

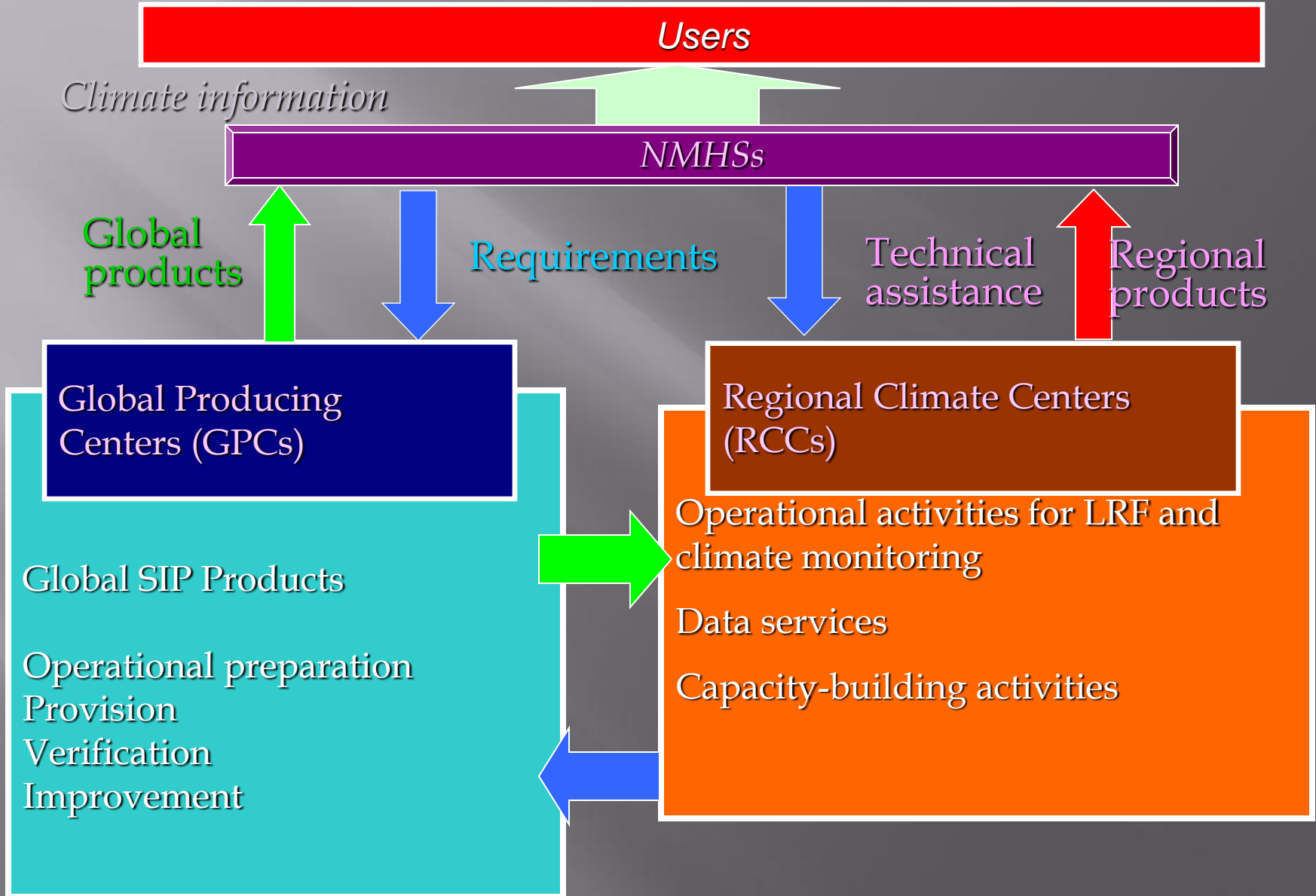
TCC ACTIVITY AND WORK PLAN

Kumi Hayashi

Tokyo Climate Center

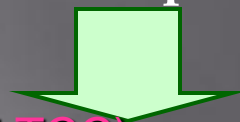
Climate Prediction Division
Global Environment and Marine Department
Japan Meteorological Agency

Framework for Advanced Climate Services



Development of RA II RCC Network

- In December 2004:** RA II session adopted a resolution to take immediate steps for the establishment of an RCC Network in RA II.
- In April 2007:** RA II WGCRM recommended to the P/RA II that both BCC and TCC be designated as multifunctional RCCs.
- In May 2007:** P/RA II recommended BCC and TCC to Cg15 as components of the RA II RCC Network.
- In January 2008:** Criteria for the mandatory functions of RCCs were defined at the CCI/CBS Intercommission Technical Meeting on Designation of RCCs.
- In April 2008:** TCC and BCC demonstrated their capabilities as RCCs at the meeting of the ET-LRF of the CBS OPAG on DPFS. The Team suggested that these Centres seek recognition as RCCs for Region II at CBS-XIV.
- In March 2009:** CBS-XIV recommended that the amendments to the Manual on the GDPFS (Vol. 1, global aspects) for designation of BCC and TCC as RCCs be adopted. CBS submitted the amendments to EC-LXI for its approval for implementation.



The first RCCs (BCC and TCC) were formally designated at EC-LXI in June 2009.

Resolution 4 (EC-LXI)

Recognizing:

- ▣ (1) The enhanced worldwide attention to climate change, the associated socio-economic vulnerabilities and the need to support decision-making for adaptation to climate change and variability with more detailed regional climate information,
- ▣ (2) The development of technical regulations, through the WMO Commission for Climatology (CCI) and Commission for Basic Systems (CBS), and regional associations, to include a formal WMO mechanism for designation of Regional Climate Centres (RCCs),
- ▣ (3) That a Regional Climate Centre, categorized as a type of Regional Specialized Meteorological Centre, is designed to be a Centre of Excellence that assists WMO Members in a given Region to deliver climate services and products and that helps to strengthen the capability of a National Meteorological and Hydrological Service to meet national climate information needs,

RCC Mandatory Functions

- Operational Activities for LRF
- Operational Activities for Climate Monitoring
- Operational Data Service, to support operational LRF and climate monitoring
- Training in the use of operational RCC products and services

TCC Homepage

アドレス(D) <http://ds.data.jma.go.jp/tcc/tcc/index.html>

リンク HotMailの無料サービス Windows Windows Media リンクの変更

気象庁 Japan Meteorological Agency

Welcome to Tokyo Climate Center

TCC home About TCC Site Map Contact us

Home World Climate Climate System Monitoring El Niño Monitoring NWP Model Prediction Global Warming Climate in Japan Training Module News Archive

HOME

Main Products

World Climate Monitoring

Climate and Outlook in Japan

ClimatView

GPC Long-range forecast (LRF) Products

TCC News (latest issue)

Monthly Highlights on Climate System (latest issue)

気候系監視速報

What's New

- 16 November 2009 **NEW**
New Release: Monthly Highlights on Climate System (October 2009)
- 11 November 2009 **NEW**
Updated Information: Monthly Report (October 2009)
- 18 September 2009 **NEW**
TCC News No. 18 (Autumn 2009; PDF)
- Renewed Contents: Statistical Relationships - Atmospheric circulations regression Indices
- Explanatory Note
- 17 September 2009
New Service: Download of Gridded Global Sea Surface Temperature Dataset (COBE-SST) from 1891 onward
- 25 August 2009
TCC News No. 17 (Summer 2009; PDF)
- 14 August 2009
Updated Contents: World Climate associated with El Niño and La Niña
- 17 June 2009
New Contents available: Madden-Julian Oscillation (MJO) Information
- 29 May 2009
Upgrade of One-month Forecast GPV Products (available only for registered NMHSs)
- 28 May 2009
New Service: Application for use of the Interactive Tool for Analysis of Climate System (ITACS) (only for NMHSs)
- 15 May 2009
New Service: Download of Gridded Monthly and Annual Mean Data Set

World Climate Center (RCC) Network
Related Products and Services for Japan
Satellite Imagery of MTSAT-1R

- Tropical Cyclone Advisory : Tokyo Typhoon Center
- Japanese 25-year Reanalysis Project (JRA-25)
- JRA-25 Atlas **NEW**
- World Data Center for Greenhouse Gases (WDCGG)
- RSMC Tokyo - Typhoon Center
- Meteorological Research Institute, JMA
- Meteorological Satellite Center, JMA

World Meteorological Organization (WMO)
Global Network Monitoring Center (GSNMC)
Center
Center
Meteorological Administration

- Asian Disaster Reduction Center
- Severe Weather Information Center
- World Weather Information Service

> more links

world climate

climate system monitoring

el Niño monitoring

NWP model prediction

climate in Japan

global warming

Tokyo Climate Conference

Better Climate Information for a Safe and Sustainable Society

The Japan Meteorological Agency (JMA) held *the Tokyo Climate Conference: Better Climate Information for a Safe and Sustainable Society* in Tokyo, Japan, from 6 to 8 July 2009, under the auspices of the World Meteorological Organization (WMO), the Government of Japan (Ministry of Foreign Affairs of Japan, Ministry of Education, Culture, Sports, Science and Technology, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, and Ministry of the Environment) and the Japan International Cooperation Agency.



[Conference Statement](#)

TCC activity at 2009

The following content has been added to the TCC website:

- ▣ [Madden-Julian Oscillation \(MJO\) information](#)
- ▣ [Monthly and annual anomalies of JMA's global surface temperature data averaged in 5° x 5° grid boxes](#)
- ▣ [Gridded global sea surface temperature data sets \(COBE-SST\) from 1891 onward](#)
- ▣ [Statistical relationships \(atmospheric circulations regressed on El Niño monitoring indices](#)

JMA has developed a useful web-based tool for climate diagnosis "ITACS"

- <http://jra.kishou.go.jp/itacs-info/tcc/conditions.html>

The screenshot displays the ITACS web interface. On the left, there is a login section for a "By Invitation Only server" with fields for "ユーザー名(U)" and "パスワード(P)". The main content area is divided into several sections:

- data1**: A table for selecting data parameters.
- analysis method**: A dropdown menu for selecting the analysis method.
- Graphic Option**: A section with various checkboxes and input fields for customizing the visualization.
- Example Pictures on ITACS**: A table listing example images with their titles and descriptions.

The "data1" table is as follows:

dataset	element	data type	area	level	average period	show period
-Dataset-	-Element-	-Data_type-	-Area-	1000hPa	1000hPa	-Mean Period-
	Vector <input type="checkbox"/>				Ave <input type="checkbox"/>	RANGE
	SD <input type="checkbox"/>					1900
						1900

The "Graphic Option" section includes:

- Show Contour Labels
- Show Color Bar
- Set Contour Parameters for data1
- interval: [] min: [] max: []
- Set Vector size: [] [inch] value: []
- Color Table: Rainbow
- Polar Stereographic
- Logarithmic Coordinates
- Reverse the Axes
- Flip the X-axis
- Flip the Y-axis
- No Caption

The "Example Pictures on ITACS" table is as follows:

Picture	Title
	JJA 1000hPa stream function anomalies JJA 1000hPa stream function anomalies
	JJA 1000hPa stream function composite of El Niño year El Niño 年 1000hPa 高度の緯度経度平均の気圧高度断面
	Distribution of regression coefficients of 1000hPa stream function with Niño 3 index El Niño 年 1000hPa 高度の緯度経度平均の気圧高度断面
	The circulation in the zonal and vertical directions in the tropics

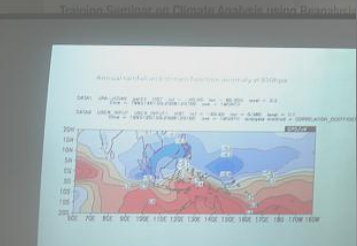
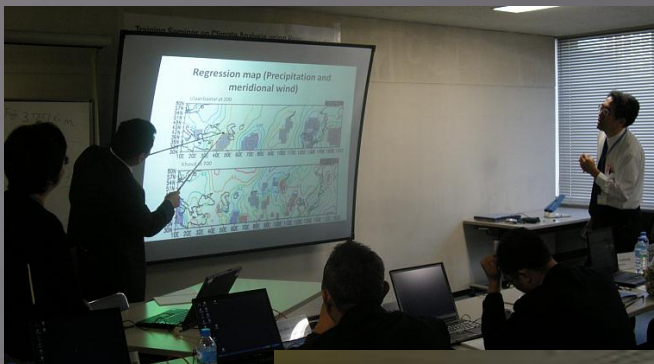
An orange box with the text "No Image" is overlaid on the bottom part of the interface, with "OK" and "キャンセル" buttons below it.

Training Seminar

Training Seminar on Climate Analysis using Re-analysis Data (1 to 4 December, 2009)



The seminar was attended by 11 participants from 11 countries engaged in operational long-range forecasting at NMHSs in East and Southeast Asia and the Pacific region (Bangladesh, Indonesia, Laos, Malaysia, Mongolia, Pakistan, Papua New Guinea, the Philippines, Sri Lanka, Thailand and Vietnam).



TCC believes that the seminar provided a good opportunity for the participants to deepen their knowledge of climate analysis.

Future Plan

Continued efforts to improve and enhance its products and services

- develop interactive tools and supply requested data to enable each country to make tailored products

Capacity building

- focus on a specific topic for the improvement of **operational** climate information services
- strengthen technology transfer

Holding of meetings including RCOF

- promote the application of climate information tailored to the users' circumstances and requirements through the exchange of good practices in the application of climate information and in the strengthening of user-provider interaction
 - exchange information of scientific knowledge

Future Plan (2010)

In February 2010, JMA introduced a coupled ocean-atmosphere general circulation model (CGCM) for operational seasonal forecasts, which is expected to improve prediction skill, especially in subtropical areas. GPC (Global Producing Center) Tokyo starts **providing products generated using the CGCM**.

However, TCC recognizes that it is necessary to provide tools and guidance for the handling and interpretation of these products from GPC.

In order to facilitate their utilization, TCC plans to **hold a training seminar on seasonal prediction** in the coming autumn or winter.

Furthermore, guidance materials on using the products will be made available on the TCC website, which will help NMHSs generate their own forecast products to meet user requirements. The Center also plans to **develop new tools for prediction products** within a few years.

Notice

- GPV products for seasonal forecasts have been upgraded since 17 February 2010. Please refer to the top page of the "TCC News No. 19" for details.

Main Products

Latest Products

One-month Prediction

- › [One-month Prediction](#) (02 Apr 2010)
- › [Z500, T850 & Psea \(Northern Hemisphere\)](#) (02 Apr 2010)
- › [Stream function, Velocity potential & Surface air temperature \(60N-60S\)](#) (02 Apr 2010)
- › [Verifications](#) (04 Apr 2010)
- › [One month probabilistic forecasts at station points \(experimental\)](#) (06 Jun 2008) **NEW**

Three-month Prediction

- › [Three-month Prediction](#) (23 Mar 2010)
- › [Z500, T850 & Psea \(Northern Hemisphere\)](#) (23 Mar 2010)
- › [Stream function, Velocity potential & Surface air temperature \(60N-60S\)](#) (23 Mar 2010)
- › [Verification of recent predictions](#) (06 Mar 2010)
- › [Verification of hindcasts](#)
- › [Probabilistic Forecasts and Verifications](#) (19 Mar 2010) 

Warm/Cold Season Prediction

- › [Warm/Cold Season Prediction](#) (23 Mar 2010)
- › [Z500, T850 & Psea \(Northern Hemisphere\)](#) (23 Mar 2010)
- › [Stream function, Velocity potential & Surface air temperature \(60N-60S\)](#) (23 Mar 2010)
- › [Verification of hindcasts](#)

Probability Forecasts

Forecast Period

Apr-May-Jun 2010

Oldest Latest

Parameter

- Surface Temperature
 Precipitation

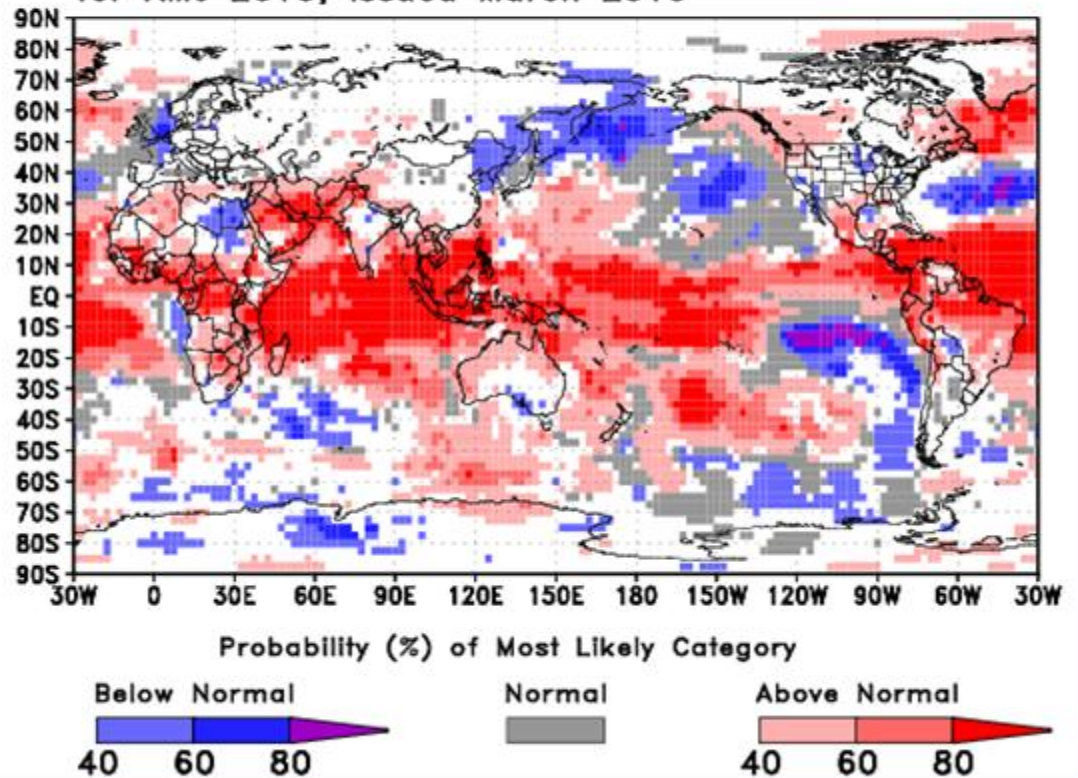
Area

Global
 Asia

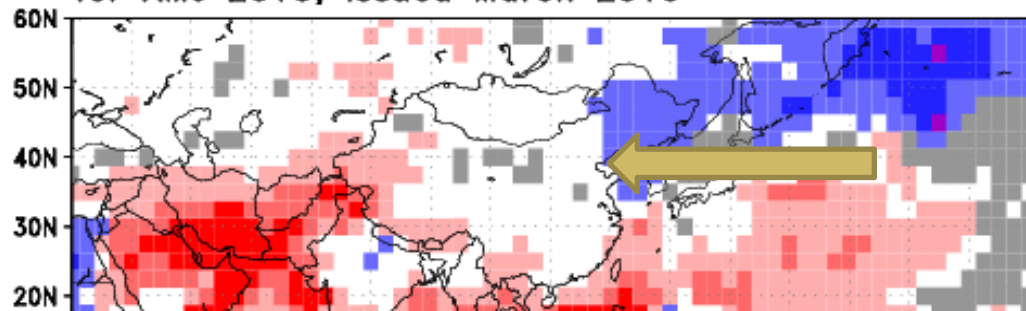
longitude : latitude

E W
 N S

TCC Probability Forecast For Surface Temperature
 for AMJ 2010, Issued March 2010

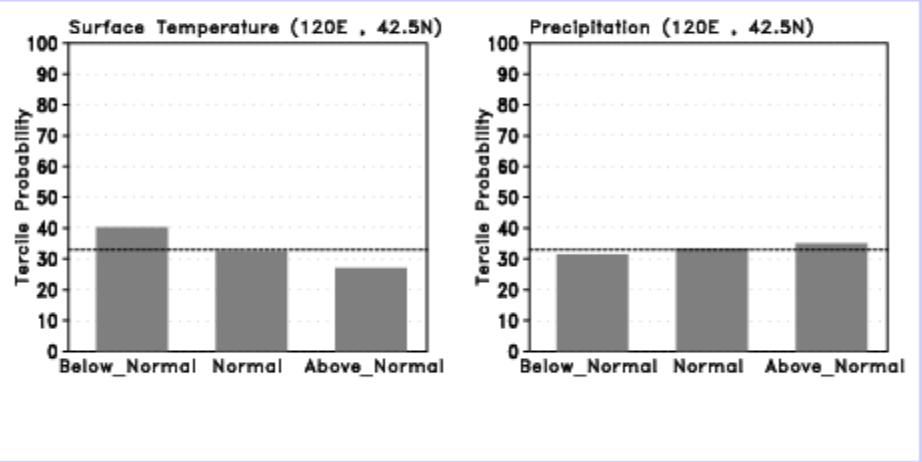


TCC Probability Forecast For Surface Temperature for AMJ 2010, Issued March 2010



Forecast Period, Apr-May-Jun 2010 Issued March 2010

- [Skill for temperature at each grid point](#)
- [Skill for precipitation at each grid point](#)
- [Close](#)



From recognition of Tokyo Climate Conference : Conference Statement

(5) Beijing Climate Center and Tokyo Climate Center were recently designated as the first WMO Regional Climate Centers, in recognition of their contribution to improving the capabilities of NMHSs' climate services in the Asian region through the provision of basic climate prediction and monitoring information, technology transfer, training events and organizing Regional Climate Outlook Forums. In Asia, India, Iran, Russian Federation and Saudi Arabia have expressed their desire to establish RCCs. In the Pacific region, discussion about the necessity of establishing a RCC has also started.

close communication with RCCs and NHMSs

Now cast

Short range
forecast

Linkage with weekly
forecast

(Weekly forecast)

Re-Analysis
Observation data

JRA25 -> JRA55

1-month forecast
(1-30)

Provide finer gridded data at tropic area

Provide
seamless
information

Seasonal forecast
(1-6 month)

Decadal change

Climate cha

Publish "Global Warming Projection"
Vol.8 in 2012

Application of short-term climate and weather information helps adaptation to long-term climate variability and change, because long-term climate change is projected to cause changes in the frequency and intensity of extreme weather events. (Tokyo climate Conference: Conference Statement)

Future image of regional communication in order to strengthen NHMSs

Knowledge of climate, dynamics and models

experiences of interaction mechanism for climate services to national users

Share

Techniques of applying numerical forecasts to operational forecasts (include downscaling)

Usage of tools and database for making own products and advisory to their responsible area

(2) NMHSs, which provide weather services including those for domestic extreme events, are urged to play a major role in continuously providing operational climate services to meet national needs, taking into account the social and cultural background of the nation.

(Tokyo climate Conference: Conference Statement : recommend)



Photo by K.Honda

Thank you for your attention