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DATA BUOY COOPERATION PANEL

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(16-Sep-14)

THIRTIETH SESSION

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ITEM: 6.4

WEIHAI, CHINA  
27-31 OCTOBER 2014

ENGLISH ONLY

### REPORT BY THE TASK TEAM ON CAPACITY-BUILDING (TT-CB)

*(Submitted by Sid Thurston (USA), Chair, TT-CB)*

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#### SUMMARY AND PURPOSE OF DOCUMENT

This document contains the report by the Chairperson of the Data Buoy Cooperation Panel (DBCP) Task Team on Capacity Building (TT-CB), and provides details on the outcome of DBCP Capacity Building activities during the last intersessional period, including: 1) Outcomes of the Fifth in-region Capacity Building Workshop for Countries of the Western Indian Ocean Region (WIO-5), Port Elizabeth, South Africa, 12-15 May 2014, 2) Outcome of the "Third North Pacific Ocean and Marginal Seas" (NPOMS-3) Capacity Building Workshop in Kyoto, Japan, 6-8 October 2014.

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#### ACTION PROPOSED

The Meeting is invited to note the information contained in this document when discussing how it organises its work and formulates its recommendations.

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- Appendices:**
- A.** Report by the Task Team on PANGEA Capacity Building Activities for 2014
  - B.** Terms of Reference of the DBCP Task Team on Capacity Building
  - C.** Proposed goals for DBCP Capacity Building activities in 2015

## DISCUSSION

### -A- DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

6.4.1 Dr Sid Thurston (USA), Chairperson of the DBCP Task Team on Capacity Building (TT-CB), reported on the Task Team activities during the last intersessional period. In particular, he provided comprehensive information on: 1) The outcomes of the Fifth “In-region Capacity Building Workshop for Countries of the Western Indian Ocean Region” (WIO-5), Port Elizabeth, South Africa, 12-15 May 2014, 2) Outcome of the “Third North Pacific Ocean and Marginal Seas” (NPOMS-3) Capacity Building Workshop, *Application of Regional Ocean Observations for Increasing Society’s Understanding and Forecasting of Typhoons*, in Kyoto, Japan, 6-8 October 2014.

6.4.2 The meeting agreed on the following:

- To convene the Fourth "DBCP in-Region North Pacific Ocean and Marginal Seas Capacity Building Workshop" (NPOMS-4), November 2015, Busan, South Korea. The goals for the workshop are detailed in Appendix C (**action; TT-CB; Autumn 2015**);
- To explore with the IOC Sub-Commission for Africa and the Adjacent Island States for a possible April/May session of a DBCP Western Indian Ocean (WIO) Capacity Building Workshop to focus on developing the contributions of WIO region to the 50<sup>th</sup> Anniversary of the International Indian Ocean Expedition ([IIOE-2](#)). (**action; TT-CB; ASAP**);
- To continue to employ recent advances in Information and Communication Technology (ICT) to help facilitate more effective DBCP TT-CB Outreach and Capacity Building Activities on a larger scale (**action; TT-CB; NPOMS-4**);
- To Enhance Coordination and Cooperation between TT-CB and WMO Regional Associations (**action; TT-CB; DBCP-30**);
- To emphasize that the regional activities should create synergies and avoid duplication, at all cost, therefore requested to develop specialize activities that meet the interest of the respective regions, preferably with the identified resources within the regions. (**action; TT-CB; continuous**);
- To explore possibly supporting, through TT-CB, in 2016 for the organization of the “First Pacific Islands Workshop on Ocean Observations and Data Applications” (PI-1). The South West Pacific Region is fertile ground for capacity building, particularly in ocean issues. The Region has good networks and there is a lot of interest in building the human capacity to digest and understand data from the ocean and climate observing systems. (**action; TT-CB; DBCP-30**).

6.2.3 The Panel thanked Dr. Thurston and the members of the Task Team for the report. The Panel re-elected Dr. Thurston to Chair the Task Team during the next intersessional period. The full report of the Task Team is provided in Appendix A of DBCP-30 preparatory document No. 6.4, and will be included in the DBCP Annual Report for 2014.

## APPENDIX A

### REPORT BY THE TASK TEAM ON CAPACITY-BUILDING (TT-CB)

#### Partnerships for New GEOSS Applications (PANGEA)

During November 4-11 2009, the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology ([JCOMM](#)) Third Session held in Marrakesh Morocco endorsed the Partnership for New GEOSS Applications ([PANGEA](#)) concept. PANGEA provides for in-country practical applications training of ocean data to large and diverse groups of regional participants and fostering partnerships between developed and developing countries to realize the socio-economic benefits of ocean observing systems. Since the inception of PANGEA, a series of workshops has been convened by the DBCP as part of their contribution to the PANGEA concept:

[1<sup>st</sup> Western Indian Ocean Capacity Building Workshop](#)

[2<sup>nd</sup> Western Indian Ocean Capacity Building Workshop](#)

[3<sup>rd</sup> Western Indian Ocean Capacity Building Workshop](#)

[4<sup>th</sup> Western Indian Ocean Capacity Building Workshop](#)

[5<sup>th</sup> Western Indian Ocean \(WIO-5\) Capacity Building Workshop](#)

[1<sup>st</sup> In-Region Capacity Building Workshop for Asian \(Asia-1\) Countries](#)

[1<sup>st</sup> In-Region Capacity Building Workshop for the North Pacific Ocean and Marginal Seas](#)

[Second Typhoon Workshop for the North Pacific Ocean and Marginal Seas \(NPOMS-2\)](#)

[Third Typhoon Workshop for the North Pacific Ocean and Marginal Seas \(NPOMS-3\)](#)

#### I. Outcomes of the Fifth in-region Capacity Building Workshop for Countries of the Western Indian Ocean Region ([WIO-5](#)), Port Elizabeth, South Africa, 12-15 May 2014.

As contributions to the PANGEA concept in 2014, The DBCP and Partners supported the Fifth In-Region Western Indian Ocean (WIO-5) Capacity Building Workshop, "Implementation and Operation of Indian Ocean Data Buoy Networks and their Socio-Economic Applications for Enhancing Regional Predictive Capability". WIO-5 was by Hosted by the South African Weather Service ([SAWS](#)), South African Environmental Observation Network ([SAEON](#)), and the International Met Systems ([InterMet](#)) in Port Elizabeth, South Africa 12-15 May 2014.

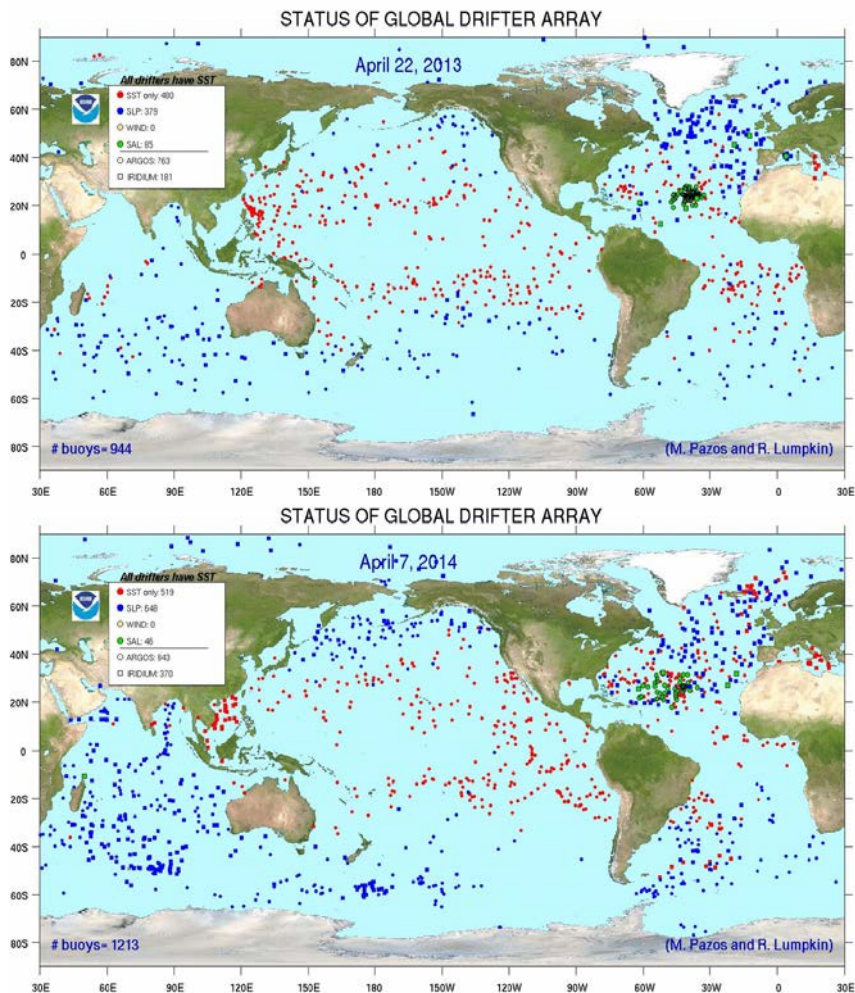
The WIO-5 Resolutions and Action Items are as follows:

##### **Resolution 1 - Maintain Western Indian Ocean Drifter Array**

Recognizing the importance of collecting ocean and weather observations in data sparse areas such as the Indian Ocean as well as the fact that members indicating willingness to become part of the International Buoys Deployment community, the WIO-5 recommends that **drifting buoys be supplied to African countries as a pilot project** and results be provided during the next Capacity Building Workshop (Please see Figure 1).

Action: Interested participating African Met/Ocean Institutes are invited to provide a brief deployment plan to Primary and Secondary to include with their delivery address for the drifters shipment of when and how these drifters will be deployed.

Primary: DBCP/IBPIO Secondary:  
NOAA/SIO Global Drifter Program



**Figure 1 Improved Status of WIO Drifters as a Result of DBCP WIO Capacity Building Workshops**

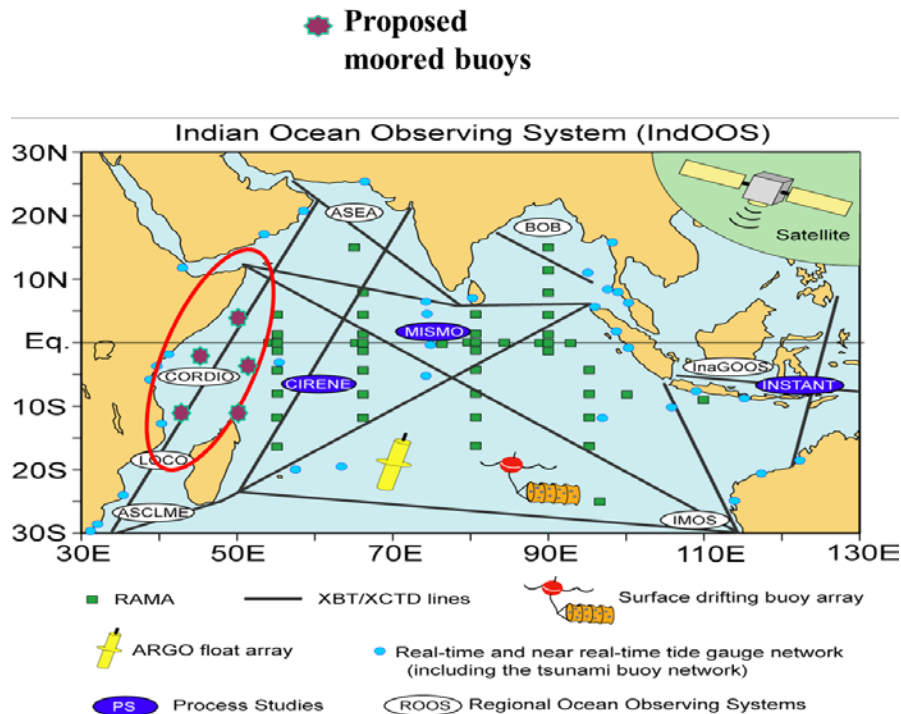
**Resolution 2 - Implement an Offshore Mooring Array**

During the first DBCP In-Region Western Indian Ocean Capacity Building Workshop in Capetown South Africa April 2010, representatives of Regional Met/Ocean Institutes put forward a Resolution to enhance ocean observations off the East coast of Africa to include five (5) Ocean Moored Buoys (Please see Figure 2). This resolution carried forward in each of the subsequent WIO Workshops, including WIO-5. [Scientific justification](#) for these additional in-situ observations off the East coast of Africa will help to better understand the following:

1. Intra-seasonal variability of the Somali jet over the East African coast and the Mascarene pressures,
2. The response of the Somali current to the intraseasonal variability of the Somali Jet,
3. The dynamical and thermal feedback mechanisms between the cool temperatures in the filament and the modified wind stress,
4. The characteristics of the atmospheric convergence and divergence over the upwelling region and their influence on the climate of east African coast,
5. Specifically investigate how the SST and surface wind coupling affect vertical profile of the atmospheric boundary layer.

Action: Identify a Sponsor able to implement and sustain these five important met/ocean moorings off the East Coast of Africa.

Primary: Kenya Meteorological Agency  
 Secondary: Tanzania Meteorological Agency



**Figure 2 [Proposed Western Indian Ocean Moored Buoys](#)  
To Augment the Indian Ocean Observing System IndOOS**

**Resolution 3 – Establish a Western Indian Ocean (WIO) JCOMM Ship Observation Team (SOT) Pilot Project**

Noting the marginal coverage of the data streams required for met/ocean applications and the limited deployment opportunities of observing equipment in the Western Indian Ocean (WIO) region. Noting also that Voluntary Observing Ships (VOS) and Ships of Opportunity (SOOP) Programmes and meteorological and oceanographic moored buoys provide observations of acceptable frequency globally, the Fifth DBCP Western Indian Ocean Capacity Building Workshop recommends the development of a JCOMM Ship Observations Team (SOT) Pilot Project to act as co-operative venture among countries within the Indian Ocean to enhance the provision of marine meteorological and oceanographic data in support of a diversity of national, regional and global programmes. This Pilot Project will establish a pool of ships to provide the opportunity for deployment of drifters (DBCP), Argo floats and potentially service RAMA moorings in the WIO Region. VOS-DBCP Donation Program could provide hardware in support of the Pilot Project.

The Kenya Marine and Fisheries Research Institute (KMFRI) acquired the RV *Mtafiti*, Swahili for “researcher”, from Belgium in May 2013. The Ship is 62m Long and could potentially contribute to a WIO SOT Pilot Project to help service the Indian Ocean Observing System (IndOOS).

Action: DBCP and/or JCOMM send Letter(s) to KMFRI expressing their interest and scientific objectives in having the RV *Mtafiti* contribute to WIO SOT Pilot Project. Explore resulting options and present conclusions to the Eighth Session of the JCOMM Ship Observations Team (SOT) meeting on 1 May 2015 in South Africa. Primary: Kenya Meteorological Agency & Kenya Marine and Fisheries Institute Secondary: JCOMM Ship Observations Team (SOT)

**Resolution 4 - Implement a Glider Capability in the Western Indian Ocean**

Noting the continuing threat of piracy in the WIO, the rapid emergence of surface and sub-surface gliders as an efficient and reliable technology, and the current planning for the International Indian Ocean Expedition - II, JCOMM is urged to co-ordinate the establishment of a sustained glider capability in the WIO, by means of a pilot project or otherwise.

Action: DBCP/WMO-JCOMM/OPA to work with IIOE-2 to examine capability of Regional Gliders. Primary: JCOMM Data Buoy Cooperation Panel (DBCP) Secondary: International Indian Ocean Expedition-2 (IIOE-2) Coordinating Body.

## **Resolution 5 - Develop a Targeted Approach to Capacity Development in WIO Ocean Modelling**

Focus on particular modelling aspects such as storm surge, coastal inundation, wave modelling, data assimilation techniques. Link with JCOMM Flooding Demonstration Initiative. Secure means to coordinate regional scientists travel to the US NOAA African Desk, Australia Bureau of Meteorology (BoM), or the IOC Sub-commission Summer School to obtain such skills.

Action: Facilitate linkages thru JCOMM contacts

## **II. Outcomes of the “Third North Pacific Ocean and Marginal Seas” ([NPOMS-3](#)) Capacity Building Workshop in Kyoto, Japan, 6-8 October 2014.**

The Third Capacity Building Workshop of the WMO/IOC Data Buoy Cooperation Panel (DBCP) for the North Pacific Ocean and Its Marginal Seas ([NPOMS-3](#)), *Application of Regional Ocean Observations for Increasing Society’s Understanding and Forecasting of Typhoons*, was Hosted by Japan’s Disaster Prevention Research Institute ([DPRI](#)) and Graduate School in Advanced Integrated Studies ([GSAIS](#)), on 6-8 October 2014 at the [Uji Campus](#) of Kyoto University in Kyoto Japan.

The Following Goals and Actions were successfully achieved at this NPOMS-3 Workshop and of the Regional long-term Ocean-Climate Monitoring Capacity for Cyclogenesis Research and Forecasting:

1. Review recent, on-going and planned regional programs on typhoon and its interaction with the ocean,
2. Discuss new advances in our understanding of the processes and mechanisms of typhoon-ocean interaction,
3. Explore the possibility of regional collaboration to improve typhoon observation and prediction,
4. Advance a design of an Optimal and cost-effective Observing System for NPOMS Cyclogenesis Research and Forecasting,
5. Demonstrate the crucial role of Western Pacific (WESTPAC) ocean observations, such as for understanding and predicting regional cyclogenesis,
6. Build Regional and National Human, Institutional and Infrastructure Capacity Needed to Acquire, Process and Deliver Socio-Economic Benefits From Ocean Observations,
7. Continue to Learn Practical Implementation Skills for the Deployment of Operational Data Buoys at Sea, the Collection of Buoy Data, and Related Data Management,
8. Continue to Align with Objectives of the Global Framework for Climate Services (GFCS) to Deliver Ocean Data to the End-User,
9. Enhance Coordination and Cooperation between the DBCP Task Team for Capacity Building (TT-CB), WMO Regional Associations (RA-II/V) and the IOC Regional Office for WESTPAC.

**APPENDIX B**

**TERMS OF REFERENCE OF THE  
DBCP TASK TEAM ON CAPACITY-BUILDING (TT-CB)**

*(as adopted at DBCP-28)*

***The DBCP Task Team on Capacity-Building shall:***

1. Initiate, plan and coordinate the implementation of the Training and Capacity-Building work programme including, in particular, Training Course on Buoy Programme Implementation and/or Data Management; coordinate production of relevant training materials, and identify lecturers;
2. In parallel with the organization of training programmes, keep under review existing training material (paper and electronic) and advise on updating and developing new DBCP standard material in this regard; and investigate ways to add training material from all capacity building activities to IOC/IODE OceanTeacher;
3. Review and assess national, regional, and global requirements for capacity-building and develop / improve programmes as appropriate;
4. Liaise with other capacity-building programmes in relevant areas to develop and implement integrated activities, to explore potential synergies and opportunities for efficiently using resources available; liaise in particular with the JCOMM cross-cutting Team on Capacity-Building;
5. Endeavour to mobilize the resources required for DBCP capacity-building, including those needed for the implementation of the Training Courses;
6. Make recommendations to the DBCP Executive Board and / or the DBCP for addressing the issues above;
7. Report to the DBCP Executive Board and the DBCP at its biennial Sessions;
8. Consider inviting mariners and shipping companies to the DBCP Capacity Building workshops as a way to advertise the ocean observation activities and seek their support;
9. Make sure the data buoy vandalism aspects are being addressed as part of its activities;
10. Investigate on possible cooperation with relevant Capacity Building programmes in WMO and IOC.

**DBCP-TT-CB Membership:**

The membership is open to all Panel members. The Chairperson<sup>1</sup>, appointed by the Panel, has selected the following team members:

Dr Sidney THURSTON, NOAA/OCO  
(TT-CB Chairperson)

Dr. R. Venkatesan, NIOT/India  
(TT-CB Vice-Chairperson)  
DBCP Technical Coordinator

DBCP Executive Board members, including

DBCP Chairperson, Vice-chairpersons (or their  
respective Deputies)

Hamad Mohammed AL GHEILANI (Oman)

Mathieu BELBEOCH (JCOMMOPS)

Rick LUMPKIN (USA)

Walter FLORES SERVAT (Peru)

Djoko HARTOYO (Indonesia)

Dr G. LATHA (India)

Byung-Gul LEE (Republic of Korea)

Kwan-Chang LIM (Republic of Korea)

David MELDRUM (UK)

John MUNGAI (Kenya)

Louise WICKS (Australia)

Lucy SCOTT (South Africa)

Representative of the IOC Secretariat

Jean ROLLAND (France)

Juliet HERMES (South Africa)

Representative of the WMO Secretariat

Santjie du TOIT (South Africa)

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<sup>1</sup> The Chair and Co-Chair of the Task Team should not be in a situation of conflict of interest.



## APPENDIX C

### PROPOSED GOALS FOR DBCP CAPACITY BUILDING ACTIVITIES IN 2015

Two DBCP TT-CB Capacity Building Workshops are being proposed for 2015 as follows:

Preliminary discussions are underway with the IOC Sub-Commission for Africa and the Adjacent Island States for a possible April/May session of a DBCP Western Indian Ocean (WIO) Capacity Building Workshop to focus on developing the contribution of WIO region to the 50<sup>th</sup> Anniversary of the International Indian Ocean Expedition ([IIOE-2](#)). The possible Venues include either the IOC Offices at the United Nations located in Nairobi, or at the Kenya Meteorological Department ([KMD](#)) with possible co-funding from the IOC and the Western Indian Ocean Marine Sciences Association ([WIOMSA](#)). Details remain to be confirmed.

The Fourth Capacity Building Workshop of the WMO/IOC Data Buoy Cooperation Panel (DBCP) for the North Pacific Ocean and Its Marginal Seas (NPOMS-4), *Application of Regional Ocean Observations for Increasing Society's Understanding and Forecasting of Typhoons*, will be hosted by the Korea Institute for Ocean Science and Technology ([KIOST](#)) in early November 2015 in Busan, South Korea. The Venue will be the Korea Ocean and Maritime University ([KMOU](#)) and KMOU will serve also as NPOMS-4 co-Host with KIOST.

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