

AWCI Training Course on Improved Bias Correction and Downscaling Techniques for Climate Change Assessment including Drought Indices

18 – 20 June 2013

The University of Tokyo, Hongo Campus, Engineering Bldg. No. 1, 4th floor, Seminar Room A

The training course will provide explanation of the improved techniques for climate change assessment including general circulation model (GCM) selection, model output (precipitation) bias correction, downscaling of the corrected output to a basin scale and generation of drought indices and drought assessment. Moreover, a system for quality control of in-situ data provided by DIAS will be demonstrated. The course includes several lectures provided by experts in respective fields and hands-on training sessions, during which the participants will work individually on PCs provided by the University of Tokyo. For the scheduled analysis, they will use the data of their country demonstration basin. In the afternoon of the last day, an excursion to the DIAS core system at the Komaba campus is scheduled.

Agenda

Tuesday 18 June: GCM Selection, Bias Correction, Downscaling

08:00 – 08:30 Registration

08:30 – 09:10 Opening Session

08:30 – 08:40 Welcome remarks: Toshio Koike (UT)

08:40 – 09:10 Opening Lecture: Climate Change Impact Assessment in Asia (Toshio Koike, UT)

09:10 – 10:45 Lectures

09:10 – 09:20 The training course design (Petra Koudelova, UT)

09:20 – 09:40 Development of Statistical Bias correction and Downscaling scheme for climate change impact assessment at a basin scale (Cho Thanda Nyunt, UT)

09:40 – 10:00 *BREAK*

10:00 – 10:30 Introduction of Global Satellite Mapping of Precipitation (Satoshi Kida, JAXA)

10:30 – 10:45 Asia Pacific Network for Global Change Research (APN) Activities (Taniya Koswatta, APN Secretariat)

10:45 – 18:00 Training, part 1: GCM Selection, Rainfall Bias Correction, Downscaling

10:45 – 12:00 Hands-on training session: GCM selection (DIAS on-line system, Excel sheets)

12:00 – 12:10 *Group Photo* (Kentaro Aida, UT)

12:10 – 13:15 *LUNCH*

13:15 – 18:00 Training, part 1: GCM Selection, Rainfall Bias Correction, Downscaling: Continue

13:15 – 14:00 Hands-on training session: GCM selection (DIAS on-line system, Excel sheets) – continue

14:00 – 14:15 Introduction of the on-line system for the bias correction and downscaling (Mohamed Rasmay, UT)

14:15 – 15:30 Hands-on training session: Rainfall bias correction and Downscaling for the historical baseline period (1981 – 2000) and future projection period (2046 – 2065) (DIAS on-line system) and preparation of the WEB-DHM precipitation forcing data

15:30 – 15:50 *BREAK*

15:50 – 17:30 Hands-on training session: Rainfall bias correction and Downscaling (DIAS on-line system) and preparation of the WEB-DHM precipitation forcing data – continue

17:30 *ADJOURN*

18:00 – 20:00 **Cocktail and Discussion Session (UT Café)**

Wednesday 19 June: WEB-DHM running for historical and future periods; Drought Indices

08:30 – 12:00 Training Part 2: WEB-DHM

08:30 – 08:45 Hydrological modeling for climate change impact assessment – importance of in-situ precipitation data (Toshio Koike, UT)

08:45 – 09:00 Climate change impact assessment on water resources sector in Malaysia (Nurul Huda Md. Adnan, NAHRIM)

09:00 – 09:15 Water and Energy Budget Distributed Hydrological Model: model structure, necessary data, model running (Patricia Ann Jaranilla-Sanchez, UT)

09:15 – 09:30 WEB-DHM with an advanced, energy balance based snow-melt scheme and glacier-melt component: WEB-DHM-S (Maheswor Shrestha, UT)

09:30 – 09:45 *BREAK*

09:45 – 12:00 Hands-on training session: Running WEB-DHM using bias corrected and downscaled rainfall data prepared on the previous day.

12:00 – 13:15 *LUNCH*

13:15 – 13:45 In-situ data management system for AWCI - Introduction and the on-line tool demonstration (Katsunori Tamagawa, Hiriko Kinutani, Misa Oyanagi, UT)

13:45 – 17:30 Training Part 3: WEB-DHM outputs, Drought Indices & Presentation on JRA55

13:45 – 14:00 Drought under the climate change (Toshio Koike, UT)

14:00 – 14:30 Drought Indices: methodology and applications for drought assessment (Patricia Ann Jaranilla-Sanchez)

14:30 – 16:00 Hands-on training session: Drought Indices generation using the bias corrected precipitation and WEB-DHM historical baseline and future period outputs (prepared in advanced by the UT team).

16:00 – 16:30 *BREAK*

16:30 – 16:45 JRA55 reanalysis by JMA (Kazutoshi Onogi, JMA)

16:45 – 17:30 Hands-on training session: Drought Indices generation using the bias corrected precipitation and WEB-DHM historical baseline and future period outputs. Continue.

17:30 *ADJOURN*

Thursday 20 June: WEB-DHM output review, Drought Indices, Excursion to IIS

08:30 – 11:00 Training Part 3 - Continue: WEB-DHM outputs, Drought Indices

08:30 – 09:45 Hands-on training session: Drought Indices generation – continue; Review and discussion on the WEB-DHM results of the previous day runs.

09:45 – 10:00 *BREAK*

10:00 – 11:00 Hands-on training session: Result analysis, conclusions, Q&A.

11:00 – 11:20 Change of precipitation and soil moisture on the Mongolian Plateau from 2001 to 2012 (Ichirow Kaihotsu, Hiroshima University)

11:20 – 12:10 Closing Session

11:20 – 11:30 Closing Remarks

11:30 – 12:00 Certificate Ceremony

12:00 – 12:10 Logistics of the afternoon excursion

12:10 – 13:50 *LUNCH*

13:50 – 18:00 Excursion to the DIAS core system at the Komaba Campus of the University of Tokyo

13:50 Meeting in front of the Engineering Bldg. No.1 (ginkgo tree)

14:00 Departure to the Komaba campus (subway)

15:00 – 16:30 Visit of the DIAS core system

18:30 – 20:30 Meeting Dinner (Boat Cruise at Tokyo Bay)

20:00 *ADJOURN*