



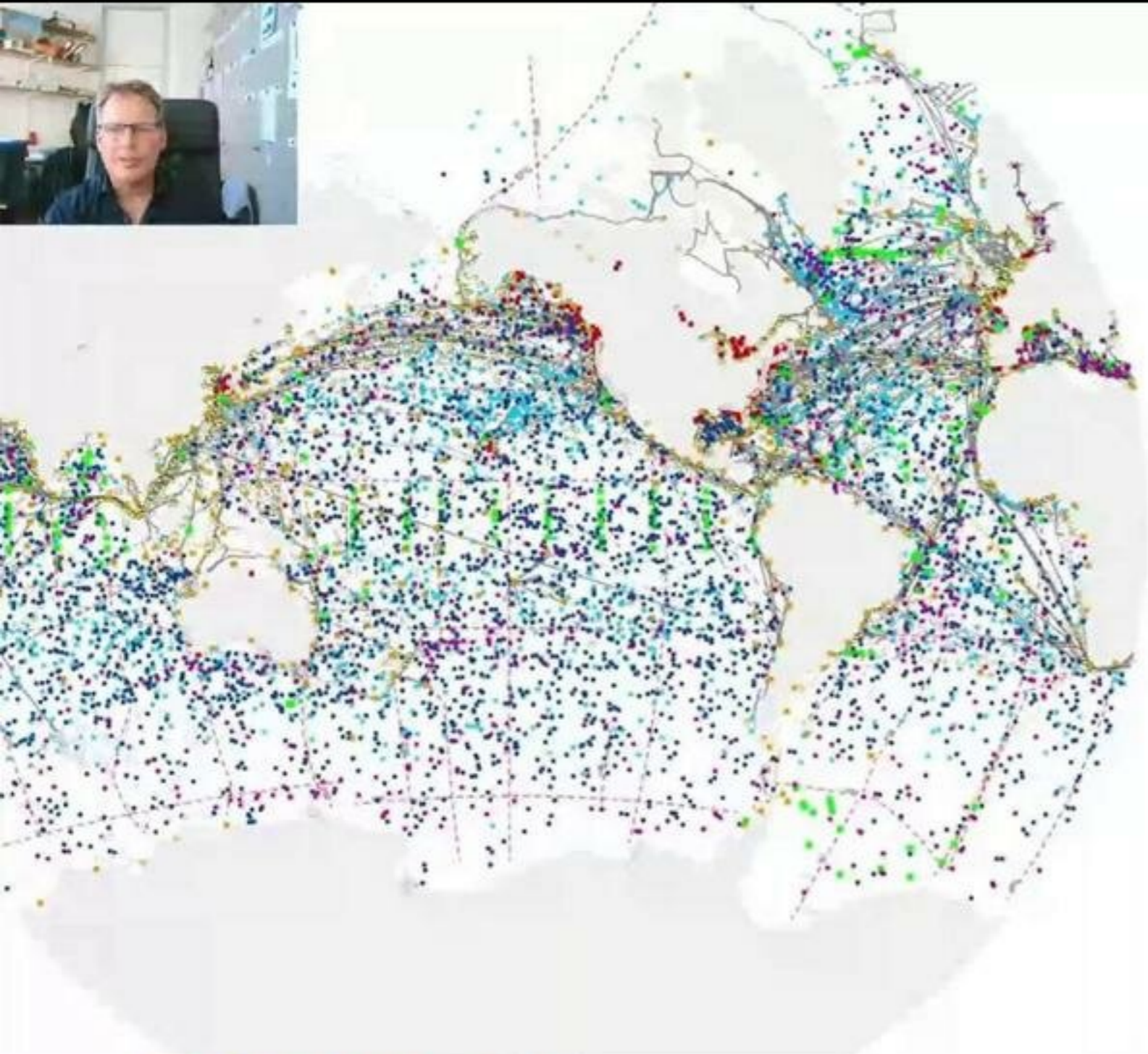
Global Ocean Observing System

# The Global Ocean Observing System -GOOS

CLIVAR IORP POGO Regional training workshop on observing the coastal and marginal seas in the western Indian Ocean  
June 7, 2022

Toste Tanhua, GOOS co-chair





# Global Ocean Observing System today

- 86 countries, 8000+ observing platforms, 12 global networks
- Ocean and marine meteorological EOVs and ECVs
- Mature networks such as Argo, VOS, and DBCP drifting and moored buoys, and emerging networks such as OceanGliders and AniBOS

"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



# Global Ocean Observing System



## Steering Committee

### Scientific oversight

#### Expert Panels

##### Physics



##### Biogeochemistry



##### Biology and Ecosystems



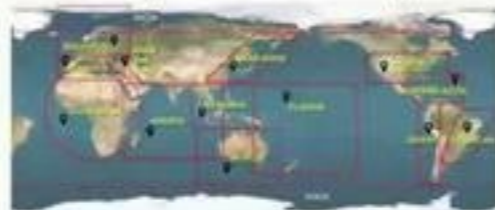
### Observation coordination

#### Global observing networks and platforms



#### Regional and National organizations

#### GOOS Regional Alliances (GRAs)



### Project development

#### Improving through innovation and renovation



### Major delivery areas

1. **Climate:** climate change modeling, warming, acidification
2. **Real time services:** weather forecasts and early warning for ocean related hazards, maritime economy
3. **Ocean health:** productivity, species diversity and resilience

Sponsored by:





# Essential Ocean Variables (EOVs)

## Physics

- Sea state
- Ocean surface stress
- Sea ice
- Sea surface height
- Sea surface temperature
- Subsurface temperature
- Surface currents
- Subsurface currents
- Sea surface salinity
- Subsurface salinity
- Ocean surface heat flux

## Biogeochemistry

- Oxygen
- Nutrients
- Inorganic carbon
- Transient tracers
- Particulate matter
- Nitrous oxide
- Stable carbon isotopes
- Dissolved organic carbon

## Cross-disciplinary

- Ocean colour
- Ocean sound
- Marine debris (\*emerging)

## Biology & ecosystems

- Phytoplankton
- Zooplankton
- Fish
- Sea turtles
- Seabirds
- Marine mammals
- Hard coral
- Seagrass
- Macroalgal canopy
- Mangroves
- Microbes (\*emerging)
- Invertebrates (\*emerging)





# The GOOS 2030 Strategy

## Vision

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

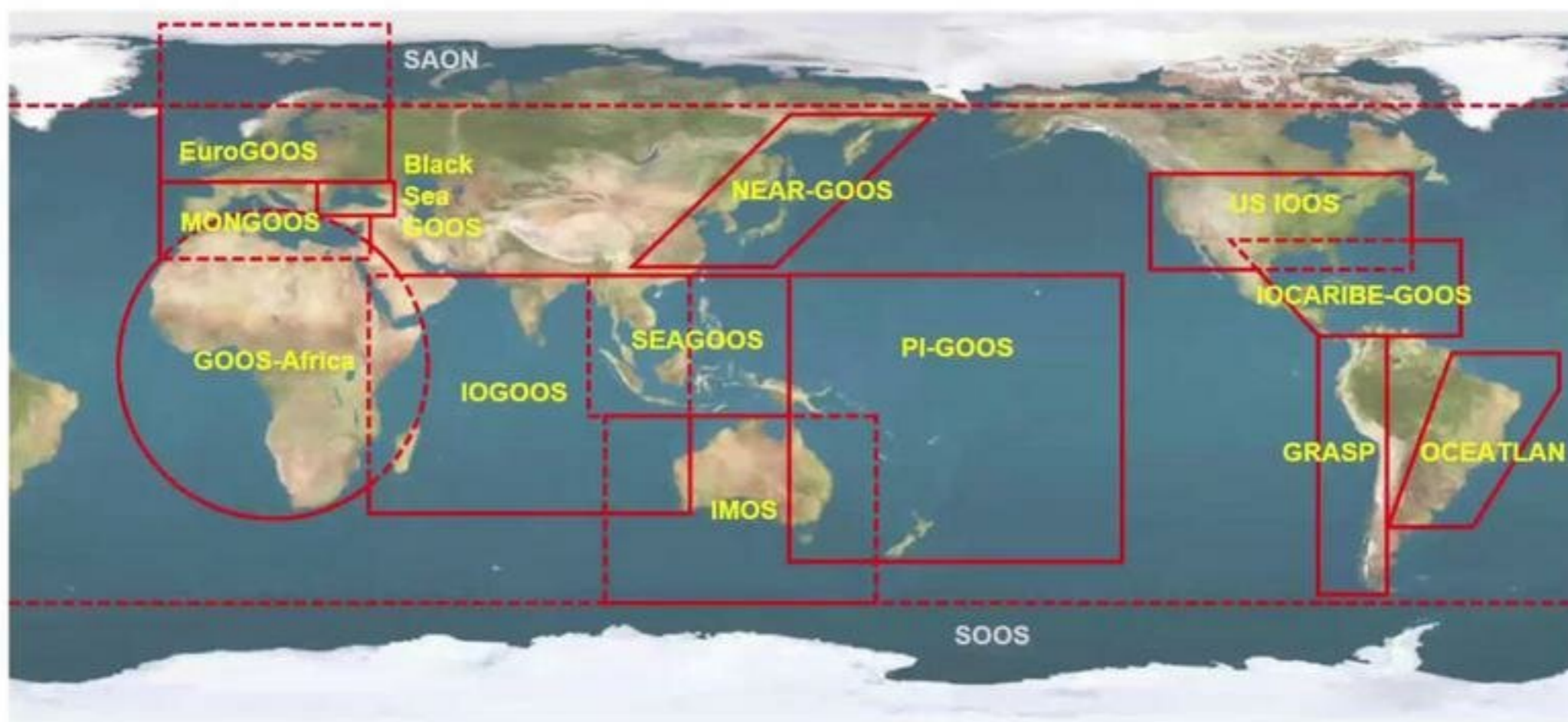
## Mission

To lead the ocean observing community and create the partnerships to grow an integrated, responsive and sustained observing system





# 15 Regional Alliances, and collaborating regional observing systems – One mechanism for regional implementation of GOOS





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The Global Ocean Observing System

# Thank you

[goosocean.org](http://goosocean.org)

