



Partnership for  
Observation of the Global Ocean

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#POGO20

# POGO-20

## Plenary Meeting Report

Ocean Science Centre Mindelo (OSCM) and  
Instituto Nacional de Desenvolvimento das Pescas (INDP)

Cabo Verde  
22-23 January 2019

*Hosted by:*



# Agenda

## 20<sup>th</sup> POGO Annual Meeting (POGO-20) and Side Meetings

Venue: Ocean Science Centre Mindelo, Instituto Nacional de Desenvolvimento das Pescas, Cova de Inglesa, C.P. 132, Mindelo, Island of São Vicente, Republic of Cabo Verde

### Week at a glance

	Sat 19 Jan	Sun 20 Jan	Mon 21 Jan	Tues 22 Jan	Wed 23 Jan	Thurs 24 Jan	Fri 25 Jan
	<b>Side Meetings</b> (Venue: OSCM Conf Room A/B)		<b>Side Meetings and reception</b>	<b>POGO-20 Open Meeting</b> (Venue: OSCM Hangar)		<b>POGO AGM (members only)</b>	<b>Side Meetings</b>
<b>Morning</b>		OpenMODs Workshop	OpenMODs Workshop (Venue OSCM Conf Room A/B) POGO Finance Committee Mtg (Venue INDP Seminar Room)	Plenary session	Plenary session	Closed session (Venue: OSCM Hangar)	<b>9:00 – 12:00</b> Wrap-up Meeting of POGO Board of Trustees (Venue: OSCM Conf Room)
<b>Lunch</b>	Lunch for workshop participants provided on-site		<b>FC and BoT lunch</b> (Venue Sr Nhela)	Lunch for delegates provided on-site			
<b>Afternoon</b>	OpenMODs Workshop	OpenMODs Workshop	Meeting of POGO Board of Trustees (Venue: INDP Seminar Room)	Plenary session	Plenary session	Closed session (Venue: OSCM Hangar)	
						<b>16:15</b> Tour	
<b>Evening</b>	<b>19:00 – 21:30</b> Dinner for OpenMODs participants (Venue: Casa Tchicau)	<b>19:00 – 21:30</b> Dinner for OpenMODs participants (Venue: Kalimba)	<b>19:00 – 21:00</b> Ice-breaker: All delegates (Venue: Terra Lodge)	<b>19:00 – 21:30</b> Dinner (Venue: Restaurant U Sabor)	<b>19:00 – 21:30</b> Dinner (Venue: Restaurant Gout de Grills)	<b>19:30</b> Board of Trustees dinner (Venue: Restaurant Dokas)	

# POGO-20 Meeting Summary

## Open Meeting

*22nd – 23rd January 2019*

The 20<sup>th</sup> POGO Annual Meeting (POGO-20) was held from 22-23 January 2019, hosted by the Instituto Nacional de Desenvolvimento das Pescas (INDP) and the GEOMAR Helmholtz Centre for Ocean Research Kiel, at their newly inaugurated joint research venue, the Ocean Science Centre Mindelo (OSCM) on the island of São Vicente, Cabo Verde. The participants were welcomed by the meeting hosts, Dr. Osvaldina Silva, Director of INDP, and Prof. Peter Herzig, Director of GEOMAR, and the meeting was officially inaugurated by H.E. the Minister of Maritime Economy of Cabo Verde.

During the opening session, the outgoing Chair, Prof. Karen Wiltshire, Deputy Director of the Alfred Wegener Institute in Germany, handed over to Prof. Nick Owens, Director of the Scottish Association for Marine Science (SAMS). Prof. Owens thanked Prof. Wiltshire, on behalf of all POGO trustees and members, for all her hard work, passion and dedication to POGO over her four-year term as Chair. Trustees stepping down from the Board were Dr. Alessandro Crise (OGS, Italy), Prof. Richard Coleman (IMAS, Australia) and Dr. Margaret Leinen (Scripps, USA), and they were also thanked wholeheartedly for all their contributions and commitments to the leadership of POGO.

The POGO-20 Meeting was extremely well attended, bringing together 86 delegates from 25 countries. The meeting location was strategically chosen in line with POGO's current focus on bringing in African countries to contribute to the global ocean observing agenda, and to become members of POGO. Thus, representatives of institutions and universities in Benin, Côte d'Ivoire, Ghana, Nigeria, Senegal and Tunisia were present and provided valuable insights to the needs and priorities of northern and western African countries.

Another strong focus of the meeting, influenced by its location, was the effect of Saharan dust fertilisation on the biogeochemistry of the waters around Cabo Verde. A half-day workshop on "Mineral-dust fertilisation of the marine environment and its consequences for the carbon cycle" was organised by Jan-Berend Stuut and Henk Brinkhuis of the Royal Netherlands Institute for Sea Research (NIOZ), with keynote presentations by Jan-Berend Stuut, Cécile Guieu (Laboratoire Oceanographique de Villefranche, France) and Mark Moore (National Oceanography Centre, UK).

Other topical sessions focussed on "Sustained observing in the South Atlantic Ocean and beyond", "Ocean observing technology and sensor development", and a lunch Side Event on Capacity Development. Other sessions included updates on POGO activities, and presentations by partner organisations and by new and selected POGO members. The detailed agenda can be found in Appendix 1, and the presentations have been shared with the delegates via Dropbox.

POGO was delighted to welcome four new members who joined in 2018: Instituto Nacional de Desenvolvimento das Pescas (INDP), Cabo Verde; Instituto de Investigaciones Marinas y Costeras (INVEMAR), Colombia; University of Algarve, Portugal; and Leibniz Centre for Tropical Marine Research

(ZMT), Germany. During the meeting itself, an additional 3 members applied and were accepted as new members of POGO: a Consortium consisting of Institut de Recherches Halieutiques et Océanologiques du Bénin and International Chair in Mathematical Physics and Applications (ICMPA-UNESCO Chair), Bénin, as well as two new members from Canada, Ocean Networks Canada (ONC) and the Ocean Frontier Institute (OFI). These recent additions represent a total addition of 5 new countries to POGO's membership, a testament to POGO's renewed efforts to increase its global outreach and inclusiveness, particularly of developing countries.

The participants' list can be found in Appendix 2.

## POGO Annual General Meeting

### *24th January 2019*

The plenary Meeting was followed by a one-day Annual General Meeting (AGM) of the newly formed POGO Charitable Incorporate Organisation, which was an opportunity for POGO members to discuss POGO business, activities, priorities and partnerships. Two new trustees were elected to POGO's Board: Gilles Lericolais (Ifremer, France) and Tiegang Li (First Institute of Oceanography, China), and subsequently a third trustee was appointed by the Board, Dr. Wendy Watson-Wright (OFI, Canada). The POGO Board and Secretariat would like to extend a warm welcome to those new trustees and looks forward to working together over the next two years.

The members discussed POGO's priorities for the coming year, including its Biological Observations Working Group activities, the "Open Access Marine Observation Devices" (OpenMODs) project, participation in Ocean Obs'19, the UN Decade of Ocean Science for Sustainable Development and the GEO Blue Planet Initiative. A draft "Cabo Verde Declaration on Ocean Observations" was also discussed, which will be sent to government officials in POGO members' countries and circulated widely. The minutes of the AGM have been drafted separately and circulated to the members.



POGO-20 delegates outside the OSCM in Mindelo, Cabo Verde. Photo Credit: Andreas Villwock, GEOMAR.

# Appendix 1. Agenda

## Tuesday 22nd January

*Venue: OSCM Hangar*

**8:15 – 9:00 Registration**

**9:00 – 9:30 Opening session (Chair: Peter Herzig)**

- Host welcome: Osvaldina Silva (President of INDP) and Peter Herzig (Director of GEOMAR)
- Remarks from Karen Wiltshire (Outgoing Chair) and handover to Incoming Chair
- Remarks from Nick Owens (Incoming Chair)
- Opening speech by H.E. the Minister of Maritime Economy of Cabo Verde, Dr. José da Silva Gonçalves
- Closure of formal opening session by the Hosts and Chair

**9:30 – 9:40 Meeting logistics (Hosts and Secretariat)**

**9:40 – 11:00 Showcase of oceanography and ocean observing in Cabo Verde and West Africa (Chair: Arne Körtzinger)**

9:40 Oceanographic observations in Cabo Verde: *Vito Ramos (OSCM, Cabo Verde)*

9:55 Recent evidences and possible shifts in the marine biome of the Cabo Verde archipelago in the tropical eastern Atlantic Ocean: *Rui Freitas (UniCV, Cabo Verde)*

10:10 Biogeochemistry of oxygen-depleted mesoscale eddies off West Africa: *Björn Fiedler (GEOMAR, Germany)*

10:25 Equatorial surface enrichment within the Gulf of Guinea Basin as inferred from in-situ measurements: *Olubunmi Ayoola Nubi (NIOMR, Nigeria)*

10:40 Showcase of ocean observations in Senegal and impact of regional warming on small pelagic fish distribution in West Africa: *Abdoulaye Sarré (CRODT, Senegal)*

10:55 Q&A

**11:00 – 11:30 Group photo and Coffee break**

**11:30 – 12:30 Updates on POGO activities (Chair: Tony Worby)**

11:30 Highlights: Nick Owens

11:50 Progress Report: Sophie Seeyave/Fiona Beckman

12:10 Address by the Nippon Foundation: Takehiro Umemura

12:15 Update on POGO/NANO Global Project: Housseem Smeti

12:20 Updates on POGO Working Groups

- Planning the implementation of a global long-term observing and data sharing strategy for macroalgal communities: *Richard Coleman*
- EO for water-related diseases: *Icarus Allen*

**12:30 – 13:30 Lunch & Poster Session Postgraduate Students and NANO alumni**  
(*Venue: OSCM Foyer*)

**13:30 – 14:00 Update on POGO activities –cont'd (Chair: Tony Worby)**

13:30 Report on POGO Biological Observations: *Margaret Leinen and Eric Orenstein (remote)*

**14:00 – 15:15 Presentations by new/selected members (Chair: Edgar Pavia)**

14:00 Introduction of new member – INDP: *Albertino Martins*

14:15 Introduction of new member – ZMT: *Nicolas Dittert*

14:30 Introduction of new member – INVEMAR: *Francisco Arias (video message)*

14:45 Update from Qingdao National Laboratory for Marine Science and Technology: *Gongke Tan*

15:00 The new era for FIO's deep ocean observation: *Tiegang Li*

**15:15 – 15:45 Coffee break**

**15:45 – 16:45 Partner organisations and projects (Chair: Hildegard Westphal)**

- Oceanoscientific Southern Expeditions: *Gérard Eldin (CNRS)*
- Sailing meets science – Ocean observation on sailing vessels: *Stefan Raimund (SubCTech)*
- Regional/European coordination of Arctic observing: *Kim Holmen (Norwegian Polar Institute)*
- Implementing the JPI Oceans Initiative – achievements and new actions: *Jacky Wood (JPI Secretariat)*

**16:45 – 17:30 Closed session (POGO members only):**

- Financial Reports from fiscal year 2018
- Discussion of dues for 2020 and 2021
- Invitation of offers to host POGO-22 (to be discussed on Thursday 24<sup>th</sup>)

**19:00 – 21:30 Dinner (Venue: Restaurant U Sabor)**

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## Wednesday 23rd January

*Venue: OSCM Hangar*

**09:00 – 12:00 Workshop 1: Mineral-dust fertilisation of the marine environment and its consequences for the carbon cycle (Co-Chairs: Henk Brinkhuis & Jan-Berend Stuut)**

**9:00 – 9:05 Session introduction: Henk Brinkhuis & Jan-Berend Stuut**

**Keynote presentations:**

9:05 The marine-environmental impact of Saharan dust: *Jan-Berend Stuut (NIOZ, the Netherlands)*

9:35 The lithogenic carbon pump: *Cécile Guieu (LOV, France)*

10:05 Upper ocean ecosystem responses to dust borne nutrient inputs in the context of system feedbacks: *Mark Moore (NOC, UK)*

**10:35 – 10:45 Q&A**

**10:45 – 11:00 Coffee break**

**11:00 – 11:55 Other contributions and general discussion**

**11:55 - 12:00 Wrap-up by Session Chairs**

**12:05 – 13:55 Lunch and Side Event on Capacity Building in West Africa (Chair Sophie Seeyave)**

*Venue: INDP Auditorium/Foyer*

- 12:05 POGO: Lessons learnt from almost two decades of capacity development: *Sophie Seeyave (POGO)*
- 12:15 Joint German-Cape Verdian WASCAL and GAME programmes: *Corrine Almeida (University of Cabo Verde)*
- 12:25 Gulbenkian Institute PGCD programme: *Joana Gonçalves-Sá (Graduate Program Science for Development, remote)*
- 12:35 ICPMA Master Programme in Benin: *Zacharie Sohoun (IRHOB)/Norbert Hounkonnou (ICPMA)*
- 12:45 Summer School in Ghana: *Brian Arbic (University of Michigan, remote)/Sam Addo (University of Ghana)*
- 12:55 Discussion
- 13:15 Lunch and informal discussions in Foyer

**14:00 – 15:30 Session on Sustained Observing in the South Atlantic Ocean and Beyond (Chair: Martin Visbeck)**

- 14:00 Decade of Ocean Science for Sustainable Development: *Martin Visbeck (GEOMAR, Germany)*
- 14:15 GOOS 2030 strategy and the relevance for POGO and its role in realizing that vision strategy: *Albert Fischer (IOC/GOOS)*
- 14:30 Successful implementation of integrated observation tools for the South Atlantic and experiences gained: *Sabrina Speich (ENS, France)*
- 14:45 Deep Ocean Observing Strategy: Opportunities for Capacity Development: *Andrea McCurdy (DOOS Secretariat)*
- 15:00 Argo2020 - a unified design for multidisciplinary global ocean observing: *Susan Wijffels (WHOI)*
- 15:15 Q&A/Discussion

**15:30 – 16:00 Coffee break**

**16:00 – 17:10 Session on ocean observing technology and sensor development (Chair: Margaret Leinen)**

- 16:00 Developing low-cost sensors –Update on the OpenMODs project: *Alessandro Crise*
- 16:15 Developing low-cost sensors –Update on the NANO-SAGITTA project: *Kirill Kivva*
- 16:30 Presentation from NF-GEBCO XPrize finalist team: *Ivan Ryzhov (remote)*
- 16:45 Q&A/Discussion

**16:55 – 17:00 Plenary Meeting Closure (Nick Owens)**

**19:00 – 21:30 Dinner (Venue: Restaurant Gout de Grills)**



## Appendix 2. Participants' list

Organisation	Position	Country	Surname	First name
<b>Members</b>				
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Director	Australia	Worby	Tony
University of Tasmania	Pro Vice Chancellor Research and Infrastructure	Australia	Coleman	Richard
Instituto Nacional de Desenvolvimento das Pescas (INDP)	President	Cabo Verde	Silva	Osvaldina
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Technician	Cabo Verde	Correia	Maria
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Biologist	Cabo Verde	Correia	Sandra
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Researcher	Cabo Verde	Costa	Marcia Perazzo Valadares
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Director	Cabo Verde	Da Cruz	Elisia
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Senior Technician	Cabo Verde	Fonseca	Anselmo
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Engineer	Cabo Verde	Fonseca	Benvindo
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Technician	Cabo Verde	Lopes	Ivone
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Director of Fisheries Department	Cabo Verde	Martins	Albertino
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Computer technician	Cabo Verde	Medina Silva	Zoraida
Instituto Nacional de Desenvolvimento das Pescas (INDP)	Técnico Superior	Cabo Verde	Ramos	David Jorge de Oliveira
Instituto Nacional de Desenvolvimento das Pescas (INDP)/ Ocean Science Centre Mindelo (OSCM)	OSCM Laboratory Technician	Cabo Verde	Monteiro Silva	Ivanice
Instituto Nacional de Desenvolvimento das Pescas (INDP)/ Ocean Science Centre Mindelo (OSCM)	Researcher	Cabo Verde	Ramos	Vito
Instituto Nacional de Desenvolvimento das Pescas (INDP)/ Ocean Science Centre Mindelo (OSCM)	Technician	Cabo Verde	Rodrigues	Elizandro
Instituto Nacional de Desenvolvimento das Pescas (INDP)/ Ocean Science Centre Mindelo (OSCM)	Facility Technician	Cabo Verde	Silva	Eder
Instituto Nacional de Desenvolvimento das Pescas (INDP)/ Ocean Science Centre Mindelo (OSCM)	Senior Technician	Cabo Verde	Silva	Péicles



First Institute of Oceanology, SOA	Director	China	Li	Tiegang
First Institute of Oceanology, SOA	Deputy Director	China	Wei	Zheng
Institute of Oceanology Chinese Academy of Sciences	Director	China	Wang	Fan
Institute of Oceanology Chinese Academy of Sciences	Assistant Director	China	Yu	Rencheng
Institute of Oceanology Chinese Academy of Sciences	Head of International Cooperation Office	China	Li	Yanwei
Qingdao National Laboratory for Marine Science and Technology (QNLN)	Director of Dept. International Affairs	China	Tan	Gongke
Institut National des Sciences de l'Univers/Centre National de la Recherche Scientifique (INSU/CNRS)	Senior Scientist	France	Eldin	Gérard
Institut Francais pour l' Exploitation de la Mer (Ifremer)	Director of European and International Affairs	France	Lericolais	Gilles
Alfred Wegener Institute (AWI)	Vice-Director	Germany	Wiltshire	Karen
Alfred Wegener Institute (AWI)	Scientific Coordinator NF- POGO CofE, Coordinator Guest Research Helgoland and Sylt	Germany	Brodte	Eva-Maria
Alfred Wegener Institute (AWI)	TA	Germany	Carstens	Kristine
Alfred Wegener Institute (AWI)	Senior Scientist	Germany	Rick	Johannes
Alfred Wegener Institute (AWI)	Environmental Scientist	Germany	Scharfe	Mirco
GEOMAR Helmholtz Centre for Ocean Research Kiel	Director	Germany	Herzig	Peter
GEOMAR Helmholtz Centre for Ocean Research Kiel	Scientific Coordinator OSCM/CVOO	Germany	Fiedler	Björn
GEOMAR Helmholtz Centre for Ocean Research Kiel	Department Head	Germany	Körtzinger	Arne
GEOMAR Helmholtz Centre for Ocean Research Kiel	Head Communication & Media	Germany	Villwock	Andreas
GEOMAR Helmholtz Centre for Ocean Research Kiel	Professor	Germany	Visbeck	Martin
GEOMAR Helmholtz Centre for Ocean Research Kiel	Executive Officer OSCM / GEOMAR	Germany	Zenk	Cordula
Leibniz-Zentrum für Marine Tropenforschung ZMT	Administrative Director	Germany	Dittert	Nicolas
Istituto Nazionale di Oceanografia e di Geofisica Sperimentale	Research Director	Italy	Crise	Alessandro
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	Assistant Executive Director	Japan	Kawano	Takeshi
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	Deputy Manager	Japan	Hida	Shinji

Korea Institute of Ocean Science and Technology (KIOST)	Director of KIOST-PML Science Office	Korea (Republic of)	Choi	Jongkuk
Oceanology Division of The Center for Scientific Research and Higher Education at Ensenada (CICESE)	Director	Mexico	Pavia	Edgar
The Royal Netherlands Institute for Sea Research (NIOZ)	Director	Netherlands	Brinkhuis	Henk
The Royal Netherlands Institute for Sea Research (NIOZ)	Scientist	Netherlands	Stuut	Jan-Berend
Instituto Espanol de Oceanografia (IEO)	Director	Spain	Balguerias	Eduardo
British Antarctic Survey (BAS)	Science Leader	United Kingdom	Meredith	Mike
National Oceanography Centre (NOC)	Executive Director	United Kingdom	Hill	Ed
Plymouth Marine Laboratory (PML)	Head of Science	United Kingdom	Allen	Julian Icarus
Scottish Association for Marine Science (SAMS)	Director	United Kingdom	Owens	Nick
Marine Biological Association (MBA)	Director	United Kingdom	Wilson	Willie
Scripps Institution of Oceanography	Director	United States	Leinen	Margaret
Woods Hole Oceanographic Institution (WHOI)	Senior Scientist	United States	Wijffels	Susan
<b>Partners/observers</b>				
JPI Oceans	Acting Executive Director	Belgium	Wood	Jacky
Institut de Recherches Halieutiques et Océanologiques du Bénin (IRHOB)	Director	Benin	Sohou	Zacharie
ICMPA-UNESCO Chair/University of Abomey-Calavi	President	Benin	Hounkonnou	Mahouton Norbert
University of Cabo Verde	Lecturer/Researcher	Cabo Verde	Almeida	Corrine
University of Cabo Verde	Teacher and Researcher	Cabo Verde	Freitas	Rui
University of Cabo Verde	Student	Cabo Verde	Neves	Paula
University of Cabo Verde	Assistant professor	Cabo Verde	Pinheiro	Neusa
University of Cabo Verde	Teacher	Cabo Verde	Ramos	Lucileida
INMG	CVAO (Atmospheric Observatory) Site Manager	Cabo Verde	Neves	Luis
German Consulate Cabo Verde	German Honorary Consul	Cabo Verde	Ferreira Santos	Carlos

Fazenda de Camarão de Cabo Verde	Production Manager	Cabo Verde	Cabral	Tatiana
Ocean Networks Canada	Chief Scientist	Canada	Juniper	S. Kim
University Felix Houphouet Boigny/CURAT	Senior Lecturer	Cote d'Ivoire	Mobio	Abaka Brice Herve
Dept. of Geosciences, Ecole Normale Supérieure, LMD-IPSL	Dean of Studies	France	Speich	Sabrina
GOOS (IOC/UNESCO)	Office Director	France	Fischer	Albert
CNRS- Sorbonne University, Laboratoire d'Océanographie de Villefranche (LOV)	Senior Scientist	France	Guieu	Cecile
Leibniz Institute for Tropospheric Research	Scientist	Germany	Fomba	Khanneh Wadinga
SubCtech	Scientific Consultant	Germany	Raimund	Stefan
Department of Marine and Fisheries Sciences, University of Ghana	Head	Ghana	Addo	Samuel
University of Tuscia	Responsible of Laboratory of Experimental Oceanology and Marine Ecology (LOSEM)	Italy	Marcelli	Marco
Nippon Foundation	Program Director	Japan	Umemura	Takehiro
Nigerian Institute for Oceanography and Marine Research	Chief Researcher	Nigeria	Nubi	Olubunmi Ayoola
Norwegian Polar Institute	International Director	Norway	Holmén	Kim
Centre de Recherches Océanographiques de Dakar-Thiaroye (ISRA/CRODT)	Researcher	Senegal	Sarré	Abdoulaye
University of Southampton	Professor	United Kingdom	Moore	Mark
University of East Anglia	Professor of Marine Sciences	United Kingdom	Robinson	Carol
UCAR (University Corporation for Atmospheric Research)	Sr. Manager	United States	McCurdy	Andrea
<b>NANO members</b>				
Shahjalal University of Science and Technology	Faculty member	Bangladesh	Sarker	Subrata
Russian Federal Research Institute of Fisheries and Oceanography (VNIRO)	Head of Division	Russia	Kivva	Kirill
NF-POGO Alumni Network for Oceans (NANO)	NANO Global Project Coordinator	Tunisia	Smeti	Housseem
<b>Secretariat</b>				
POGO Secretariat	POGO Chief Executive Officer	United Kingdom	Seeyave	Sophie

POGO Secretariat	POGO Communications Officer	United Kingdom	Beckman	Fiona
POGO Secretariat	POGO/NANO Contractor	Portugal	Krug	Lilian