

**NOTES FROM THE FOURTH FORMAL COORDINATED ENERGY AND WATER-CYCLE
OBSERVATIONS PROJECT (CEOP) TELECONFERENCE ON ASIA-PACIFIC-AUSTRALIA
REGIONAL HYDROCLIMATE PROJECTS AND REFERENCE SITE ISSUES HELD ON
21 OCTOBER 2009
FINAL DRAFT, 2 December 2009**

1. INTRODUCTION

The 4th Asia-Pacific-Australia RHP and Reference Sites Teleconference related to the Coordinated Energy and Water-Cycle Observations Project (CEOP) took place on Wednesday 21 October 2009 at 05:00 UTC.

The issues that were discussed on the subject conference call included:

- (i) Results from the 3rd CEOP Annual Meeting at Melbourne, Australia from 19-21 August 2009;
- (ii) Current status of the CEOP Reference Site Data Archive with focus on the sites located in the Asia-Pacific Australia (CEOP_AP) region;
- (iii) CEOP_AP Reference Sites status and issues.

Participants

The participants were:

- 1. Toshio Koike** (Japan, CEOP Co-Chair)
- 2. Katsunori Tamagawa** (Japan, CEOP Asia Reference Site Data Manager)
- 3. Wu Zhang** (China, Lanzhou site representative)
- 4. Hironori Yabuki** (Japan, Eastern Siberian Tundra, Eastern Siberian Taiga, Mongol Arvayheer, Mongol Nalaikh sites representative)
- 5. Hideyuki Kamimera** (Japan, Central Vietnam site and Western Indonesia sites representative)
- 6. Manabu D. Yamanaka** (Japan, Western Indonesia, Central Indonesia, Eastern Indonesia, Northern Indonesia, and Southern Indonesia site representative)
- 7. Steve Williams** (USA, Data WG Co-Chair)
- 8. Elisa Vuillermoz** (Italy, Himalayas/Karakorum/Alps/Apennines site representative-for Gianni Tartari)
- 9. Rui Jin** (China, Heihe River Basin site representatives)
- 10. Tetsu Ohta** (Japan, CEOP Asia Reference Site Data Manager)
- 11. Huimin Lei** (China, Downstream of the Yellow River site representative)
- 12. Hirohiko Ishikawa** (Japan, Tibet site representative)
- 13. Xin Li** (China, Heihe River Basin site representative)
- 14. Akiko Goda** (Japan, CEOP Administrative Manager)
- 15. Sam Benedict** (Japan, CEOP International Coordination Function)
- 16. Petra Koudelova** (Japan, CEOP International Coordination Function)

Could Not Participate

- 1. Ichirow Kaihotsu** (Japan, Mongolia site representative)
- 2. Masatoshi Aoki** (Japan, Chao-Phraya River, North-East Thailand sites representative)
- 3. Shigenori Haginoya** (Japan, Tibet site representatives)
- 4. Tetsuo Ohata** (Japan, Eastern Siberian Tundra, Eastern Siberian Taiga, Mongol Arvayheer, Mongol Nalaikh sites representative)
- 5. Jun Matsumoto** (Japan, Northeast Bangladesh site and Central Vietnam site representative)
- 6. Ming-Cheng Yen** (Taiwan, Northern South China Sea - Southern Japan site representative)
- 7. Gombo Davaa** (Mongolia, Northern Mongolia site and Mongolia site representative)
- 8. Ryuichi Shirooka** (Japan, Western Pacific Ocean site representative)
- 9. Jianping Huang** (China, Lanzhou site representative)

10. **Dawen Yang** (China, Downstream of the Yellow River site representative)
11. **Shigenori Haginoya** (Japan, Tibet site representatives)
12. **Jun-Ichi Hamada** (Japan, Western Indonesia, Central Indonesia, Eastern Indonesia, Northern Indonesia, Southern Indonesia sites representative)
13. **Liu Huizhi** (China, Tongyu site representative)
14. **Kenichi Ueno** (Japan, Tsukuba site representative)
15. **Toru Terao** (Japan, Northeast Bangladesh site)
16. **Jun Asanuma** (Japan, Northern Mongolia site representative)
17. **Masatoshi Aoki** (Japan, Chao-Phraya River, North-East Thailand sites representative)
18. **Feng Jianwu** (China, Tongyu site – on behalf of Liu Huizhi)
19. **Jason Evans** (Australia, MDB Site Representative)
20. **Hisayuki Kubota** (Japan, Western Pacific Ocean site representative)
21. **Fadli Syamsudin** (Western Indonesia, Central Indonesia, Eastern Indonesia, Northern Indonesia, Southern Indonesia sites representative)
22. **Tsing-Chang (Mike) Chen** (Iowa, Northern South China Sea - Southern Japan site representative)

2. NEXT CONFERENCE CALL

The timing of the next, **5th CEOP Asia-Pacific-Australia RHP and Reference Sites Teleconference** will be announced in accordance with a new strategy for the organization of such calls that will be developed by the end of November 2009. **Benedict/Koudelova** have the **action (A1)** to inform the group of the details of the next call nearer to the time of the call and to coordinate the origination of the call.

3. CEOP AND CEOP DATA GROUP GENERAL ISSUES

3.1 Opening

(3.1a) Koike introduced items of interest to the participants that came out of the Third Annual meeting of the Coordinated Energy and water cycle Observations Project (CEOP), held from 19-21 August 2009 at Melbourne, Australia. He noted that the meeting focused on how CEOP is being organized and implemented. All of the presentation material provided by the participants at the meeting, on the Internet through the CEOP Home Page at: <http://www.ceop.net>.

The more detailed science findings and progress toward its main scientific goal to: “understand and predict continental to local-scale hydroclimates for hydrologic applications”, were left for detailed presentation, review and discussion at the Sixth International Scientific Conference on the Global Energy and Water Cycle that took place from 24-28 August 2009, at Melbourne, Australia.

(3.1b) The main actions from the meeting included:

(i) Action was assigned to the Data Management Working Group to submit a proposal with an implementation scheme and schedule for defining and organizing a CEOP 10 year dataset.

(ii) The CEOP Co-Chairs agreed to take action to use existing material contained in the CEOP submittal to the WCRP/GEWEX Legacy document to develop a draft of the initial CEOP Synthesis Document by the end of October 2009, with submission set for early 2010. However, this action will involve many members of the CEOP community before it is submitted for publication.

(iii) Activation of a number of small Task Teams including a Hydrologic Applications Project (HAP) Team, Land Modeling Team and a Global to Regional Scale Analysis Team.

(iv) It was agreed that CEOP would embrace some of the main tenets of Adaptation to Climate Change (ACC) and would look into ways of contributing to those in a direct manner. Some ideas related to this consensus were:

- (i) Identifying Regional to local Impacts of ACC on the hydroclimate in RHP basins,
- (ii) Quantifying uncertainty by using CEOP data infrastructure,
- (iii) Testing models and ACC scenarios by apply WEBS analysis techniques and
- (iv) Exploiting CEOP/RHP connections to local/basin scale model Centers to assist in ACC work

(3.1c) **Koike and Tamagawa reported the outcome of efforts to standardize meta-data and descriptive documentation utilized in CEOP.** Efforts have been underway in CEOP and related initiatives to attempt to review standard protocols such as ISO-90115 to determine their suitability for application in CEOP or to introduce modifications to such protocols to provide for a standard to be used in CEOP for all the documentation and meta-data provided in conjunction with the data sets themselves. The status of this effort was to be provided as part of Koike's presentation at the 3rd Annual CEOP Meeting 19-21 August 2009 at Melbourne, Australia. Details will be further described at the time of the next call.

(3.1d) **Tamagawa** provided updates from the CEOP_AP data center at Tokyo, Japan in an email prior to the time of the call. These included that Version 1.10c is a new version of the CEOP raw data uploading system. On this version 1.10c, the system corresponds to a file format of "MS Excel", "zip" and "rar". Some issues that were uncovered while previously uploading various raw datasets have also been fixed in this new version.

A revised "Data Upload IF Users Guide" was also provided with this announcement. In it, the updated points have been highlighted in "yellow". It is felt that this user's guide will help the data uploading process. The guide will be linked to the top page of the Upload IF at: <http://dias-d.tkl.iis.u-tokyo.ac.jp/CEOP/upload/>. All participants have the **action A2** to review this newly updated users guide and provide Tamagawa with any questions and comments on the noted updates.

In this context, **Williams** noted the work at the NCAR/EOL CEOP database with respect to the site documentation/metadata and agreed to work with **Tamagawa** on **action A3** to ensure that the Tokyo scheme and the EOL scheme are consistent. Williams noted that the Tokyo group should consider looking at all the CEOP_AP Reference Site web pages to make sure the EOL database has all the site documentation currently available, at Tokyo. Of particular importance is information such as the Site contact information and correct site location. **Tamagawa** agreed (**action A3a**) to send **Williams** any additional information that is received at Tokyo directly from the Site Managers so that the pages at the EOL database can be as up to date as possible. **Tamagawa** also agreed to look at the EOL template as the design of the content in the Tokyo metadata registry tool moves forward. The link provided by Williams is at: <http://www.eol.ucar.edu/projects/ceop/dm/insitu/sites/mahasri/>

3.2 On-going Actions for Reference Site Managers and RHP Representatives: Review/Update of Reference Site Meta-data on the CEOP Data Management Web Page.

In the same context with the updating of the CEOP EOL database and the agreement to make it and the Tokyo database consistent, the **Reference site Managers and RHP Representatives were asked to undertake action A4**, namely, to put themselves in the place of users of the CEOP data archive and to go on line to review all the documentation for their Reference sites that is available through the following web site: <http://www.eol.ucar.edu/projects/ceop/dm/insitu/sites/> and to verify that it is complete and accurate and report and necessary updates to Tamagawa and Williams.

In particular, it was specified that the **Reference site Managers and RHP Representatives were asked to under take action A4a**, namely, to reconfirm the latitude and longitude center locations for their sites and to provide this information for any new sites for Phase 2. The satellite data available in the CEOP Satellite data archive and the scene center coordinates during Phase1 for 35 Reference Sites are available at the following web sites respectively: <http://monsoon.t.u-tokyo.ac.jp/ceop/data/eop-1/satellite/doc/>; http://monsoon.t.u-tokyo.ac.jp/ceop/data/eop-1/satellite/doc/ref_site_info_r03.txt;

4. Status and Update of the CEOP Reference Site data archive: RHP/Reference Site Reports

4.1 Summary status of the reference site archive at NCAR/EOL

Williams introduced the current status of the CEOP reference site data archive, which can be accessed on the Internet at: (http://data.eol.ucar.edu/master_list/?project=CEOP/EOP-3/4).

4.2 Written Site Reports

The Following written reports were sent in by both persons who were not able to participate directly in the call and by those who did participate in the call but also provided their reports in written form. The list of participants and of those who could not participate are provided in Item 1. above.

(4.2a) MDB by J. Evans

Evans reported a minor update for the MDB reference sites since the Melbourne meeting. The flux data from the Tumburrumba reference site is expected to be updated. A new algorithm for gap filling has been determined and the data reprocessing was due to have occurred last month. Delivery of the data has been delayed but should occur soon.

(4.2b) Tsukuba site by K. Ueno

Ueno reported that the formatting error of 2007-2008 data was corrected, but other inconsistent errors were pointed out by S. Williams. Accordingly, individual site managers have been asked to check those matters and answers are anticipated soon. In addition, **Ueno** is writing a proposal to Japan Science and Technology Agency (JST) to secure the next year's budget. The team will make effort to complete at least the four-year mission and generation of the data set.

(4.2c) Central Vietnam and Western Indonesia sites by H. Kamimera

Central Vietnam

Kamimera reported that at Da Nang station of the Central Vietnam site the AWS measurement and data logging has been in operation since October 2008 and automated data transfer to remote servers both at Ha Noi and Japan was installed in March 2009. However, the data transfer stopped in April 2009 and therefore the team visited the site in September to download the data and repair the automated data transfer. The team in Japan now can monitor the condition of the AWS and collect the data in near-real-time. A 1-year dataset (October 2008 – September 2009) is available and the team will do check and control of the data quality. At first they will cross-check the data quality with operational half-daily surface measurement which has been carried out by National Hydro-Meteorological Service of Vietnam. After that they will check and control the data quality by using the QC system of the University of Tokyo (UT) which has been developed and maintained by Dr. Eiji Ikoma of the UT.

Western Indonesia

Kamimera further reported that their team is now doing the quality check of AWS data in 2007 of Kototabang and MIA by using the QC system of the UT. Before uploading the data onto the QC system, they aggregated 1-minute raw data into a 30-minute dataset. In this process, they have already conducted preliminary QC of data. Therefore they can check the data quality more carefully by using the QC system. The team would like to acknowledge Dr. Ikoma for his work.

(4.2d) Western Pacific Ocean site by H. Kubota

Kubota reported that continuous observation is performed at Palau of "Western Pacific Ocean" site. Their team has visited Palau and collected the latest observation data until end of September 2009. Palau AWS data for the year 2007 is converted into University of Tokyo QC system format. The quality check of the data is now being performed and will be completed in the near future.

(4.2e) Lower Yellow River site by H. Lei

Lei reported that all the instruments were going well at the Lower Yellow River site except some non-critical ones, such as instruments on soil moisture, soil temperature, and air temperature and relative humidity at certain levels (some of them were damaged by a plough). Their team is considering replacing

these damaged instruments in early 2010. They have carried out the Quality Control/Quality Assurance of the data before 2008. The data is being prepared for upload and this work will be completed soon.

(4.2f) Mongolia site by I. Kaihotsu

Kaihotsu reported that the three AWS at the Mongolia site, which have been monitoring water cycle elements since 2001, were well working as of September 2009. In addition, turbulence measurement was successfully tested in 2008 and the monitoring of turbulence elements started in 2009.

4.3 Site Reports Obtained From The Oral Discussion

The Following reports were provided by persons who were able to participate directly in the call. The accounts for each site listed in this section are based on notes taken by **Koudelova** during the oral discussions. They must, therefore, be considered a very rough draft of the exact information provided by each site representative during the call. The information presented by the participants is greatly appreciated and everyone feels they benefit from the oral discussion but as noted in item 4.1 above brief written summaries provided in advance of the call will always be a very good way to assist with and stimulate the oral discussion and will also be an excellent way of ensuring accuracy of the call report and the actions noted in that report. **In the future, therefore, brief written summaries will be asked for in advance of the call from ALL participants as well as from those who are unable to participate.**

As noted above **Benedict** has accepted **action A5** to communicate with the site representatives at the time of the planning for the next call **to ask all participants to submit brief written status reports prior to the conference call itself.** This will allow for a more efficient organization and implementation of the call. **All members of this Group who are responsible for site management/operations should be prepared near the time of the next call to undertake action A5a to submit brief WRITTEN status reports.**

(4.3a) Tibet site by H. Ishikawa

Ishikawa reported that due to certain power system issues, some data are missing in the first half of 2009. The issues were resolved and equipment checked in July and the data continue to be collected. It is expected that the site will continue for next 3-4 years. In addition, **Ishikawa** advised the group that the Cold and Arid Regions Environmental and Engineering Research Institute had installed a well equipped observatory near the Tibet tower site.

(4.3b) Lanzhou site by Z. Wu

Wu reported that the Lanzhou site data were prepared for submission but the team was waiting for permission by China Meteorological Administration (CMA) to release them. In this context, **Koike** voiced that he was anticipating response from CMA regarding the data policy and would undertake necessary steps to reach the agreement in the near future.

(4.3c) Heihe river basin site by X. Li

Li reported that the data from 5 stations had been uploaded and the quality check was being performed. Another station data will be uploaded in the near future. Nevertheless, also these data cannot be released before the agreement on the data policy between CMA and CEOP.

(4.3d) Lower Yellow River site by H. Lei

Lei introduced the update as provided in the written input (see 4.2e above).

(4.3e) Eastern Siberian Tundra, Eastern Siberian Taiga, Mongol Arvayheer, Mongol Nalaikh sites by H. Yabuki

Yabuki reported that the Mongol Arvayheer site was closed and the Nalaikh site was under reconstruction that would be completed by the end of October. Then the measurement at this site will continue.

Yabuki further voiced that the quality check of the Siberian Tundra and Taiga site data had been completed and work on the site documentation was now underway.

(4.3f) Central Vietnam and Western Indonesia sites by H. Kamimera

Kamimera introduced the update as provided in the written input (see 4.2c above).

(4.3g) Western, Central, Eastern, Northern, and Southern Indonesia by M. Yamanaka

Yamanaka reported that Dr. Hamada was in Indonesia checking the observation sites equipment and collecting data. He will proceed with the data quality check in the near future. He further mentioned that the recent earthquake that affected the Eastern Indonesia site did not cause any damages to the measuring instruments and the site continued in observation and data collection.

(4.3h) Himalayas site by E. Vuillermoz

Vuillermoz reported that they had sent the updated metadata to S. Williams, who confirmed receiving of it and acknowledged its completeness. **Vuillermoz** further voiced that next part of observed data would be quality-checked and submitted to the CEOP Database in the near future.

4.4 CEOP 10-year dataset

In the context of the action item accepted at the time of the Melbourne meeting to define and organize a CEOP 10 year dataset (see item 3.1b above), the representatives of the sites that had been in operation since CEOP Phase 1 were asked for kind cooperation on this task (**action A6**). From those, who attended the call, this action was accepted by **Ishikawa** (Tibet), **Vuillermoz** (Himalayas), **Yabuki** (Siberian Tundra and Taiga), and **Yamanaka** (West Indonesia).

5. CLOSING

Koike and **Benedict** acknowledged the participants for attending the call and providing their valuable contributions, comments and suggestions. The call was adjourned at 6:30 UTC.