

TCC Activity Report for 2011

In 2011, 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 and dispatching experts.

1. Highlights in 2011

1.1 Assistance to NMHSs affected by heavy rainfall over the Indochina Peninsula

NMHSs are expected to actively contribute to climate risk management, and must issue appropriate information in a timely manner when extreme events occur. Against this background, TCC is committed to assisting NMHSs in fulfilling their roles.

In 2011, heavy monsoon rains caused widespread flooding in Thailand and other areas of the Indochina Peninsula from late July to the end of the year. On 31 October 2011, TCC issued a report entitled “Heavy rainfall over the Indochina Peninsula for June – September 2011” to give a brief summary of the situation. The report was also made available on the WMO website. The Center additionally provided NMHSs in the affected areas with extra commentary on the situation as well as information on how to prepare related figures using web-based tools available on the TCC website. ([TCC News No. 26](#))

1.2 Global Framework for Climate Services (GFCS)

Climate services are vital to manage climate risks and seize opportunities, but often do not reach communities most vulnerable to climate change. Together with its partners, WMO is currently working on the development of the Global Framework for Climate Services to better serve society’s needs for accurate and timely climate information. Regional Climate Centres (RCCs) are expected to play a major role in the Climate Services Information System (CSIS) – one of five components of the Framework. As one of only two existing RCCs, TCC contributed to the effective and appropriate development of the system and the framework.

Staff from the Center gave a presentation on regional aspects of CSIS at the GFCS side-event during the 16th World Meteorological Congress in June 2011 ([TCC News No. 25](#)). TCC also participated in the development of the draft implementation plan for the GFCS as a contributor to the sections of CSIS and Capacity Development in the implementation plan.

1.3 Service as an operational DCPC within the WMO Information System

TCC was designated as one of the first Data Collection or Production Centres (DCPCs) of the WMO Information System (WIS) at the 16th World Meteorological Congress in June 2011. Along with seven other DCPCs operated by JMA, TCC started providing metadata catalogues for data

discovery, access and retrieval (DAR) services as a new WIS service as of 1 August 2011. ([TCC News No. 25](#))

1.4 New climatological normals for 1981 – 2010

JMA has developed new climatological normals using data for the period from 1981 to 2010, and started operationally using them on 18 May 2011. As these data are used in various products available on the TCC website, a number of products have been updated. ([TCC News Nos. 24 and 25](#))

1.5 Update of JMA's One-month Ensemble Prediction System

JMA updated its Ensemble Prediction System (EPS) for operational one-month forecasting on 4 March 2011. The main changes included implementation of a new dynamical frame, an update to the climatological aerosol total optical depth, and minor adaptations to land surface processes ([TCC News No. 23](#)). In addition to the change in operational forecasts, hindcast experiments were also executed using the new system, and the target period will be extended to 1979 – 2010. The updated gridded data obtained from these experiments were made available in January 2011.

2. Enhancement of data/products/tool on the TCC web site

TCC strives to continuously enhance its services in the provision of data, products and tools. In 2011, the following data and products were newly made available on the TCC website:

- 3 Mar.: Forecasting maps and circulation indices based on hindcast experiments using the updated One-month Ensemble Prediction System
- 25 Mar.: Pacific Decadal Oscillation (PDO) index
- 25 Jul.: Warm/Cold Season Probability Forecast and Verification (for registered NMHS users)
- 2 Sep.: Daily gridded data of One-month Forecasting (for registered NMHS users)
- 31 Oct.: Animation of the JMA One-month EPS (7-day running mean) as an experimental product

Upgrades were also made to products/services as detailed below.

- 6 Jan.: Enhancement of hindcast gridded data in accordance with the replacement of the One-month Forecasting Model in March 2011 (for registered NMHS users) (see Section 1.5)
- 3 Jun.: Verification of one-month probabilistic forecasts with a new hindcast
- 25 Jul.: Addition of a new element (Sea Surface Temperature) to the Three-month Probability Forecast
- 31 Oct.: Upgrade of the Interactive Tool for Analysis of the Climate System (ITACS) to Version 4

3. Capacity Development

3.1 Training Seminars

TCC holds an annual training seminar as part of capacity-building activities related to its role as an RCC in the WMO RA II area. As the seminar for fiscal 2010 took place in January 2011 ([TCC News](#)

[No. 23](#)), two training sessions were held during the calendar year.

As the seminar for fiscal 2011, the Training Seminar on One-month Forecast Products was held from 7 to 9 November at JMA Headquarters in Tokyo. The event was attended by 13 experts from NMHSs in Bangladesh, Cambodia, Hong Kong, Indonesia, Lao Democratic People's Republic, Malaysia, Mongolia, Myanmar, Pakistan, the Philippines, Sri Lanka, Thailand and Viet Nam. Through lectures and exercises, the participants learned how to produce one-month forecasts using guidance and gridded model outputs. The presentations given by the lecturers are available on the TCC website. ([TCC News No. 26](#))

3.2 Expert visit

TCC dispatches experts to NMHSs to support exchanges of views on climate services and the effective transfer of technology. In March 2011, two TCC experts visited the Meteorological, Climatological and Geophysical Agency (BMKG) in Indonesia. They outlined the latest status of JMA's seasonal forecasts and ITACS, and discussed effective reporting of CLIMAT with BMKG experts toward the improvement of climate services in Indonesia.

4. International meetings

4.1 Regional Climate Outlook Forums

In November, TCC hosted the Twelfth Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon in Tokyo ([TCC News No. 26](#)). In addition to experts from the four regular participating countries (China, Japan, Mongolia and the Republic of Korea), participants in the TCC Training Seminar also attended, making the meeting even more fruitful. As the purposes and organization of the Joint Meeting are similar to those of Regional Climate Outlook Forums (RCOFs), the event is expected to be formally recognized as an RCOF in the future.

TCC is also involved in RCOFs in Asia. In 2011, experts from the Center participated in FOCRAII (Beijing, China, April) and SASCOF-2 (Pune, India, April), and gave presentations on TCC and JMA's forecasts.

4.2 Other meetings

In January 2011, a Japan Society for the Promotion of Science (JSPS) International Forum titled "Climatic Changes in Monsoon Asia (CCMA)" was held in Bangkok, Thailand, as part of the Strategic Program for Building an Asian Science and Technology Community – an initiative operated with funding support from the Special Coordination Funds for Promoting Science and Technology. The goals of the forum are to solve common challenges and build an exploratory research network encompassing Japan and Southeast Asian countries. A presentation on TCC activities was given at the forum to encourage enhanced collaboration between operational climate service providers and research communities.

A TCC expert is a member of the Expert Team on Regional Climate Centres (ET-RCC) under the Commission for Climatology (CCI), and participated in its session held in Offenbach, Germany, in

October. The event's discussion topics included the establishment and operation of WMO RCCs, the standardization of RCC products and services, and coordination with other climate-related entities.

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 2011, TCC [News Nos. 23 – 26](#) were issued and made available on the TCC website.

Other English-language publications related to the climate, such as [Climate Change Monitoring Report 2010](#), were also made available on the TCC website.

6. Plans for 2012

With the development of the GFCS, improvement and expansion of NMHS climate services are expected. In this context, the importance of international cooperation through RCCs is growing, and TCC plans to further strengthen its activities in this area. As an RCC in the Asian region, the Center will expand its customized services for NMHSs in the area in 2012. Considering the important role of NMHSs in climate risk management, TCC will enhance regional climate watch by more actively providing NMHSs with relevant information as necessary. The following plans are also in place for the TCC website:

- Development of new products for Asian monsoon monitoring
- Provision of useful animations relating to climate system monitoring in Asia

TCC also plans to hold an annual training seminar in the autumn of 2012, and expert visits from TCC to NMHSs will be organized as necessary.

JMA is currently conducting the Japanese 55-year reanalysis project (JRA-55), which is scheduled for completion in fiscal 2013. The Agency plans to develop a high-resolution one-month forecast model, which will become operational in fiscal 2013. Data and products based on JRA-55 and the high-resolution forecast system will be made available to NMHSs through TCC in due course.

(Teruko Manabe, Tokyo Climate Center)