

Report

CDP Expert Team on Capacity Development through Technical Departments (CDP-ET-TDs)

1. Introduction

The **Terms of Reference of the CDP-ET-TDs** were established as follows:

Monitor and make recommendations on the following:

- i. Capacity development of technological infrastructure
- ii. Capacity development in Services delivery
- iii. Capacity development in hydrology and water resources
- iv. Capacity development in research, science and innovations
- v. Work in close collaboration with the appropriate departments in the Secretariat as well as with WMO Bodies and Technical Commissions
- vi. Work in close collaboration with the rest of the CDP-ETs identifying possible interactions based on the contributions received by the CDP-ET-TDs invited members
- vii. Promotion of existing strategies on capacity development in various areas of service delivery, hydrology and water resources, by way of providing advisory on how to support least developed and developing countries.
- viii. Promotion of existing strategies in the areas of research, science and innovation.

2. Activities

Since the creation of the CDP-ET-TDs, the facilitator, Dr. Carla Gulizia, has been coordinating several online meetings with different CDP Members, individual representative members of the WMO Bodies and Technical Commissions included in the ET, and/or WMO Secretariat staff (see **Table I**). Other ways of communication of the CDP-ET-TDs included email exchanges and interaction through the Moodle platform forums allocated for the present ET. The reports of the CDP-ET-TDs meetings were shared, on a regular basis, not only with the members of the CDP-ET-TDs (through the working files folder in the Moodle site) but also with the WMO Technical Departments by personal e-mail correspondence. The motivation for this, in line with the ToR v (*“work in close collaboration with the appropriate departments in the Secretariat...”*), was that they could be aware of the work of the ET as well as contribute if they identify any thing that has an implication on their programme, so they can quickly react. Other documentation and/or reports relevant to the work of the CDP-ET-TDs were also included in the working files folder in the Moodle site for asynchronous consultation.

Table I: *Inventory of meetings coordinated by facilitator of the CDP-ET-TDs, Dr. Carla Gulizia*

Date	Participants
Sep. 23 rd , 2020	CDP-ET-TDs & Secretariat
November 9 th , 2020	CDP-ET-TDs & Secretariat
January 14 th , 2021	CDP-ET-TDs & Secretariat
October 5 th , 2020	CDP-ET-TDs Facilitator & SERCOM and Services Dept.
January 8 th , 2021	CDP-ET-TDs Facilitator & Mary Scholes (RB Rep.)
January 11 th , 2021	CDP-ET-TD facilitator participating in the CDP-ET-RMPDA meeting
February 17 th , 2021	CDP-ET-TDs Facilitator & Jennifer Milton (INFCOM rep.)

February 15th, 2021	CDP-ET-TD and CDP-ET-RMPDA facilitators participating in the planning of the Implementation arrangement meeting with Services Dept
March 10th - 12th, 2021	Participation and presentation of the CDP-ET-TD facilitator in the Implementation Arrangement meeting (" <i>Strengthening collaboration among NMHSs and WMO Centers for effective support to Members through extra-budgetary projects</i> ")
April 15th, 2021	CDP-ET-TDs Facilitator & Karen Mc. Court (facilitator CDP-ET-RMPDA)
April 20 th , 2021	CDP-ET-TDs and CDP-TT-WCDS & Secretariat
May 27, July 7, and August 23, 2021	CDP-ET-TD facilitator invited to participate in RA-III Joint Working Groups Meetings (Presentation of CDP-2 report and the Implementation Arrangements Meeting highlights)
August 27th, 2021	CDP-ET-TDs Facilitator & Claudio Caponi
November 29th, 2021	CDP-ET-TDs Facilitator & Anna Timofeeva (facilitator CDP-ET-HRDET)
December 2nd, 2021	1st brainstorming meeting HCP-CDP collaboration (HWR Division, HCP Rep., CDP-ET-TDs & ET-HRDET Facilitators & Vice-Chair CDP)
January 24th, 2022	2nd brainstorming meeting HCP-CDP collaboration with FICH RTC-Argentina (HWR Division, HCP Rep., INFCOM Rep., CDP-ET-TDs & ET-HRDET Facilitators & Vice-Chair CDP)
April 8th, 2022	CDP-ET-TDs Facilitator & SERCOM and INFCOM representatives & Secretariat
August 16th, 2022	CDP-ET-TDs Facilitator & SI Dept.
August 16th, 2022	CDP-ET-TDs Facilitator & Jennifer Milton (INFCOM rep.)
August 22nd, 2022	CDP-ET-TDs Facilitator & HWR Division
August 29th, 2022	CDP-ET-TDs Facilitator & Regional Office for the Americas

The representative of the Regional Training Centres in the CDP, Prof. Odjugo Peter, was in charge of gathering and synthesizing information provided by several RTCs worldwide addressing three main issues: successes, priorities/gaps and recommendations/suggestions. For this aim he prepared a questionnaire distributed to all RTCs and based on the responses received he was able to consolidate a final summary report which provided relevant insights on good practices and ways of fostering collaborations among regions. The latter was presented during CDP-2 and is currently uploaded in the CDP-ET-TDs working files folder in the Moodle site.

In addition, the facilitator of the CDP-ET-TDs co-lead the WCRP Forum for South America, taking into consideration the recommendations discussed and agreed during the CDP-2 Meeting, particularly in line with EC-73 Decision 9 including "*Developing strategies to foster engagement of academics and NMHSs staff at the local and regional levels on research questions and ways in which results could be applied for improved operational delivery*" and "*...foster systematic contribution from the academia towards enhancement of research-to-operation connection as additional way of strengthening capacity of NMHS..*". Given that the Forum for South America was held in English, in order to tackle the language barrier in the region, the WMO provided simultaneous Spanish

translation for this Forum, whereas the regional focal points for the continent prepared the translation of all the advertisement material (flyer and website content).

Feedback from CDP-ET-TDs facilitator and HCP representative was provided to the review HCP-4/Doc.10 on Regional needs/proposals, for inclusion as HCP recommendations to Technical Commissions. Principles and process of updating the Strategy on Capacity Building in Hydrology and Water Resources were reported to the CDP-ET-TDs by HCP representative whenever there was a progress in this review process.

The representative of the INFCOM, Ms. Jennifer Milton, has been providing a continuous report and overview of the identification and monitoring of Capacity Development activities supporting the implementation of new or modified technological systems, observations and infrastructure supporting weather, water, climate and the environment, since the beginning of her nomination approval as representative of INFCOM in the CDP (and member of CDP-ET-TDs). Related reports on INFCOM aspects were presented during CDP-2 and CDP-5.

Meanwhile, the representative of the SERCOM, Prof. Dr. Roger Stone, gathered and synthesized relevant information regarding capacity developments issues and recommendations based on several Standing Committees feedback. This documentation was uploaded into the Moodle site and was presented by CDP-ET-TDs during CDP-2. Particular issues and recommendations that were more aligned with the ToRs of other CDP-ETs were shared with the respective facilitators, taking into account ToR vi of CDP-ET-TDs.

Contributions from the Standing Committee on Marine Meteorological and Oceanographic Services (SC-MMO), particularly from the Expert Team on Competencies and Capacity Development (CCD) expected deliverables were reported to the CDP-ET-TDs facilitator and she presented these during CDP-5.

CDP-ET-TDs facilitator sent letters to WMO Technical Departments Directors prepared together with the CDP-HRDET facilitator, and with the approval of the Chair of CDP, Dr. Kijazi, in order that the Technical Departments could identify potential regional meetings where representatives of the Regional Centres mentioned in the EC-73 Decision 9 could be invited, so that communication between these actors be established and/or further promoted. National examples of satisfactory collaboration with the Regional Centres, and particular statements from the WMO Symposium on education and training SYMET-14, were also mentioned in the letter.

3. Highlights of achievements

The representative of the Research Board, Prof. Mary Scholes, provided several recommendations and issues on capacity development gaps according to each region, mainly focused on developing countries. The emphasis was put on recommending targeting programmes taking into account what kind of capacity development is needed, for whom and by whom. In addition, capacity development for Early Career Researchers (ECRs) needs to be addressed independently of the region of origin. Connection between WMO Programmes and ECRs networks, potential integration of ECRs community with international high level panels, are possible ways of bridging this capacity gap. Finally, there is a need to change the paradigm and think not only in terms of capacity development but also in capacity recognition. This would erase the stigma of the geographical region of origin, if from a developed or a developing country.

Several activities of the Plan of Action* (AP) for Hydrology have associated capacity development components. Initial discussions started between facilitator of the ET and Claudio Caponi on how CDP could contribute to the implementation of the Plan of Action. At that moment, the SC-HYD had

finalized the “Assessment Guidelines for End-to-End Flood Forecasting and Early Warning Systems (E2E FFEWS)” and was about to start the development of training material. The FICH-UNL (WMO RTC Hydrological component in Argentina) was contacted by Dr. Carla Gulizia and accepted to actively contribute with HCP in the development of the training material which will be used in the training for the Assessment Guidelines for End-to-End Flood Forecasting and Early Warning Systems (E2E FFEWS). They are planning an asynchronous virtual training, 4-days training in person, and 1 month for participants to do it in their country and send them to get feedback. Asynchronous virtual training: will cover all possible issues of flood forecasting in line with their specific level of implementation and requirements – from basic levels of services to state-of-the-art practices and services according to WMO recommendations. This CDP-HCP-RTC collaboration is a clear successful example of how the articulation, communication and coordination of several WMO actors was initiated through the awareness raised by the work of the CDP-ET-TDs.

A valuable collection of concrete examples and experiences at national level on successful strategies implemented towards engagement between academics and NMHSs staff/operational community has been provided during CDP-5 and is allocated in the CDP-5 Moodle site.

Several observations were extracted from the outcomes of "*Strengthening collaboration among NMHSs and WMO Centers for effective support to Members through extra-budgetary projects*" Meeting (March 10-12, 2021). Capacity development requirements are very different depending on the geographical region. Taking into account the local knowledge, building on strong examples in current and past projects and having the sufficient time to engage in the twinning arrangement and training component are some of the successful experiences shared throughout the meeting. These good practices, in line with some of the CDP-2 recommendations, should be promoted in other ongoing and emerging agreements. Meanwhile, there is a need in accelerating the update in seasonal and subseasonal products as most are based on statistical approaches and this could be contributed with further collaboration involving academics and scientific institutions with the support of the WMO Research Programmes (e.g. WWRP, WCRP). Furthermore, close coordination with WMO including parallel projects is helpful in linking up with Partners. Interaction with Technical Commission experts, regional institutions and Regional Centers can provide continuous support to the NMHSs and link together the different projects. National and Regional Climate Forums are useful platforms for this aim. Coordination between projects in WMO and with other WMO Development Partners, with regional and sub-regional coordination mechanisms (e.g. building upon other existing coordination mechanisms) is helpful. It was recommended to promote coordination among partners at the design stage when opportunities for new projects arise. On the other hand, the engagement of the WMO Hydrological Community in twinning arrangements and extra-budgetary projects (both as beneficiaries and implementing partners) could be further expanded so WMO can provide wider and more integrated support to Members. Project proposals from across WMO could be supported by the Hydrological Coordination Panel (HCP) to help engage the hydrological community's needs and capabilities. Finally, experiences and capacities from previous cooperation in one developing country can upscale to neighbouring countries, with similar challenges and opportunities through new projects promoting South-South cooperation.

4. Challenges and opportunities

Challenges during the first intersessional period of the Expert Team were mainly that nominations for the representatives of WMO Bodies and Technical Commissions have been approved in the course of the second semester of 2020, though several of them were implemented by the end of the

2020. Thus, interactions with some of them could not be fully completed. Once the full membership of the ET was approved, the facilitator was able to encourage communication with them and receive inputs for the CDP meetings as requested.

There was a lack of active participation through the Moodle Platform, so communication between ET Members were mainly tackled by individual email exchange, or by coordinating online meetings with members. Another challenge the ET faced was the timing of some of the CDP meetings was that the reception of inputs or prior communication with members was during the summer break of the northern hemisphere, so it was hard to contact people and get their inputs since many were out of the office.

Finally, the ToRs for the ET were too wide, so it was difficult to cover all the aspects efficiently or even to set priorities among them as they all cover very important fields.

The creation of the CDP and particularly the CDP-ET-TDs have provided the opportunity to enhance the communication and articulation between the WMO Technical Commissions and Bodies, while also raising awareness of the work being done at the various levels for enriching potential collaborations (eg. HCP-CDP-RTC FICH cooperation) and avoiding duplication of efforts, whenever possible.

Recommendations from the expert team

The issues in which NMHSs contribute require interdisciplinary research. WMO can help, promote, and encourage such interdisciplinary action (nationally and regionally) with good practice guidance and capacity development support. But there must also be local (national) policy support for interaction between civil society (e.g. 'last mile' and community level behavioral work to support the implementation of early warning systems) and national (intra-national) governments to align social science actors with data from NMHSs. Again, the issue comes back to the WMO encouraging and supporting NMHSs to engage with national and international Universities across a range of relevant research areas. The WMO (Science and Innovation) and the broader UN ecosystem can better advertise its potential role to NMHSs to broker, facilitate and support the development of such knowledge networks. In addition, there is also a need to enhance the inclusion of multi-disciplinary personnel, enhance staff progression, qualifications, use of supplementary guidance, and use of case studies.

The role of the WMO Regional Offices includes facilitating the link between the WMO Technical Commissions with the respective Regional Association Working Groups and Regional Centres. It is recommended to develop a value chain at the regional level to identify what and how each of the components described above could contribute to this value chain. Take advantage of the Regional Projects for looking for opportunities of engagement between Research and Operational Communities.

There is a need for monitoring of success and challenges after implementation of capacity development activities, as well as monitoring of who is taking each training activity. Support from ETR for this can help on adopting best practices. Identifying linkages of WMO Technical Commissions with RTCs is also desirable. Enhance the use of distance-learning and blended-learning techniques, using latest available information technologies should be explored. In doing so, inclusion of Regional Training Centres and academic institutions should be made to provide increased outreach.

Particular emphasis should be placed on developing partnerships with academic institutions and professional and scientific associations, including exchanges of academic staff. Furthermore, there is considerable untapped potential for projects funded by CREWS and SOFF to include research

elements alongside, and complementary to, their operational mandates. Within the WMO, Science and Innovation can play a key role in brokering and matching research needs (funding calls) with appropriate sources of regional expertise.

It is recommended to emphasize on twinning, partnership, pooling, sharing, communities of instructors, and regional co-operations -in order to achieve effective outcomes in capacity development and institutional cooperation. Capacity development, and education and training activities supported by WMO should, in principle, be demand-driven. The requirements will be determined on the basis of the inputs from the Members, regional association working groups, and surveys undertaken by the WMO Secretariat.

Strategic vision for capacity development in NMHS's needs strong visionary leaders who can see the big picture and think strategically to bring about innovative changes to develop institutional and infrastructural capacity and to sustain it.

5. Activities up until Congress

The CDP-ET-TDs will focus in analyzing the national inputs received for the CDP-5 in order to suggest a potential collection of good practices that could be included in the WMO Capacity Development Strategy.

The CDP can support and facilitate the development of the CD framework of high-level principles for each WMO Technical Commission. Thus, it is planned to continue fostering communication and interaction with CDP-ETs members, representatives from RB, HCP, JCB, SERCOM and INFCOM, as well as with Technical Departments Directors at a regular basis for improvement of coordination and delivery of WMO capacity development activities