First Data Buoy Cooperation Panel Mediterranean Training Workshop on Ocean Observations and Data Applications (DBCP-Medi-1)-Part 2

https://goosocean.org/Medi-1-2

Hybrid Session

Organizers

National Institute of Meteorology (INM), Ministry of Transport, Tunisia

WMO-IOC Data Buoy Cooperation Panel (DBCP), OceanOPS/WMO

National Center of Ocean Standards and Metrology (NCOSM), China

Host

National Institute of Meteorology (INM), Ministry of Transport, Tunisia

Date: 2-4 May 2023 Venue: Hotel Royal ASBU Tunis

Group Photo

Executive Summary

The First Data Buoy Cooperation Panel Mediterranean Training Workshop on Ocean Observations and Data Applications (DBCP-Medi-1)-Part 2 took place at the Royal Asbu Hotel in Tunis, Tunisia, with the invitation of the Tunisian National Institute of Meteorology (INM), Ministry of Transport. The workshop was attended by about 30 in person and about 50 online. The list of participants is provided in Annex 3.

The three-day workshop was opened by the Tunisian Permanent Representative to WMO and the Director General of the INM, Mr Ahmed Hmam. Welcome speeches were delivered by the World Meteorological Organization (WMO) Secretariat, Ms. Champika Gallage, the Intergovernmental Oceanographic Commission (IOC), UNESCO Secretariat, Dr. YU Ting and the Chair of the Data Buoy Cooperation Panel Dr. Nelly Florida Riama. Ms. JIANG Qiu, Chair of the DBCP Task Team, explained the evolution of the DBCP Capacity Building activities, and the scope of Medi-1 Part-2 session. DBCP Technical Coordinator, Dr. JIANG Long introduced technological and coordination development of the Panel, which currently covers drifting buoys, coatal/national moored buoys, tropical moored buoys, tsuameters, and fixed platforms, and their applications to societal benefits. He further noted the workshop itself extended to other observing networks that serve the purpose of the Meditarranean basin and value of co-design for region-specific capacities and requirements. All the speakers highlighted the importance of ocean observations, observation and data gaps in the Mediterranean region, and a number of global initiatives that the region can take advantage of.

The objective of the workshop was to enhance the Mediterranean region's capacity to apply ocean observations for social and economic benefit and to improve the forecasts. The themes for the workshop included information on the role of ocean observations for regional weather prediction and climatology, societal and economic benefits of ocean observations, best practices, data quality control and ocean observing with new technologies, data access and data applications, data quality control and ocean observing capacity in the region, as well as continuing the discussion from Medi-1 Part-1 (virtual session, 9-11 November 2022) on the

regional observations, quality control and data applications in forecast improvements. The workshop Agenda is provided in Annex 2.

The three-day workshop was organized under four major sessions and a tour to the INM facility. The four sessions were 1. Global and Regional Initiatives, 2. Instrumentations Quality Control & Assurance, 3. Carbon and Biogeochemistry Observations**,** 4. Application and Forecasting. This Part-2 of the workshop was very well received by the participants. Participants online and in person were very actively engaged in the discussions and shown their interest on the subjects presented at the session.

It was noticed that the majority of the countries bordering the southern part of the Mediterranean Sea were not familiar with the global ocean observing networks. There is also a lack of ocean observation instruments and related knowledge within the countries of the southern part of the Mediterranean Ocean to make necessary ocean observations. A number of requests were made to include hands-on training on instrument handling, deployment and calibration checks in future workshops. Participants from three Members/Member States expressed interest in hosting future workshops, Cyprus, Egypt, and Morocco.

Participants identified that one of the key issues in the region is lack of coordination and collaboration between the African countries in the Mediterranean. They also lack downscaled models for national use to provide a better forecast and requested help in this area. A post-training survey was circulated to participants for future planning. Recommendations and actions from the workshop are provided in Annex 1.

A tour of the INM on the last day of the workshop included a visit to the instrument park, forecasting office, supercomputing system and power supply room. Mr. Ahmed Hmam delivered the certificates to the participants in person. Officially closing the workshop, Mr. Hmam thanked the organizing committee (Annex 4) and all who were involved in delivering a successful workshop. The workshop closed at 15:30 local time on 4 May 2023.

Annex 1

Recommendations and Actions

Recommendations:

1. Encourage OceanOPS, WMO and IOC to facilitate clearance processes as appropriate to operate in EEZs of the southern Mediterranean shores, which often prevents being able to collect data there (and in part explains the data gap there).
2. Participants are requested to work with their national authorities to appoint National Focal Points (NFP) for Global Ocean Observing System (GOOS). This can be done through IOC Natoinal Focal Point, WMO Permenant Representatives (PRs), and GOOS Addressees through the form attached to IOC CL2931, and the NFP for OCG networks such as DBCP and SOT. Designated NFP's engagement in observing network activities will benefit the Mediterranean community to connect with the regional and global ocean-observing communities.
3. Participants are encouraged to take advantage of activities and initiatives from various partners:
    a. ECMWF, Corpernicus, and Members in the region, such as France, Italy, Spain, etc.
    b. the RA-V Regional Training Center activities (https://bit.ly/flyertrbmkg,pusdiklat@bmkg.go.id),
    c. OceanTeach Global Academy Tianjin Regional Trainin Center (OTGA-RTC, Tianjin),
    d. International Digital Twins of the Ocean Summit (https://ditto-summit2023.scimeeting.cn/en/web/index/, contact: yuntao.wang@sio.org.cn and xywang@xmu.edu.cn) and
    e. WMO-IOC Regional Marine Instrment Center for Asia Pacific (RMIC-AP) activities (contact: jlzxjq@163.com and jiangfan202301@163.com) by joining the planned training activities in 2023-24 .
4. Participants are informed about the barometer upgrade programme and encouraged to use this opportunity to fill the observation gaps in their

respective regions by upgrading the drifters with additional sensors (barometers, salinity, wave etc.). TT-CB is willing to laise with OceanOPS to further explore joint ocean glider deployment opportunities in the region.

5. Participants are encouraged to work with the Mediterranean Coordinator at OceanOPS (odefommervault@ocean-ops.org, support@ocean-ops.org) to get assistance in ocean observations related matters in the Mediterranean region, and higher engagement with the GOOS Regional Alliance for the Mediterranean, i.e. MonGOOS (https://mongoos.eurogoos.eu/).
6. Operators of the ADCP in Mediterranean region are requested to consider sharing ADCP data in real or near real-time. Mediterranean Coordinator at OceanOPS (odefommervault@ocean-ops.org) will assist the members with this.
7. Participants are requested to provide supporting science and early warning input to the Joint Task Force (JTF) of the SMART Cables to assist in obtaining further funding for adding SMART capability to the MEDUSA cable system and other cable systems in the Mediterranean region.
8. Tide Gauge operators in the Mediterranean who are not yet partners of GLOSS network are invited to engage with GLOSS. This will provide a better network of stations for particular applications, such as tsunami monitoring which need a network of tide gages for improved forecast results. In addition, tide gauge operators in the region are encouraged to add Atmospheric Pressure(AP) and Atmospheric Temperature (AT) sensors to the existing and planned tide gauge stations.
9. Suggested to collaborate in inter-laboratory comparisons for BGC parameters between NCOSM/MNR of China and CSIC of Spain. Proposed to collaborate on the salinity calibration activities in CNR and NCOSM, and NSMFC/MNR to test oil spill forecasting modelling in the region.
10. The Medittaranina ocean modelling community is invited to collaborate with SIO/MNR, China, to build a coupled physical-biological model in the western Mediterranean. The collaboration fits well under scope of UN Decade endorsed project ‘Mitigation of Natural Incidence Towards an increased Oceanic Resilience (MoNITOR)’. SIO’s hydrodynamical model is based on both ROMS model and SCHISM model, and the Mediterranean Sea is not yet

considered. SIO is happy to share the CoSiNE ecosystem model to collaboratively build a coupled physical-biological model in different regions, and SIO looks for collaborations for building a digital twin representation of the global coastal oceans, including Medittaranina Sea and Red Sea.

11. Improve the dialogue between modelling and observing communities to advocate for sustainable, fit-for-purpose observing networks for operational oceanography.
12. Improve the engagement and collaboration among countries from Region I and Region VI on the data buoy and other ocean observation activities in Mediterranean sea including data and knowledge sharing.
13. Increase the number of short presentations from the region and include national reports from the participating countries to learn about capacities, collaboration opportunities and gaps in neighbouring countries.
14. Requested more focused training opportunities in ocean modelling
15. Suggested to include hands-on training in future workshops.

Actions:

1. Provide the information on WMO and IOC data policies to all participants (WMO and IOC Secretariat, July 2023)
2. Provide all the links mentioned during the discussions (i.e. GBON, SOFF, drifter upgrade, SOT-12 session, etc.) in one email to all participants. (DBCP-TC, July 2023)
3. OceanOPS to assist Sana BEN ISMAIL (IOCCP, Tunis) to get their atmospheric data from the Tunis Research ship and to be part of the SOT programme. (OceanOPS TC for Mediterranion and SOT, December 2023)
4. A follow up survey is done after 6 months (around November 2023) to assess the impact of the workshop.

Annex 2
Day 1: Tuesday 2 May 2023

Local Time (UTC+1)	Subject	Lead
07:30-08:00	**Registration**	
08:00-08:30	INM Director General IOC WMO DBCP	Ahmed Hmam YU Ting-Julia Champika Gallage Nelly Florida Riama
08:30-08:40	Workshop Objectives & Agenda	JIANG Qiu (Rachel) NCOSM
08:40-08:45	Logistic Information	Imen Baccari, INM
08:45-09:00	**Group Photo** & Break	
Session 1: Global and Regional Initiatives *(20' presentation)* **Chair: JIANG Qiu-Rachel Rapporteur: Basma Brahmi**		
09:00-09:20	Roundtable Introduction	All
09:20-09:40	INM presentation	Basma Brahmi, INM
09:40-10:00	Marine Environmental Monitoring in Mediterranean	Khalil Attia, UNEP
10:00-10:20	DBCP and OceanOPS	JIANG Long,OceanOPS
10:20-10:40	Observations in the Mediterranean: Overcoming Challenges and Seizing Opportunities through Coordination	Orens De Fommervault OceanOPS
10:40-11:10	Regional Training Centre activities	Nelly Florida Riama BMKG
11:10-12:00	Q&As	
12:00-13:30	Lunch Break	
Session 2: Instrumentations and Quality Control/Assurance *(20' presentation+10'Q&As)* **Chair: YU Ting-Julia Rapporteur: JIANG Long**		
13:30-14:00	New Wave Drifters from FIO (video available upon request)	QIAO Fangli (pre-recorded) FIO
14:00-14:30	Surface drifters in the Western Mediterranean Sea	Lara Diaz (remote) SOCIB
14:30-15:00	ADCPs application cases: From shallow sea to deep ocean	RAO Liang (remote) IACAS

15:00-15:30	Tsunami buoy sensor design and use in forecasting	Christopher Moore (remote) PMEL
15:30-16:00	Coffee Break	
16:00-16:30	30 years of monitoring a Mediterranean choke point: the CNR moorings in the Sicily Channel	Katrin Schroeder(remote) CNR
17:00	Wrap up Day 1	

Day 2: Wednesday 3 May 2023

Session 2: Instrumentations and Quality Control/Assurance *(continued, 20' presentation+10'Q&As)* **Chair: Nelly Florida Riama, Rapporteur: Champika Gallage**		
Local Time (UTC+1)	**Subject**	**Lead**
09:00-09:30	Observing the Earth and Ocean with SMART Subsea Cables Mitigating Environmental Hazards The Mediterranean	Bruce Howe/Ceci Rodriguez Cruz (remote)/U. Hawaii
09:30-10:00	Tide gauges network: GLOSS recommendations and on-going regional initiatives	Begoña Pérez Gómez (remote) Puertos del Estado
10:00-10:30*	The new oceanographic operational platform "ZYPHIUS" of the Al Hoceima Marine Observatory - Morocco	Houssine NIBANI AGIR
10:30-10:45	Break	
10:45-11:15	Coastal High-frequency radars in the Mediterranean Sea	Pablo Lorente (Puertos del Estado) Emma Reyes (SOCIB) (remote)
11:15-11:45	The Analysis of sea temperature and sea surface wind variation in response to super typhoon Lekima (1909)	LI Xiaoxia (remote) MOC/CMA
11:45-13:30	Lunch Break	
Session 3: Carbon and Biogeochemistry Observations *(20' presentation+10'Q&As)* **Chair: Artur Palacz, Rapporteur: Sana Ben Ismail**		
13:30-14:00	Global marine carbon and biogeochemistry observing capacity and data products	Maciej Telszewski & Artur Palacz IOCCP
14:30-15:00	Ocean Acidification observations - contributions from the Mediterranean community	Abed El Rahman HASSOUN GEOMAR
15:00-15:30	Combining in situ and remote sensing biogeochemical observations -examples from the Mediterranean Basin	Sana BEN ISMAIL IOCCP
15:30-16:00	Coffee Break	
16:00-16:30	Best practices in measuring and reporting some basic	Marta Alvarez

	Biogeochemical Essential Ocean Variables	CSIC
16:30-17:00*	Drifter Quality Control--A focus on C-RAID ocean drifters reprocessing: improve the access to historical drifter data	Thierry Carval (remote) Ifremer
NOTE: * These two presentations swapped time slots. Houssine's under theme Session 3 and Thierry's under Session 2		
19:00	**Self-funded group dinner**	

Day 3: Thursday 4 May 2023

Session 4: Application and Forecasting (continued, *20' presentation+10'Q&As)* **Chair: JIANG Fan, Rapporteur: Basma Brahmi**		
Local Time (UTC+1)	**Subject**	**Lead**
09:00-09:30	Integrated coastal observing and forecasting system - lessons learnt from the China Coastal Regions	WANG Yuntao (remote) SIO
09:30-10:00	Use and impact assessment of observations in Operational Ocean forecasting systems	Elisabeth Remy (remote) Mercator
10:00-10:30	The Copernicus Mediterranean Physical system: latest model upgrades and accuracy	Emanuela Clementi (remote) CMCC
10:30-10:45	Break	
10:45-11:15	Wave Observations and Forecasts	Fabrice Ardhuin (remote) Ifremer
11:15-11:45	Maritime Search and Rescue and Offshore Oil Spill Emergency Decision Support System	XU Jiangling NSMFC
11:45-12:15	New Meteo-France buoys in the Mediterranean 2023-2024	Christophe Guillerm (remote) MeteoFrance
12:15-13:30	Lunch Break	
Session 5: Round Table Discussions **Chair: JIANG Qiu-Rachel, Nelly Florida Riama, Rapporteur: Champika Gallage**		
13:30-14:30	Roundtable Discussions	All
14:30-15:00	Workshop Wrap-Up (Actions/Recommendations)	All
15:30	Visit to INM	

Annex 3

List of Participants

Name	**Country**
Lecturers	
Fan JIANG	China
Xiaoxia LI	China
Yang LIU	China
Qiu JIANG	China
Liang RAO	China
Yuntao WANG	China
Jiangling XU	China
Fabrice ARDHUIN	France
Thierry CARVAL	France
Orens DE FOMMERVAULT	France
Christophe GUILLERM	France
Long JIANG	France
Elisabeth REMY	France
Nelly RIAMA	Indonesia
Katrin SCHROEDER	Italy
Maciej TELSZEWSKI	Poland
Lara DÍAZ-BARROSO	Spain
Pablo LORENTE	Spain
Begoña PEREZ GOMEZ	Spain
Emma REYES	Spain
Khalil ATTIA	Tunisia
Sana BEN ISMAIL	Tunisia
Bruce HOWE	USA
Christopher MOORE	USA
Participants	**Country**
Fatima KARTOUCHE	Algeria
Nadim MAHMUD	Bangladesh
Maidaawe Bahane HADJATI PULCHÉRIE	Cameroon
L. CUEVAS	Chile
Participants	**Country**
Matheos PAPADAKIS	Cyprus
Pritha TUTASI	Ecuador
Mohamed ABDELAZIZ	Egypt
Mohamed ABDELMONEIM IBRAHIM	Egypt
Mohamed ALY-ELDEEN	Egypt
Derya VENNIN	France
Peter BUSUMPRAH	Ghana
Maria CHANIOTAKI	Greece
Raja ACHARYA	India
Basanta JENA	India
Rodhi ALDILLA PUTRI	Indonesia
Dava AMRINA	Indonesia
Laiza ARAZAK	Indonesia
I Nyoman ASTINA PUTRA	Indonesia
Erik HANDONO	Indonesia
Perdinand HUTABARAT	Indonesia
Ryan PUTRA	Indonesia
Muhammad QOLBI	Indonesia
Dian RAHANRA	Indonesia
Zulkifli RAMADHAN	Indonesia
Noor SANTI	Indonesia
Pitoyo SASONGKO	Indonesia

Aprizal VERDYANSYAH	Indonesia
Risa YURISMA	Indonesia
Malek BELGACEM	Italy
Faiza AL-YAMANI	Kuwait
Yara EWIDA	Kuwait
Sunia AZIEZ	Libya
Abdalbast FADEL	Libya
Abdoulhamid SWEDAN	Libya
Najat SARKOUH	Morocco
Vânia LIMA	Portugal
Inês MARTINS	Portugal
Marta ALVAREZ	Spain
Hichem BAIZIG	Tunisia
Basma BRAHMI	Tunisia
Saoussen CHERIAA	Tunisia
Oussema FERSI	Tunisia
Wafa KHALFAOUI	Tunisia
Chadha MARZOUGUI	Tunisia
Mondher MRABTI	Tunisia
Bacem NAHALI	Tunisia
Nuran ALTAY	Türkiye
Pinar ESKIOGLU	Türkiye
Romina NUQUI	UAE
Tareq ALSAYALI	Yemen

Funded participants by DBCP	**Country**
Amine Khedim	Algeria
Matheos Papadakis	Cyprus
Nasser Darwesh Moustafa	Egypt
Amani Ali	Egypt
Reem Hosny Morsy	Egypt
Tarek Salhab	Lebanon
Ashraf AlAryan	Libya
Abdoul Hamid Swedan	Libya
Sunia Aziez	Libya
Hassan Amane	Morocco
Nomamed Aitlaamel	Morocco
Elhoucine Bizafine	Morocco
Adil Chair	Morocco
Sabiha Khamis	Tanzania

Annex 4

Organizing Committee

Name	email	Affiliation
Ms. Qiu JIANG (Rachel)	jlzxjq@163.com	Chair of the DBCP Task Team on Capacity Building
Mr. Fan Jiang	jiangfan202301@163.com	Core Member of the DBCP Task Team on Capacity Building
Dr. Nelly Florida Riama	nelly.florida@bmkg.go.id	Chair of the DBCP
Dr. Long Jiang	ljiang@wmo.int, ljiang@ocean-ops.org	Technical Coordinator, DBCP
Dr. Ting YU (Julia)	t.yu@unesco.org	IOC Secretariat
Ms. Champika Gallage	cgallage@wmo.int	WMO Secretariat
Ms. Basma Brahmi	basma.brahmi13579@gmail.com	INM, Local Organizer
Ms. Imen Baccari	imen.baccari@gmail.com	INM, Local Organizer

Annex 5

Acronyms

ADCP	Acoustic Doppler Current Profiler
AGIR	Association de Gestion Intégrée de Ressources, Morocco
BGC	BioGeoChemical/BioGeoChemistry
CTD	Conductivity, Temperature, and Depth
CMA	China Meteorological Administration, China
CMCC	Euro-Mediterranean Center on Climate Change, Italy
CNR	National Research Council, Italy
CSIC	National Research Council, Spain
DBCP	Data Buoy Cooperation Panel
FIO	First Institute of Oceanography of MNR, China
GLOSS	Global Sea Level Observing System
IACAS	Institute of Acoustics of the Chinese Academy of Sciences, China
INM	National Institute of Meteorology, Tunisia
IOC	Intergovernmental Oceanographic Commission of UNESCO, France
IOCCP	International Ocean Carbon Coordination Project
Ifremer	Institut Français de Recherche pour l'Exploitation de la Mer, France
MOC	Meteorological Observation Center, China
MNR	Ministry of Natural Resources, China
NCOSM	National Center of Ocean Standards and Metrology of MNR, China
NSMFC	North China Sea Marine Forecasting Center of MNR, China
NOAA	National Oceanic and Atmospheric Administration, USA
PMEL	Pacific Marine Environmental Laboratory, USA
QA	Quality Assurance
QC	Quality Control
OceanOPS	WMO-IOC Joint in situ Ocean Observing System Monitoring and Coordination Centre
SOCIB	Balearic Islands Coastal Observing and Forecasting System
SIO	Second Institute of Oceanography, China
UNEP	United Nations Environment Programme
XMU	Xia'men University, China
WMO	World Meteorological Organization, Switzerland