

# IOCaribe – Technical Science Meeting

## Brasilia, April 2025



**unesco**

Intergovernmental  
Oceanographic  
Commission

# THE FISHING VESSEL OCEAN OBSERVING NETWORK (FVON).

**Steering Committee:** Cooper Van Vranken, A. Miguel Piecho-Santos, Julie Jakoboski, Christopher Cusack, Patrick Gorringer, Michela Martinelli, Moninya Roughan, João de Souza, Peter McComb, George Maynard, Shinichiro Kida, Hassan Moustahfid

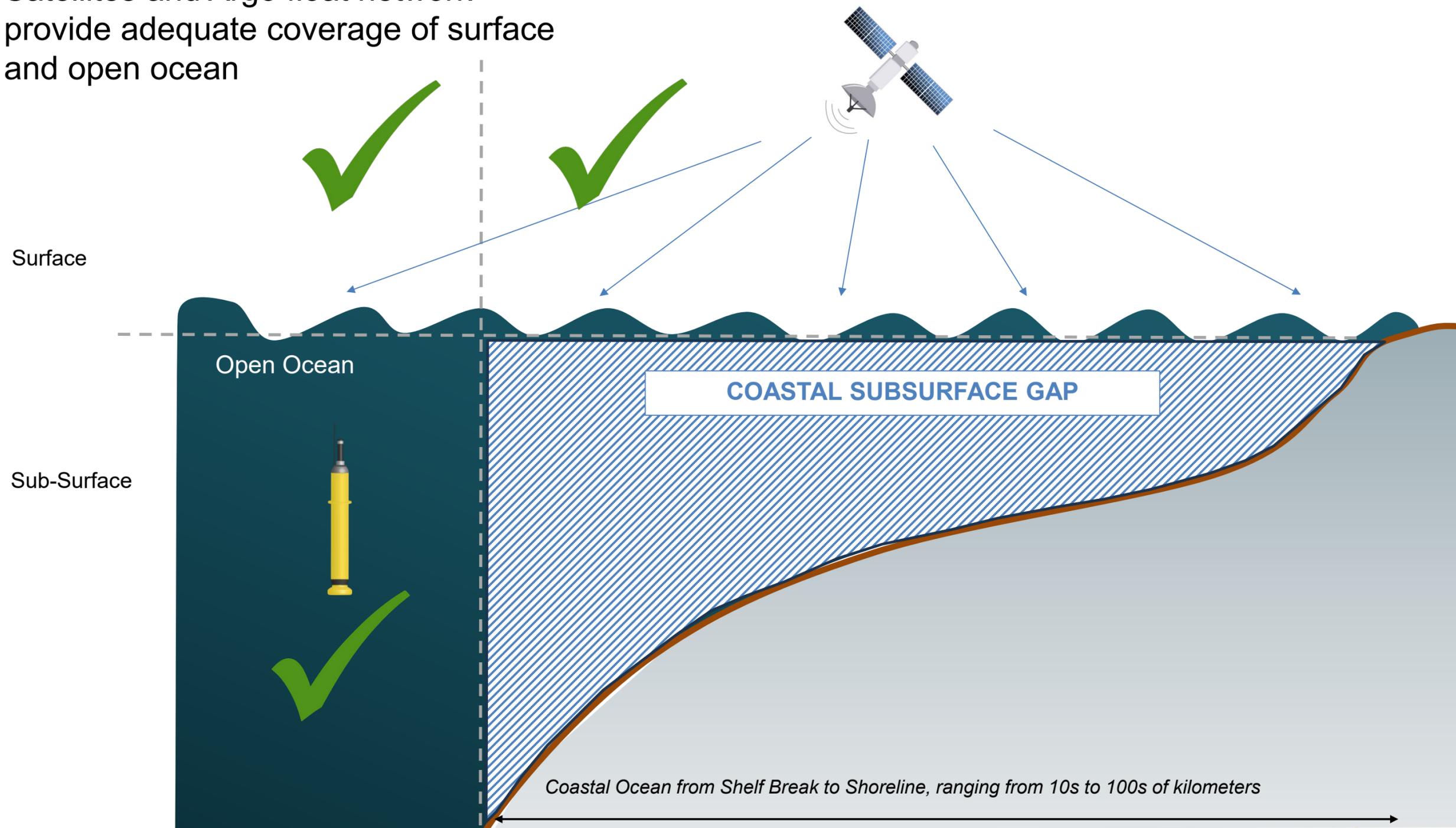
**Secretariat:** Aubrey Taylor, Emilie Brévière, Rita Esteves, Matt Irwin, Dustin Colson Leaning



2021 United Nations Decade  
2030 of Ocean Science  
for Sustainable Development

# OBSERVING GAPS IN THE COASTAL OCEAN

Satellites and Argo float network provide adequate coverage of surface and open ocean



**Coastal subsurface is the missing piece, with huge impacts on:**

**PUBLIC SAFETY**

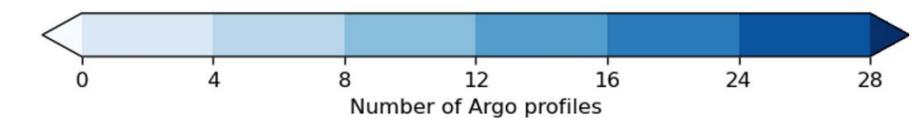
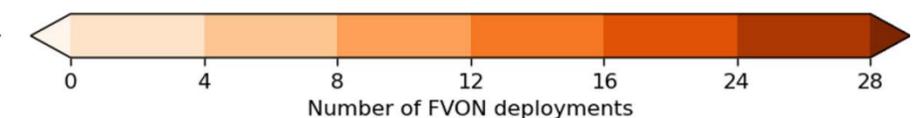
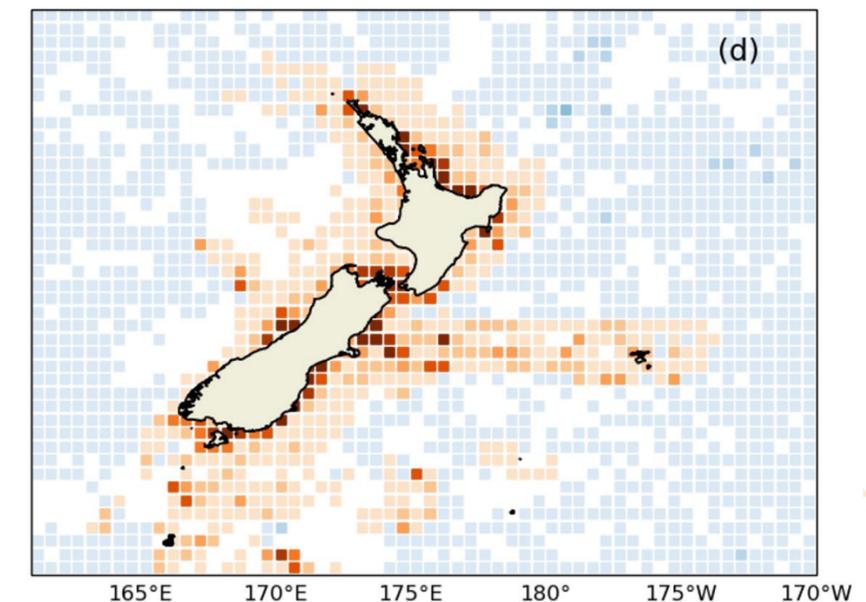
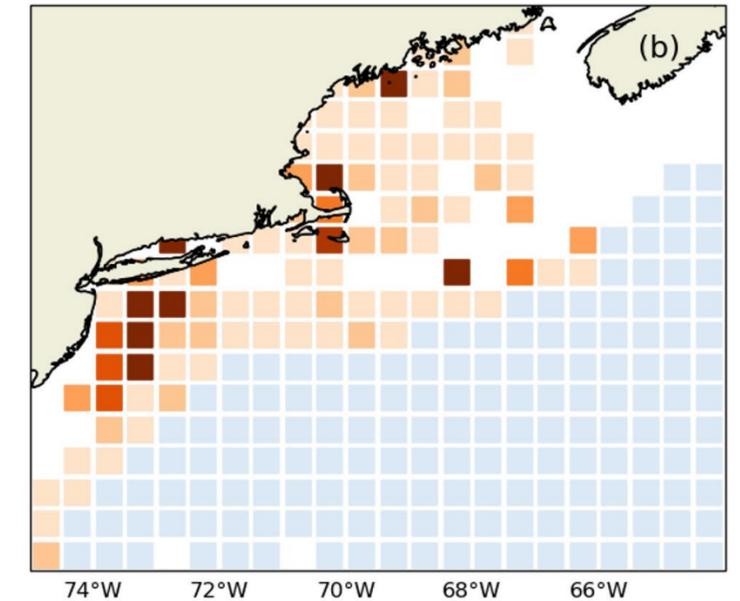
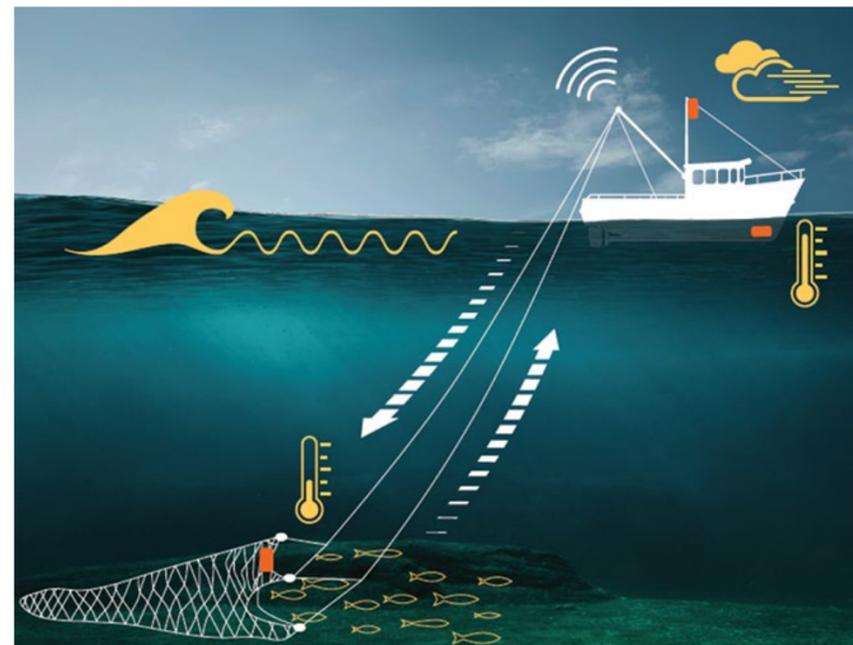
**ECONOMY**

**ECOSYSTEMS**



# THE COASTAL ARGO COMPLEMENT

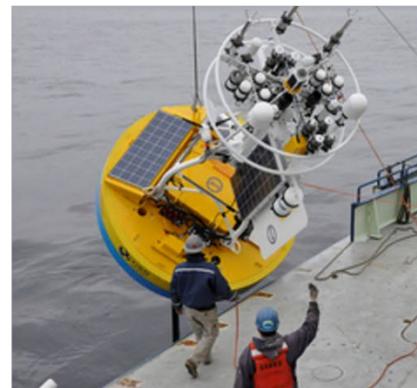
- Existing fishing fills coastal ocean data gaps
- IoT sensors on fishing gears (nets, traps, etc.)
- Along for the ride down and up, data transmitted automatically
- Proven on 600+ vessels, aiming for 10s of thousands
- Coastal data particularly valuable for the blue economy



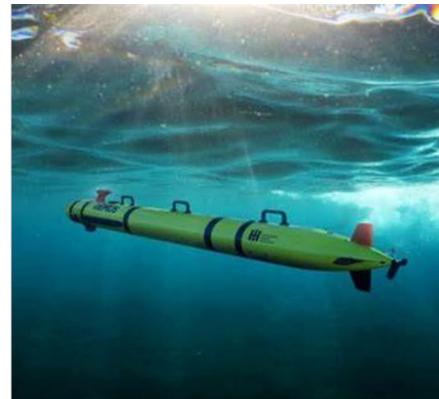
# SCALABILITY IN OCEAN OBSERVING



Oceanographic Research Vessel with CTD cast



Moored Buoy with wire-crawling CTD



Autonomous UUV / Glider



Open ocean Argo Profiler



FVON:  
Going along for the ride

Daily/Profile  
Operational  
Cost

\$30,000+

\$2,700

\$400-\$3,000

\$200

\$27

Available  
Host  
Platforms

Dozens

Dozens

Hundreds

Thousands

Millions!

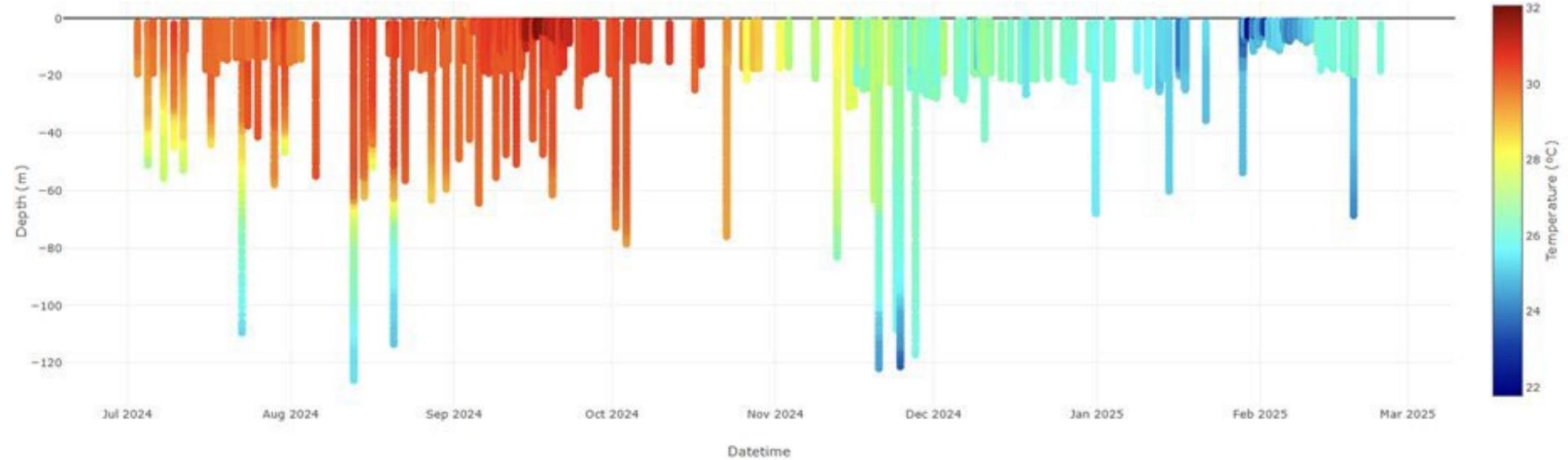
Applicable to  
coastal seas?



All platforms are necessary! While FVON is cost-efficient, there are inherent limitations



- Goal: improve Tropical Cyclone rapid intensification forecasting
- 10 small-scale vessels across Bahamas starting July 2024
- Transitioning to Bahamian leadership for sustained operations and expansion
- Model for IOCaribe nations



## FISHING INDUSTRY

- Small host vessels often receive a stipend
- Captains use data to fish smarter and more efficiently, temperature windows to avoid bycatch
- Ocean modeled products fed with FVON data

## FISHERIES SCIENCE AND MANAGEMENT

- Data precisely where the fish are: key foundation for Ecosystem Based Fisheries Management
- Data from eMOLT FVON program used in lobster and tilefish stock assessments
- eMOLT data lead to increase in quota by reducing uncertainty in stock assessments



A predicted ocean



A healthy and resilient ocean



A productive ocean



A safe ocean



## FEEDBACK FROM KYUSHU SFIN CAPTAINS

*“Through the CTD castings, I found the temperature range for good catches.”*

*“I don't have to look around the fishing grounds anymore and thus save 15% in fuel. It makes me so relaxed that I can take a nap on site.”*

# WHY DOES FVON DATA MATTER?



**ACCESSIBLE:** affordable for lower-income countries

**INCLUSIVE:** empowers fishers to be part of the solution

Compounding benefits for science, fisheries, and other blue economy industries



SUSTAINABLY  
FEED THE GLOBAL  
POPULATION



DEVELOP A SUSTAINABLE  
AND EQUITABLE OCEAN  
ECONOMY



INCREASE COMMUNITY  
RESILIENCE TO OCEAN  
HAZARDS

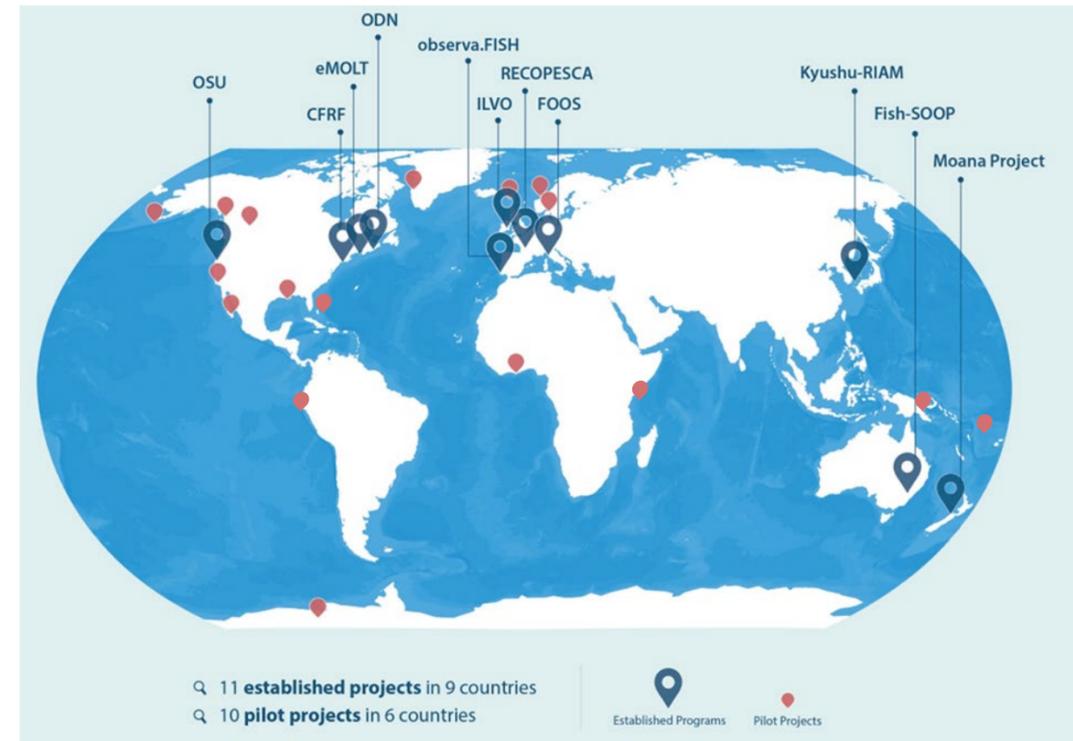


Ghana video link

## Interdisciplinary Steering Committee

- Scientific, NGO, and private sector representation
- Core pillars: Quality Data, Mutual Benefits, Global Advocacy, Inclusivity, Global Coordination and Collaboration, and Financial Innovation

We would like to establish the appropriate framework(s) for collaboration with IOCaribe and associated member states.



# THANK YOU.



## CO-CHAIRS

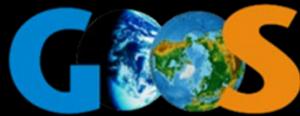
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