Tokyo Climate Center Website (TCC website) and its products
-For monitoring the world climate and ocean-

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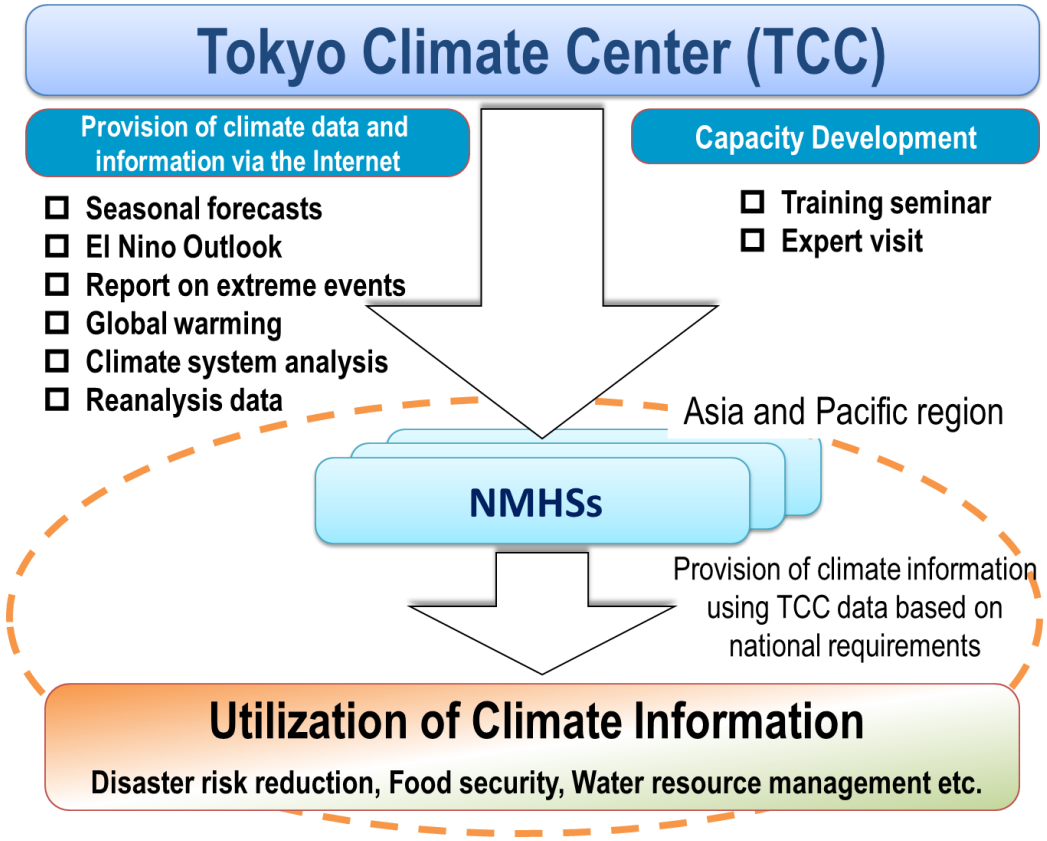
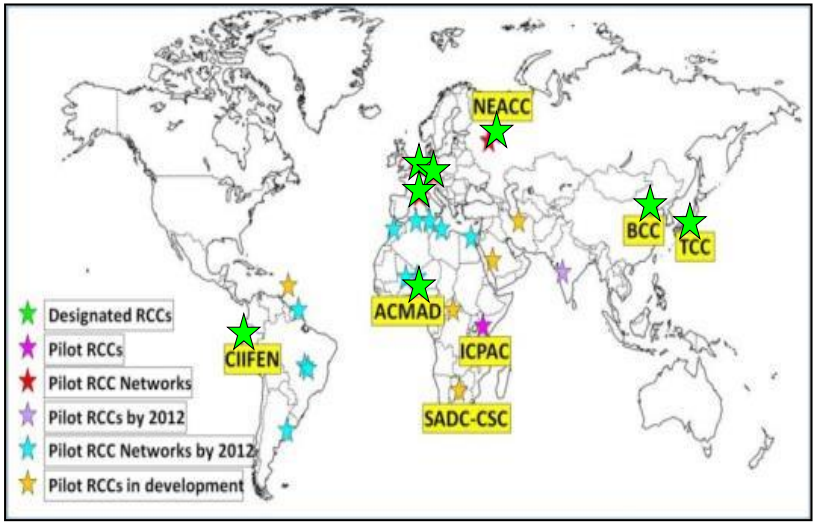
http://ds.data.jma.go.jp/tcc/tcc/index.html

Tokyo Climate Center (TCC)

- TCC serves as a WMO Regional Climate Center in the RA II.
- TCC supports NMHSs through data/information provision and capacity development activities.

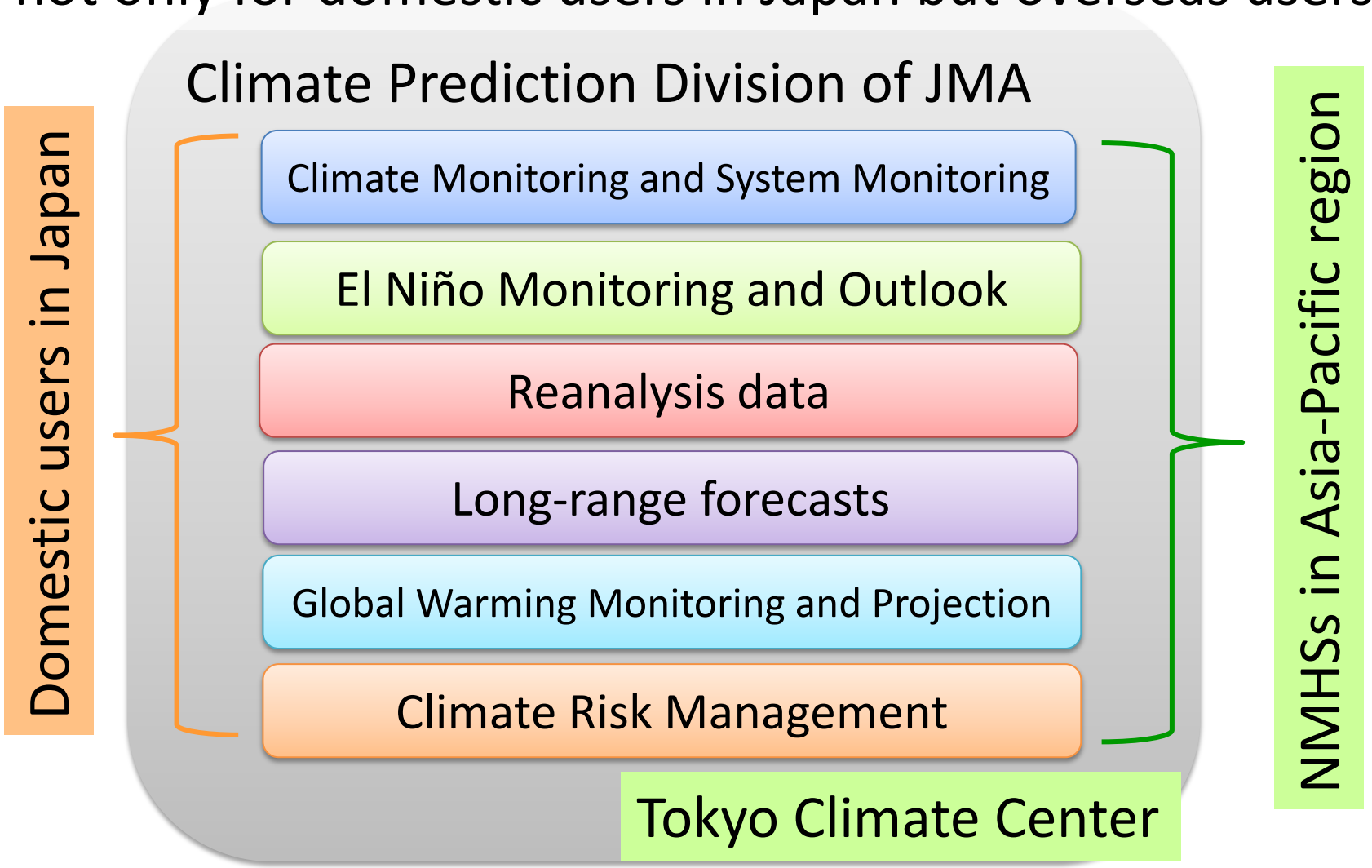




Current status of establishment of RCC

TCC was designated as RCCs in RA II in 2009.

CPD/TCC provides various climate information
not only for domestic users in Japan but overseas users.



Aims of this presentation

- To know the outline of the TCC website
- To know how to access to the “climate monitoring and diagnosis” related products

TCC Training Seminar 2016

Day 1-2
Lecture
- TCC website
- El Nino/La Nina
- Primary Mode
- Reanalysis

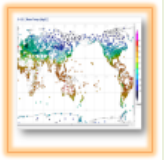
Day 3-4
Exercise
- iTacs
- Statistical Relationship
- Diagnosis

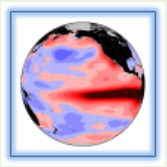
Day 4-5
Presentation

Day 1
Introduction to Climatology for experts on Climate Monitoring

After getting back

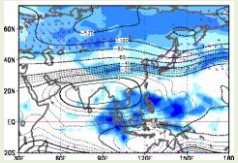
Grasp the conditions





ClimatView

Diagnose the climate



iTacs

with TCC website

TCC Website

気象庁 Japan Meteorological Agency

Tokyo Climate Center
WMO Regional Climate Center in RA II (Asia)

WMO

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 | Press release | Links

HOME

What are WMO RCCs

WMO RCCs are centres of excellence...

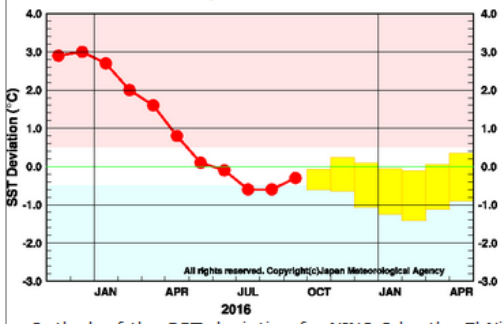
RCC Functions

- **Operational Activities for Long-range Forecasting**
- **Operational Activities for Climate Monitoring**
- **Operational Data Services, to support operational LRF and climate monitoring**
- **Training in the use of operational RCC products and services**

Latest Updates

World Climate	Updated: 15 September 2016
Climate System Monitoring	Updated: 15 Sep 2016
El Niño Monitoring	Updated: 11 October 2016

El Niño Outlook is updated on 11 October 2016.

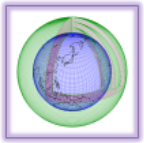


Outlook of the SST deviation for NINO.3 by the El Niño

Main Products

iTacs

iTacs, Interactive Tool for Analysis of the Climate System, is a web-based application to assist NMHSs to analyses extreme climate events and to monitor climate status.

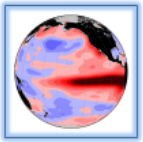


GPC Tokyo

Products of long-range forecast from Global Producing Center (GPC) Tokyo are available. These products are based on JMA's ensemble prediction system.

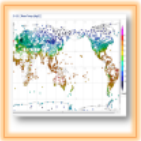
Monthly Discussion on Seasonal Climate Outlook

This is intended to assist NMHSs in the Asia-Pacific region in interpreting GPC Tokyo's three-month prediction and warm/cold season prediction products.



El Niño Monitoring

"El Niño Outlook" consists of a diagnosis of current condition and prediction of El Niño/Southern Oscillation. This is issued every month around 10th.



ClimatView

The ClimatView tool enables viewing and downloading of monthly world climate data, including monthly temperature/precipitation statistics and 30-year climate normals.

TCC News

What's New RSS

28 September 2016 NEW

- Announcement: The 2015 edition of Climate Change Monitoring Report is now available.

7 September 2016 NEW

- Announcement: Figures and data relating to Global Average Surface Temperature Anomalies have been updated due to re-evaluation of past land observation data.

1 September 2016 NEW

- TCC News No. 45 (Summer 2016: PDF)
  - Incorporation of ENSO Forecast Probabilities into the TCC El Niño Outlook
  - Summary of the 2014–16 El Niño event
  - Sea Ice in the Sea of Okhotsk in the 2015/2016 Winter Season
  - Summary of Kosa (Aeolian dust) Events over Japan in 2016
  - TCC Experts Visit Cambodia

10 August 2016 NEW

- Announcement: ENSO forecast probabilities are introduced to "El Niño Outlook" from this month.

2 June 2016

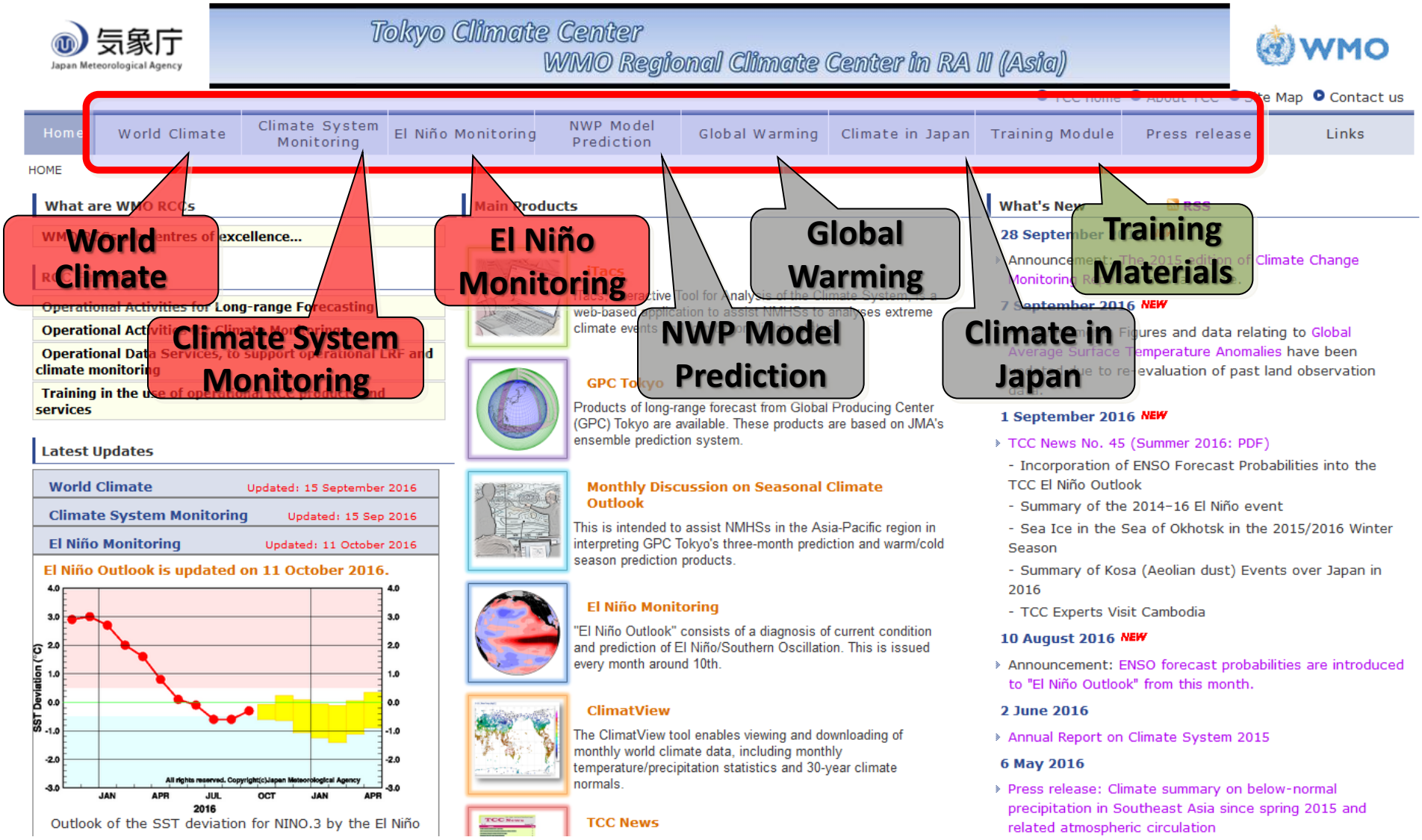
- Annual Report on Climate System 2015

6 May 2016

- Press release: Climate summary on below-normal precipitation in Southeast Asia since spring 2015 and related atmospheric circulation

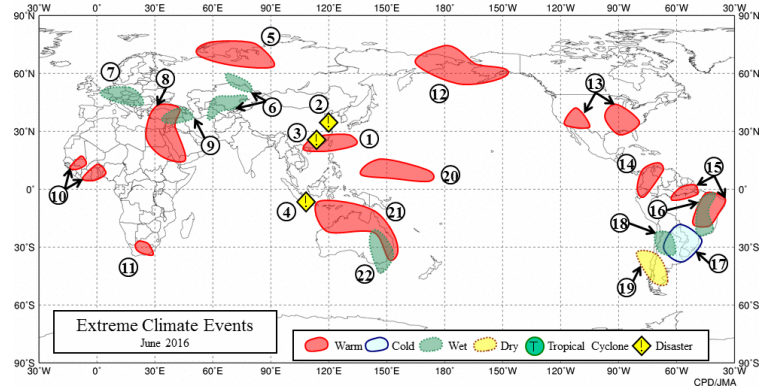
TCC Website: http://ds.data.jma.go.jp/tcc/tcc/index.html

TCC Website



TCC Website: http://ds.data.jma.go.jp/tcc/tcc/index.html

Extreme Climate Monitoring

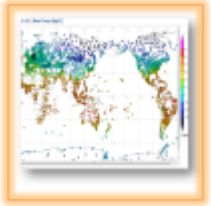


Monthly Highlights (Jun 2016)

- Monthly mean temperatures were extremely high from the Okinawa Islands of Japan to southern China.
- Monthly precipitation amounts were extremely high from Romania to northern France.
- Monthly precipitation amounts were extremely high in southeastern Australia.

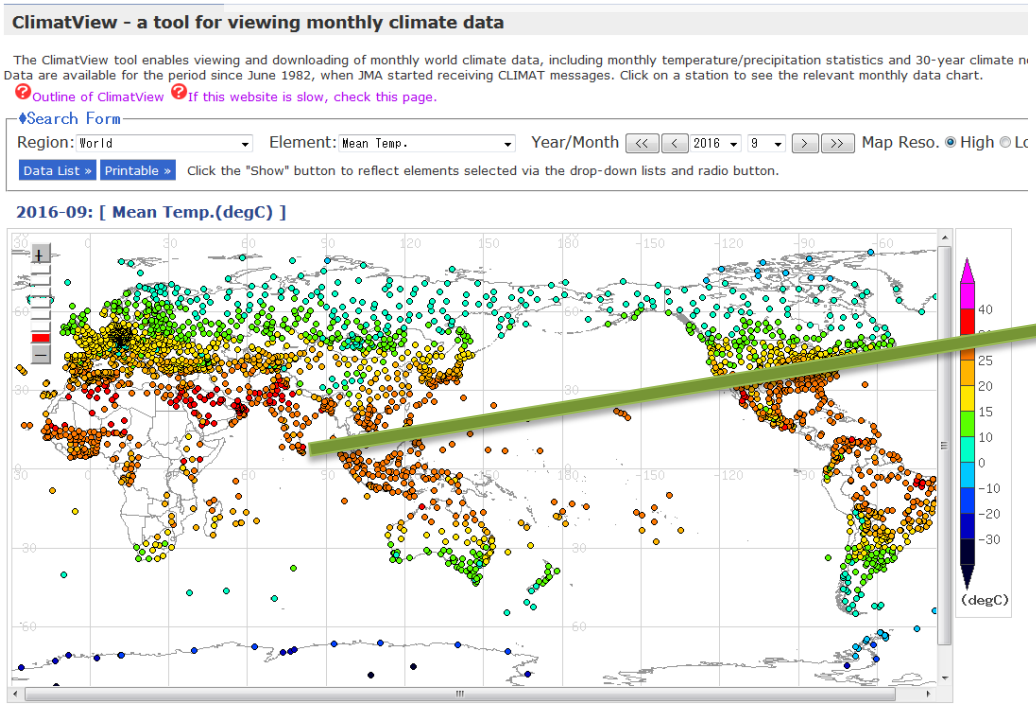
Extreme	Weekly	Monthly/Seasonal
Warm/Cold	The positive/negative anomaly of weekly mean temperature exceeds three times the 30-day standard deviation.	monthly/seasonal temperature anomaly is larger than 1.83 times of its standard deviation
Wet	Precipitation in a week exceeds a threshold decided on the basis of the 30-day precipitation normal. If this normal is 10 mm / 100 mm / 200 mm / 500 mm, the threshold is 153% / 98% / 81% / 59% of the normal value.	monthly/seasonal precipitation quintile category is 6.
Dry	Precipitation in the last 30-day is less than the threshold of quintile 1 for the 30-day period.	monthly/seasonal precipitation quintile category is 0.

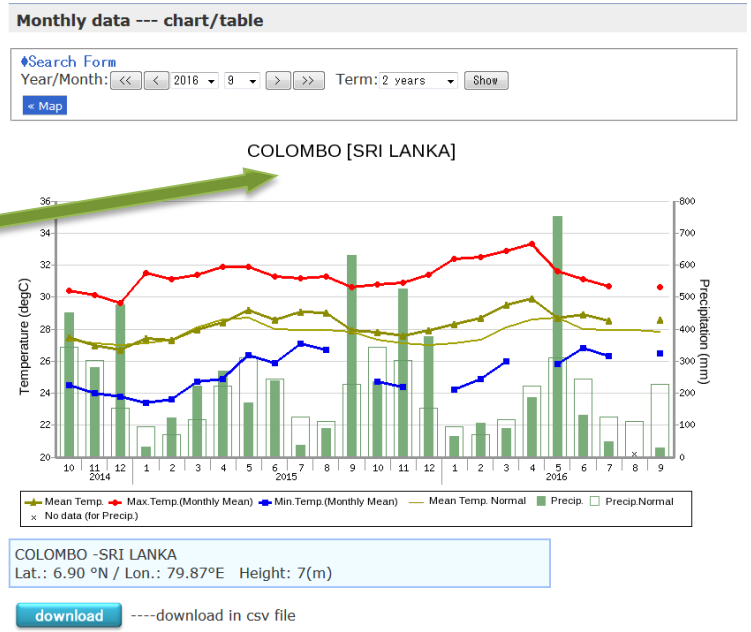
Extreme Climate monitoring: http://ds.data.jma.go.jp/tcc/tcc/products/climate/index.html



ClimatView

Powerful tool overviewing and downloading monthly world climate data. It allows the user to see and obtain monthly mean temperatures, monthly total precipitation amounts and its anomaly or ratio at all available stations.





Monthly climate data over the world since 1982 are able to viewed.

Time series of monthly high, mean and low temperatures and monthly precipitation

ClimatView: http://ds.data.jma.go.jp/gmd/tcc/tcc/products/climate/climatview/frame.php

Climate System Monitoring -Monitoring and Statistical Analysis-

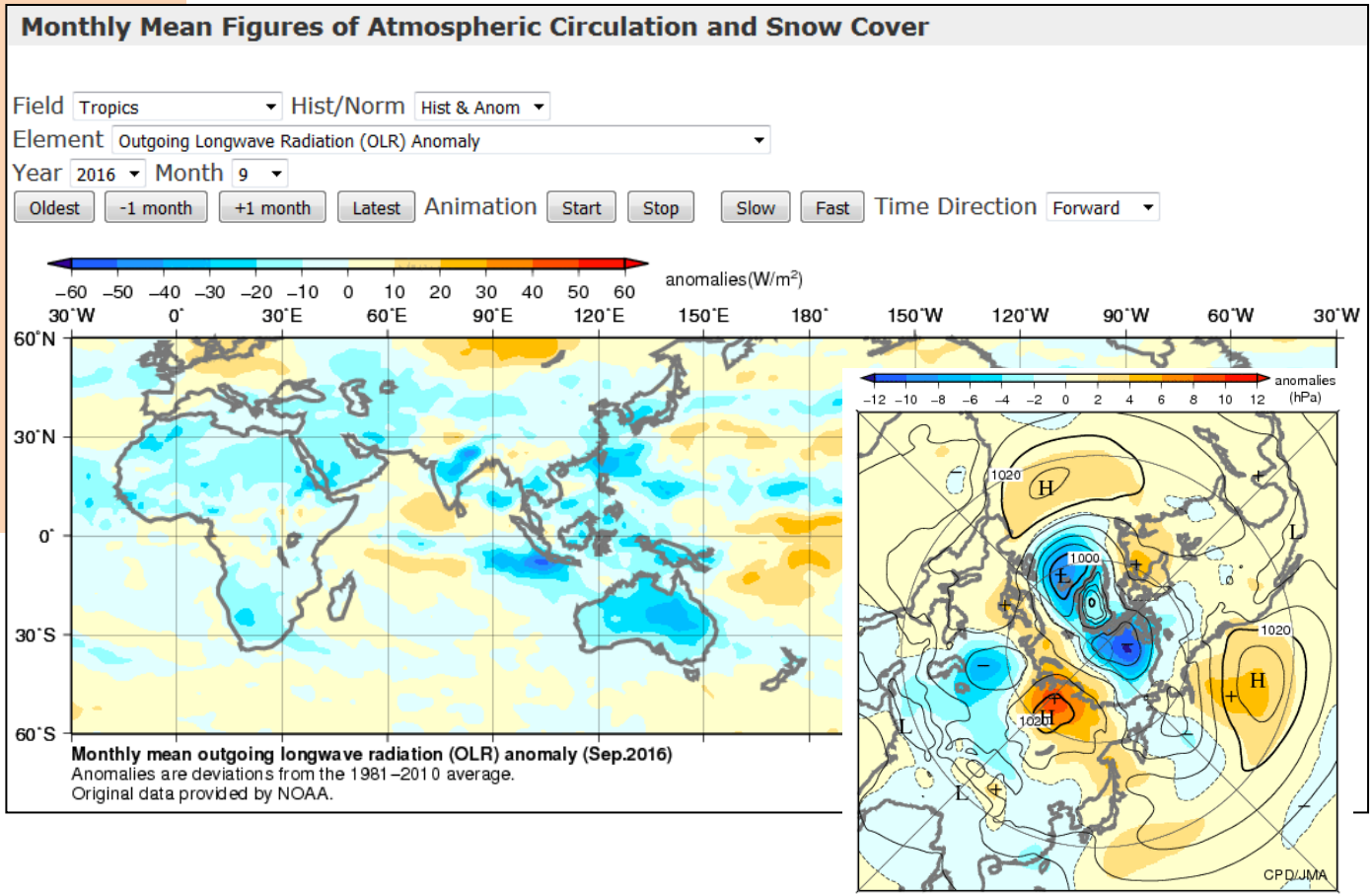
Analysis Charts and Monitoring Indices

Atmospheric Circulation Map

- Time-averaged
  - 5/10-day
  - Monthly
  - Seasonal
- Time Cross Section

Oceanic Figures and Tables

Animation Map (Next slide)



Analysis Charts http://ds.data.jma.go.jp/tcc/tcc/products/clisys/acmi.html

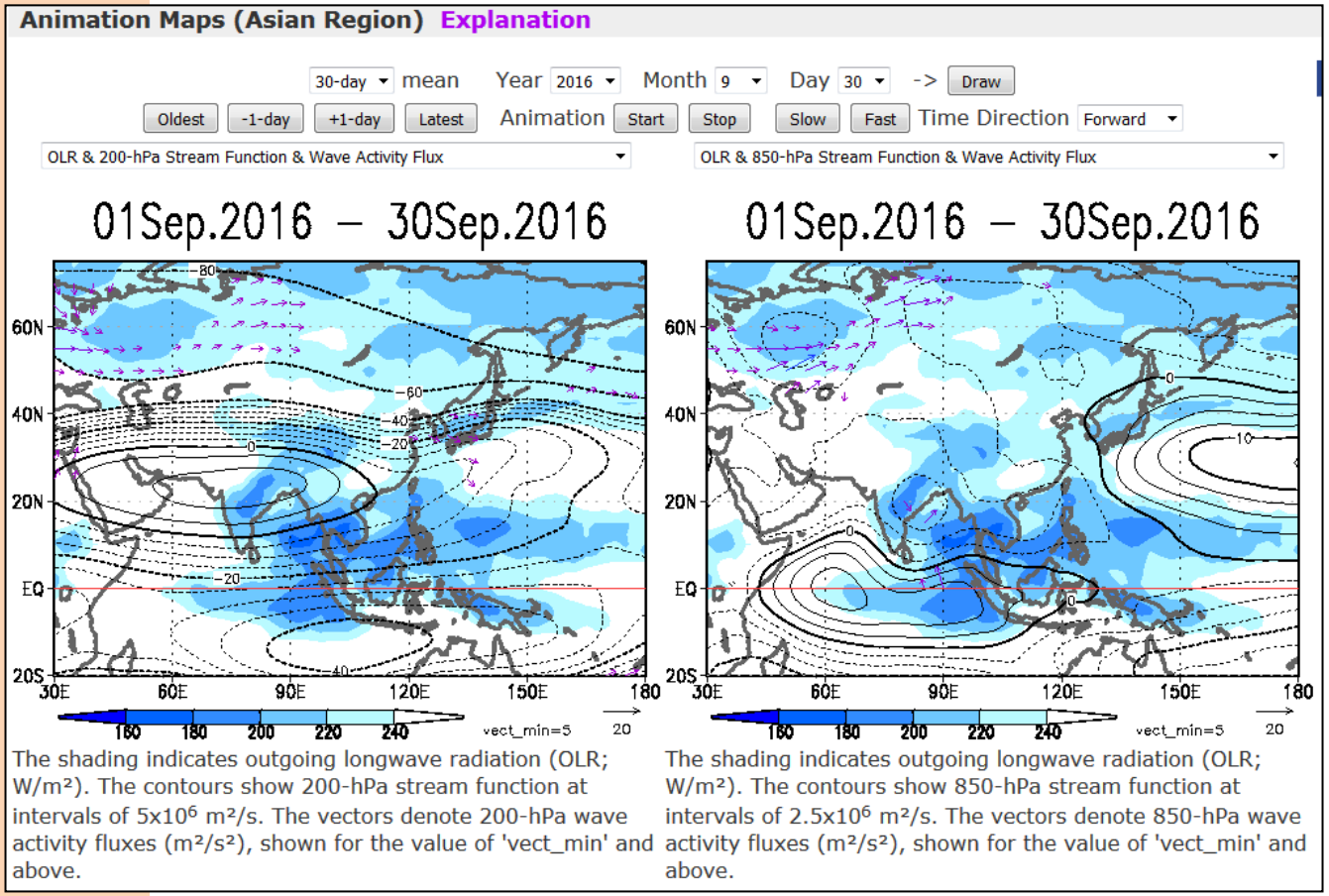
Climate System Monitoring -Monitoring and Statistical Analysis-

Analysis Charts and Monitoring Indices

Animation Map

Area
- The Asian region
- Northern Hemisphere
- Southern Hemisphere
- Global

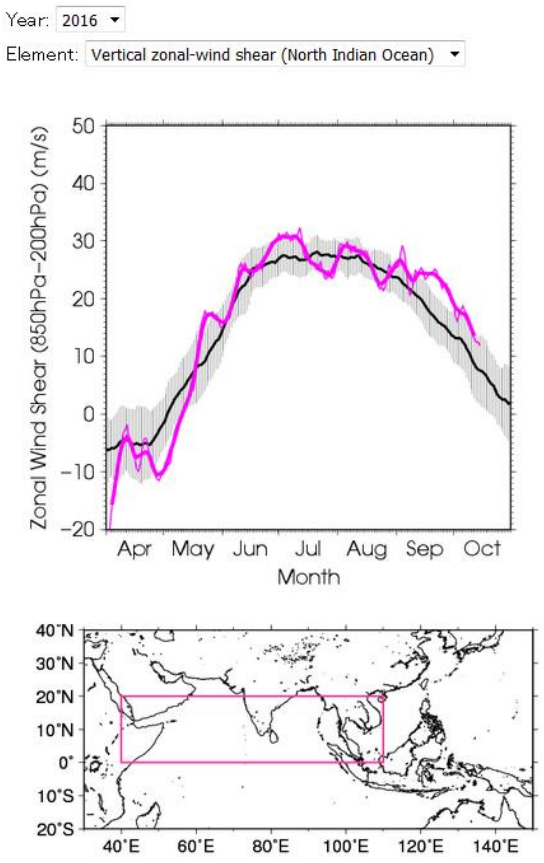
Elements (example)
- OLR
- Geopotential Height
- Wave activity Flus
- Stream Function
- Sea Level Pressure
- Wind Vector
- Temperature
- Moisture Flux
- Equivalent potential temperature



Animation Map: http://ds.data.jma.go.jp/tcc/tcc/products/clisys/anim/anim_asia.html

Climate System Monitoring -Asian Monsoon Monitoring-

Monsoon Monitoring Indices



Report

Summary of the 2014 Asian Summer Monsoon

28 November 2014

Tokyo Climate Center, Japan Meteorological Agency

1. Precipitation and temperature

Four-month total precipitation amounts based on CLIMAT reports during the monsoon season (June – September) were more than 120% of the normal in Hokkaido region of Japan, from western Japan to southern China and from western China to northern Pakistan. Conversely, the corresponding figures were less than 60% of the normal around the Korean Peninsula, in central and northwestern Mongolia, in southern parts of Central Asia and in southern Pakistan (Figure 1). The amounts were mostly consistent with the distribution of four-month mean OLR anomalies (Figure 3).

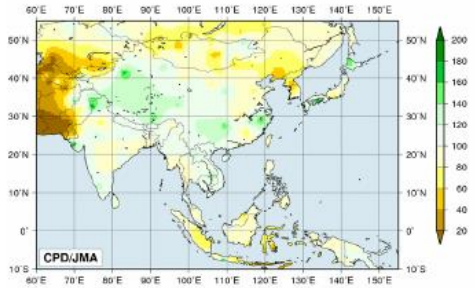


Figure 1 Four-month precipitation ratios (%) from June to September 2014
The base period for normal is 1981 – 2010. There were not data in Afghanistan.

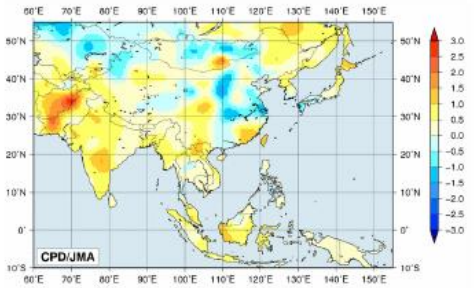


Figure 2 Four-month mean temperature anomalies (°C) from June to September 2014
The base period for normal is 1981 – 2010. There were not data in Afghanistan.

Asian Monsoon Monitoring report and its Analysis Charts and monitoring indices
http://ds.data.jma.go.jp/tcc/tcc/products/clisys/ASIA_TCC/index.html

Climate System Monitoring -Report on Climate System-

Reports on Specific Events

Cold wave over the Eurasian Continent in December 2012

28 December 2012

Tokyo Climate Center, Japan Meteorological Agency

1. Overview

Since the end of November 2012, the Eurasian continent from northern East Asia to Western Russia has experienced significantly lower-than-normal temperatures due to strong cold-air inflow.

2. Climate conditions

Temperatures have been more than 6°C below normal from Central Siberia to northeastern China since the end of November. The influence of cold air has extended to Central Asia and Western Russia (Table 1 and Figure 1). Figure 2 shows daily temperatures at major meteorological stations in affected countries.

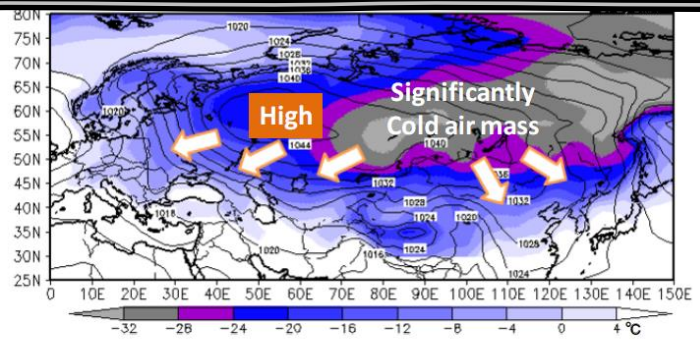


Figure 3 Sea level pressure and surface air temperature (11 – 24 December 2012)
The contours indicate sea level pressure (hPa), and the cold shading denotes 2 m temperature (°C).

Monthly Highlights on the Climate System

14 October 2016 *Japan Meteorological Agency*

Monthly Highlights on the Climate System (September 2016)

Highlights in September 2016

- The monthly anomaly of the global average surface temperature was the second highest since 1891.
- It is considered that La Nina conditions are present in the equatorial Pacific (see *El Niño Outlook* updated on 11 October 2016).
- In the lower troposphere, cyclonic and anti-cyclonic circulation anomalies were seen over the southern part of East Asia and the seas southeast of Japan, respectively.
- In the 500-hPa height field, positive height anomalies were seen over Western to Central Siberia, and negative height anomalies were over eastern China.
- Due to typhoons repeatedly approaching or making landfall on Japan and a stationary front near the main island of Japan, monthly sunshine durations were significantly below normal in eastern and western Japan and Okinawa/Amami.

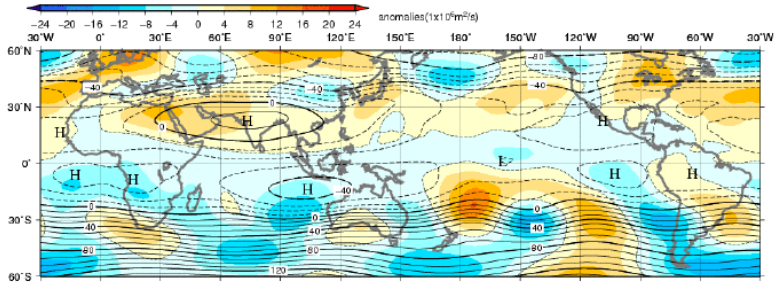
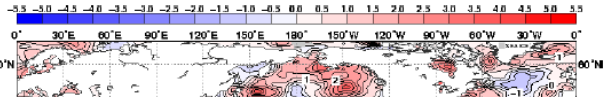


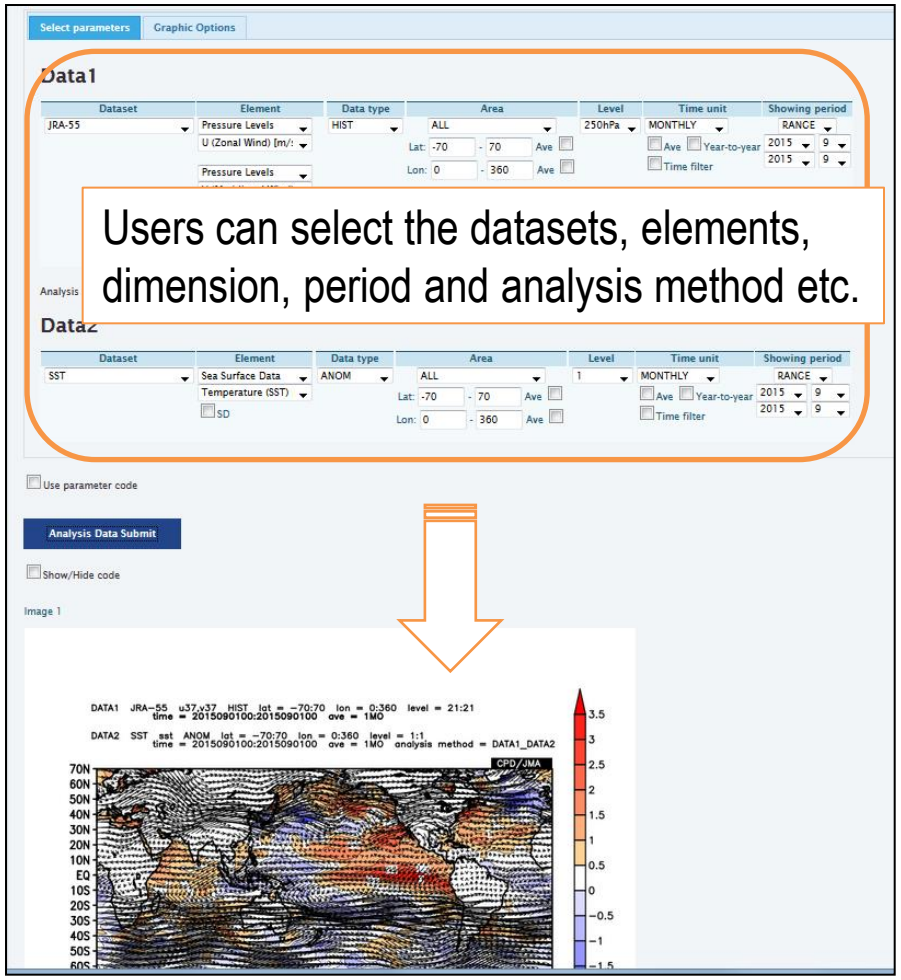
Fig. 8 Monthly mean 200-hPa stream function and anomaly (September 2016)
The contour interval is 10×10^6 m^2/s. The base period for the normal is 1981-2010.



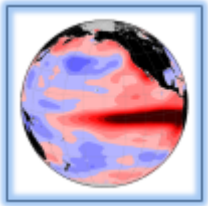
Reports on Specific Events: http://ds.data.jma.go.jp/tcc/tcc/products/clisys/reports/index.html
Monthly Highlights on the Climate System: http://ds.data.jma.go.jp/tcc/tcc/products/clisys/highlights/index.html

iTacs :
Interactive Tool for Analysis of Climate System

- The iTacs (Interactive Tool for Analysis of the Climate System) is a web-based application for climatological analysis.
- The output of analysis can be downloaded in the form of gridded data (GrADS format).
- This tool is available for registered NMHS staffs only.
- Applicants are requested to contact TCC via E-mail.

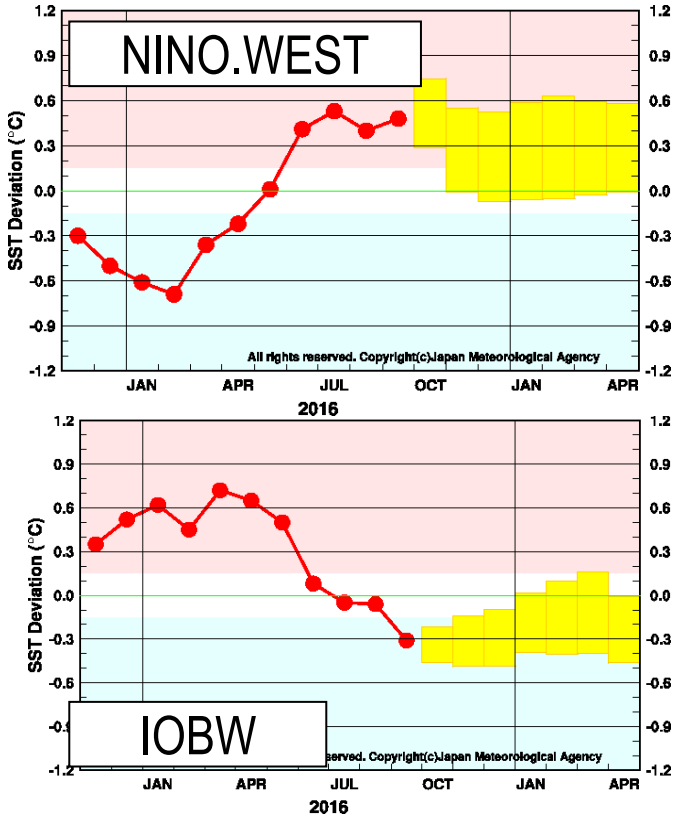


iTacs Login: http://extreme.kishou.go.jp/tool/itacs-tcc2015/



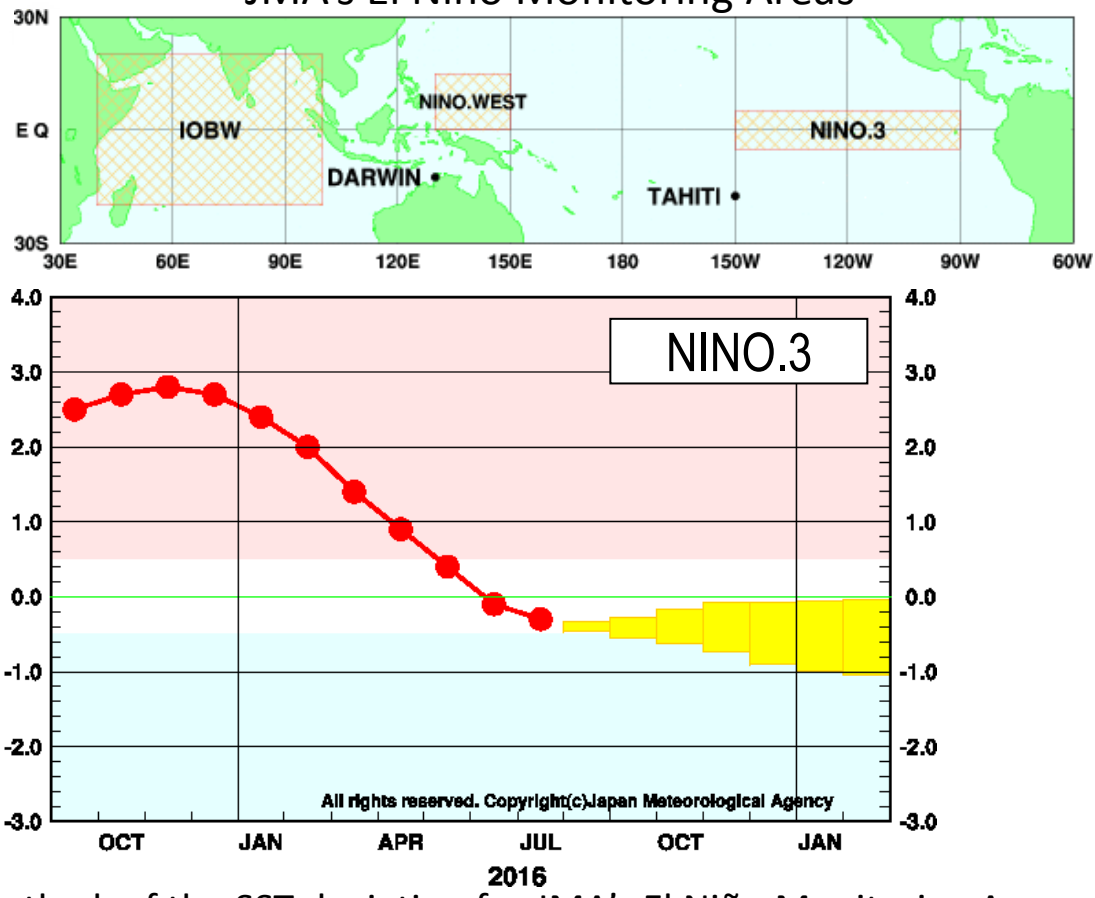
El Niño monitoring and outlook

"El Niño Outlook" consists of a diagnosis of current condition and prediction of El Niño Southern Oscillation. This is issued every month around 10th.

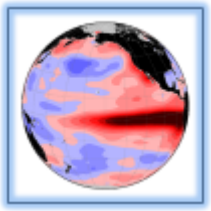


(IOBW: Indian Ocean basin-wide)

JMA's El Niño Monitoring Areas



Outlook of the SST deviation for JMA's El Niño Monitoring Areas by the El Niño prediction model.

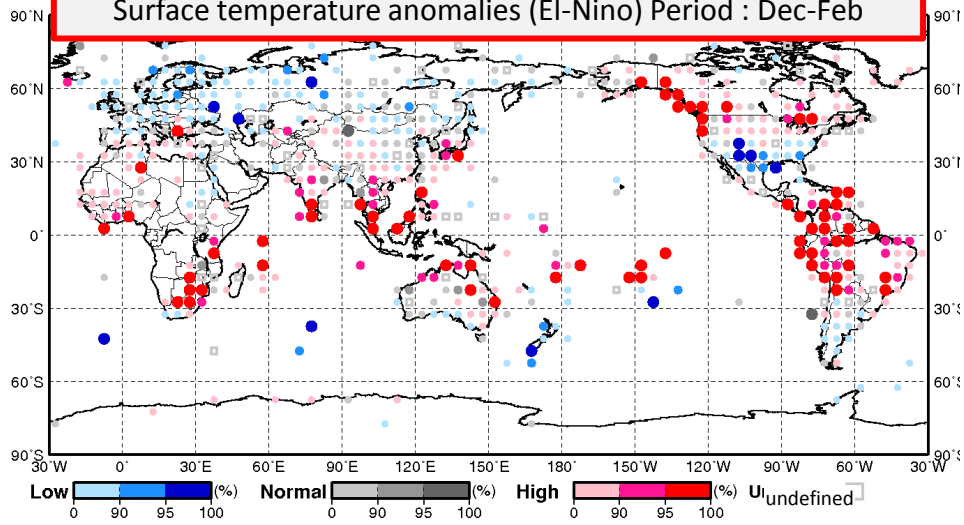


El Niño monitoring and outlook

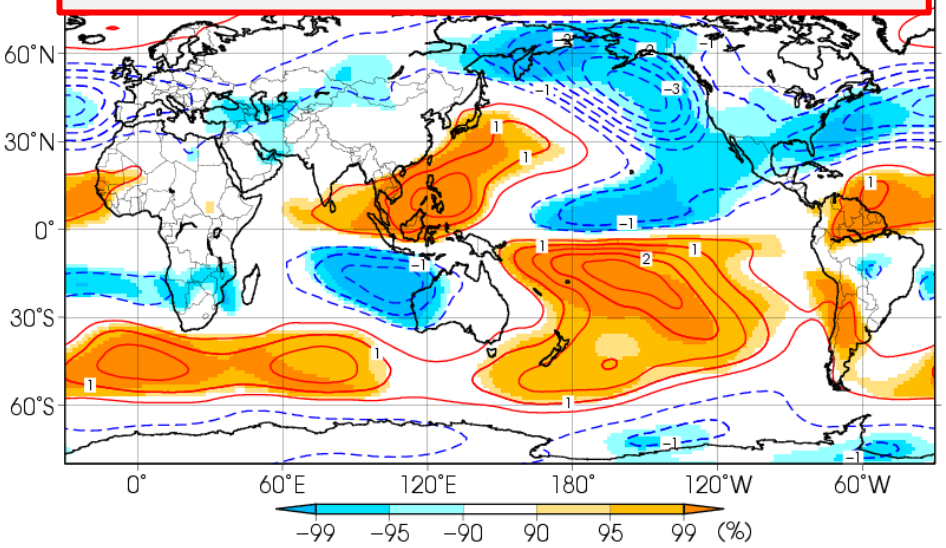
Investigation of ENSO's impact on the global climate using CLIMAT and the JRA-55 (1958-2012)

In order to promote the understanding of the influence of ENSO on global climate system, TCC is currently producing new statistical products using CLIMAT and the second Japanese global reanalysis data (JRA-55), which covers the period starting from 1958, and plans to update the web contents of the ENSO statistics.

Surface temperature anomalies (El-Nino) Period : Dec-Feb



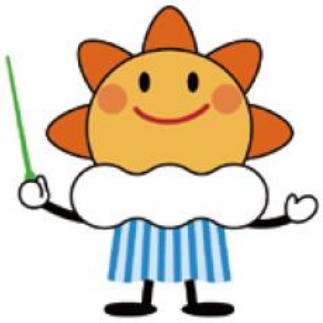
Lower-level stream function anomalies (El-Nino) Period : Dec-Feb



World Climate: http://ds.data.jma.go.jp/gmd/tcc/tcc/products/climate/ENSO/index.htm
Atmospheric Circulation: http://ds.data.jma.go.jp/gmd/tcc/tcc/products/clisys/enso_statistics/index.html

Thank you for your attention.

The JMA mascot



Harerun

JMA's mascot is named Harerun (from hare – the Japanese word for "fine weather"), and incorporates elements of sun, cloud and rainfall. Harerun holds a green baton representing hopes for a peaceful and disaster-free world. The mascot helps to raise public awareness of meteorological services as well as natural disasters and global environmental issues at various events.