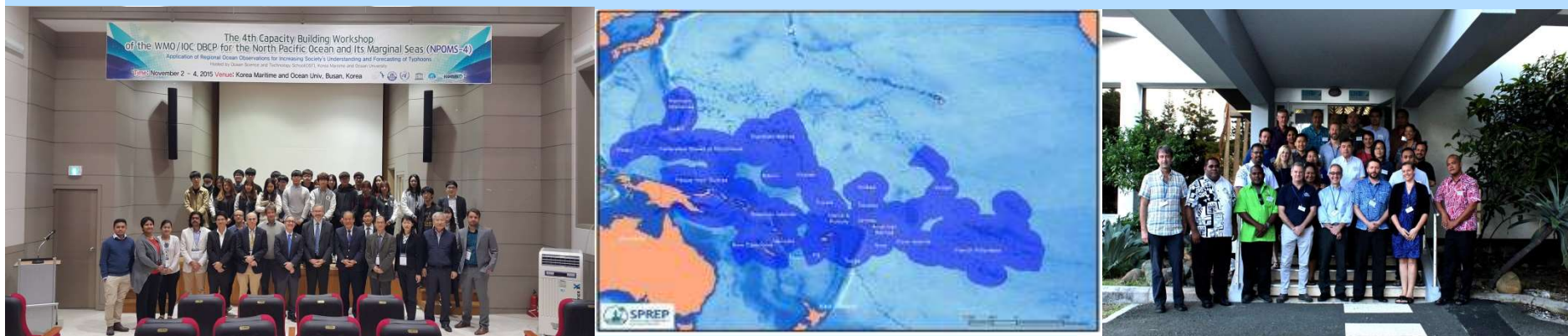


7.3 DBCP Task Team on Capacity Building Task (TT-CB)



www.jcomm.info/pangea-concept

DBC-32
La Jolla, CA USA
19 October 2016

Dr. Sidney Thurston
Lead, DBCP Capacity Building Task Team
GT MBA and GDP Program Manager
NOAA Office of Climate Observation (OCO)



DBCP TT-CB Members

Sidney THURSTON, NOAA/OCO (TT-CB Chairperson)	R. VENKATESAN, NIOT/India (TT-CB Vice-Chairperson)
DBCP Executive Board members, WMO and IOC Secretariat	Champika GALLAGE (DBCP Technical Coordinator)
Hamad Mohammed AL GHEILANI (Oman)	Mathieu BELBEOCH (JCOMMOPS)
Johan STANDER (South Africa)	Walter FLORES SERVAT (Peru)
Djoko HARTOYO (Indonesia)	M. RAVICHANDRAN (India)
Byung-Gul LEE (Republic of Korea)	Adote Blim BLIVI (Togo)
Rick LUMPKIN (USA)	John MUNGAI (Kenya)
David MELDRUM (UK)	Lucy SCOTT (South Africa)
Louise WICKS (Australia)	Sang Kil PARK (Republic of Korea)
Juliet HERMES (South Africa)	Kwan-Chang LIM (Republic of Korea)
Verena HORMANN (USA)	Luca Centurioni (USA)
Arshid JAVED (Pakistan)	Jennifer Lewis (USA)



Overview

Highlights & Recommendation of Two (2) Intersessional TT-CB Capacity Building Workshops:

- 1) Busan, [NPOMS-4](#) (see DBCP Doc. 55)
- 2) Noumea, [PI-2](#)

One (1) DBCP TT-CB Workshop Planned in 2017:

5th Asia Typhoon Workshop (NPOMS-5) in Tianjin China May

Salient Points from Yesterday's TT-CB Breakout Session

Prospects for future Indian Ocean Capacity Building Workshops within the context of the *Second International Indian Ocean Expedition (IIOE-2)*



Background of Capacity Building Task Team

- Task Team for Capacity Building was established Eight Years ago at DBCP-24 in Jeju South Korea,
- During this time we have been successful in raising awareness of the DBCP in many countries around the world, both developing and developed States,
- Over four hundred participants have contributed to Twelve (12) capacity building workshops in Asia, Western Indian Ocean (WIO), North Pacific Ocean and Marginal Seas (NPOMS), and the Pacific Islands (PI),
- Trainees have received technical training as well as demonstrations on the social and economic practical applications of ocean observations,
- High-Level Government Officials have Delivered Opening Remarks and Remained to Hear Lead Presentations

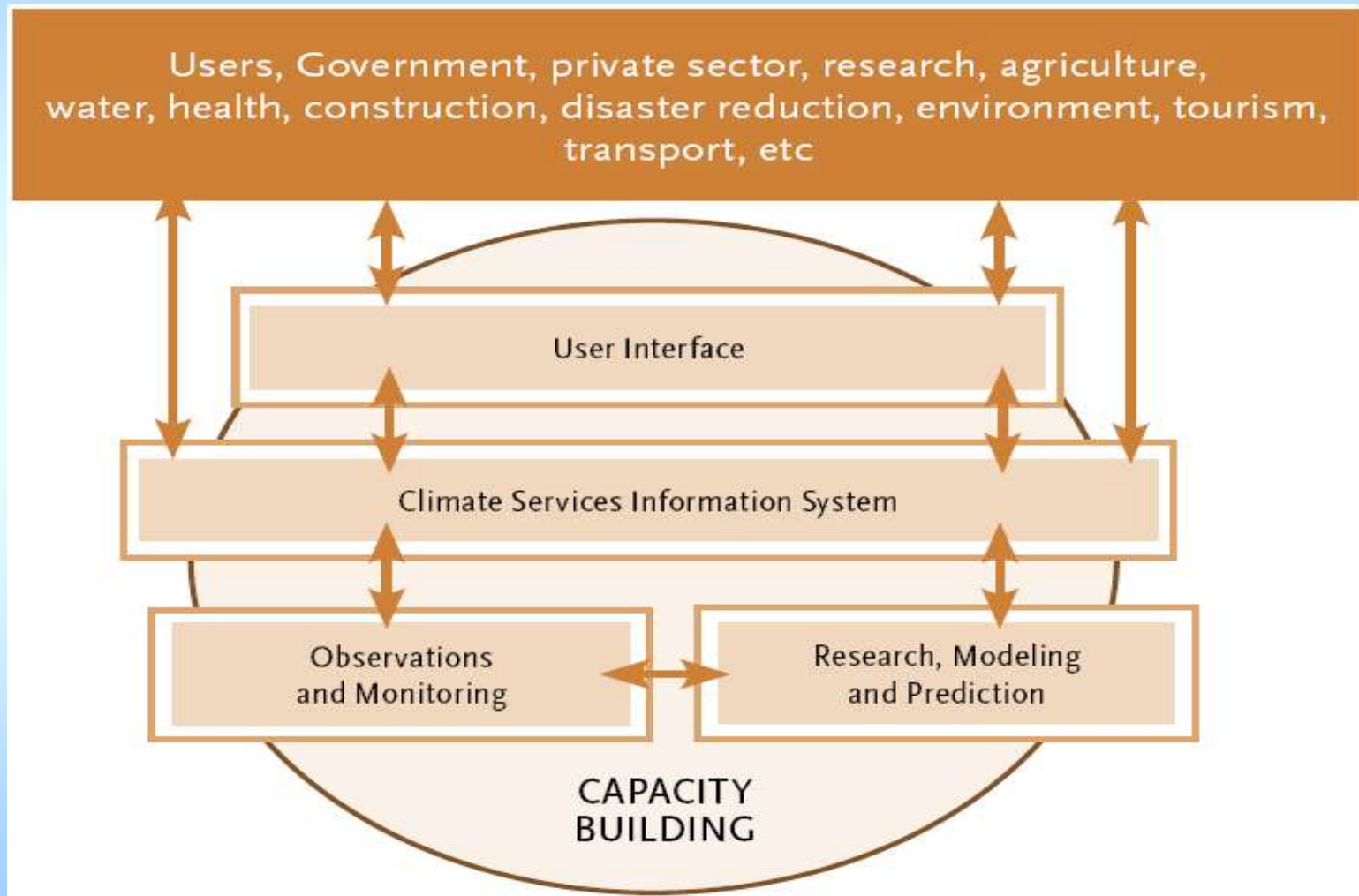


IOC Mandate for Capacity Building

- As recognized by the General Assembly, capacity-building is essential for the implementation, and is an integral part of, the Regular Process,
- To this end, the Regular Process will contribute to the promotion and facilitation of capacity-building through international cooperation,
- This includes technical cooperation and transfer of technology towards developing countries,
- In particular least developed countries, African coastal States and Small Island Developing States.



The Pillars of the WMO Global Framework for Climate Services (GFCS)





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PANGEA The Partnership for New GEOSS Applications (PANGEA)

Author(s) Secretariat

Summary The Partnership for new GEOSS Applications (PANGEA) is a concept developed by the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) with the goal to develop partnership between developed and developing countries to realize the socio-economical benefits of ocean observing systems at global and regional scales.

Doc Type Reference Document

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English (v1.0, 189 KB)

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Last updated at 15:18 on 23 Nov 2010 by Etienne CHARPENTIER

Capacity Building Task Team Objectives:

- Provide In-country/Regional Training Workshops to build local capacity for drifter/mooring observations, as well as the societal-economic applications and management of these new data,
- Build advocacy of Government officials to support additional ocean observations and become active and contributing Members of the DBCP,
- Encourage the sharing of Drifter/Mooring Data.



Twelve (12) TT-CB Workshops

1. 1st Western Indian Ocean (WIO-1) Capacity Building Workshop
2. 2nd Western Indian Ocean Capacity Building Workshop
3. 3rd Western Indian Ocean Capacity Building Workshop
4. 4th Western Indian Ocean Capacity Building Workshop
5. 5th Western Indian Ocean (WIO-5) Capacity Building Workshop

6. 1st In-Region Capacity Building Workshop for Asian (Asia-1) Countries

7. 1st In-Region Capacity Building Workshop for the North Pacific Ocean and Marginal Seas (NPOMS)
8. 2nd Typhoon Workshop for the North Pacific Ocean and Marginal Seas (NPOMS-2)
9. 3rd Typhoon Workshop for the North Pacific Ocean and Marginal Seas (NPOMS-3)
10. 4th Typhoon Workshop for the North Pacific Ocean and Marginal Seas (NPOMS4)

11. First Pacific Islands Training Workshop on Ocean Observations and Data Applications ([PI-1](#))
12. Second Pacific Islands Training Workshop on Ocean Observations and Data Applications ([PI-2](#))



Your DBCP Capacity Building Task Team:
Working Hard for you Since DBCP-31
(Geneva)



DBCP Capacity Building Workshops for the North Pacific Ocean and Marginal Seas (NPOMS)



Jeju, South Korea July 2012



Hangzhou China October 2013



Kyoto Japan October 2014

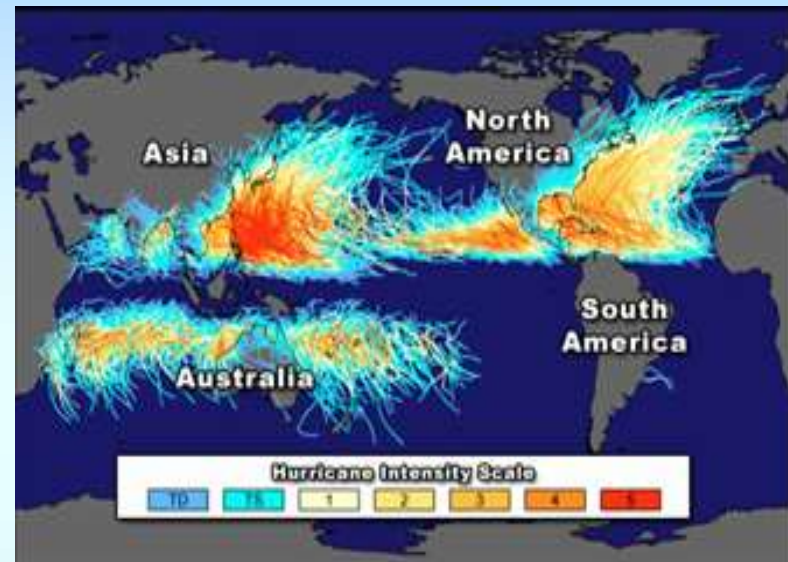


Busan South Korea November 2015

DBCP NPOMS-4

Application of Regional Ocean Observations for Increasing Society's Understanding and Forecasting of Typhoons

- Host: Korea Maritime and Ocean University (KMOU)
- Location: Busan South Korea
- Time: 2-4 November 2015
- Participants: Korea, Japan, China, Philippines, Thailand, US, Taiwan, Myanmar and others



NPOMS-4 Objectives

- Increase Regional Coordination, Data Sharing of Ocean Data for Better Understanding and Forecasting of Typhoons,
- Advance New NPOMS Training Center Presented by Professor BG Lee of Korea,
- Implement and Consolidate IOC WESTPAC Typhoon Observing System
 - Fixed (e.g. China's 973 Typhoon Array in South China Sea)
 - Rapid Adaptive (Drifters/thermistors, Gliders, ..)





DATA BUOY COOPERATION PANEL

**RECOMMENDATIONS OF THE FOURTH CAPACITY
BUILDING WORKSHOP OF THE DBCP FOR THE NORTH
PACIFIC OCEAN AND ITS MARGINAL SEAS (NPOMS-4),
BUSAN, REPUBLIC OF KOREA, 2-4 NOVEMBER 2015**

***Application of Regional Ocean Observations for
Increasing Society's Understanding and Forecasting
of Typhoons***

Report Editors:
Etienne Charpentier - WMO
Sidney Thurston - DBCP

DBCP Technical Document No. 55

– 2015 –

NPOMS-4 Recommendations

- Workshop participants and Members/Member States of the NPOMS region are invited to participate in the DBCP activities, establish partnerships, and build on potential synergies (sharing observing platforms and instruments, deployment opportunities, training opportunities).
- Members making relevant ocean observations are urged to comply with existing WMO and IOC data policies ([WMO resolution 40, Cg 12](#)) and share the data in realtime on GTS. In particular, efforts should be made in the NPOMS region to augment the “973 Typhoon Array” met/ocean observing array (of China) with contributions from other countries, and to share the data in real-time (including “973 Array” data).
- Particularly important variables to measure are Sea Level Pressure (SLP) and upper ocean heat content. Additional variables to measure include air relative humidity, sub-surface currents, and waves.
- Members in the NPOMS region are encouraged to make use of (i) the **DBCP barometer upgrade scheme** (details below) and (ii) the [DBCP-VOS drifter donation programme](#) (drifter with SLP reporting from the deck of a ship) (the Technical Coordinator of the DBCP can provide technical assistance on how to benefit or participate).



NPOMS-4 Recommendations (continued)

- NPOMS supports the DBCP efforts to make **wave observations from drifters**. The guidance of drifter communications should be provided. (Note: CMA offered to add additional comments for this recommendation). This can be expanded to all platforms.
- NPOMS recognizes the importance of training on met/ocean observations requirements and met/ocean observing systems implementation, and **supports the establishment of the NPOMS Training Centre at the Busan National University**, Republic of Korea.
- **NPOMS support the development of TPOS-2020** project, and is inviting it to take into account the observational user requirements for typhoon prediction.
- Include a scientific framework in future NPOMS Workshops for risk impacts (**risk assessment and economic impacts**).
- KMA has experience with operational ocean models, and marine observations. Korea can assist other countries for setting up infrastructure (e.g. storm surge model), and for training on marine observations. Interested countries in the NPOMS region are invited to use this opportunity. **KMA is invited to contribute to these important initiatives and participate in NPOMS-5.**
- NPOMS is inviting National Meteorological Services in the NPOMS Region, and KMA in particular, to make use of the DBCP **SVPB drifter barometer upgrade scheme**.



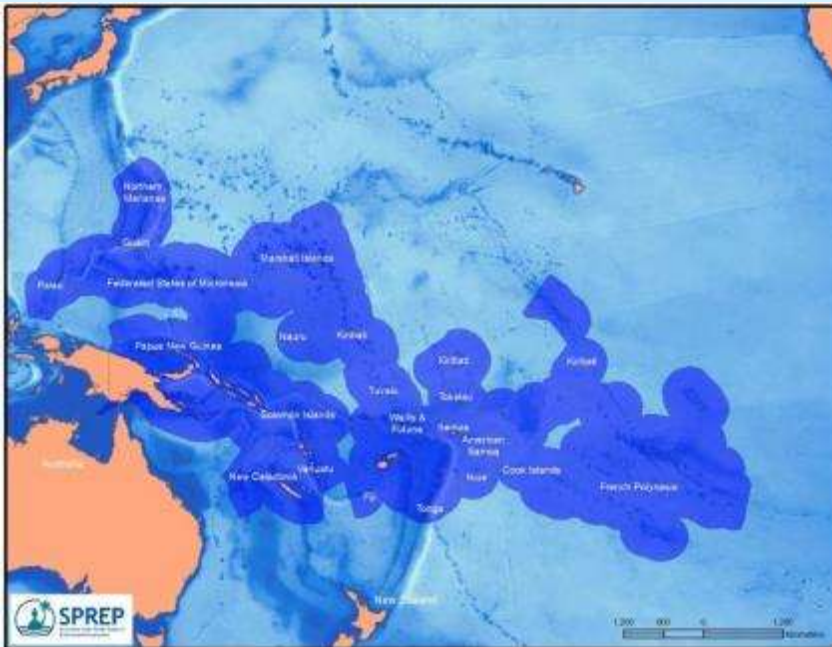
NPOMS-4 Recommendations

- The *Ocean and Climate Platform*, working with the IOC to start addressing Capacity building for empowering vulnerable states to engage in ocean observing activities. **It is also recommended that the platform should advocate the making of more ocean observations**, and their use to address mitigation of high impact weather events.
- **NPOMS-4 recommends merging NPOMS activities with the North Pacific Data Buoy Advisory Panel (NPDBAP) DBCP Action Group**, in order to better build on potential synergies between buoy deployment activities of NPDBAP, and capacity building and network design activities of NPOMS, and assure better continuity and **national representation** of NPOMS countries in all these activities.
- An important scientific question emerged from NPOMS-4, how important is stratification in the NPOMS region to TC development? To answer this question, more strategic observations are required, to include upper ocean heat content. Observations can also help assessing the impact of warm and cold eddies on intensification of typhoons.
- **A centralized data centre** should be established to collect data of interest for impact studies. Impact of data should be assessed e.g. through OSEs, hindcast sensitivity studies can also be made, and efforts made to assimilate more of existing impactful data.
- An in-depth **inventory** of available observing systems should be made.
- **NPOMS National Focal points** (Korea, Japan, China, Taiwan-Province of China, Indonesia, Thailand, Philippines and others) are needed for investigating feasibility of such an inventory and coordinating the gathering of initial information. Information should also be collected on possible barriers for sharing the data; and strategies identified for removing such barriers.



Second Pacific Islands Training Workshop on Ocean Observations and Data Applications (PI-2)

24-27 May 2016
Noumea, New Caledonia



Five Offers to Host PI-2

1. Apia, Samoa (SPREP)
2. Honolulu, Hawaii (UH)
3. Noumea, New Caledonia (IRD)
4. Papeete, French Polynesia (UPF/IRD)
5. Suva, Fiji (USP)



IRD's Letter to Host


Institut de recherche
pour le développement

NOUVELLE-CALÉDONIE

Nouméa, 08 octobre 2015

Dr. Sidney Thurston,
Overseas Program Development,
NOAA Global Ocean-Climate
Observations, Climate Program Office,
R/CPO, 1100 Wayne Ave., Room
1202 Silver Spring, Maryland 20910-
5603 USA

Subject: Offering to host the 2nd Data Buoy Cooperation Panel (DBCP) Pacific Islands Capacity Building Workshop in Nouméa, New Caledonia

Dear Director of Overseas Program Development,

On Behalf of the Institute of Research and Development (IRD) center in Nouméa, New Caledonia, I offer to host the 2nd Data Buoy Cooperation Panel (DBCP) Pacific Islands Capacity Building Workshop, which aims to review and discuss substantial issues on ocean and marine observations for increasing the regions resilience to climate change and natural disasters.

We would be very pleased to host the DBCP PI-2 at the IRD center in Nouméa. We can liaise with DBCP to prepare the various matter to hold this important event. To provide with effective and consistent communications, we designate Dr. Jerome Aucan (jerome.aucan@ird.fr) as a point of contact. If you need additional information, please don't hesitate to contact him.

Yours sincerely,

Georges DE NONI

Georges DE NONI
Directeur du Centre IRD de Nouméa
Coordinateur régional Pacifique



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Improving Pacific Islanders' Access to Pacific Ocean Information



- Environmental and economic management in the Pacific has a strong oceanic focus. Over 98% of Pacific Island's EEZs consist of ocean which provides food, financial income, and controls the climate.
- While a wealth of publicly available data is collected about the Pacific Ocean, few Pacific islanders are aware of, or able to access, this information.

PI-2 Co-Sponsor:

- Institut de recherche pour le développement ([IRD](#))
- Pacific Island Global Ocean Observing System ([PI-GOOS](#))
- Secretariat of the Pacific Regional Environmental Programme ([SPREP](#))
- Secretariat of the Pacific Community ([SPC](#))
- Pacific Islands Ocean Observing System ([PacIOOS](#))
- Tropical Pacific Observing System ([TPOS](#))
- NOAA's Office of Climate Observation ([OCO](#))



Participating Pacific Island States

1. Republic of Palau
2. Australia Institute for Marine Sciences (AIMS)
3. European Union Global Climate Change Alliance Project (EUGCCA)
4. Federated States of Micronesia (FSM) Weather Service
5. French Research Institute for Development (IRD), New Caledonia
6. Marshall Islands Meteorological Service
7. National University of Samoa



Participating Pacific Island States (continued)

8. Pacific Islands Global Ocean Observing System (PI-GOOS)
9. Pacific Islands Ocean Observing System (PacIOOS)
10. Royal Thai Navy
11. Samoa Meteorology Division (MNRE)
12. South Pacific Regional Environment Programme (SPREP)
13. University Of Hawaii, International Pacific Research Center (IPRC)
14. American Samoa
15. Vanuatu Meteorological Service



PI-2 Roundtable Discussion & Recommendations: Priority areas and needs/gaps:

- Coastal Inundation and Coastal Hazards
- Tsunami monitor systems
- Tide Gauges
- Maritime safety and marine forecasting
- Sea Level Pressure and Support for Meteorology
- Data Products for Users (Fisheries, maritime safety, tourism, etc.)
- Training/Capacity Building



Yesterday's Task Team Meeting

- Engage with IOC's E-Learning Program for online training and certification,
- Engage with WMO-IOC Regional Marine Instrument Centres (RMICs) as Appropriate,
- Include Vandalism Mitigation outreach whenever possible,
- Develop Performance Metrics to Document Success of Capacity Building Workshops to the Community,
- Engage with Brazilian Navy Hydrography/Navigation Cruise in April 2017.



PROPOSED GOALS FOR DBCP CAPACITY BUILDING ACTIVITIES IN 2017

NPOMS-5

National Marine Data and Information Service (NMDIS)
Tianjin, China
May 2017.

PI-3

Apia, Samoa (Secretariat of the Pacific Regional Environment Programme, SPREP)
Spring 2018

For 2018:

Finally, Preliminary discussions are underway with the IOC Sub-Commission for Africa and the Adjacent Island States for a possible future session of a DBCP Indian Ocean Capacity Building Workshop to focus on contributing to the Second *International Indian Ocean Expedition* (IIOE-2). Details remain to be confirmed.



NPOMS-5 May 2017

China SOA National Marine Data & Information Service Tianjin, China



- The National Marine Data and Information Service (NMDIS) is a national facility under the State Oceanic Administration (SOA) of China
- Responsible for looking after and distributing data and information concerning the marine environment.
- As a National Oceanographic Data Center, NMDIS maintains and develops the national marine database.
- As a national coordinator, NMDIS is actively participating the activities of International Oceanographic Data and Information System (IODE) and many other international marine data and information management activities.
- NMDIS hosts the World Data Center for Oceanography, China Argo Data Center, China Delayed Mode Database for NEAR-GOOS. NMDIS manages the ODAS Metadata Center for JCOMM.

2018 Considerations

- Prospects for future Indian Ocean Capacity Building Workshops within the context of the *Second International Indian Ocean Expedition (IIOE-2)*



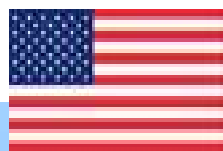
Second International Indian Ocean Expedition (IIOE-2) 2015-2020



478 Participants from 29 Countries



Main countries by number of participants



344

25

16

11

10

9

9



So Why an IIOE-2?

It has been half a century since IIOE & The Indian Ocean is complex & still relatively poorly understood



- *Natural and human disasters in the IO highlight this point - climatic, oceanographic, Sea Search and Rescue / recovery*
- *Environmental problems*
- *Climate Change*
- *Food & Energy Security*
- *Need to underpin sustainability for the Blue Economy*

Recent DBCP Capacity Building Workshops for the Western Indian Ocean



Capetown April 2010



Mombasa Kenya May 2012



Port Elizabeth South Africa May 2014



Mauritius May 2011

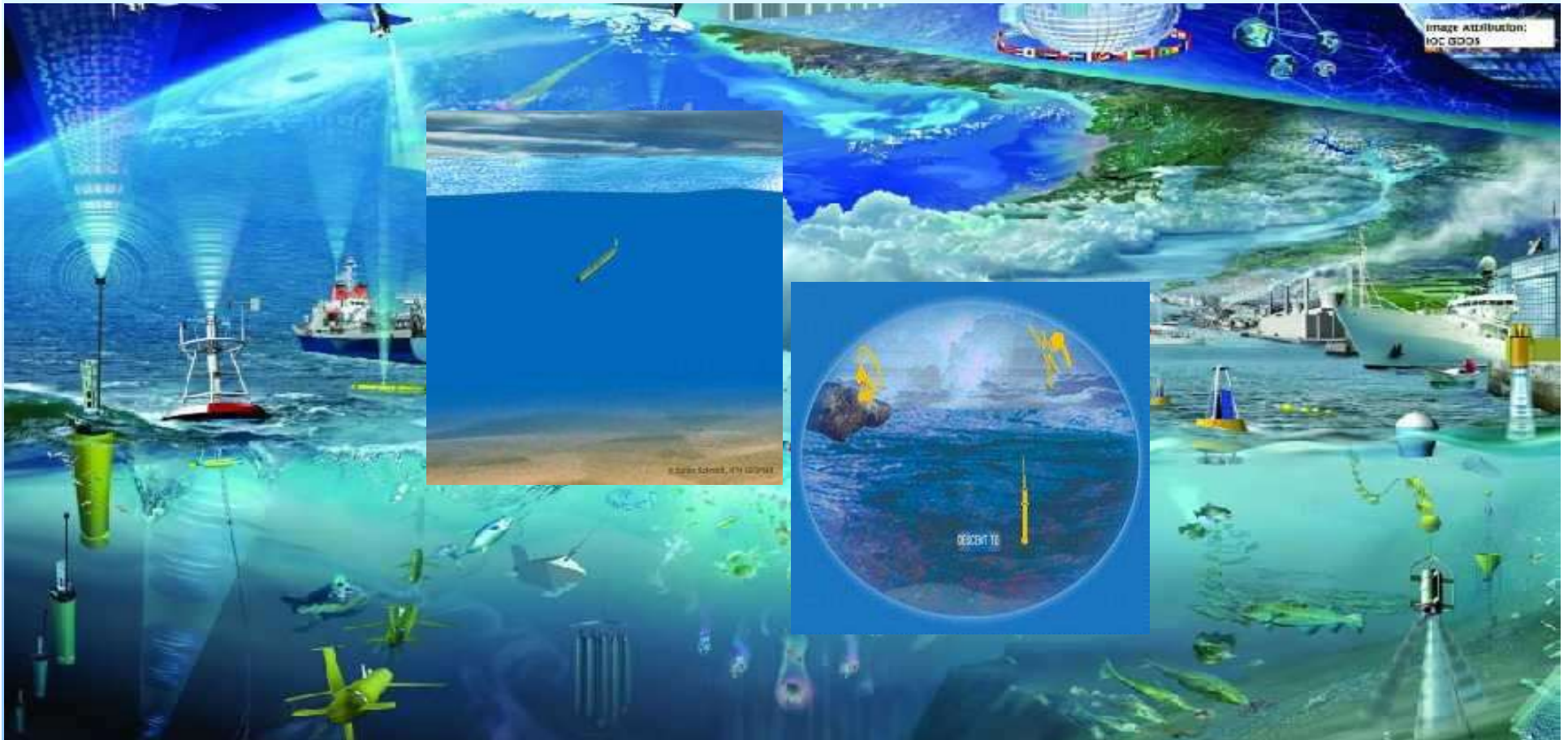


Zanzibar Tanzania April 2013

A 'new world' in Observational Technology

Contemporary techniques/technology, infrastructure → give us an improved capacity to measure and characterize (processes)

Direct and robotically – gear, humans and animals –
above, at and below the sea surface



For 2018 Consideration

Dear Sid,

I would appreciate if you can update us on the discussions related to proposed Future Capacity Building workshop in association with IIOE-2.

we are very interested in collaborating on this, including the development of course content and identification of potential participants.

Maybe this could include shipboard training?? We sufficient advance notice we could try and see if we could use on the research vessels in the region for this (possibly Kenya or South Africa which are very supportive of CB for IIOE-2).

Best regards,

Mika.

Mika Odido
IOC Coordinator in Africa

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Nairobi, Kenya

Tel: +254 20 7621244



Thank You!

