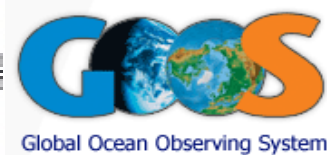




Global Ocean Acidification  
Observing Network

# The Global Ocean Acidification Observing Network

*Bronte Tilbrook, CSIRO, AUS; Libby Jewett, NOAA, USA; Phil Williamson, UEA, UK; Jan Newton, UW, USA; Kirsten Isensee, IOC-UNESCO & GOA-ON community*



Ocean Acidification  
International  
Coordination Centre  
OA-ICC



An ***integrated network*** for the detection of ocean acidification and ecosystem response from local to global scales





## GOA-ON Membership Expansion

# GOA-ON now (Sep 2016)

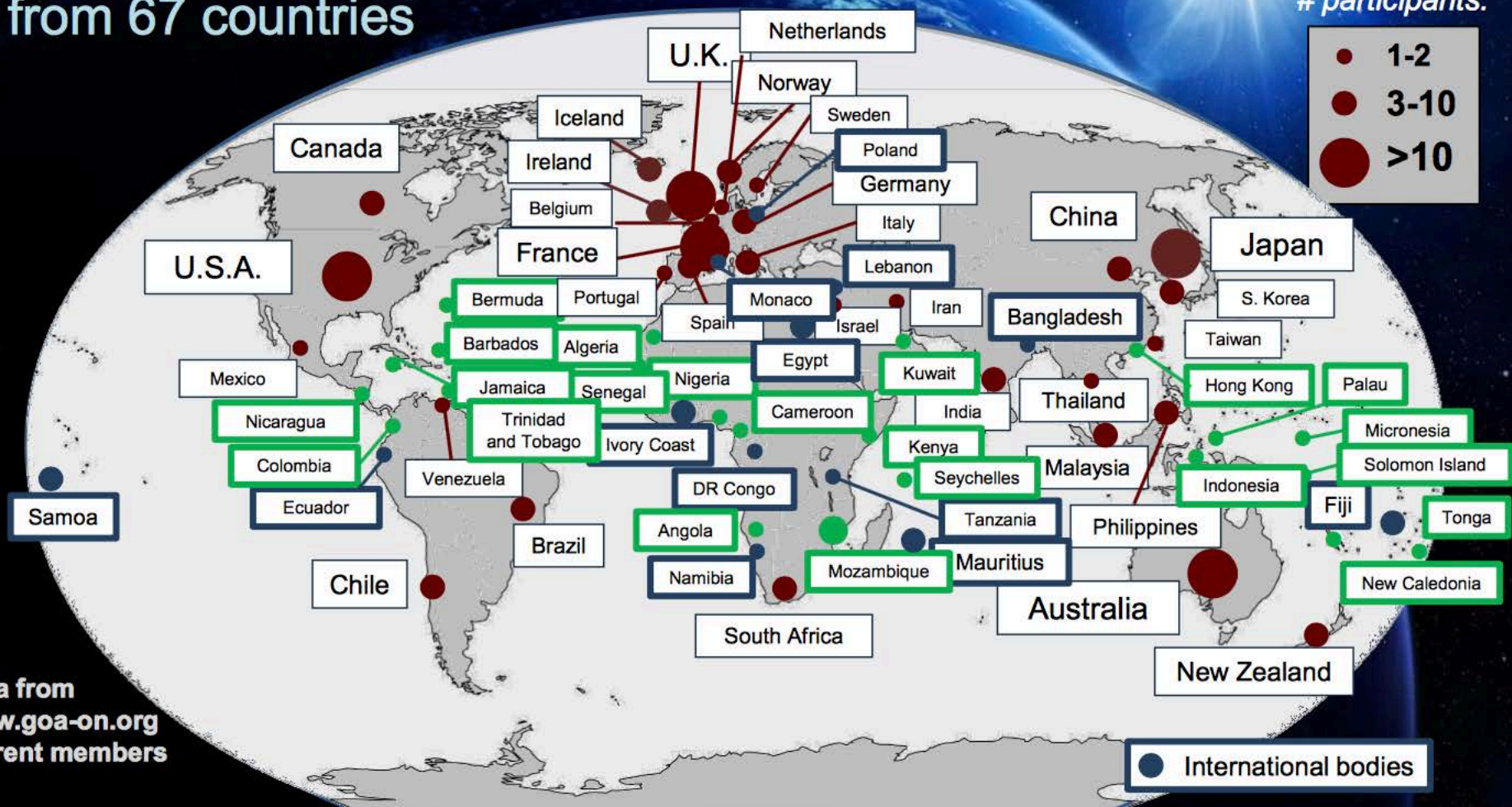
## ➤ Several regional trainings (2016)

Network of 330 scientists  
from 67 countries

- Jul 2013
- Apr 2016
- Sep 2016

# participants:

- 1-2
- 3-10
- >10

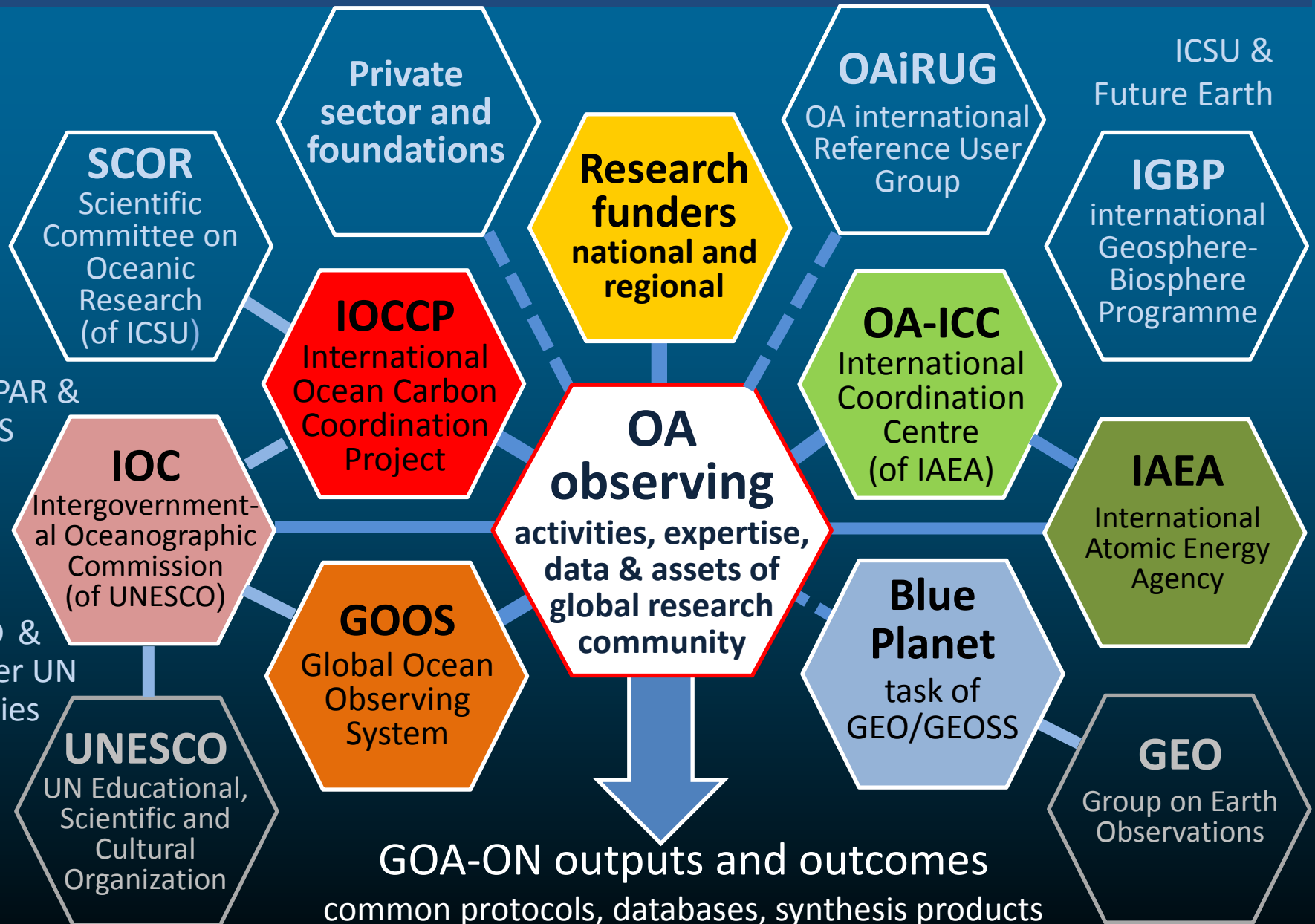


Data from [www.goa-on.org](http://www.goa-on.org)  
current members list

● International bodies

# Global OA Observing Network

*wider connections  
(not comprehensive)*



# Designing GOA-ON

Three international workshops, 2012-2103, defined the framework for the observation network

- *Rationale*
- *Goals*
- *Design*
- *Suite of measurement parameters*
- *Regional coverage (hubs)*
- *Data quality and data distribution strategies*
- *International program integration*



The Global Ocean Acidification Observing Network (GOA-ON) is a collaborative international approach to document the status and progress of ocean acidification in open-ocean, coastal, and estuarine environments, to understand the drivers and impacts of ocean acidification on marine ecosystems, and to provide spatially and temporally resolved biogeochemical data necessary to optimize modeling for ocean acidification.

Global Ocean Acidification Observing Network



Home

References/Reports

GOA-ON Activities

Interactive Map

Network Members

Governance/Contact

Pier2Peer

GOA-ON  
Global Ocean Acidification Observing Network

Global Ocean Acidification Observing Network:  
Requirements and Governance Plan

Second Edition

October 2015

J.A. Newton, R.A. Feely,  
E.B. Jewett, P. Williamson,  
J. Mathis

## GOA-ON plan:

[www.goa-on.org](http://www.goa-on.org)

Goal 1: Detect ocean acidification

Goal 2: Ecosystem impacts

Goal 3: Data exchange and improve predictions of change and impacts

- GOA-ON observations have a **nested design**:
  - Level 1: **critical minimum measurements**
  - Level 2: measurements for integrated assessment to enhance interpretation
  - Level 3: measurements that are not yet fully ready for standardisation, in development or evaluation
- Ecosystem variables will only be measured in a subset of total OA observation stations

# GOA-ON nested system design depends on habitat

Coral reefs

Open ocean

Coasts & shelf seas

| Goal 1<br>OA conditions  | Goal 2<br>Ecosystem response  | Goal 3<br>OA modeling   |
|--|---|-------------------------|
| <p><u>L1:</u> carbonate-system constraint, T, S, O, fluorescence, irradiance</p> <p><u>L2:</u> nutrients, bio-optics, transport, meteorology, trace metals, PIC...</p> <p><u>L3:</u> capability-specific</p> | <p><u>L1:</u> biomass of functional groups (phytoplankton, zooplankton &amp; microbes)</p> <p><u>L2:</u> species; processes incl. growth, grazing &amp; respiration</p> <p><u>L3:</u> capability-specific</p> | <p>Inputs to models</p> |



# CAPACITY BUILDING 2015/16

## IAEA, IOC, Ocean Foundation

*'Help train tomorrow's experts on ocean acidification'*

**Xiamen, Oct 2015**

**28 participants  
from  
10 Asian  
countries**



**'OA-ASIA'**



**Cape Town and Inhaca  
(Mozambique)**

**'OA-  
AFRICA'**

**36 participants from  
17 African countries**  
from L. Hansson, IAEA

# Pier2Peer: mentorship

*A mentorship program to expand ocean acidification observing capacity through two-way sharing and capacity building activities.*



**International Professional Engagement:** Mentors answer scientific questions and assist in professional development opportunities.

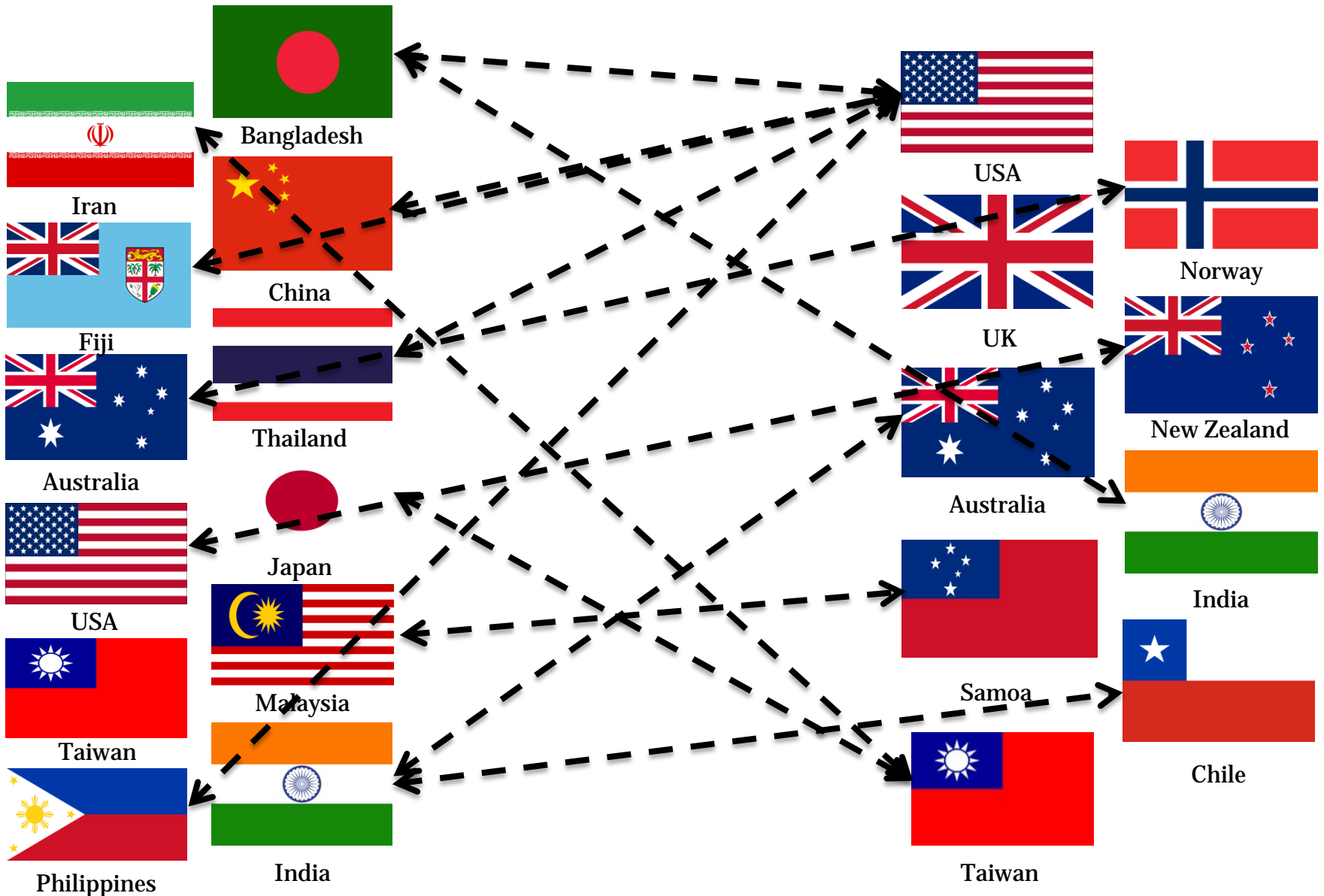
**One-on-One Training:** Competitive funding opportunities will be made available for travel and training between P2P partners.

**Strengthening GOA-ON:** Members become a part of the GOA-ON Network.

# Pier2Peer – Asia/Pacific

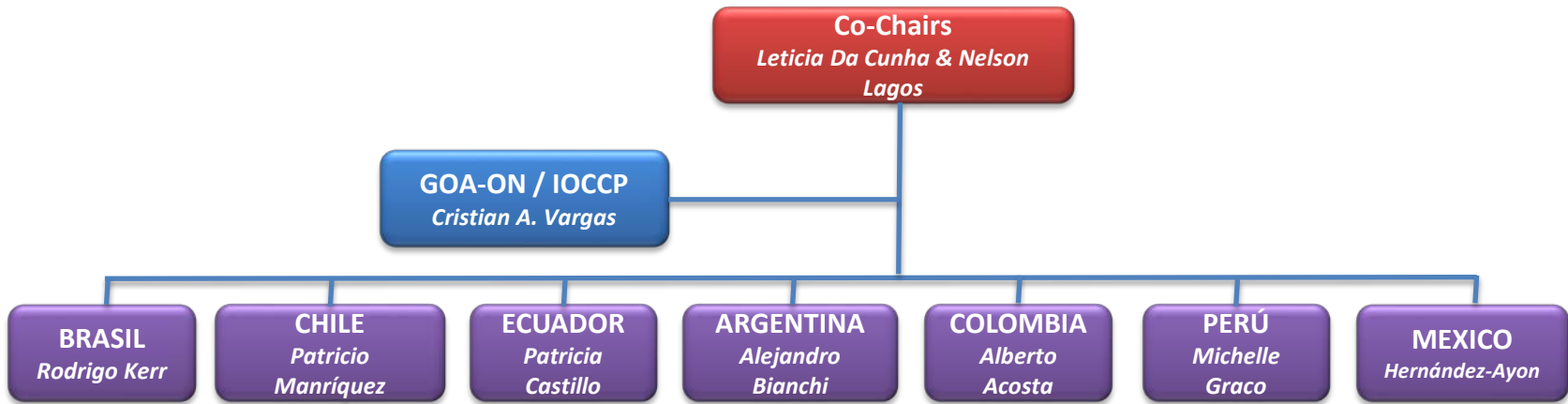
## Mentee Countries

## Mentor Countries



# Building regional hubs: Latin America Ocean Acidification

## Executive Council LAOCA 2016 - 2018



- Capacity building
- Intercalibration
- Outreach
- Publication
- Funding

From C. Vargas

# Observing assets and data delivery

<http://portal.goa-on.org/Explorer>

Home **Explorer** Settings

GLOBAL OCEAN ACIDIFICATION OBSERVING NETWORK  
EXPLORER

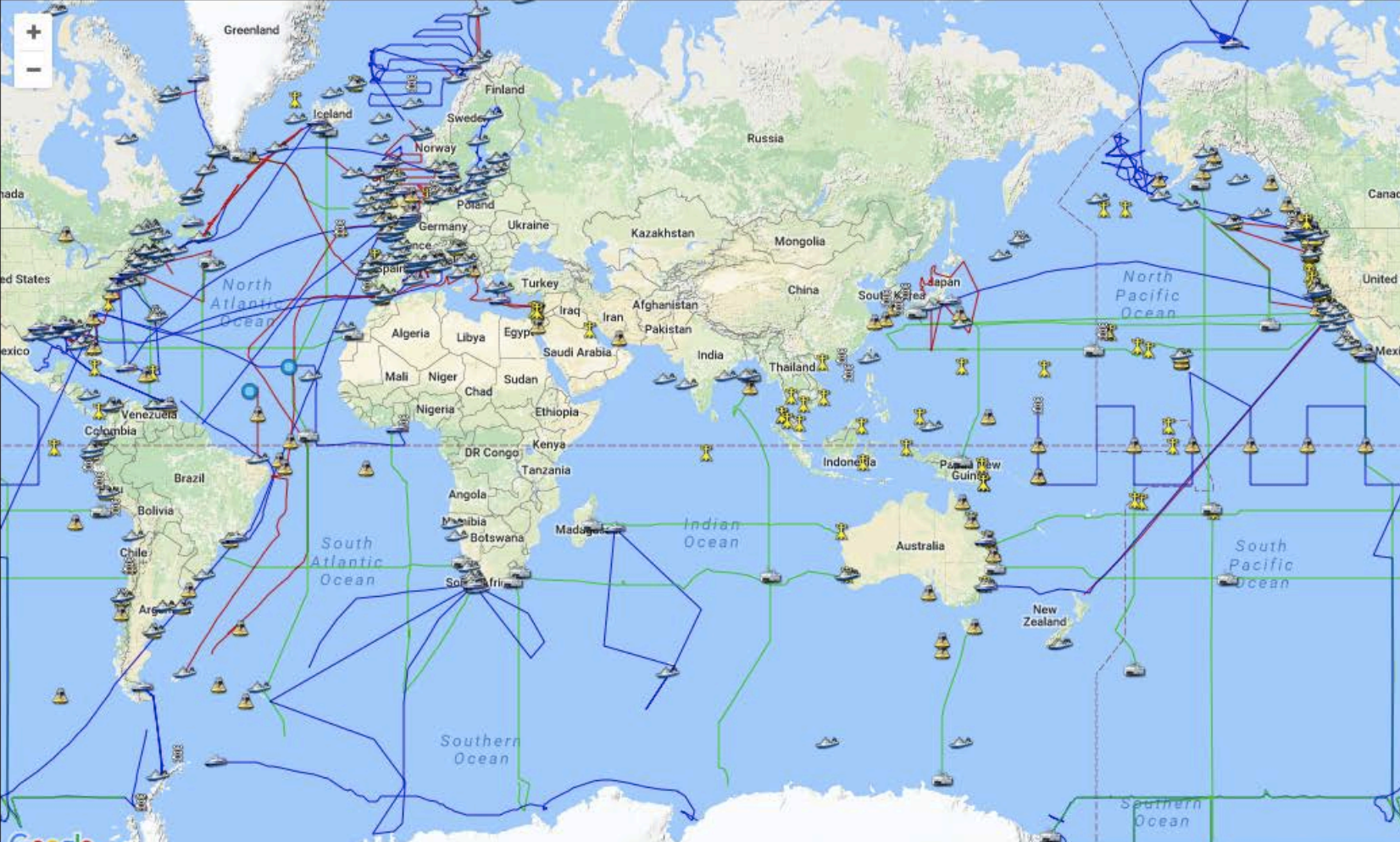
Map Asset List Asset History Help

Powered by Vizer

Lat: 74.8679 Lon: -102.3047

Terrain

- Regions
- Filters
- Fixed Platforms
- Mobile Platforms
- Remote Sensing
- Legend



The map displays a global network of observing assets and data delivery routes. Assets are represented by yellow icons (buoys, ships, and remote sensing satellites) and are connected by colored lines (blue, red, green, purple) representing data delivery paths. The map covers all major oceans and continents, with labels for various countries and regions. The interface includes a sidebar with filters for Regions, Fixed Platforms, Mobile Platforms, Remote Sensing, and Legend. The top navigation bar includes Home, Explorer, Settings, Asset List, Asset History, and Help. The bottom of the map shows Google logo, map data copyright (©2017), a 500 km scale bar, and links for Terms of Use and Report a map error.

# Data products

