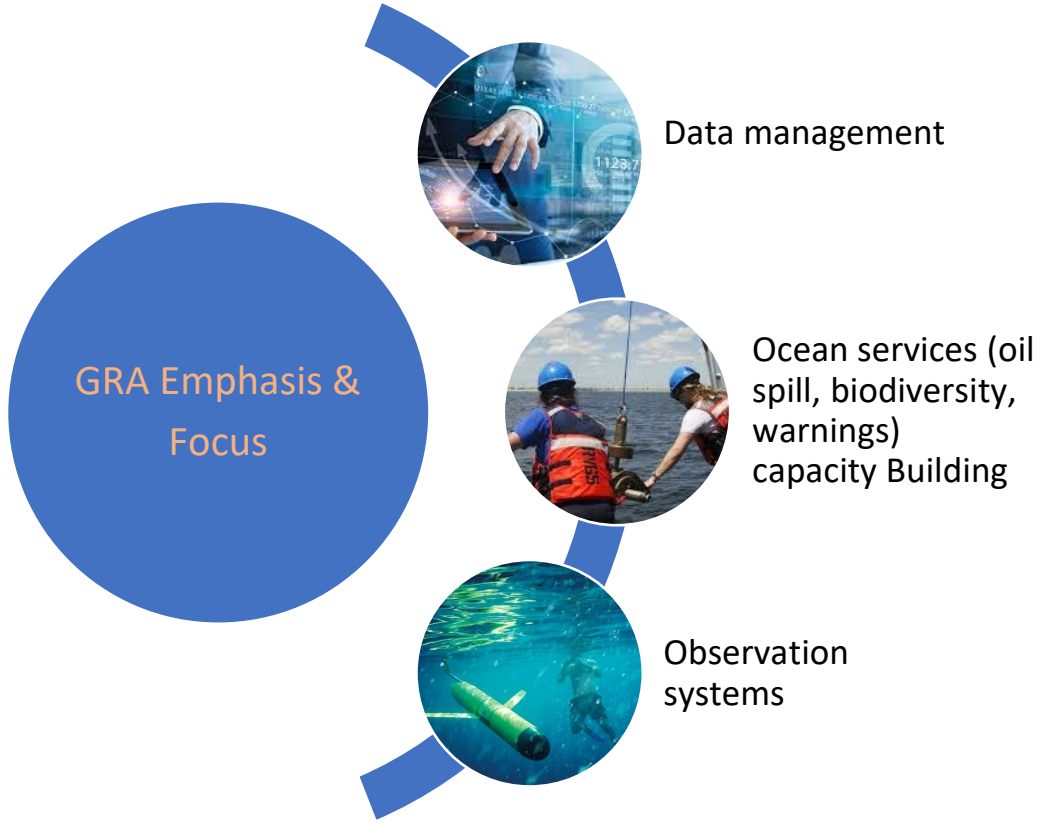
Projects (TPOS, DOOS, OBPS, AtlantOS)

Prediction

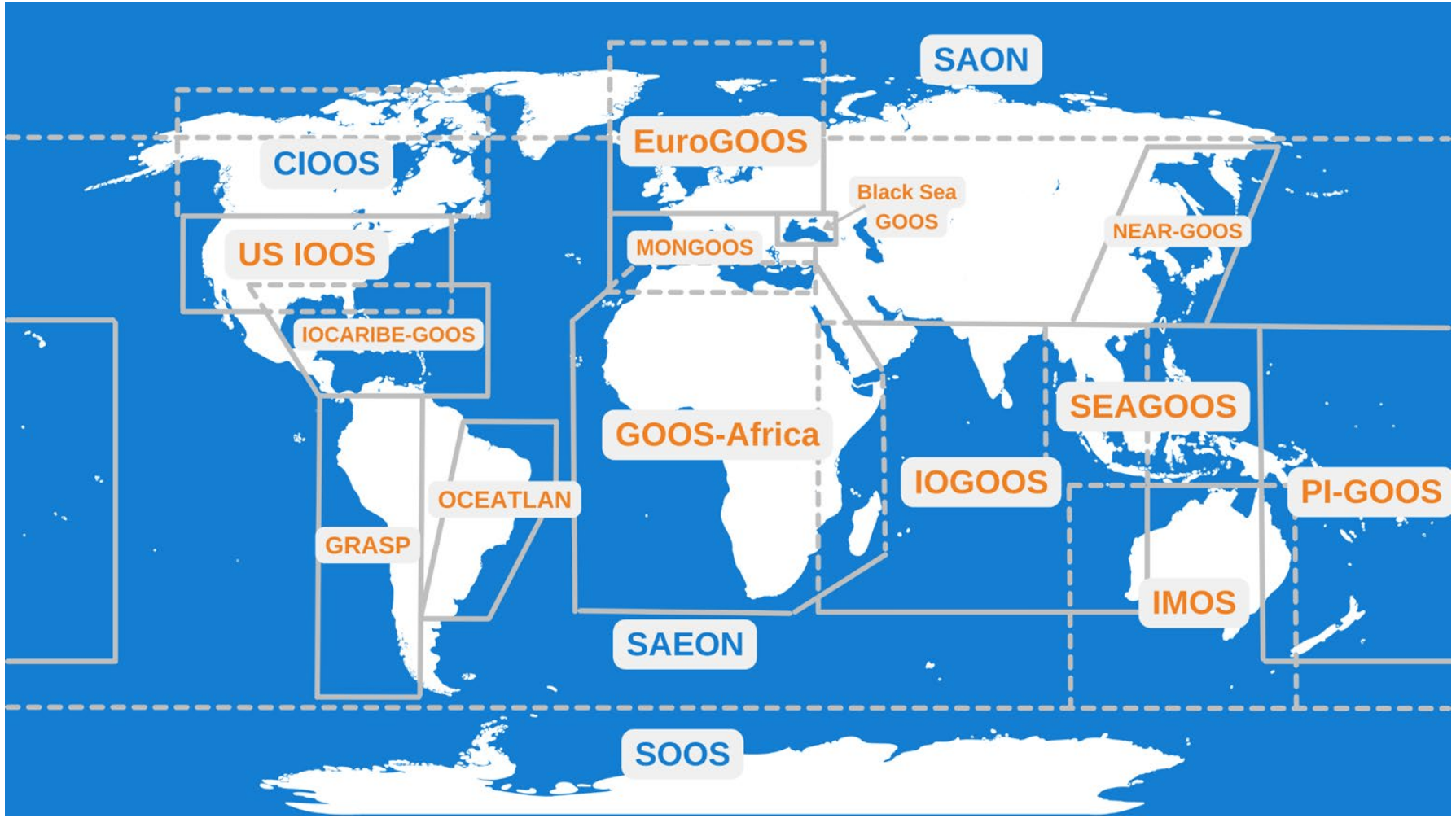
Expert Team on Operational Ocean Forecast Systems (ETOOFS)

Role GOOS Regional Alliances (GRAs)

- GOOS Regional Policy 2013 - link
- National ocean observing and forecasting that come together at the regional scale
- Focus on regional priorities within a global context
- Support delivery of the GOOS 2030 Strategy
- GRAs are capable of identifying observing system gaps and proposed strategies to fill those gaps
- Many emphasize data sharing, capacity development, some are building extensive observing systems with marine services
- GRAs contribute to and benefit from the global observing system coordinated through GOOS



GOOS Regional Alliances



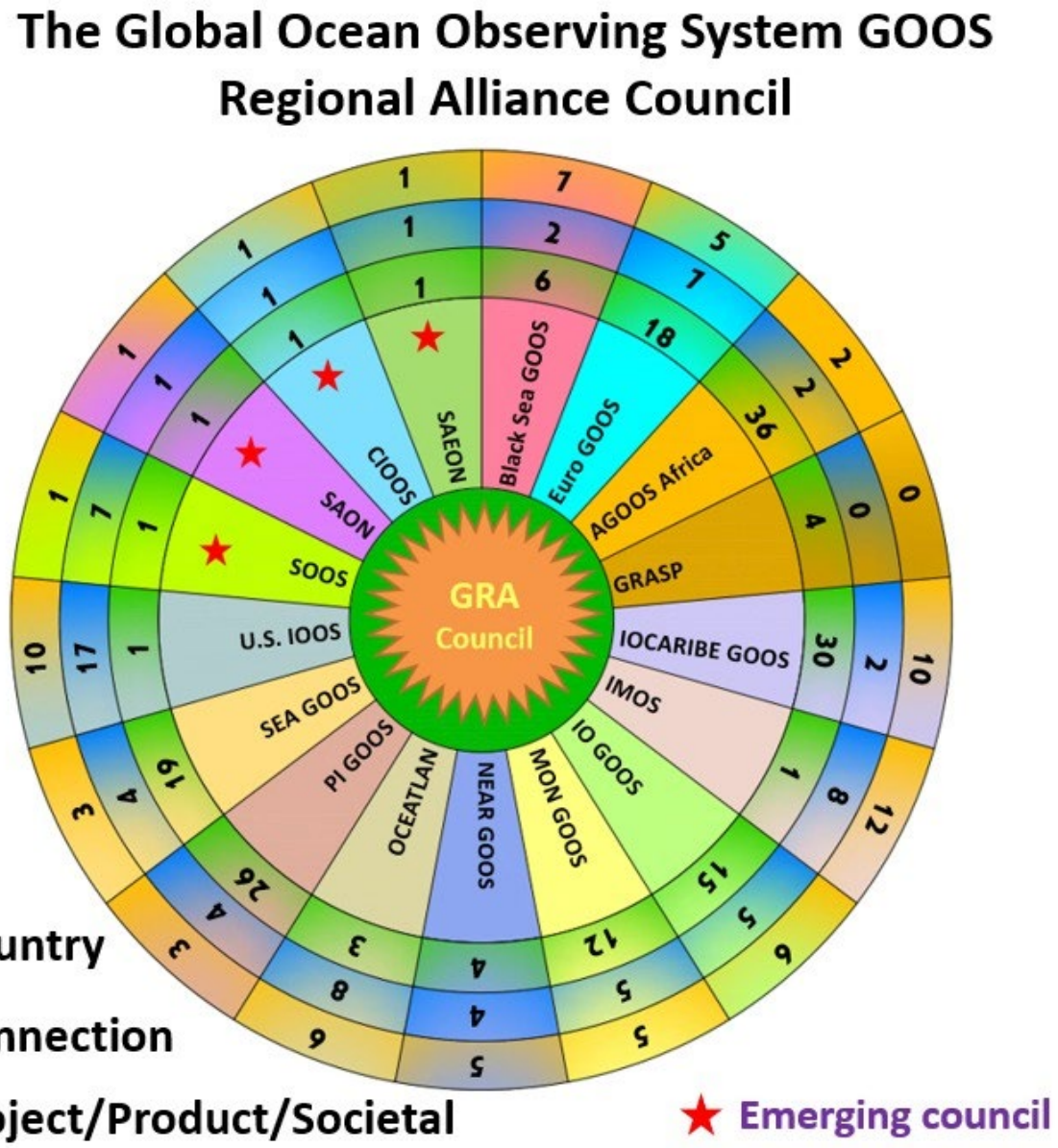
13 GOOS Regional Alliances (GRAs)

130+ countries

65 GOOS National Focal Points

Strength of GRAs

- ✓ 6 IOC sub-commissions
- ✓ 4 memorandum of understanding.
- ✓ 1 international nonprofit
- ✓ 2 national systems



GRA recent developments

- CIOOS - proposal to become a GRA
- PI-GOOS work ongoing to rejuvenate
- IOCARIBE-GOOS opportunity to rejuvenate
- GOOS-Africa - activity though Ocean Decade & GMES
- GOOS SC highlighted regional development as important
- Opportunity with green-blue funds and Ocean Decade
- GRA Forum in April 2024

IOCARIBE-GOOS

- **Identify regional needs**: tropical *storms, biodiversity, marine heatwaves, blue economy, fisheries, storm inundation, tourism, sargassum, oil spills?*
- **Develop Regional Strategy** ocean observing and forecasting - based on needs, existing expertise and partners
- **GOOS Office support**: connections across GOOS, global networks and BioEco communities, other GRAs, forecasting, WMO, seek solutions for needs
- **Leverage opportunities for funding & partnership,** e.g. joint ventures etc.
- **Invest in communications**
- Encourage **GOOS National Focal Points**
- Work with GOOS, GRA Chair, partners

The Global Ocean Observing System

Thank you

goosocean.org

unesco
Intergovernmental Oceanographic Commission

WORLD METEOROLOGICAL ORGANIZATION

UN environment programme

International Science Council