

**NOTES FROM THE FIFTH FORMAL COORDINATED ENERGY AND WATER-CYCLE  
OBSERVATIONS PROJECT (CEOP) TELECONFERENCE ON ASIA-PACIFIC-AUSTRALIA  
REGIONAL HYDROCLIMATE PROJECTS AND REFERENCE SITE ISSUES HELD ON  
8 APRIL 2010  
FINAL DRAFT, 24 May 2010**

## **1. INTRODUCTION**

The 5<sup>th</sup> Asia-Pacific-Australia RHP and Reference Sites Teleconference related to the Coordinated Energy and Water-Cycle Observations Project (CEOP) took place on Thursday 8 April at 05:00 UTC.

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

- (i) Outcomes of the GEWEX SSG Meeting in India, January 2010
- (ii) The Pan-GEWEX Meeting and The 4<sup>th</sup> CEOP Annual Meeting in Seattle, August 2010
- (iii) CEOP 10 year dataset
- (iv) Current status of the CEOP Reference Site Data Archive with focus on the sites located in the Asia-Pacific Australia (CEOP\_AP) region and the Individual Reference Site documentation
- (v) RHP/Reference Site data providers/managers reports – update on past activities and perspectives with respect to CEOP

### **Participants**

The participants were:

1. **Toshio Koike** (Japan, CEOP Co-Chair)
2. **Tetsu Ohta** (Japan, CEOP Asia Reference Site Data Manager)
3. **Katsunori Tamagawa** (Japan, CEOP Asia Reference Site Data Manager)
4. **Steve Williams** (USA, Data WG Co-Chair)
5. **Tsing-Chang (Mike) Chen** (Iowa, Northern South China Sea - Southern Japan site representative)
6. **Jason Evans** (Australia, MDB Site Representative)
7. **Kenichi Ueno** (Japan, Tsukuba site representative)
8. **Feng Jianwu** (China, Tongyu site – on behalf of Liu Huizhi)
9. **Wang Weizhen** (China, Heihe River Basin site representatives)
10. **Jun-ichi Hamada** (Japan, Western Indonesia, Central Indonesia, Eastern Indonesia, Northern Indonesia, Southern Indonesia sites representative)
11. **Hideyuki Kamimera** (Japan, Central Vietnam site and Western Indonesia sites representative)
12. **Hisayuki Kubota** (Japan, Western Pacific Ocean site representative)
13. **Gianni Tartari** (Italy, Himalayas, Karakorum and Italy site representative)
14. **Elisa Vuillermoz/ Roberta Toffolon** (Italy, Himalayas, Karakorum and Italy site representative)
15. **Wu Zhang** (China, Lanzhou site representative)
16. **Dawen Yang/Lei Huimin** (China, Downstream of the Yellow River site representative)
17. **Hirohiko Ishikawa** (Japan, Tibet site)
18. **Sam Benedict** (Japan, CEOP International Coordination Function)
19. **Petra Koudelova** (Japan, CEOP International Coordination Function)
20. **Akiko Goda** (Japan, CEOP Tokyo Office)

### **Could Not Participate**

1. **Ichiro 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 Ohta** (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 Shirooma** (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. **Liu Huizhi** (China, Tongyu site representative)
13. **Toru Terao** (Japan, Northeast Bangladesh site)
14. **Jun Asanuma** (Japan, Northern Mongolia site representative)
15. **Masatoshi Aoki** (Japan, Chao-Phraya River, North-East Thailand sites representative)
16. **Fadli Syamsudin** (Western Indonesia, Central Indonesia, Eastern Indonesia, Northern Indonesia, Southern Indonesia sites representative)
17. **Hironori Yabuki** (Japan, Eastern Siberian Tundra, Eastern Siberian Taiga, Mongol Arvayheer, Mongol Nalaikh sites representative)

## 2. NEXT CONFERENCE CALL

Per a new strategy for the organization of CEOP RHP and Reference Site calls that was developed in November 2009, these calls will be held once in every 4 months. Accordingly, the next, **6<sup>th</sup> CEOP Asia Pacific RHP and Reference Sites Teleconference** is proposed to take place on **Tuesday 6 July 2010, 05:00 UTC**. **Koudelova/Benedict** 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 (**action A1a**).

## 3. CEOP AND CEOP DATA GROUP GENERAL ISSUES

### 3.1 Opening

(3.1a) Benedict reiterated the main items of interest to the participants that came out of the CEOP Third Annual meeting, held from 19-21 August 2009 at Melbourne, Australia. He noted that efforts had been made to undertake the main action items from the meeting that 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

In particular, initial conference calls have been held that focused on CEOP Hydrologic Applications Project (HAP) and other CEOP fast track activities.

(3.1b) With regards to the "Fast Track" activities as mentioned above, a new strategy for organizing the CEOP Conference Calls was proposed in November 2009. Per this strategy, the CEOP RHP and

Reference Sites calls will be held once every 4 months for each of the three regions (Europe-Africa, Americas, and Asia-Pacific). If needed, an ad-hoc focused call can be arranged in between the regular calls.

(3.1c) **Williams** advised the group that new mailing lists were created using the NCAR Mailman service that with intention to facilitate the CEOP groups communication and material distribution. The address for the Asia-Pacific-Australia RHP and Reference Site group is: [ceop-rs-asiapacific@eol.ucar.edu](mailto:ceop-rs-asiapacific@eol.ucar.edu) and include all the site representatives of Asian, Australian and Pacific sites and RHPs. To add/remove a person to/from the list, request should be made to Steve Williams or Petra Koudelova and Sam Benedict.

(3.1d) **Koike** informed the group that a request letter to the China Meteorological Administration (CMA) had been drafted and sent for permission for the Chinese reference sites to provide their data to CEOP. The permission is expected to reach the sites in the near future.

### 3.2 WCRP and GEWEX related issues

(3.2a) **Koike** reported on the **GEWEX SSG meeting in New Delhi, India in January**. He voiced that the CEOP data component was very well acknowledged at the SSG meeting and in particular the high quality and long-term reference site data was recognized as crucial for the science and thus continuation of this CEOP activity was considered as highly desirable. He reiterated that at the 3<sup>rd</sup> Annual CEOP Meeting in Melbourne in August 2009, CEOP took commitment of developing **10-year dataset** that is especially needed for climate projection studies focusing on climate model uncertainties. The CEOP 10-year dataset should include in-situ as well as satellite data and added will be data from other projects like the FLUXNET and IGBP iLEAPS data. The goal for this year is to prepare the 10-year dataset for 10 sites selected among CEOP and FLUXNET sites. In this respect, **Koike** advised the group that a request had been sent to the FLUXNET community to nominate suitable sites.

It was emphasized that this task will require special effort on unifying the data format, time interval, variable names, etc. and also to assure metadata interoperability. As the first step, the data group has **action A2** to nominate the suitable sites from the CEOP as well as FLUXNET network.

In this context the representatives of the sites that had been in operation since CEOP Phase 1 were asked for kind cooperation on this task at the time of the last call. From those, who attended that call, this action was accepted by **Ishikawa** (Tibet), **Vuillermoz** (Himalayas), **Yabuki** (Siberian Tundra and Taiga), and **Yamanaka** (West Indonesia).

(3.2b) The group was advised the **4<sup>th</sup> CEOP Annual Meeting** would be held as part of the 2<sup>nd</sup> Pan-GEWEX meeting that will take place in **Seattle, USA, 23 – 27 August 2010**. The CEOP sessions will include one full-day CEOP session on Tuesday 24 August, one evening session on Thursday 26 August and one morning session on Friday 27 August. In addition, one day for panel interaction science sessions (RHP science interactions) and one day for science interactions with other WCRP programs (crosscutting issues; hot topics such as polar climate, ocean fluxes/acidification, etc.) are scheduled on Wednesday 25 August and Thursday 26 August, respectively. Further information including logistics details can be found at the meeting website at: <http://www.gewex.org/2010pangewex/home.html>. The participants on the call were encouraged to consider their participation in this event.

(3.2c) **Koike** also mentioned that at the WCRP Observation and Assimilation Panel (WOAP) meeting in Hamburg it was endorsed to expand the WTF-CEOP data integration activity for linking to other WCRP components like IGBP and others.

### 3.3 Overall status of the CEOP reference site data archive and related issues

(3.3a) **Williams** provided updated status of the sites that submit their data directly to the NCAR/EOL in the requested format and quality-checked without using services of the CEOP\_AP data center at Tokyo, Japan. These sites include: Himalayas, Pakistan, Tsukuba (Japan), Australian, and Italian sites. **Williams** pointed out that new datasets were available for Himalayan and Pakistani sites, while the data had been received from Tsukuba and were being checked. The overall status can be accessed on the Internet at: [http://data.eol.ucar.edu/master\\_list/?project=CEOP/EOP-3/4](http://data.eol.ucar.edu/master_list/?project=CEOP/EOP-3/4).

(3.3b) **Tamagawa** provided updated status of the CEOP\_AP data center in an email prior to the time of the call. The summary table is included in Attachment 1 below. He also reiterated that a revised "Data Upload IF Users Guide" was available on-line at: <http://dias-d.tkl.iis.u-tokyo.ac.jp/CEOP/upload/>. It is felt that this user's guide will help the data uploading process.

(3.3c) **Williams** reported on the ongoing **action A3** on updating the site documentation/metadata that all of the **Reference site Managers and RHP Representatives** were asked to undertake. He acknowledged the efforts of the Tokyo data center in stimulating this action that have resulted in new inputs to the NCAR/EOL database since the last call. Nevertheless, inputs from number of sites are still missing and thus the **Reference site Managers and RHP Representatives**, who have not responded to the metadata update request yet, were asked for their kind attention to this action item. Namely, they should 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 this context, **Tamagawa** reiterated that a new metadata input system was under construction and should be available in the near future. The participants will be informed of its services in due course.

(3.3d) **Williams** also reiterated that the discussion in the CEOP model community and the definition of the scientific foci for the new CEOP period has resulted in the interest in / request for **additional data from the CEOP in-situ reference sites**. This mainly covers three groups of parameters: **clouds, aerosol, and groundwater**. It would be desirable if the Reference Site Managers complete the survey and provide this information to the NCAR/EOL database. The on-line survey is located at: <https://survey.ucar.edu/s?s=3003> and can be found through the Data Management site at: <http://www.eol.ucar.edu/projects/ceop/dm/questionnaires/>. Accordingly, all the **Reference Site Managers** were asked to undertake the **action A4** to visit the said website and fill out the questionnaire by **16 April 2010**.

## 4. RHP/REFERENCE SITE REPORTS

### 4.1 Written Site Reports

It was reiterated that in order to assure a more efficient organization and implementation of the call, **all members of this Group who were responsible for site management/operations should be prepared near the time of the next call to undertake action A4 to submit brief WRITTEN status 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.

(4.1a) **Himalayas, Pakistan Karakorum, and Italian sites:** the Ev-K2-CNR group (Tartari, Vuillermoz, Toffolon)

The Himalayas, Pakistan and Italian AWSs are regularly functioning and maintenance operation and data downloading are regularly performed. At present all the sites continue to perform continuous measurements correctly. Last month metadata sheet of each station were sent to Dr. Steve Williams to update the official CEOP web site and now these information are available on the web.

In particular the Italian stations, Monte Pino, Monte Simone and Forni Glacier, have been grouped under a new name: Italy Reference Site included in the "Other" category under RHP Reference Sites.

Concerning Himalayas AWSs, for each station (Lukla, Namche, Periche and Pyramid) all 2007 dataset and relative Reference site documentation has been provided to Dr. Steve Williams and Dr. Scot Loehrer for the data check except for Syangboche data of 2007 that will be sent in the forthcoming period.

Regarding the dataset of Askole and Urdukas AWSs, the only station included in the Pakistan Karakorum Network, their complete dataset from 2004 to 2007 and relative documentation have just been sent to Dr. Steve Williams and Dr. Scot Loehrer.

The 2008 Himalayas and Pakistan dataset will be sent to NCAR within the end of this year.

(4.1b) **Tibet (West) site:** Shigenori Haginoya

No new data have been received from Chinese Academy of Meteorological Sciences since November 25<sup>th</sup> 2008 and it has not been clarified when the new data will be sent.

The Reference Site Documentation has been updated. The items are, Station Operator, Vegetation and Land Use, Soil Type and Characterization and Climate. The updated document has been provided prior to the call.

The following two references should be added in the section "8.0 REFERENCES" of the following document files:

CAMP\_Tibet\_Gaize\_flx.doc,  
CAMP\_Tibet\_Gaize\_flx .sfc and  
CAMP\_Tibet\_Gaize\_flx.stm.

References to be included:

(1) K. Wang, P. Wang, J. Liu, M. Sparrow, S. Haginoya and X. Zhou  
Variation of surface albedo and soil thermal parameters with soil moisture content at a semi-desert site on the western Tibetan Plateau; *Boundary-Layer Meteorology*, 2005, 116, 117–129.  
DOI 10.1007/s10546-004-7403-z

(2) K. Wang, Z. Wan, P. Wang, M. Sparrow, J. Liu and S. Haginoya  
Evaluation and improvement of the MODIS land surface temperature/emissivity products using ground-based measurements at a semi-desert site on the western Tibetan Plateau; *International Journal of Remote Sensing*, 2007, 28, 2549–2565.  
DOI: 10.1080/01431160600702665

(4.1c) **Mongolia site:** Ichirow Kaihotsu

The monitoring activities in Mongolia are ongoing smoothly and data acquisition and processing continues as planned.

(4.1d) **Tsukuba site:** Ken'ichi Ueno

Tsukuba RS datasets during 2007-2008 are almost completed according to the comments provided by NCAR, except for TERC data. The data in 2009 were also archived and put on the Tsukuba RS website, however, these are still being processed checking the format and accuracy.

In addition, the "National Institute of Fruit Tree Science (NIFTS)" proposed to add their AWS data for Tsukuba RS since 2007. A slot for this on the Tsukuba RS homepage will be prepared within a month.

Regarding the reference site documentation, soil types differ depending on the station and land cover. The land cover map is on the Tsukuba RS web site. It is very difficult to mention the overall soil condition in Tsukuba RS as mentioned in the Lindenberg. Point information at each station can be gathered but it may require certain time for the manager to complete this task.

(4.1e) **Indonesian sites:** Manabu D. Yamanaka, Jun'ichi Hamada

The data quality control for the western Indonesia site (Kototabang & MIA) in 2007 has been finished. The data will be provided to NCAR soon after preparing the document (metadata information).

As for the data in 2008, they have already been collected from the sites (Western/Central/Southern/Northern/Eastern Indonesia) and are being prepared to be put into the QC system of UT. This procedure is expected to be finished by the time of the next call.

(4.1f) **Northern Mongolia site:** Jun Asanuma

The observation at the Grassland site in Northern Mongolia is being continued as usual. In the last summer, it was found that the data logging system had been in trouble since Jun of 2008, probably due to lightning or electric surges. For this, the system was fixed and restarted again, and

later it was assured the system was working well. Due to this trouble, the soil moisture and rainfall data for almost one year are missing.

In the meantime, the group is currently rechecking the data back from 2003 up to 2007, in order to compute internally-consistent annual water budget. Through this process, it has been found that at some occasions, the raingauge strongly over-measures rainfall, most probably due to the vibration caused by strong wind speed. We are currently cross-checking the data to correct this error.

#### 4.2 Site Reports Obtained From The Oral Discussion

##### (4.2a) MDB and associated sites by J. Evans

**Evans** reported that updated data from the Tumarumba site would be submitted within a week and further data by the end of the month. The site documentation will be checked and updated in due course.

In this context, **Koike** mentioned that the soil data from the Murray-Darling Basin were being used for validation of satellite soil moisture retrieval algorithms and acknowledged this contribution of the MDB community.

##### (4.2b) Tibet site by H. Ishikawa

**Ishikawa** reiterated that due to certain power system issues, some data were missing in the first half of 2009. The issues were resolved and equipment checked in July and the data continue to be collected. Certain instruments will be replaced in April and **Ishikawa** will provide further details on this for metadata update in due course. Data status is summarized in the Table from Tamagawa in Attachment 1.

##### (4.2c) Lanzhou site by Z. Wu

**Wu** reported that the Lanzhou site data were being transferred to the QC system of UT but the team was waiting for receiving the permission by China Meteorological Administration (CMA) to release them.

##### (4.2d) Lower Yellow River site by H. Lei

**Lei** reported that the observation was continuing smoothly. The data for the period 2006 – 2007 have been uploaded to the Tokyo data center and QC procedure is ongoing. The site documentation/metadata has been submitted to Tamagawa and consequently to the NCAR group.

##### (4.2e) Northern South China Sea - Southern Japan site by Mike Chen

**Chen** reported that a special experiment focused on the monsoon activity was on schedule this year that consisted of two components: (i) winter monsoon and (ii) summer monsoon. Unfortunately, this year winter was unusually dry and thus the envisioned experiment could not be carried out to its full extent. The summer experiment will begin as scheduled and the results will be presented at a workshop dedicated to summer and winter monsoon in December.

As for the site characteristics information, in particular soil and vegetation, and the ancillary data observation, **Chen** mentioned that there was no additional observation and little information on soil and vegetation. Nevertheless, he will check and provide available information.

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

**Kamimera** reiterated that the 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. He mentioned that the cross-checking of the available data with the local operator, NMHS, had finished and the data would be uploaded to the Tokyo data center and quality checked soon. The site documentation update has been sent to Tamagawa.

##### (4.2g) Western, Central, Eastern, Northern, and Southern Indonesia by J. Hamada

**Hamada** introduced the update as provided in the written input (see 4.1e above).

##### (4.2h) Himalayas, Pakistan Karakorum, and Italian sites by G. Tartari, E. Vuillermoz, R. Toffolon

**Vuillermoz** introduced the update as provided in the written input (see 4.1a above). The site documentation update will be provided as soon as possible. In addition, **Tartari** recommended the group reports on the Italian sites update at the CEOP Europe-NEESPI-Africa site calls in order to allow for interaction with other European sites, in particular those of HyMeX project. This was agreed

and **Koudelova** took action to assure Tartari, Vuillermoz, and Toffolon are included on the appropriate mailing list.

(4.2i) Tsukuba site by K. Ueno

**Ueno** introduced the update as provided in the written input (see 4.1d). He added that the site stations (currently 7 and one more will be installed soon) were distributed within an area of roughly 10x10 km which means a relative high degree of heterogeneity of soil properties and even though these properties are requested from all stations, this information should be properly used as the station data may not be representative for the whole footprint of the Tsukuba reference site.

(4.2j) Heihe river basin site by W. Wang

**Wang** reported that the data from the Heihe river basin 6 AWSs for the period 2007 – 2008 had been uploaded to the Tokyo data archive and the QC procedure would follow. The site documentation will be sent to Tamagawa and Williams shortly.

(4.2k) Tongyu site by J. Feng

**Feng** reported that observation stations were working well, the power system had been upgraded. The available data have been uploaded to the Tokyo data center and the QC procedure is underway. The site documentation will be provided in the near future.

(4.2.l) Weat Pacific ocean by H. Kubota

**Kubota** reported that the observation continued smoothly and the data were available up to March 2010. The QC procedure is underway and the update of the site documentation will be done shortly.

#### 4.3 MAHASRI and AMY

**Koike** advised the group that the MAHASRI community was leading the Asian Monsoon Year (AMY) reanalysis for which an improved atmospheric model of JMA was used. The reanalysis will be completed by the end of 2012. The CEOP dataset will be used for evaluating this reanalysis and CEOP strongly endorses the Asia-Pacific sites to join the AMY initiative. This can be done by sending an official letter to the AMY leaders at Institute of Atmospheric Physics, Chinese Academy of Sciences, China.

**ATTACHMENT 1: Status of the CEOP AP data center status**

CEOP\_AP Data management status

YY/MM/DD Completed   ongoing

	Reference Site Name	# of Sta.	Basic Info. <sup>*1)</sup>	Raw DataUpload		Quality Control		Dataset documentation <sup>*2)</sup>		Remarks
			Complete	Ready	Complete	Ready	Complete	Ready	Complete	
1	Eastern Siberian Tundra	1	O	08/12/03	09/07/30	09/08/05	09/08/14			
2	Eastern Siberian Taiga	1	O	08/12/03	09/07/31	09/08/05	09/08/14			
3	Mongolia	16	O	09/01/23						
4	Tongyu	2	O	09/01/23						
5	Tibet	22	O	08/12/03		09/02/19	ongoing			PBL station
6	Himalayas	5	O	Data managing by own system						
7	Northern South China Sea - Southern Japan	25	O	09/01/23	09/08/13	09/08/20	ongoing			
8	Chao-Phraya River	1	O	09/01/23	ongoing					
9	North-East Thailand	1	O	09/01/23						
10	Western Pacific Ocean	1	O	08/12/03	09/07/08	09/08/11	09/11/10			
11	Mongolia Arvayheer	1	O	08/12/03						
12	Mongolia Nalaikh	1	O	08/12/03						
13	Northern Mongolia	2	O	09/01/23						
14	Lower Yellow River	1	O	09/01/23	10/02/02	10/04/07				
15	Central Vietnam	1	O	08/12/03						
16	Northeast Bangladesh	1	O	09/06/25						
17	Pakistan Karakorum	2	O	Data managing by own system						
18	Tsukuba	7	O	Data managing by own system						
19	Lanzhou	1	O	09/01/23	ongoing					
20	Heihe River Basin	6	O	09/01/23	09/10/19					
21	Western Indonesia	2	O	08/12/03	09/06/23	09/08/02	10/04/07			
22	Central Indonesia	1	O	08/12/03						
23	Eastern Indonesia	1	O	08/12/03						
24	Northern Indonesia	1	O	08/12/03						
25	Southern Indonesia	1	O	08/12/03						
26	Australian site			Data managing by own system						

<sup>\*1)</sup> Basic info is completed, more detail information is asking now.

<sup>\*2)</sup> Document Metadata Registration System is preparing now.