



Partnership for
Observation of the Global Ocean



@POGO_Ocean #POGO23

POGO-23

Plenary Meeting Report

24 – 28 January 2022

Virtual Meeting Platform:

Zoom

Agenda

23rd POGO Annual Meeting (POGO-23) and Side Meetings

Week at a glance

Key:

	Live Update Sessions, accessible though Zoom, open to all registered participants
	Live Thematic Sessions, accessible though Zoom, open to all registered participants
	Live, closed sessions, accessible though Zoom

	Mon 24 Jan	Tues 25 Jan	Wed 26 Jan	Thurs 27 Jan
	POGO-23 Open Meeting	POGO-23 Open Meeting	POGO-23 Open Meeting	POGO AGM Closed session
UTC Morning/early afternoon	12:00 – 14:00 Session 1 Overview and status of POGO activities	11:30 – 12:30 Session 2 Presentations by (new) POGO members	11:30 – 12:30 Session 3 New/ emerging initiatives by POGO members	06:00 – 08:00 AGM Part 1 (members only)
UTC Afternoon	14:30 – 16:00 Thematic Session A POGO & the UN Decade	13:00 – 14:30 Thematic Session C Engagement with GOOS	14:00 – 16:00 Reporting back from Thematic Session leaders and discussion of recommendations	13:00 – 15:00 AGM Part 2 (members only)
UTC evening		15:00 – 16:30 Thematic Session D OBON		15:00 – 16:30 Board Meeting
UTC evening		17:00 – 18:30 Thematic Session E Ocean obs & indigenous knowledge		

The full agenda can be accessed here: <https://pogo-ocean.org/wp-content/uploads/2022/01/POGO-23-agenda-final.pdf>.

POGO-23 Meeting Summary

Open Meeting

24th-27th January 2022

The list of participants is accessible to all at <https://pogo-ocean.org/about/pogo-meeting/pogo-23/>.
Background documents, recordings and presentations are available to registered delegates at:
<https://pogo-ocean.org/pogo-23-documents-and-links/> (password was sent to delegates before the meeting)



Although it had been hoped (once again) that the meeting would be hosted in-person by the Oceanology Division of the Center for Scientific Research and Higher Education at Ensenada (CICESE) in Mexico, the 23rd POGO Annual Meeting (POGO-23) unfortunately had to be held once again on-line, from 24 to 27 January 2022. As last year, the meeting was very well attended, bringing together a total of 147 delegates from 33 countries.

Prof. Nick Owens, Chair of the POGO Board of Trustees, and Director of the Scottish Association for Marine Science (SAMS), opened the meeting and welcomed the participants. He also thanked the Board of Trustees and the Secretariat staff for all their hard work during another challenging year. He then gave a summary of the highlights of 2021, including an update on membership, governance and finances, the establishment of Regional Nodes, POGO-sponsored projects (OBON, IQOE, and Lounsbery Foundation-funded project COLLECT), capacity development (in particular the continued successful partnership with the Nippon Foundation), and the launch of POGO's [new interactive Strategy](#).

The first day continued with updates on POGO activities, including general updates from the Secretariat on the 3 pillars of POGO (observations, capacity development and outreach/advocacy), followed by individual updates on the following POGO-sponsored activities:

- SMART Cables Initiative
- [Citizen Observation of Local Litter in Coastal Ecosystems \(COLLECT\)](#)

- [Building capacity In Ocean acidificaTion MoniToring in the Gulf of GuineA \(BIOTTA\)](#)
- [Data Acquisition in Gulf of Guinea](#)
- [Open Access Marine Observation Devices \(OpenMODs\)](#)
- [Empowerment/Employment of female researchers in Key Assignments \(ERIKA\)](#)
- [Capacity building for Biochemical obsERvation of AnthropogeniC pollutiOn in tropical TraNsitional waters \(BEACON\)](#)
- [South East Asia project for General Regional Awareness of Seagrass by Society \(SEAGRASS\)](#)
- [Ocean Best Practices Workshop](#)
- World Association of Marine Stations (WAMS).

During the general discussion about how POGO could further support these initiatives, the endorsed programmes expressed an interest in working collaboratively to avoid duplication of effort (WAMS) and in POGO helping to raise awareness of their activities (SMART Cables). There was also some discussion about an outcome of the ERIKA WG developing an international accreditation for gender equality in science that POGO members could apply for.

On Day 2 a new member ([University of Lagos, Nigeria](#)) and new Directors of existing member institutions (NIOZ Netherlands, Ifremer France, QNLM China and OFI Canada) had the opportunity to introduce themselves to the rest of the community, and on Day 3 all members were able to briefly introduce new initiatives taking place at their institutions.

A total of 5 thematic sessions were held over the first 2 days, on the topics of (1) POGO and the UN Ocean Decade, (2) Ocean Sound EOv and low-cost devices, (3) Engagement with GOOS, (4) the Ocean Biomolecular Observing Network (OBON), and (5) Ocean Observations and Indigenous Knowledge. Session leaders reported back on Day 3 and the POGO members discussed plans for follow-up actions. A summary of each Thematic Session is presented below, followed by the list of Action Items that were agreed.

1. UN Decade of Ocean Science for Sustainable Development (Co-Chairs Francisco Arias and Chai Fei)

The first part of the session consisted of an introductory presentation/update on the UN Ocean Decade by Margaret Leinen, followed by 3 examples of UN Ocean Decade programmes (a) related to observations (DITTO, Martin Visbeck), (b) on capacity development (OTGA, Claudia Delgado) and (c) a regional programme (Coastal SOS, Yawei Luo).

The discussion addressed the issue of funding for UN Decade activities. Although the Decade itself was not designed to provide any new funding, there is the aspiration to direct funding towards ocean work, by raising the visibility of large international efforts, such as seafloor mapping, marine life and digital twins. It was also noted that there has been progress in engaging with philanthropy.

The discussion then focussed on the role of POGO in the Decade. POGO's track record in capacity development was noted and this could be an area where POGO serves as a successful example. A programme on sustaining high-to-low capacity exchange was suggested, which could use the POGO network as a test bed for making such exchanges more reliable, transparent, effective and sustainable. The POGO network could also be used to encourage POGO members in developing countries to establish a coordinating centre for ocean observations outside of the "usual" places.

Finally, it was noted that the UN system is based on state membership and tends to network employees of government ministries, whereas the success of the UN Decade will rely on the institutions conducting the oceanographic work, many of which are POGO members. It was agreed that POGO should apply for Implementing Partner status.

The following actions were agreed during the wrap-up session on Day 3 of the meeting:

Submit proposal to UN Decade for POGO, as a natural partner of IOC and of many Decade Actions, to be a formal Implementing Partner on the theme of ocean observations, with the following contributions:

- 1.1. To look at how POGO can bridge the gap between developed and developing countries, making use of low-cost/open access technologies, and also between different stakeholders (academia, government, industry, foundations?) for specific regions/themes.
- 1.2. To help explain the UN Decade in under-represented countries, and advocate for establishment of National Decade Committees.
- 1.3. To coordinate actions in response to Decade calls for collaborative programmes and projects between POGO members (and other parties).

2. Ocean Sound EOV and Low-Cost Acoustic Devices (Co-Chairs Gilles Lericolais and Peter Tyack)

Sound is a persistent yet dynamic component of the maritime environment reflecting both physical and biological properties and phenomenology that define oceanography. This session was dedicated to stimulate the engagement of POGO members in envisaging solutions to fund development of low-cost acoustic recording devices (as follow-up to IQOE workshop held in Dec 2021 and at POGO-22).

The session was introduced by 3 topics:

- Update on IQOE activities related to sustained ocean sound observations by Peter Tyack;
- UN Decade programme on the Maritime acoustic Environment by Kyle Becker;
- Update on JPI Oceans Action on ocean sound by Angelo Camerlenghi.

Peter Tyack gave an update on IQOE and concluded that there are still difficulties to define the EOV for Ocean sound, and underline the need to determine what we want to measure. Actions carried out at the Military level and Geophysics were also mentioned as well as the ones taken at different other levels showing a need for collaboration to be developed. The presentation confirmed that the community is not here yet for low cost acoustic sensors and proposed to envisage a POGO programme that could define orientation and define solutions.

Kyle Becker presented the UN Decade programme on the Maritime acoustic Environment (UN-MAE) and underlined that understanding sound in the ocean is critical to support users of, and life within, the ocean. For this reason and in support of the UN Decade for Ocean science, the UN Research Programme on the Maritime Acoustic Environment is there to establish a comprehensive science-based programme aimed at measuring and objectively characterizing underwater acoustic environments – the physical, biological and anthropogenic – at regional to global scales. This Programme will foster new scientific knowledge, technologies, approaches to data collection and dissemination that facilitate the use of sound for analysing, evaluating and predicting ocean-life systems and therefore help to define the EOV for ocean sound. This could form the basis of a reflection for POGO to initiate a Programme on low-cost acoustic sensors.

Angelo Camerlenghi informed POGO members about the JPI Oceans Action on ocean sound.

The Joint Action Underwater Noise in the Marine Environment of the JPI oceans was adopted on 6th May 2020 with the purpose of promoting a pan-European, cross-disciplinary partnership, for the integration of different sectors of the scientific research community. A joint call for proposals was launched in December 2021 with the objectives to identify priorities, research gaps and needs on the state of impacts, technology, sound propagation, and measurements. The call addresses two main challenges in the field through activities that may focus on:

Theme 1: Effects of anthropogenic noise pollution on marine ecosystems

Theme 2: Innovative seismic sources as an option for quieter and effective alternatives to conventional marine geophysical exploration.

The session discussions were also addressing other mechanisms for funding follow-up work on the low-cost sensors topic. The possibility to establish a global hydrophone network as a first step in implementing the Ocean Sound EOY as part of GOOS was also on the table. Propositions were made about the possible expansion of the JPI Oceans model for funding international projects on ocean sound -particularly thinking about how this could be applied at POGO level to establish a Programme for low-cost Sound sensors.

The Session ended with the following recommendations presented and agreed during the wrap-up session:

- 2.1. Continue to support IQOE efforts to implement Ocean Sound EOY, in particular the prioritisation of parameters to measure (and their specifications -e.g. which frequency range(s)) and the most useful data products.
- 2.2. Support establishment of IQOE Working Groups to follow up on the topic of low-cost underwater acoustic recording devices, and in particular their required technical specifications; POGO input could focus in particular on the needs of developing countries (what to measure and for what purpose?).
- 2.3. Liaise with potential partners/funders, including the private sector (e.g. JPI Ocean: Ocean sound calls) to study the possibility for POGO and POGO members to get involved in joint actions.

3. Engagement with GOOS (Co-Chairs Anya Waite and Ed Hill)

This session aimed to better define the differences as well as the synergies between POGO and GOOS, in order to develop a plan for more effective collaboration and maximised use of each organisation's resources. The session built on some discussions already held between GOOS and POGO, which are summarised in the "POGO-GOOS Relationship Paper" and aimed to produce some concrete outcomes (i.e. agreed next steps).

Ed Hill presented the POGO perspective and Anya waite covered the GOOS perspective.

On the POGO side, the three priorities discussed where:

- Innovation in ocean observing – leading the making and innovation of observations that contribute to the global ocean observing system

- Capacity development – develop world-wide capacity and capabilities needed for ocean observations, nurture new generations of scientists, technical experts and leaders of ocean affairs
- Outreach and advocacy – advocate and promote in our own countries and world-wide (to intergovernmental organisations, governments, funding agencies, businesses, foundations and citizens) the importance of making systematic sustained, ocean observations for the advancement of science and for sustainable management of the ocean.

On the GOOS side, the relevant strategic objectives highlighted were

- Deepening engagement and partnership from observations to end users to advance the use and impact of the observations and demonstrate their benefits
- Deliver an integrated, fit for purpose observing system built on the systems approach outlined in the Framework for Ocean Observing
- Building for the future through innovation, capacity development and evolving good governance.

POGO's unique capabilities were noted as:

- Distributed network of institutions
- Excellence in research and innovation
- Collaborative achievement
- Institutional longevity
- Trust.

Possible areas of collaboration included:

- Innovation in ocean observing, e.g. POGO Biological Observations Working Group initiated Ocean Biomolecular Observing Network (OBON)
- Human impacts: POGO-IQOE (International Quiet Ocean Experiment) Working Group proposed Ocean Sound EO (Essential Ocean Variable)
- Noting that there was also strong potential for cooperation within advocacy and capacity development.

The following actions resulting from this session were agreed during the wrap-up session on Day 3 of the meeting:

- 3.1. Establish a drafting group to work on a Statement of intent ('declaration') to work together coming out of the POGO-23 meeting.
- 3.2. Advocacy: Align messaging (demonstrate consistency, avoid perception of competing voices) Confer annually on core messages (2 or 3 big issues to push and for joint-branded statements and/or consistent for major opportunities e.g. for 2022 UN Oceans, COP-15 (CBD), COP-27(UNFCCC)
- 3.3. Capacity Development: POGO to articulate to GOOS need for CD priorities, which GOOS can advocate for within intergovernmental/development aid system. Conversely, GOOS to highlight to POGO priorities/requests from the IOC member states regarding their CD needs, and POGO to try to align its capacity development activities with those. GOOS to refer to POGO as a CD partner (e.g. in GOOS Road Map).
- 3.4. Innovation – POGO to work on developing maturity of new areas of ocean observing and bringing them into GOOS (e.g. OBON, ocean sound).

- 3.5. POGO and GOOS Confer on UN Ocean Decade Actions; GOOS proposal to be Decade Office; POGO proposal to be Implementing Partner. Need to define how these might work in practice to maximise effectiveness?
- 3.6. Implement practical solutions to continue the discussion with GOOS, e.g. through POGO-GOOS Working Group.

4. Ocean Biomolecular Observing Network (Co-Chairs Margaret Leinen and Willie Wilson)

Margaret Leinen gave a short update on the ocean biomolecular observing network OBON, an endorsed UN decade project, and led by POGO. OBON was set up from an International Oceanographic Data and Information Exchange observation workshop last year, where there was agreement for all biomolecular observations and it was proposed to create a network. This is based on the premise that all life shares nucleic acids, through cells or waste products or debris after death. By sampling water and analyzing this, we can detect the organisms and also make other studies that help us understand the functioning of organisms and ecosystem. This will help us to develop capability to create biomolecular measurements, everything from viruses up to larger animals, to understand relationships and to be able to detect changes to them in oceans and to link them to causes. Objectives and goals for OBON can be found here <https://www.obon-ocean.org/> Members were reminded about the UN Ocean decade [call for OBON Projects](#) and invited to suggest SAC committee members from parts of the world not already represented.

Nicolas Pade (Executive Director of European Marine Biological Research Board) gave a presentation on the European Marine Omics Biodiversity Observation Network. They have biomolecular sampling and analysis incorporated into 16 time series stations from Norway to the Red Sea, focussing on water column, soft sediment and hard substrates. The programme will use centralised DNA extraction, ITS and CO1 for error reduction, and work on quality control. The data will be published every 3 months, and will be working on networking and training. More information on EMO BON here: <https://www.embrc.eu/emo-bon>.

Andrew Allen (Scripps Institution of Oceanography and J Craig Venter Institute) gave a presentation on incorporating biomolecular sampling and analysis into the 67 year-long California Current time series study of fisheries and oceanography. Microbial measurements have been looked at in relation to carbon cycling and transformation and impact on coastal food webs. They have sampled on almost every cruise since 2014 for microbial diversity. This research is also part of a long-term ecological research network to look at what drives major transitions, what types of processes are changing food webs and the influence of El Niño and La Niña weather patterns. Long-term ecological time series are important but it is difficult to obtain funding to maintain these. More information: <https://wp.calcofi.org/wp/data/marine-ecosystem-data/e-dna/>

Miguel Piecho-Santos -- Developing A-Fish-eDNA-Scan

Fish-dDNA-Scan is a program of cruises along the historical track of Magellan that will incorporate eDNA analyses and has a strong capacity development component. They are aiming to identify ichthyoplankton and use them in the assessment of fisheries and to advise ministries. They are trying to include the DNA techniques into monitoring of fisheries. More information: <https://cbma.uminho.pt/project/a-fish-dna-scan/>

PRESENTATIONS ON CROSS CUTTING INITIATIVES FOR OBON

Emmett Duffy, MBON

MBON already exist as international community of practice (CoP) and has agreed to serve as the CoP for biodiversity in the Ocean Decade. There is a lot of interest in standard protocols and methods. We need a stakeholder community, theme groups, so we can create specific goals and objectives. We also need to coordinate between existing and new partners, in particular help create communities of scale. One way to begin, is with common messaging to create a front that brings together the needs in biology and shows how we can achieve these. More information: <https://geobon.org/bons/thematic-bon/mbon/>

Pier Luigi Buttigieg and **Raissa Meyer** reported on the development of the OBON data framework. They are focusing on what is necessary for biological data, with societal benefits and creating a fit-for purpose system for primary data from RNA and eDNA and also expecting some secondary data. In this system OBON creates digital exchange packages with known and unknown stakeholders, and people from genomic backgrounds. But they are also working with partners to bridge gaps. They want to create a framework that will be very closely connected to and able to interoperate with other marine and biomolecular data bases. More information: <https://tos.org/oceanography/article/observing-life-in-the-sea-using-environmental-dna>

PRESENTATIONS ON CAPACITY DEVELOPMENT FOR OBON

Aileen Tan Shau Hwai - Malaysia

Aileen presented perspectives on capacity development from her experience with western Pacific training programs in marine biology sampling and analysis. Once they have received the training, people are unable to continue what is been learned due to lack of funding in their home country. There is a pressing need for people who go through training to get match funding in their own country. We need to ensure proper documentation is in place so that we can create trust. It is great to have opportunities to attend workshops and to travel and learn, but many scientist face problems when they get home, e.g. using small boats for sampling. It needs a strong partnership that goes beyond just training, to include joint publications, joint funding proposals, and also language, (e.g. English).

RECOMMENDATIONS:

- Participant/institute/country roles in the joint program
- Stepping up awareness and education into the importance of capacity development
- Foster multidisciplinary and integrated research
- Initiate a long-term monitoring program in the country
- External funding support in key issues related to translating research findings into actions
- Cooperate on joint research on developing a common methodology for scientific research
- Initiate cross-border research on continuous water bodies beyond national boundaries.

Zacharie Sohoun – Benin

Zacharie presented perspectives on capacity development from his experience and emphasized the desire of least developed countries and small island developing states to engage in this area of research, but also the serious issue of resources for obtaining equipment to engage in marine biomolecular research, but also the challenge of cost of maintaining laboratories.

The following Action was agreed during the wrap-up session on Day 3:

- 4.1. Continue to support the development of OBON, particularly the capacity development and stakeholder engagement aspects, the recruitment of projects to be endorsed by OBON, and the engagement of POGO members in all OBON activities.

5. *Ocean Observations and Indigenous Knowledge (Co-Chairs Kim Juniper and Ken Paul)*

This session aimed to explore Indigenous ocean observing in the context of Indigenous Protected and Conserved Areas, which are waters where Indigenous governments have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems. Ocean observations are an important component of biodiversity conservation. Continuous, long-term observations of seawater properties, physical habitat condition, and presence/absence and abundances of marine species enable the establishment of baselines of natural variability and the identification of trends related to climate change, resource extraction, habitat loss and conservation measures. These observations also inform the development of a broader societal understanding of marine biodiversity and its connection to ocean health. Panelists discussed the role of traditional knowledge of indigenous people (also referred to as “indigenous knowledge”), and ways of knowing in biodiversity conservation, the ecological validity of direct observations by people out on the land and on the sea, as well as the need for capacity development for scientific observations.

Presentations

- Presentation of panellists and topic: Kim Juniper (Ocean Networks Canada)
- Introductory presentation on Indigenous Protected and Conserved Areas: Ken Paul (Wolastoqey Nation in New Brunswick, Canada)
- Ocean observing and governance of ocean space in Haida Gwaii: Russ Jones (Haida Nation, Canada)
- Capacity development requirements for connecting traditional knowledge and scientific practices: Angie Gillis (Confederacy of Mainland Mi'kmaq, Canada)
- Indigenous ocean observing and biodiversity conservation in South and Central America: Claudia Barón-Aguilar (Wayuu Indigenous community, Colombia, and PhD student at University of South Florida, USA).

The Panellists were representatives of Indigenous communities from Pacific (Haida) and Atlantic Canada (Wolastoqey & Mi'kmaq), as well as from Caribbean Colombia (Wayuu). Their presentations highlighted the following:

- Traditional knowledge is based on a knowledge system, with a methodology.
- There is a need and motivation for ocean observing linked to governance of ocean space (e.g., Indigenous Protected and Conserved Areas)
- Indigenous peoples (in Canada) are striving to develop Nation-to-Nation relationship with federal governments; challenge is to build trust
- Capacity building (in Canada) has involved programs to train Indigenous youth and recruitment of non-Indigenous expertise.
- The notion of “Two-eyed Seeing” aims to combine (not reconcile) Indigenous knowledge systems and scientific approaches, and to produce an enriched understanding of ocean processes and long-term change.
- There is a stark contrast in social context between coastal Indigenous peoples in Canada and Wayuu peoples of Caribbean South and Central America. In the latter, addressing poverty and access to basic resources takes precedence over ocean monitoring.

The panellists made the following recommendations for researchers wishing to engage with coastal Indigenous peoples in ocean research and ocean observing initiatives in Indigenous ocean territories:

- Co-creation and co-design are critical to successful engagements
- Identify the ocean survey and monitoring needs/priorities of Indigenous communities before defining a research topic/ applying for funding
- Understand what engagement processes exist within the community, if they already have a process to engage with academia, or if there is an organisation that works on this.
- Need to immerse oneself in a community to understand the value system of Indigenous peoples.
- Funding is important for community engagement as well as for research
- Relationships and long-term commitments are key to long-term successful initiatives.

There was some discussion around data sharing and the need for confidentiality where sensitive information is concerned (e.g. information on specific places used by Indigenous communities, access to food etc). There is a danger that the knowledge shared will be used against Indigenous people. Indigenous communities are generally not involved in decision making/resource management -e.g. setting quotas, protected areas etc. There is a technical challenge in implementing FAIR principles in this context; the OBON data task force needs input on what community control of data would look like (doesn't need to be technical). We need to be very clear what the data would be used for, including an option to request use for very specific purposes. With capacity development, a community can control and filter data to determine how it is shared. There is also a need to educate the community on where to find data and how to use it.

The session concluded with some discussion of possible next steps for POGO, which included:

- Continuing to develop the topic at future meetings
- Establishing a thematic node for POGO on this topic

Kim highlighted a new initiative in Canada – a coordination action for Indigenous contributions to the goals of the UN Ocean Decade. This is a 3-year program that just began in January 2022, funded by the federal Department of Fisheries and Oceans, in partnership with Indigenous leadership, Ocean Networks Canada and Ocean Frontier Institute. He also mentioned a 4h “Innovative Session” at the upcoming Ocean Sciences Meeting, split between 2 sessions/time zones, involving Canadian as well as Hawaiian panellists.

The following Actions were agreed during the wrap-up session on Day 3:

- 5.1. Kim Juniper to report back at POGO-24 on the progress of the new project being carried out by ONC and OFI as a contribution to the Decade.
- 5.2. Look into establishing a task force to continue the discussion and development of ideas for future work in this area.

POGO Annual General Meeting

The Plenary Meeting was followed by the Annual General Meeting (AGM) of the POGO Charitable Incorporate Organisation, which consisted of two 2-hour on-line sessions accommodating different time zones. Two new trustees were elected: Jan Mees (Flanders Marine Institute (VLIZ) in Belgium) and Francisco Chavez (Monterey Bay Aquarium Research Institute, USA). In addition, existing trustee Kim Juniper (Ocean Networks Canada) was elected as incoming Chair, to take over from Nick Owens in January 2023. The POGO trustees and Secretariat would like to extend a warm welcome to the new trustees, and express their gratitude towards retiring trustees Edgar Pavia (CICESE, Mexico) and Henk Brinkhuis (NIOZ, Netherlands) for their several years of service on the Board and significant contributions towards the successful establishment of POGO as a UK charity.

During the AGM, POGO members discussed POGO business, finances, activities, new projects and partnerships. The members discussed POGO's priorities for the coming year, in particular plans to follow up on the five thematic sessions held during the Plenary. One of the outcomes was a [statement of intent](#) to strengthen collaboration between POGO and GOOS, which was subsequently shared with the community. The minutes of the AGM have been written separately and circulated to the POGO members.