

# Climate Information Services of APEC Climate Center (APCC)

Jin Ho Yoo

APEC Climate Center  
Busan, Korea  
[jhyoo@apcc21.net](mailto:jhyoo@apcc21.net)

the Coordinated Regional Climate Downscaling Experiment (CORDEX)  
International Conference on  
Trieste, 21-26 March, 2011

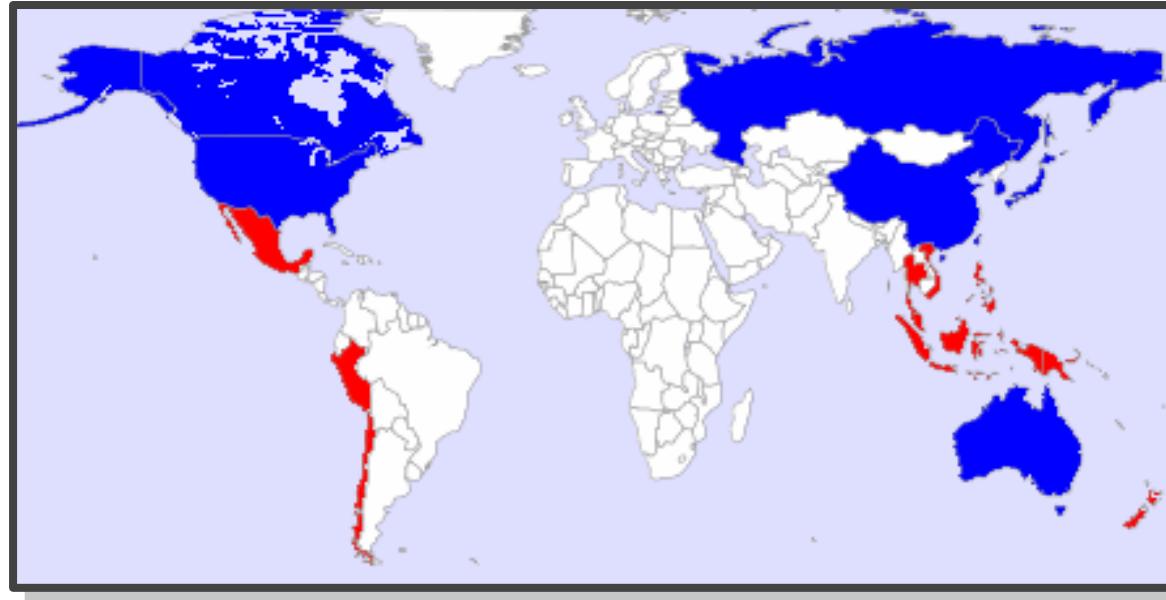


# Outline

- **Introduction of APCC**
- **Climate information services of APCC**
- **Brief plan for CORDEX data center**



# APEC Climate Center



- 1998 – The creation of the **APEC Climate** the 3<sup>rd</sup> APEC Science and Techonology Ministerial Meeting.
- 2005 – APEC member economies unanimously agreed to establish APCC at the 1<sup>st</sup> APEC Senior Officials Meeting.
- 2009 – APEC Climate Center moved to its



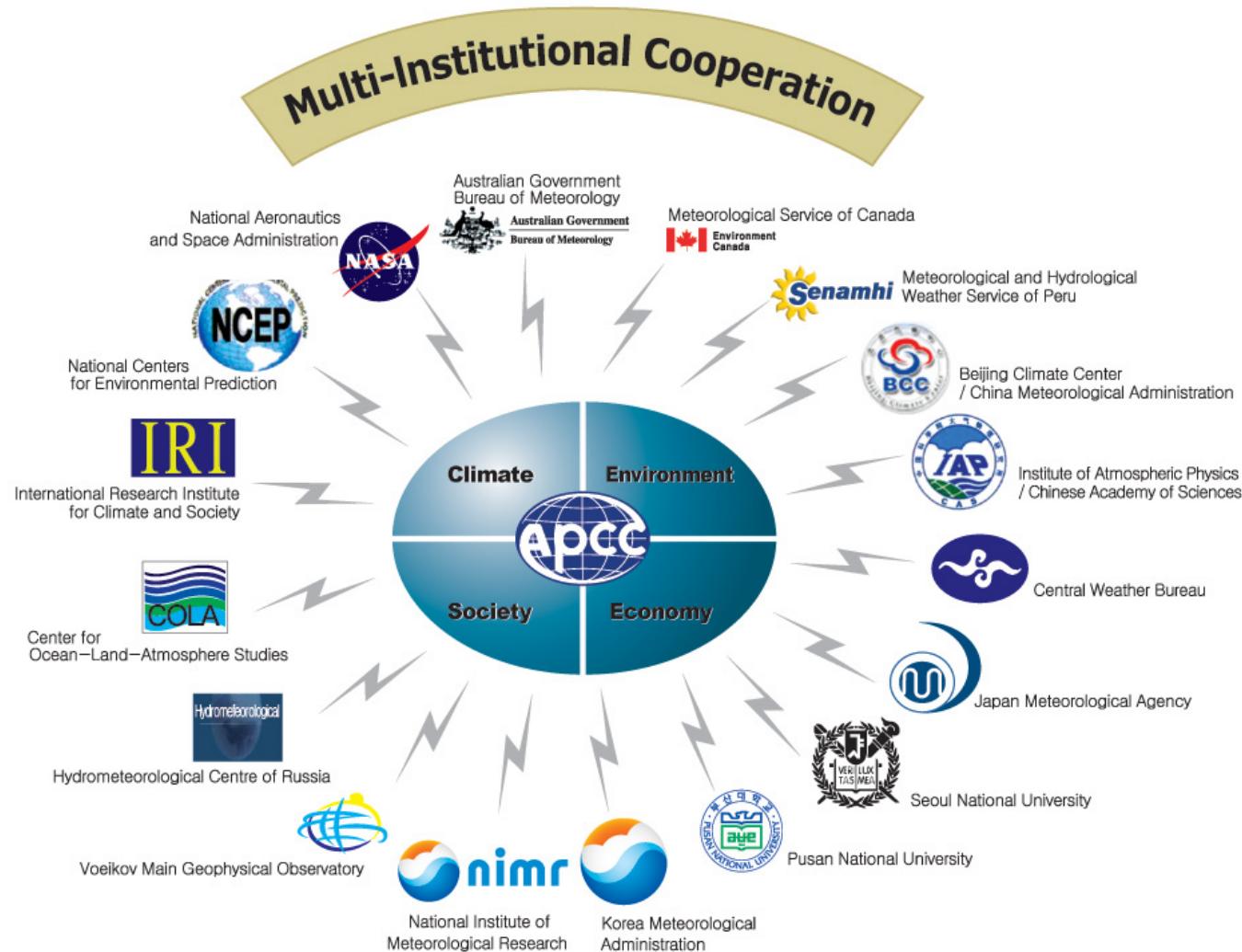


# APCC Goals

- Facilitating the **sharing** of high-cost **climate data and information**
- **Capacity building** in prediction and sustainable social and economic applications of climate information
- Accelerating and extending socio-economic **innovation**



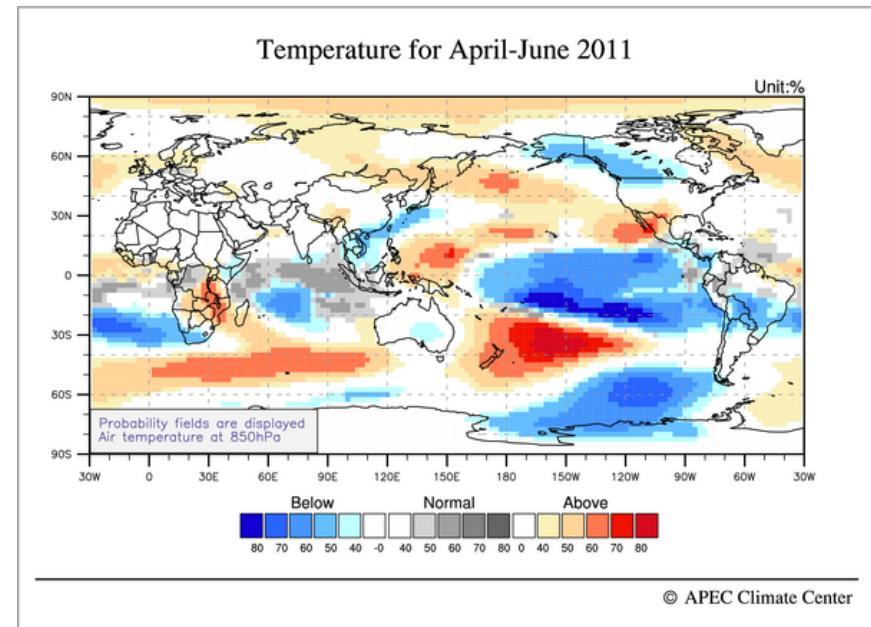
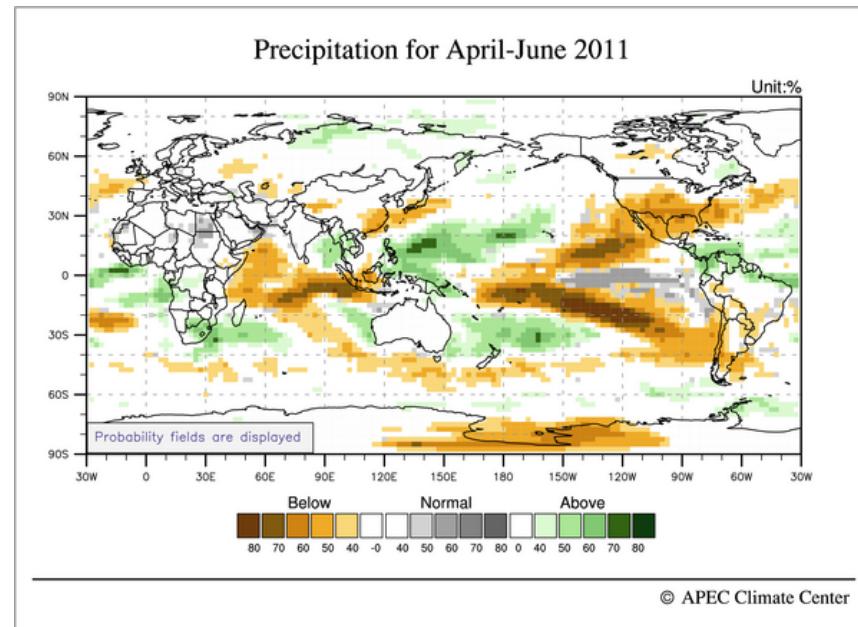
# Sharing of High-Cost Climate Information





# Monthly update of seasonal prediction

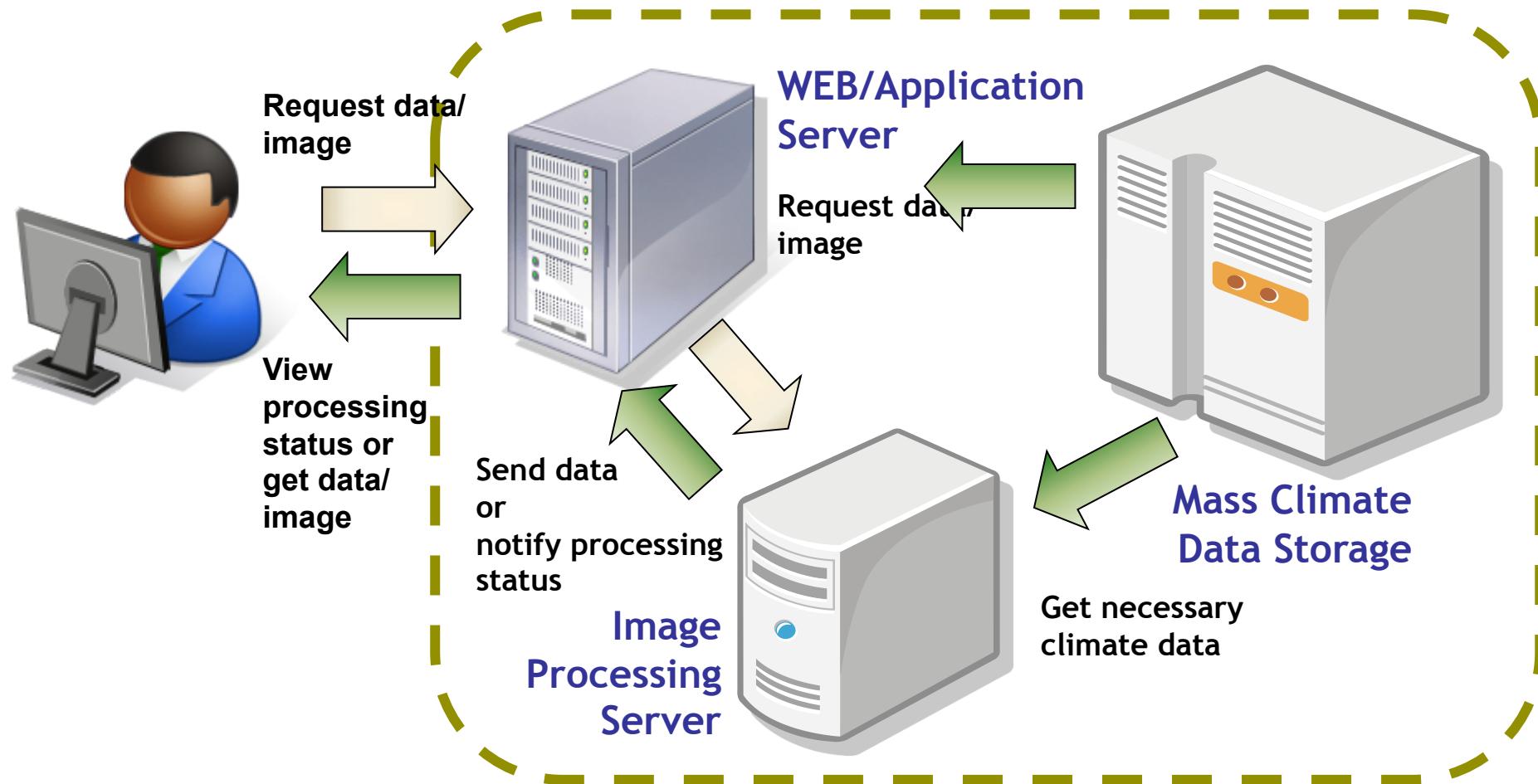
| Day of the month | 1~10            | 11~15                           | 16~21                   | 22~23                               |
|------------------|-----------------|---------------------------------|-------------------------|-------------------------------------|
| Activity         | Data collection | Standardization & quality check | Analysis and production | Outlook release & upload to website |



[www.apcc21.org](http://www.apcc21.org)



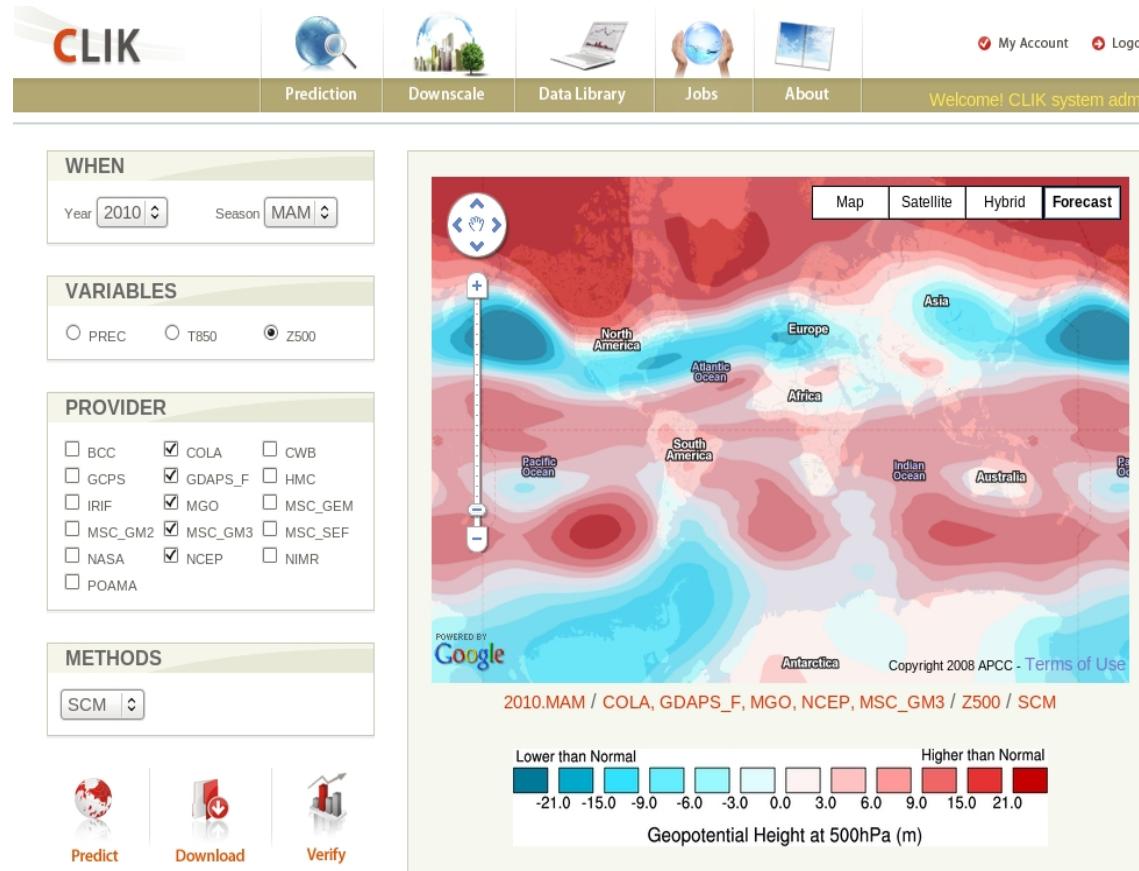
# Climate Information Services





# CLIK On-line Climate Information Toolkit

<http://clik.apcc21.net>



Customized MME Prediction/Verification Page (Main page)

- Web-based tool for data retrieval and climate prediction

- Customized 3-MON Multi-Model Ensemble Prediction

- Produce over 1,200 MME Prediction & 600 Verification results by user requests

- 3,882 visited CLIK came from 497 cities since March 2009 and the visiting count is continuously increasing\*

\* Logged by Google Analytics service (<http://www.google.com/analytics>)



# CLIK On-line statistical downscaling feature

Step 3. Set-up Downscaling

Prediction Season  
Year 2010 Season JJA

**Predictors**  
○ PREC ● T850 ○ Z500

BCC    COLA    CWB  
 GPCP    GDAPS\_F    HMC  
 IRIF    MGO    MSC\_GEM  
 MSC\_GM2    MSC\_GM3    MSC\_SEF  
 NASA    NCEP    NIMR  
 POAMA

**Predictands**  
● Precipitation ○ Temperature

**Advanced Options**  
Training Period From 1982 To 2002

**Downscaling Region**  
Latitude 8.891 ~ -14.783  
Longitude 50.625 ~ 26.719

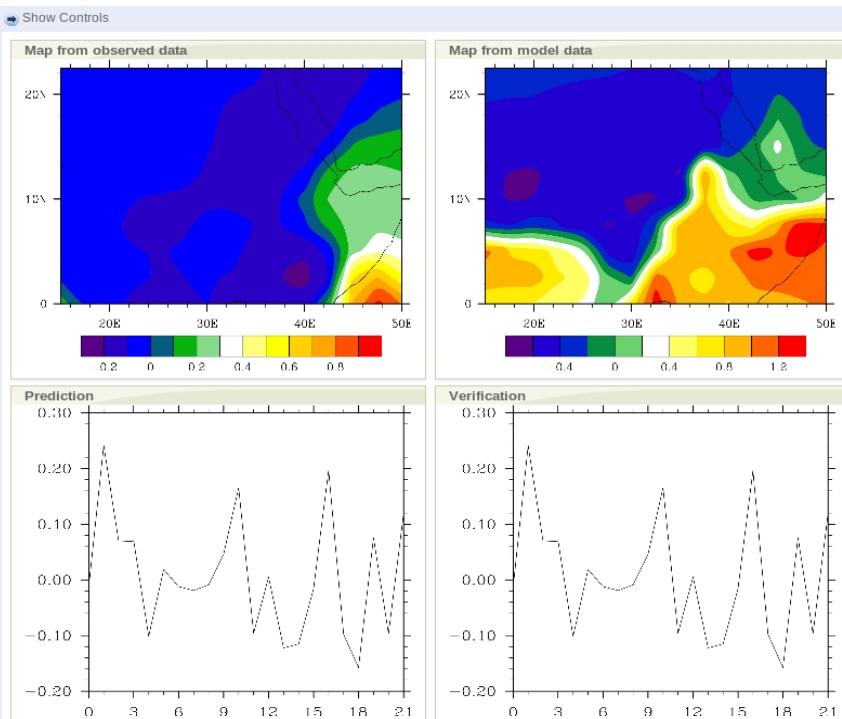
**Method**  
REG

Selecting stations for downscaling

- CLIK generates downscaling result based on user's selection with user's observation data and MME data which many institutions contributed
- User can recognize which stations data and MME data are reasonable for downscaling of specified area through the result

- User can upload/modify their own observation data for downscaling though CLIK
- CLIK provides customized downscaling feature, so user can select conditions for each downscaling

Downscaling result



Downscaling result for each station



# CLIK Data Library

| No  | Provider | Economy           | Variables  | Model Designation                       | SST Specification (Hindcast/Forecast)      | Ensemble | Data     |
|---|----------|-------------------|--|---|--|----------|----------|
| 1   | BCC      | China             | PREC T850 Z500                                     | NCC CGCM T63L16                         | Predicted SST/ Predicted SST               | 8        | Download |
| <div style="background-color: #e0e0e0; padding: 5px;"> <b>Variables</b> <input type="radio"/> PREC <input checked="" type="radio"/> T850 <input type="radio"/> Z500<br/> <b>Mode</b> <input checked="" type="radio"/> FORECAST <input type="radio"/> HINDCAST<br/> <b>Month</b> <input type="radio"/> JAN <input type="radio"/> FEB <input type="radio"/> MAR <input checked="" type="radio"/> APR <input type="radio"/> MAY <input type="radio"/> JUN <input type="radio"/> JUL<br/> <input type="radio"/> AUG <input type="radio"/> SEP <input type="radio"/> OCT <input type="radio"/> NOV <input type="radio"/> DEC<br/> <b>Years</b> From <input type="button" value="2008"/> To <input type="button" value="2009"/><br/> <b>Type</b> <input checked="" type="radio"/> NetCDF <input type="radio"/> ASCII         </div> |          |                   |  |   |  |          |          |
|   |          |                   |  | <input type="button" value="Download"/> |  |          |          |
| 2   | COLA     | U.S.A.            | T2M PREC SLP T850 U850 V850 U200 V200 Z500 OLR     | COLA AGCM v2.2.5 T63L18                 | OISSTv2/ IRI SST Forecast                  | 10       | Download |
| 3   | CWB      | Chinese Taipei    | T2M PREC SLP T850 U850 V850 U200 V200 Z500         | CWB T42L18                              | OPG SST from CWB/ OPG SST from CWB         | 10       | Download |
| 4   | GCPS     | Republic of Korea | T2M PREC SLP T850 U850 V850 U200 V200 Z500         | GCPS T63T21                             | KMA/SNU SST Forecast/ KMA/SNU SST Forecast | 4        | Download |
| 5   | GDAPS_F  | Repulic of Korea  | T2M PREC SLP T850 U850 V850 U200 V200 Z500         | GDAPS T106L21                           | KMA/SNU SST Forecast/ KMA/SNU SST Forecast | 20       | Download |
| 6   | HMC      | Russia            | T2M PREC SLP T850 Z500                             | SL-AV 1.125 x 1.406, L28                | Persistent SST/ Persistent SST             | 10       | Download |
| 7   | IRIF     | U.S.A.            | T2M SST PREC SLP T850 U850 V850 U200 V200 Z500 OLR | ECHAM4.5 T42L19                         | Observed SST/ Predicted SST                | 24       | Download |
| 8   | MGO      | Russia            | T2M SST PREC SLP T850 U850 V850 Z500 OLR           | MGOAM2 T42L14                           | Observed SST/ Persistent SST               | 10       | Download |
| 9   | MSC_GEM  | Canada            | PREC T850 Z500 T2M SLP U850 V850 U200 V200         | RPN GEMCLIM v3.2.1 2.0 x 2.0, L50       | Persistent ERA40 SST/ Persistent CMC SST   | 10       | Download |
| 10  | MSC_GM2  | Canada            | PREC T850 Z500 T2M SLP U850 V850 U200 V200         | CCCma AGCM2 T32, L10                    | Persistent ERA40 SST/ Persistent CMC SST   | 10       | Download |
| 11  | MSC_GM3  | Canada            | PREC T850 Z500 T2M SLP U850 V850 U200 V200         | CCCma AGCM2 T63, L32                    | Persistent ERA40 SST/ Persistent CMC SST   | 10       | Download |
| 12  | MSC_SEF  | Canada            | PREC T850 Z500 T2M SLP U850 V850 U200 V200         | RPN SEF T95, L27                        | Persistent ERA40 SST/ Persistent CMC SST   | 10       | Download |
| 13  | NASA     | U.S.A.            | T2M SST PREC SLP T850 U850 V850 U200 V200 Z500 OLR | NASA-GSFC 2.5 x 2.0, L34                | Predicted SST/ Predicted SST               | 8        | Download |
| 14  | NCEP     | U.S.A.            | T2M SST PREC SLP T850 U850 V850 U200 V200 Z500 OLR | NCEP CFS T62L64                         | Predicted SST/ Predicted SST               | 15       | Download |
| 15  | NIMR     | Repulic of Korea  | PREC SLP T850 U850 V850 U200 V200 Z500             | METRI AGCM 5.0 x 4.0, L17               | Persistent OISST/ Persistent OISST         | 10       | Download |
| 16  | POAMA    | Australia         | T2M SST PREC SLP T850 U850 V850 U200 V200 Z500 OLR | POAMA 1.5 T47L17                        | Predicted SST/ Predicted SST               | 15       | Download |

*Model list and hindcast data download*

- User can find the dataset period, the list of available variables, the model designation and the ensemble number of each dynamical model

- View the all available information for the model provider of APCC and admin can update the model dataset through the updating functionality in this page

- Registered user also are able to download hindcast data of individual models



# APCC Data Service System

<http://cis.apcc21.net>

Login | Register | Contact Us

## APCC Data Service System (ADSS)

The APEC Climate Center Data Service System was developed for real-time climate monitoring and provision of digital data service to APEC member economies. This system underscores the role of APCC in playing an important role as a hub of climate data and services in the region. The main objective of the ADSS is to provide a comprehensive set of models and observational climate data to various researchers and users to establish a scientific basis for climate prediction. ADSS also aims to monitor climate information using near real-time in-situ observation and prediction data in a standardized and accessible format for various users.

### Currently Available Data Set

NCEP  
NCEP\_SFC  
NOAA\_OLR  
TMI  
QuikScat  
GPCP  
GHCN  
UD  
MME  
INDIVISUAL MODEL

[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)  
[Info](#)

[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)  
[OPeNDAP](#)

[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)  
[FTP](#)

**OPeNDAP Service**  
allows user to cut and  
slice data as needed

**Conventional FTP**  
Service is also provided

Today 15 Total 32328



APEC Climate Center  
1463 U-dong Haeundae-gu Busan 612-020 Korea. Tel:82-51-745-3900  
Fax:82-51-745-3949 E-mail:cis@apcc21.net Copyright(c) APCC All rights reserved.



# Tracking Environmental Changes: virtual collaborations



## TRACE

Tracking Climate and Environmental Changes

[About us](#)[Resources](#)[Guest Articles](#)[Trends](#)[You Report](#)[Sitemap](#)

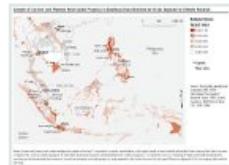
APCC Virtual Center

Guest Article



Impacts of weather on dengue incidence in Singapore  
Yien Ling, Hii  
Doctoral student  
Umeå University

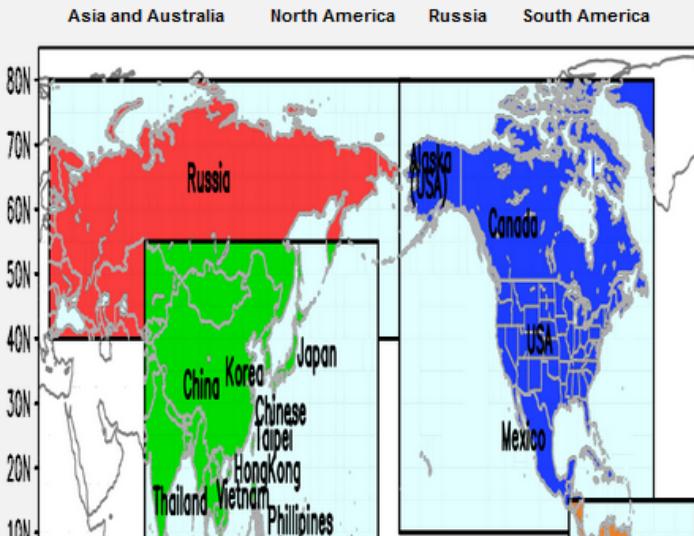
Trends



Publish the most unexpected and amazing climate change related pictures around you.  
 YOU

## Climate Change Projections in APEC Regions & Economies

- Project Summary
- Tables



Australia  
Brunei Darussalam  
Canada  
Chile  
China  
Hong Kong  
Indonesia  
Japan  
Korea  
Malaysia  
Mexico  
New Zealand  
Papua New Guinea  
Peru  
Philippines  
Russia  
Singapore  
Chinese Taipei  
Thailand  
USA  
Vietnam

<http://trace.apcc21.net>

### News / Events

● [DAILY YOMIURI]Massive tsunami 'caused by quake's shallow focus'  
The massive tsunamis following the Tohoku Pacific Offshore Earthquake on Friday might have been caused by the tremor's extremely Mar 13, 2011

● [asahi.com]Very strong quake rattles Japan  
Editor's note: We will update our earthquake news as frequently as possible on AJW's Facebook pageMar 11, 2011

● [Joongang Daily]Heavy snow continues to cause trouble along coast  
First it was Gangwon, now it's the southeastern part of the country that is struggling with heavy snowfall, as major Feb 16, 2011

● [CNN]47 dead from flooding in the Philippines; 1.5 million affected  
The death toll from flooding in the Philippines has climbed to 47, the country's national disaster

APEC Climate Center





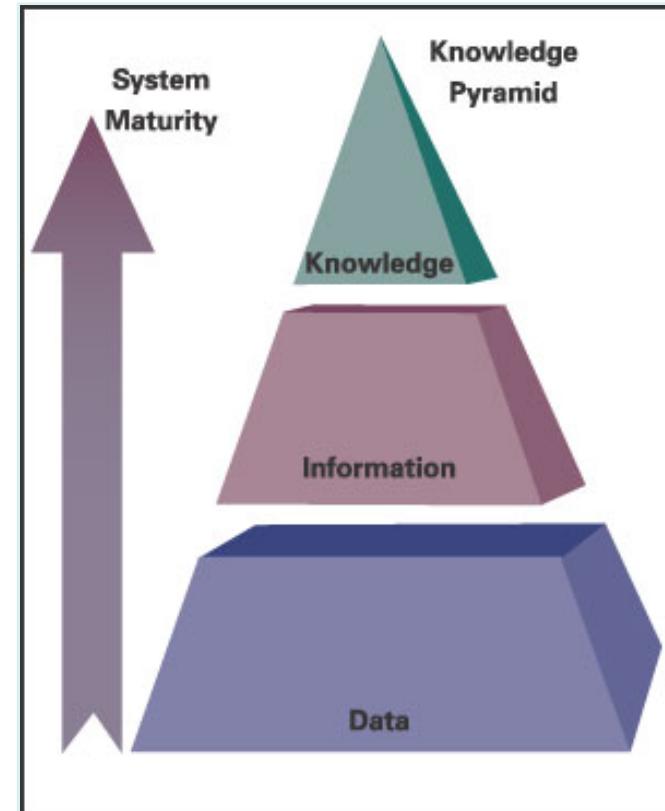
So far,





Step forward

Brings economies together to discuss ways and do things to improve economic well being of members through better **utilization** of climate information





# Climate Change Information Services

## Expanding current service area into Climate Change (in collaboration with KMA)

- Regional Climate Change data and products  
(CORDEX-ASIA + ...)
- Data services + CLIK feature for a few core outputs
  - ✓ Huge volume compared to operational seasonal forecasts
- ~ 100TB (online), later in 2011



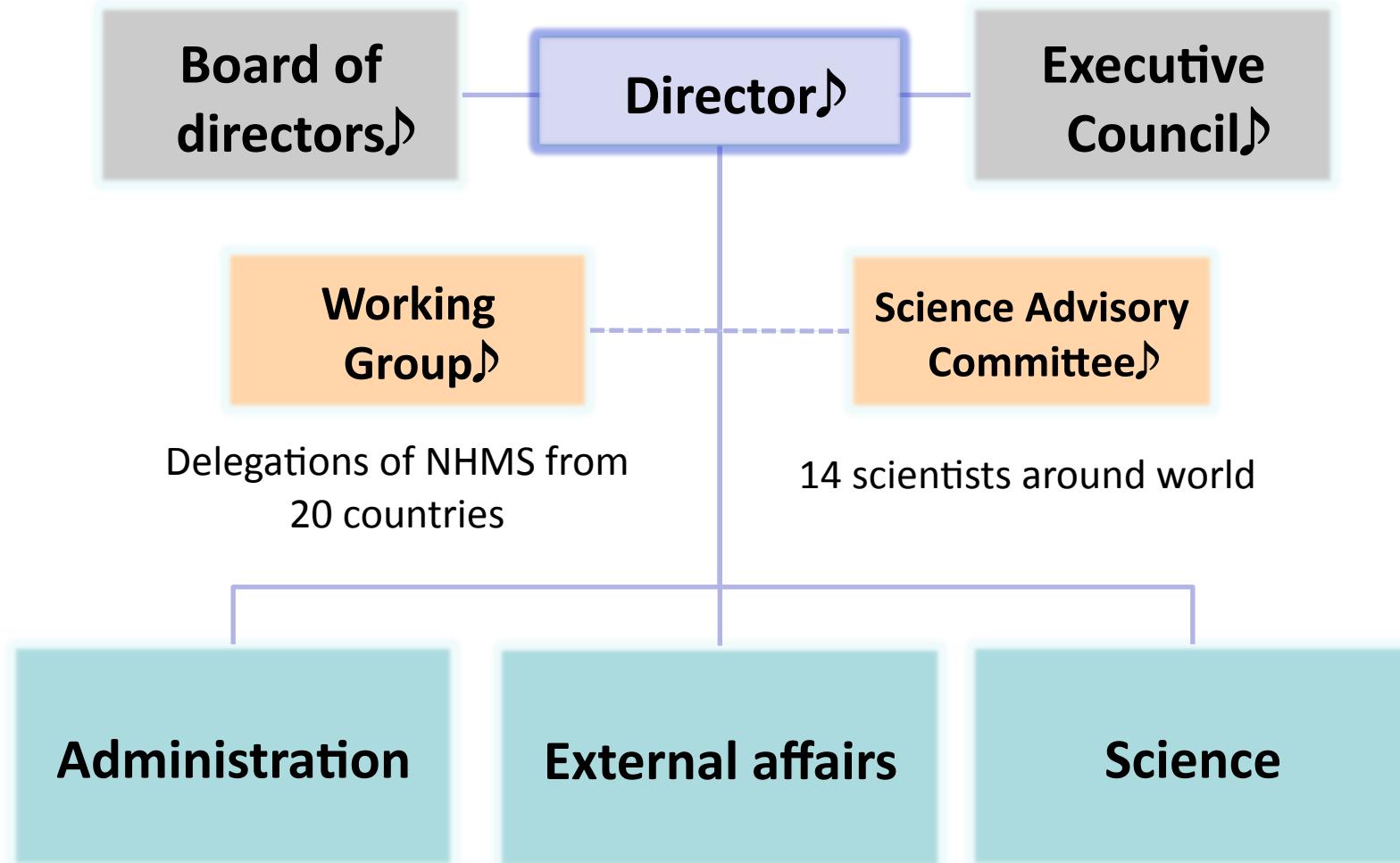
# Thank You.

We are here





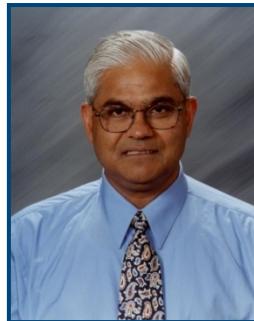
# Structure





# Science Advisory Committee

USA



IGES/George Mason Uni.  
Prof. Jagadish Shukla

Korea



SNU  
Prof. In-Sik Kang

Australia



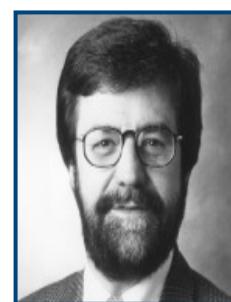
Dr. Oscar Alves  
BMRC

Australia



Prof. Will Steffen  
ANU

Brazil



Dr. Antonio Divino Moura  
INMET

China



Prof. Hui-Jun Wang  
IAP

China



Prof. Yihui Ding  
CMA

Italy



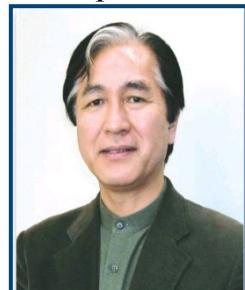
Dr. Antonio Navarra  
INGV

Japan



Prof. Masahide Kimoto  
UT

Japan



Prof. Toshio Yamagata  
UT

Russia



Dr. Vladimir Kattsov  
MGO

USA



Prof. Bin Wang  
UH

USA



Prof. C. P. Chang  
NPGS

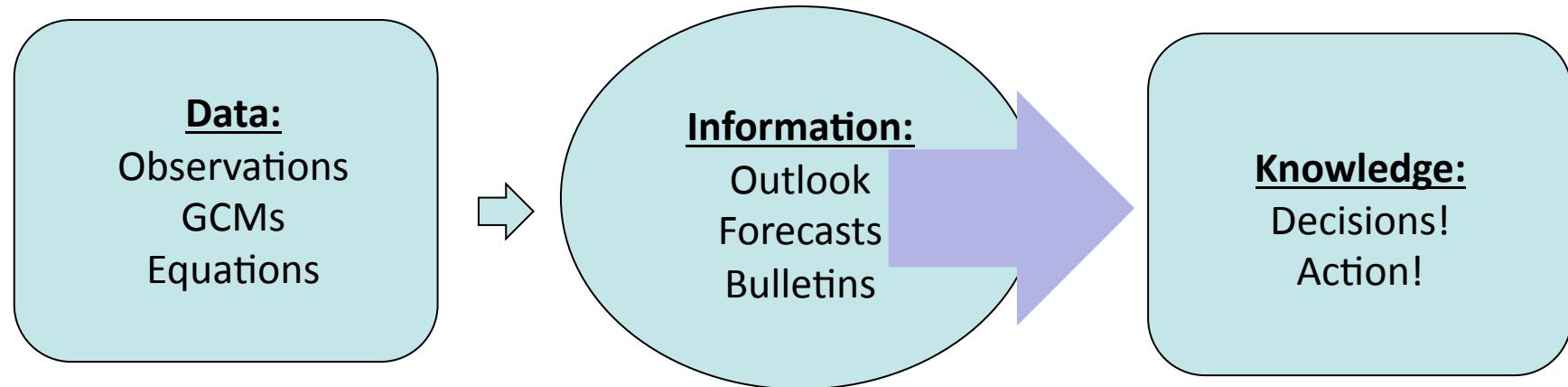
USA



Dr. Anthony Rosati  
GFDL



# Climate information to Climate knowledge



**Socioeconomic information**  
Regional, Sectoral  
.....

**Physical Information**  
Quality,  
Quantity, Format