

Indo-Pacific Oceanography Reference Group (IPORG)

Inaugural Meeting, 26-27 March 2012, UNESCO IOC Perth Regional Programme Office, Perth, Western Australia.

Report back by: Sarah-Anne Nicholson

Acknowledgments:

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Participants:

UNESCO IOC Perth Office:

Dr Nick D'Adamo, UNESCO IOC Perth Office.

Dr Sarah Grimes, UNESCO IOC Perth Office.

BLUElink Australia:

Dr Andreas Schiller: CSIRO, Hobart, Australia; Co-Chair GODAE OceanView.

IOGOOS:

Dr Said Mazaheri, INIO, Tehran, I.R. Iran.

Sarah Nicholson, South African Environmental Observation Network, University of Cape Town, South Africa.

Dr. John Mungai, Kenya Meteorological Organisation, Nairobi, Kenya.

WAGOOS:

Dr Ray Steedman, Chair WAGOOS. SEAGOOS:

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Dr Somkiat Khokiattiwong: SEAGOOS Coordinator, Phuket Marine Biological Centre, Thailand.

PIGOOS:

Dr Phillip Wiles, PIGOOS Coordinator, SPREP, APIA, Samoa.

IMOS:

Tim Moltmann, Director, Integrated Marine Observing System, Australia.

IOTWS:

Tony Elliott, Head, Secretariat, ICG IOTWS, Perth, Australia.

Introduction/Background:

The purpose of the Indo-Pacific Oceanography Reference Group (IPORG) was to provide an informal forum for members to meet periodically face to face. This allows for the interaction between members in determining and strengthening the working relationships and understandings. The meeting allows for updates on members programs (current and prospective), following up on mutual interests and potential collaborative opportunities amongst the members.

The meeting commenced with updates from attending members on the background, current and prospective activities of each of their programs. Discussions on the relevance of IPORG followed.

Members Programs: Current and prospective

PIGOOS: Pacific Island Global Ocean Observing System	Dr. Phillip Wiles
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Dr Phillip Wiles is the recently appointed PIGOOS Coordinator, SPREP, APIA, Samoa.

The Pacific has many similarities to the Indian Ocean. Twenty-one countries make up PIGOOS, the majority of which are maritime countries. The observational measurements relevant to the Pacific are mostly made by developing countries that are focused on large-scale process (ie. el Niño) which affect them. However, there is little communication in getting this large-scale information relevant to the Pacific island, which is what Dr. Wiles has been attempting to do. The observations in Pacific are made up of Argos floats, which are quite sparse. Making this data relevant to each specific island is challenging.

PIGOOS aims to setup severe weather prediction and mitigation for the Pacific region. Providing coastal management, and information on sea level rise, tsunami propagation and warning systems to Pacific Islands. Sea level rise particularly large issue for low lying islands, extremely NB to get appropriate information. PIGOOS aims to help improve the use of data, information and products being generated, bringing the relevant large-scale data to Pacific Island. PIGOOS aims to identifying gaps in the large-scale observational network, working with pacific countries to build an understanding of current data available.

The current activities of PIGOOS include: Coastal Modelling, plankton recording, larval connectivity with Pacific, marine protected regions, coastal water quality assistance, Pacific ocean data centre (merit desirable however question of amount of resourcing it would need), research vessel register, raising the profile of PIGOOS and support of regional activities.

PacIOOS - Pacific division of USA Integrated Ocean Observing System Dr. Phillip Wiles

Presented by Dr Wiles, on behalf of Dr Chris Ostrander (University of Hawaii)

PacIOOS is the Pacific division of USA Integrated Ocean Observing System. The main aims are to develop data modelling, observations, data management and capacity building. PacIOOS intends to assist people, livelihoods and marine operations. The vision is a sustained system of systems, with focus on marine observations and forecasts to ensure a safe, clean and productive ocean for the U.S. Pacific Islands.

PacIOOS is one of the eleven regional observing systems that support the emergence of IOOS the Integrated Ocean Observing System. IOOS works to bring new tools and forecasts to provide enhancements to safety, environment and economy.

Current observational platforms include HF radar, wave buoys, seal tagging, gliders, research vessels, AUV's and airbase glider. Making use of a wide range of sensors. All data including modeled data, ship tracks and gliders is provided online on PacIOOS website. www.pacioos.org/map

SEAGOOS – South East Asian Global Ocean Observing System Dr Somkiat Khokiattiwong
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The Navy conducts the majority of current observational activities in SE Asia making data distribution hard, as it is difficult to retrieve the data from the Navy. Activities include work on climate and tropical cyclones, coastal dynamics and pollution (storm surge, circulation etc.), ecosystem and fisheries (very important for the economy), however, the budget is restricting for the proposed activities.

SEAGOOS has proposed the implementation of a pilot project, as it is easy to implement on a small budget and requires moderate input. Aims are to develop observations to serve operational oceanography, to develop forecasts and encourage capacity building for ocean observations. Model development is a problem as there is a lack of physical oceanographers in the region.

During 2009-2011, the Monsoon Onset Monitoring and its Social Ecosystem Impacts (MOMSEI) have increased in ability. Understanding monsoon are extremely important for this region and hence the need to monitor the monsoons. Countries affected by monsoon include China, Thailand, Malaysia, Indo, Phillipines. As the monsoon is linked to the sea surface temperatures, bouys positioned offshore are useful.

SEAGOOS has been involved in several capacity building opportunities for the region including: August (Climate variability and impact on coral) in 2011 and planned for this year a summer school in July 2012 (air-sea interaction, hand on practice).

The future work plan for SEAGOOS between 2012-2013 includes a cruise survey in the Andaman Sea, Bay of Bengal and eastern tropics of the Indian Ocean. Working towards the Develop Ocean Forecasting Demonstration (OFD) to

develop an ocean-forecasting system on a pilot basis at 4km resolution. The working plan for 2012-2014 will be to have high-resolution ocean 1km forecasts.

WAGOOS: Western Australia Global Ocean Observing System	Dr. Ray Steedman
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WAGOOS operates slightly differently to the rest of the GOOS as it tries to bring together private and public sectors, in order to get benefits from both. The purpose of WAGOOS is to try to improve the coordination of ocean observations, modeling and applications in hopes to advance in project efficiency and effectiveness.

In the demonstration projects some of the current work has included: sub-inertial processes, coastal circulation and water quality (regarding annual and seasonal variations) and changes in the Indonesian through flow. Turbidity issues were highlighted as a just one of the problems associated with the offshore mining, particularly in the Timor Sea (NW shelf of Australia). They have noticed that oil often sits at the thermocline rather than at the surface. There is drive to get the right models to allow for an accurate ocean forecasting system and small-scale observations deployable in 24 hours in the event of an oil spill.

IMOS – Integrated Marine Observatory System	Tim Moltmann (Director)
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Integrated Marine Observatory System present by Tim Moltmann (Director)

The motivation for IMOS is that Australia is a marine nation with the third largest ocean territory in the world. It is highly sensitive to ocean-influenced climate and thus understanding the marine science is very important.

IMOS is a collaborative, national, sustained observing system. Several regional nodes have been setup around Australia, which work together cohesively. IMOS brings together several observations including: Argo Australia, Ships of Opportunity, deep water programs, gliders, AUV's, mooring network, seal tagging, wireless sensor networks and ocean radar.

SOOS - Southern Ocean Observing System -	Tim Moltmann
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Tim Moltmann presenting on behalf of Louise Newman newman@soos.aq

There is a lack of coordination between Southern Ocean work. The mission of SOOS is towards multi-disciplinary, sustained observations addressing key science challenges such as climate change. To achieve this mission, SOOS attempts to develop an overall framework with the existing programs rather than starting from scratch, with the aims to design and implement. Currently they have designed a sampling plan, the next goal is to implement. The key goal will be the setup of an ocean data portal.

Indian Ocean Tsunami Warning/Mitigation System (IOTWS) – Tony Elliott

Presented by Tony Elliott head Secretariat of the ICG/IOTWS.

There are four Tsunami Warning Systems in the global network. Each warning system is made up of three working groups. These three 'pillars' allow for an end-to-end warning system. They are: 1.) Risk assessment and reduction, 2.) Detection warning and dissemination, and 3.) Awareness and response.

The launch of Regional Tsunami Service Provider (RTSP) system will be in October 2012; this is a significant milestone for IOTWS. The RTSP is extremely crucial to the system. It must be able to locate the earthquake in acceptable time period, give specific threat info, provide timely advisories and update information as it progresses. To do this, the operational elements of RTSP include seismic data, modeled scenarios for a range of earthquake magnitudes, and receive sea level data to confirm if a tsunami has been generated.

Global Ocean Observing System for Indian Ocean (IOGOOS) Dr Siad Mazaheri

Presented by Dr Said Mazaheri, INIO, Tehran, I.R. Iran.

The Indian Ocean Global Ocean Observing System was established in 2002. The broad aim is to enhance the ocean system in the region.

The 1st International Symposium on Smart Ocean (ISSO) in Tehran 12-14 Feb 2013, allows for an interchange of ideas in ocean observation, creates grounding for science and wise management in this area. Tehran 12-14 Feb 2013

BLUElink

Dr Andreas Schiller

Presented by Dr Andreas Schiller, CSIRO; Co-Chair GODAE OceanView.

BLUElink aims to develop an ocean forecasting system for Australia. This will be achieved through various observations and the assimilation of these observations into hydrodynamic models. Data assimilation helps get eddies in right place at right time; it is crucial for realistic forecasts.

Greatest challenge facing BLUElink is the lack of observations. In order to achieve forecast skill, you need to have observations. The satellite altimetry data might not be sufficient.

www.bom.gov.au/bluelink/

Discussions

The issue of how to link IPORG discussions with the GOOS scientific steering community's new structure was discussed, however no consensus was drawn.

Issues with lack of communication between the sampling, frequency and intensity of Essential Ocean Variables (EOV) being measured were discussed. IMOS will push towards this line, to encourage the coordination and communication between data collection. The EOVs are not explicit in the GRA's. It was highlighted as worth examining in the context of new GOOS steering community structure.

The application of ensembles (made up of several global models) for forcing was addressed. Forcing with ensembles would be more useful and give a better representation, rather than just forcing with one global model.

Discussion with regard to BLUElink and capacity building were addressed. It is not in their mandate for funding. However, they are particularly interested in providing desk space and expertise if the funding is available to send someone over.



Left: Tony Elliotte, Dr Ray Steedman, Dr Sarah Grimes, Dr Andreas Schiller, John Mungai, Dr Nick D'Adamo, Dr Said Mazaheri, Sarah Nicholson, Dr Phillip Wiles, Dr Somkiat Khokiattiwong and Tim Moltmann