

TCC Activity Report for 2013

In 2013, the Tokyo Climate Center (TCC) continued to support the climate services of NMHSs in Asia-Pacific countries by providing and enhancing data and products, holding training seminars, sending experts and hosting visitors.

1. Highlights of 2013

1.1 Pilot project on Information Sharing on Climate Services

TCC plays a leading role in the implementation of the WMO RA II Pilot Project on Information Sharing on Climate Services. In 2013, the Center collected climate information provided by NMHSs as well as details of good practices on the application of climate information in society via a questionnaire survey. Based on the information received, TCC worked on the development of a dedicated website.

1.2 Issuance of special reports on extreme events

In its role as a WMO Regional Climate Center (RCC) in RA II, TCC monitors world climate conditions with focus on Asia and the surrounding area. The Center issues reports on extreme climate events and summaries of the Asian summer/winter monsoon on its website at <http://ds.data.jma.go.jp/tcc/tcc/products/clisys/reports/index.html>.

In 2013, Japan experienced extremely hot summer conditions. During this period on 13 August, TCC issued a preliminary report on the heat. To support the issuance of a more comprehensive statement on this extreme event, the Center invited members of its Advisory Panel on Extreme Climate Events ([TCC News No. 28](#)) to investigate and discuss related factors. The preliminary report and the statement were issued both in Japanese and in English on the JMA website, and the English versions were also made available on the TCC website.

TCC also closely monitored a number of extreme events, especially those listed below, and issued related media releases in Japanese. These are available on the JMA website at http://www.data.jma.go.jp/gmd/cpd/monitor/extreme_world/index.html.

- Heavy rainfall in Europe from May to the middle of June
- Heavy rainfall in India in June
- Heavy rainfall from central China to the northern part of the Korean Peninsula in July
- Heat-wave and dry conditions in southern China in July/August
- Heavy rainfall over the Amur River basin (Russian Federation) from July to September
- Heavy rainfall over the Indochina Peninsula mainly in September

In its role as an RCC in RA II, TCC informed WMO of events in the region to assist in the preparation of the WMO Statement on the Global Climate in 2013.

1.3 JRA-55

JMA recently completed the second Japanese reanalysis, known as JRA-55, thereby providing a comprehensive atmospheric dataset suitable for the study of climate change and multi-decadal variability. The data cover a period of 55 years extending back to 1958 when regular radiosonde observations became operational on a global basis. JRA-55 is the first global atmospheric reanalysis to apply four-dimensional variational data assimilation (4D-Var) to the last half century including the pre-satellite era. The JRA-55 product is available for research purposes. For details, see the JRA-55 web page at http://jra.kishou.go.jp/JRA-55/index_en.html.

1.4 RA II RCC portal site modification

In 2013, the Russian Federation's North Eurasia Climate Centre (NEACC) was formally designated as a new RCC in RA II. In response, TCC modified the RA II RCC website (<http://www.rccra2.org/>) in collaboration with BCC by adding links to NEACC climate data and products.

2. Enhancement of data/products/tools on the TCC website

TCC strives to continuously enhance its services in the provision of data, products and tools. In 2013, the following data and products were made available on its website:

- 27 February: [Table showing historical El Niño and La Niña Events](#) (El Niño Monitoring)
- 21 May: [Time series of anomaly correlation in the tropics](#) (NWP Model Prediction)
- 1 July: [Regional map of ten-day/half-monthly mean temperatures and total precipitation](#) (World Climate)

Some of these new data/products were made available in response to requests by NMHSs, and are also expected to be useful to other parties. The Center will continue to accommodate requests from NMHSs wherever possible.

3. Capacity development

TCC holds annual training seminars as part of capacity-development activities related to its role as an RCC in RA II. In addition to running annual training seminars, it also arranges expert visits to and hosts visitors from NMHSs to support exchanges of views on climate services and the effective transfer of technology.

3.1 Training seminar

In 2013, TCC held the Training Seminar on Seasonal Prediction Products from 11 to 15 November at JMA Headquarters in Tokyo. The event was attended by 16 experts from NMHSs in Bangladesh, Cambodia, Hong Kong (China), Indonesia, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Nepal, Papua New Guinea, the Philippines, Sri Lanka, Thailand and Viet Nam. The seminar focused on familiarizing the participants with

the outputs of JMA's numerical prediction model and improving their skills in generating seasonal prediction products using statistical downscaling methods. Presentations given by the lecturers are available on the TCC website ([TCC News No. 34](#)).

3.2 Expert visits

In February, TCC sent experts to Indonesia for follow-up work relating to the visit by experts from Indonesia's Meteorological, Climatological and Geophysical Agency (BMKG) in July 2012 ([TCC News 29](#)). The main purpose of the visit was to install a module for site-specific probabilistic guidance for one-month forecasting, which is expected to contribute to enhancing BMKG's Climate Early Warning System. The experts also led discussions and exchanged views with attendees on improving climate services and engaging in future collaboration.

In October, a TCC expert visited the *Philippine Atmospheric, Geophysical and Astronomical Services Administration* (PAGASA) to install a module for site-specific probabilistic guidance for one-month forecasting. The expert also gave technical guidance on the module to support its use on an operational basis in the near future.

3.3 Visitors

In November, three experts from Indonesia's BMKG visited TCC for further follow-up activity toward the installation of a module to support site-specific probabilistic guidance for one-month forecasting. During the visit, TCC provided the experts with technical guidance focusing on verification procedures for one-month forecasting. The attendees also participated in the TCC Training Seminar on Seasonal Prediction Products.

4. International meetings

4.1 Regional Climate Outlook Forums

RCCs are expected to actively contribute to discussions in Regional Climate Outlook Forums (RCOFs). In 2013, TCC experts participated in the following RCOFs in Asia:

- Ninth session of the Forum on Regional Climate Monitoring, Assessment and Prediction for Regional Association II (FOCRA II) held in Beijing, China, from 8 to 10 April
- Fourth session of the South Asian Climate Outlook Forum (SASCOF-4) held in Kathmandu, Nepal, from 18 to 19 April
- Fifth session of the North Eurasian Climate Outlook Forum (NEACOF-5) held in Moscow, Russian Federation, from 29 October to 1 November
- First session of the East Asia winter Climate Outlook Forum (EASCOF), held in Ulaanbaatar, Mongolia, from 4 to 6 November
- Inaugural session of the Asian Climate Outlook Forum (ASEANCOF) held in Singapore from 3 to 5 December

TCC attendees gave presentations on seasonal predictions based on JMA's numerical model and participated in discussions toward the formulation of a consensus statement on regional forecasts.

4.2 WMO Workshop on Operational Long-range Forecasting: GPCs and RCCs, in support of NMHSs and RCOFs

TCC experts participated in the WMO Workshop on Operational Long-range Forecasting: GPCs and RCCs, in support of NMHSs and RCOFs (November, Brasilia, Brazil), giving presentations on examples of information/data/products output by RCC Tokyo and GPC Tokyo (a Global Producing Center for long-range forecasts). The Workshop made recommendations on steps needed to strengthen the process of generating regional seasonal forecasts through increased capability for the synthesis of prediction information on global, regional and national scales.

4.3 Other meetings

On 28 October, the Second Joint RA VI Regional Climate Centres Network Coordination Meeting took place in conjunction with NEACOF-5. The TCC representative who attended NEACOF-5 was also present at this meeting, which provided valuable opportunities to learn about the activities and coordination of the RA VI RCC Network and to introduce TCC's work.

In 2013, TCC was also represented at other meetings including the first session of the Intergovernmental Board on Climate Services (IBCS-1, July, Geneva, Switzerland) and the International Workshop on Climate Data Requirements and Applications (March, Nanjing, China). At the Operational Climate Services: A Dialogue on Practical Action session held as part of IBCS-1, TCC gave a poster presentation on JMA's contribution to improving climate risk management highlighting a new dedicated website to promote the use of climate information in such management.

5. Publications

TCC has published its newsletter (TCC News) on a quarterly basis since 2005. The publication is intended to enhance communication and provide information to NMHSs and related communities about recent TCC developments, events and activities as well as details of the Center's reports on the state of the climate, monitoring results and outlooks. In 2013, [TCC News Nos. 31 – 34](#) were issued and made available on the TCC website.

Other English-language publications related to the climate, such as Climate Change Monitoring Report 2012 and Annual Report on the Climate System 2012, were also published on the TCC website.

6. Other activities

TCC's Ryuji Yamada, who serves as Chairman of the RA II Working Group on Climate Services (WG-CS consisting of Expert Groups on Climate Services (EG-CS) and Agrometeorology (EG-AgM)) developed a work plan for the Working Group in collaboration with co-coordinators and theme leaders from each Expert Group.

7. Plans for 2014

- Contribution to the Global Framework for Climate Services (GFCS)

The implementation of the GFCS has made international collaboration through RCCs even more important, and TCC plans to further strengthen its activities to lead RA II's contribution to the Framework. In light of the important roles played by NMHSs in climate-related disaster risk management (one of the key sectors in the GFCS), TCC plans to enhance regional climate watch observation by more actively providing NMHSs with relevant information as necessary. A portal site for the Pilot Project on Information Sharing on Climate Services will be launched in spring, and TCC will continue to collect pertinent information from NMHSs to be shared with Members.

- New/upgraded data and products

In January, the web-based ClimatView interactive climate database will be upgraded. To view ClimatView graphics in the previous version, a plug-in (Adobe SVG Viewer for Windows Internet Explorer) was required, and graphics could not be displayed with other browsers. The new version is designed to allow browsing without plug-ins using PHP and its graphic library. It enables viewing with web browsers including Firefox and Google Chrome in addition to Internet Explorer.

JMA plans to upgrade its one-month numerical prediction system in March. Hindcast experiments have already been executed using the new system with the target period of 1981 – 2010. Forecast data and products as well as hindcast gridded data with the new system will be made available on the TCC website.

In response to the release of JRA-55 data, all climate products generated using JRA-25 data will be replaced by versions generated using JRA-55 data in March.

In spring, TCC plans to start monthly issuance of comprehensive information on climate monitoring and seasonal prediction to assist NMHSs in the creation of seasonal forecasts. The document, provisionally named *Monthly Climate Discussion on Seasonal Outlooks*, will contain results of climate system monitoring and other observations from the previous month as well as interpretation of seasonal prediction products from GPC Tokyo, and will be published on the TCC website.

In spring, TCC will also start releasing Extreme Forecast Index (EFI) maps via its website to show areas at high risk of extreme weather conditions in the next two weeks, such as

high/low temperatures, heavy precipitation/drought conditions or strong winds. The maps will be produced using one-month forecast products from GPC Tokyo.

- Capacity development

In the last quarter of the year, TCC will hold its annual training seminar with a dozen invited experts as attendees. The Center will also continue to dispatch experts to NMHSs as necessary and host visitors from NMHSs upon request.

- Hosting of EASCOF

In autumn, TCC will host the second session of the East Asia Winter Climate Outlook Forum (EASCOF) with the participation of experts engaged in climate services at NMHSs and researchers from China, Japan, Mongolia and the Republic of Korea. At the event, the climate conditions of the previous season will be reviewed, and the current status of the climate system as well as the seasonal Asian winter monsoon forecast for winter 2014/2015 will be discussed.

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