
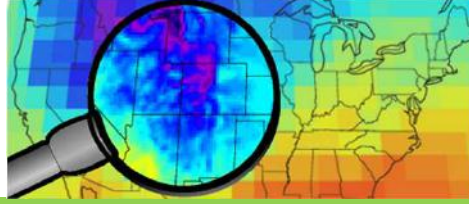




# Seamless Climate Service and Downscaling for Climate Change Adaptation

**Jaepil Cho**  
**2018/08/14**



## History of the APEC Climate Center

APEC Climate Network endorsed by ISTWG

APEC Climate Center endorsed by ISTWG and SOM

APEC Climate Center establishment

Public Organization


1999
2005

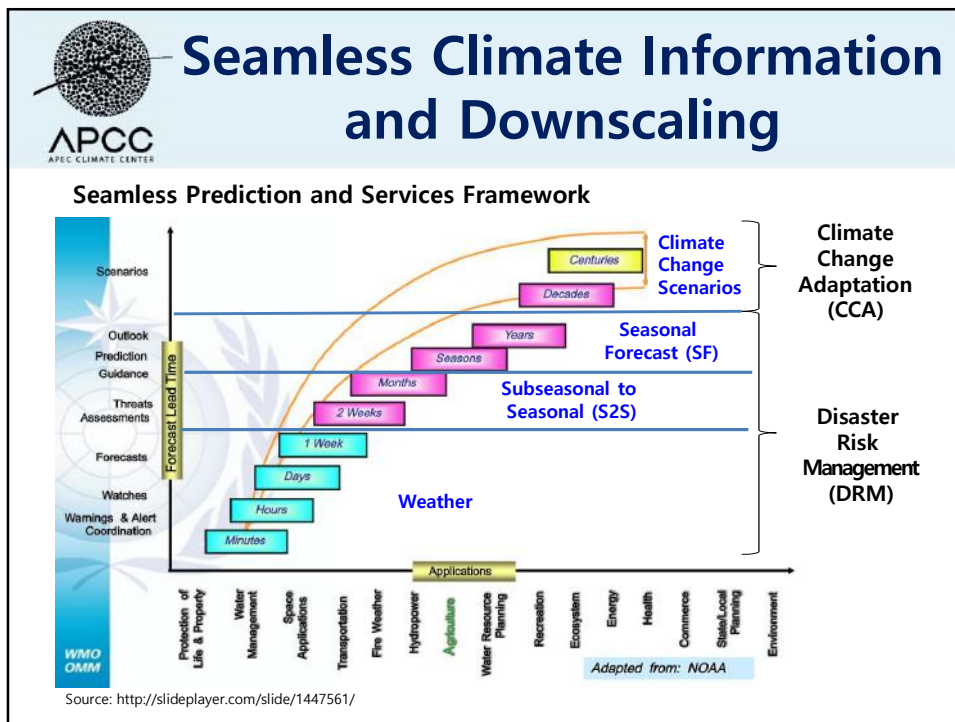
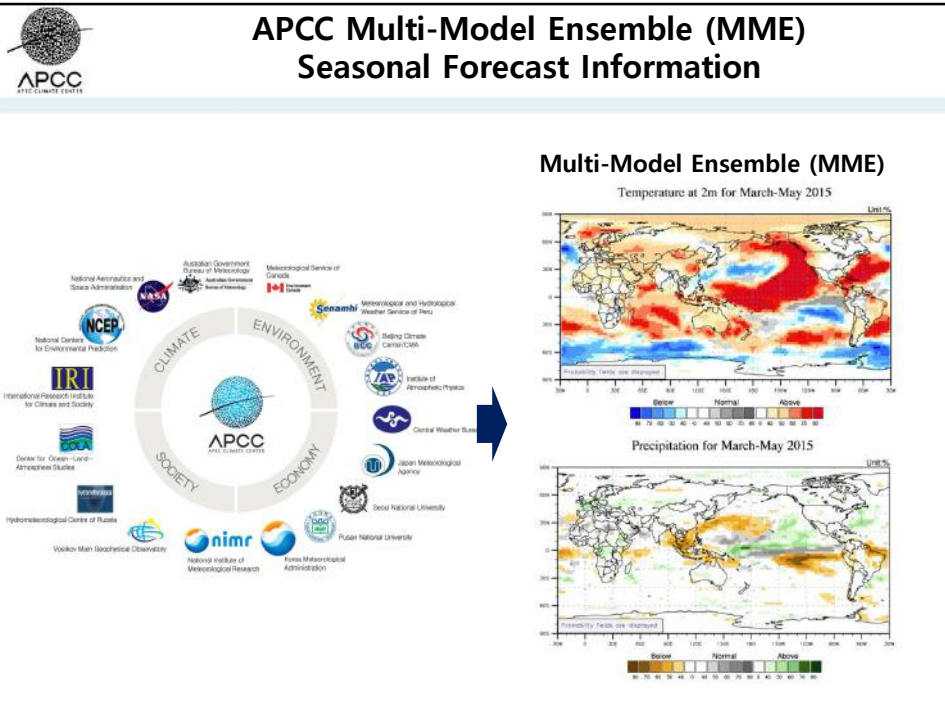
APEC Climate Center noted by STMM

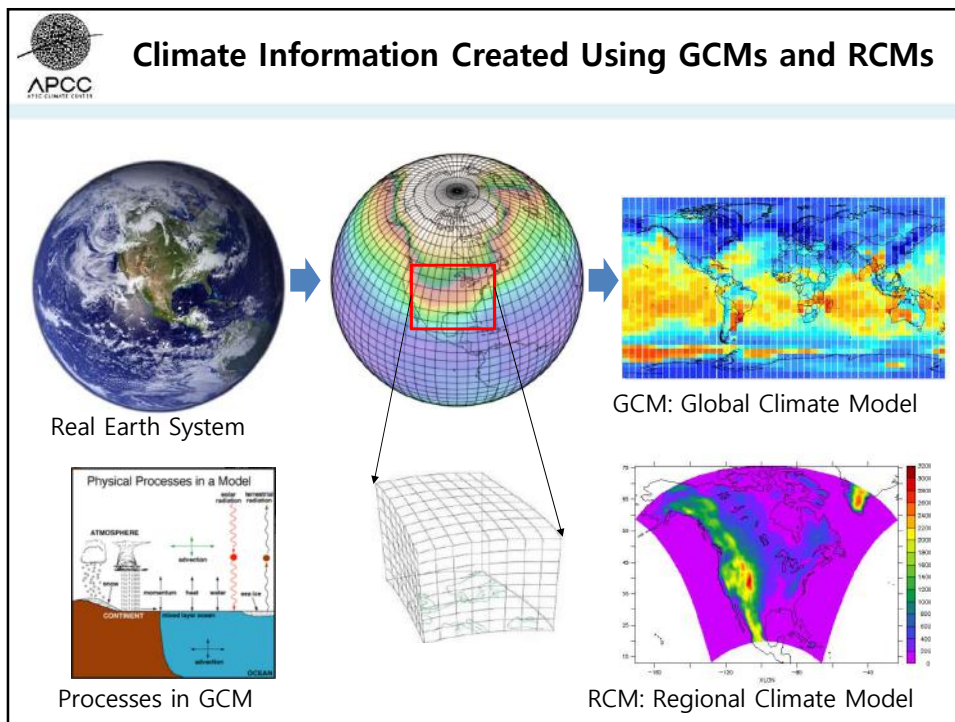
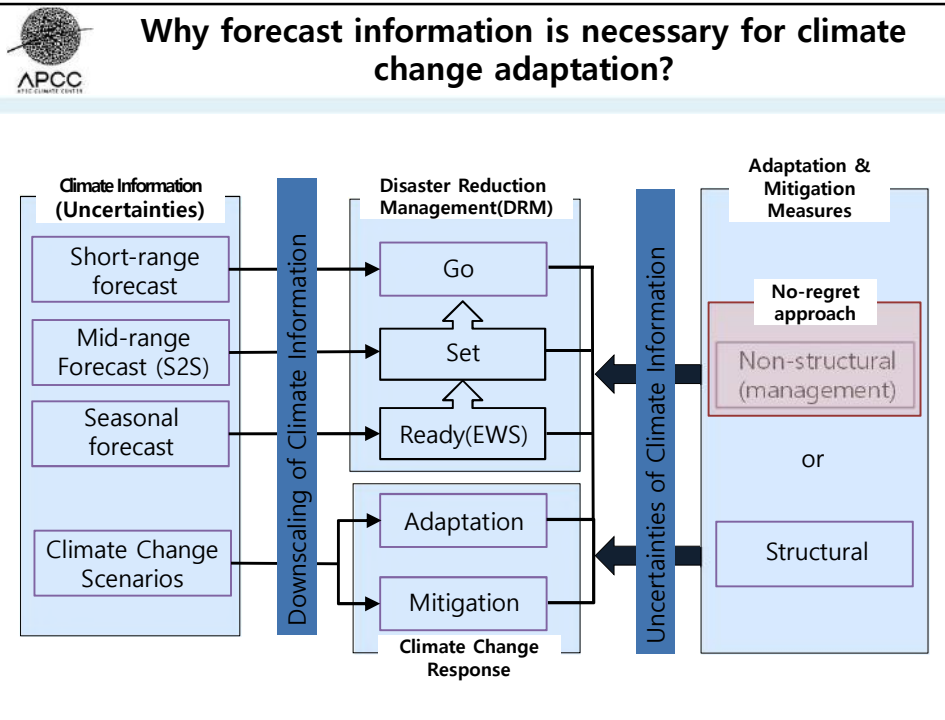
APEC Climate Center 10th anniversary

**2005 SOM 1 for the 17<sup>th</sup>  
APEC Ministerial Meeting Summary Report**

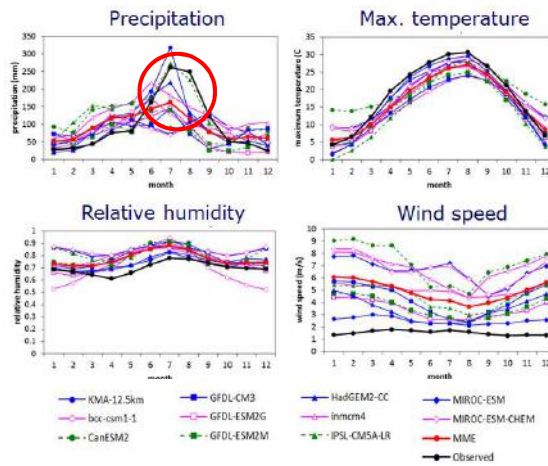
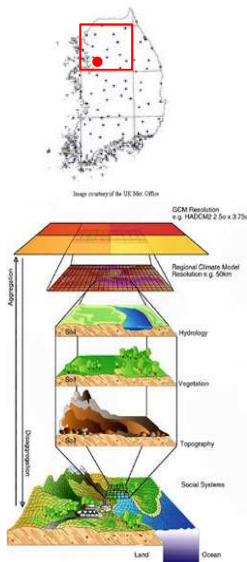
41. SOM concluded that this was an important decision made by the ISTWG and endorsed the establishment of the APCC.







## Necessary for spatial downscaling and bias-correction



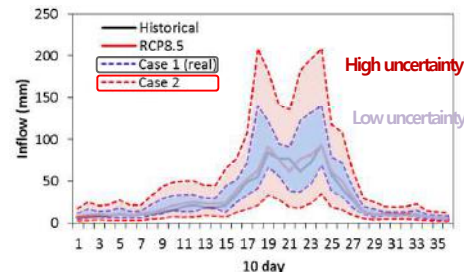
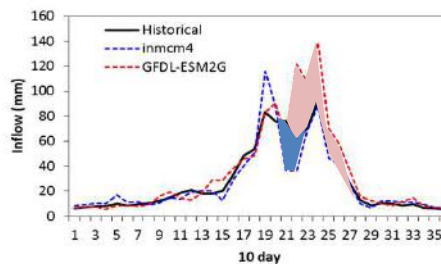
➔ Requires spatial downscaling and bias-correction

## Uncertainty in Future Projections of Climate Change

| Scenarios          | Inflow | % Change |
|--------------------|--------|----------|
| Historical         | 988.5  |          |
| RCP8.5: GFDL-ESM2G | 1198.0 | 21.2     |
| RCP8.5: Inmcm4     | 953.7  | -3.5     |

- How decisions can be utilized when **opposite directions** are projected in the same watershed?
- Even though **MME-based projection** shows same projection, what kind of additional information should be provided for decision-making?

**Uncertainty of future projections**



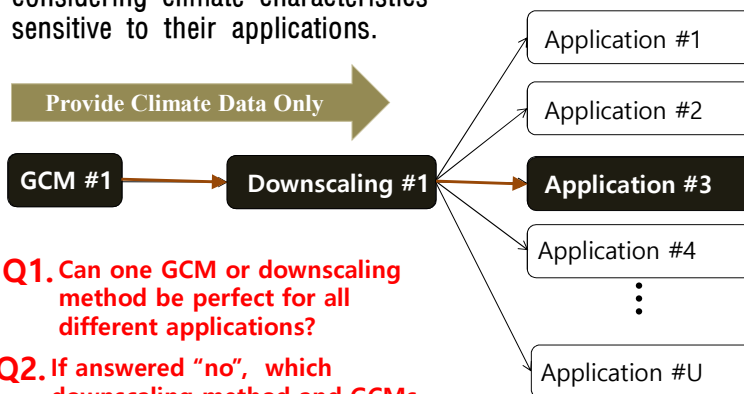


## User-centered Downscaling Platform: AIMS



## Provider-centered Climate Data Service

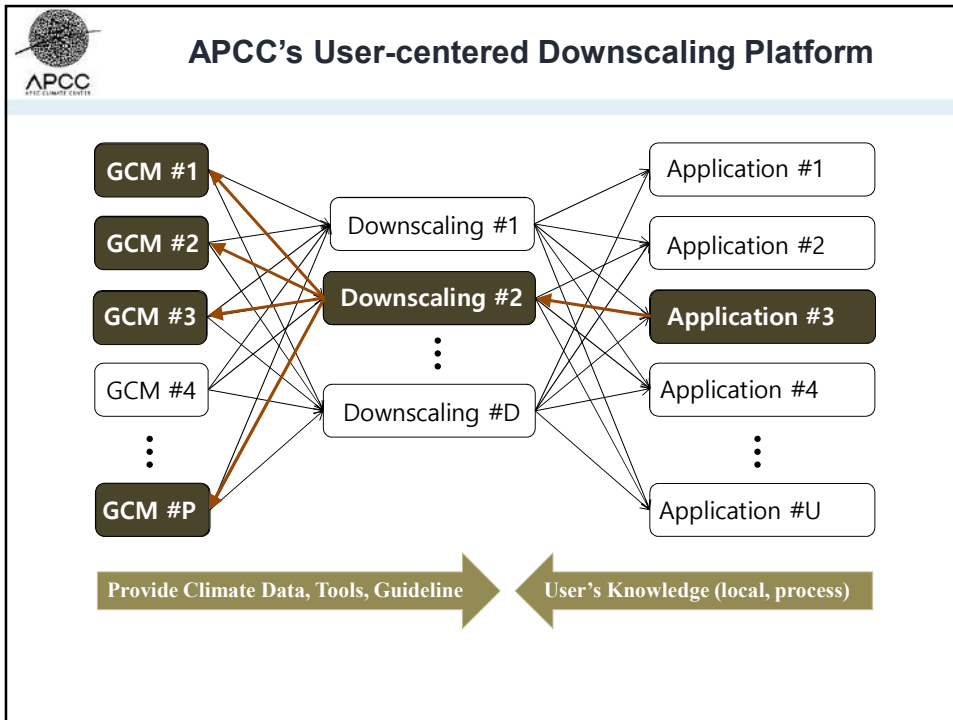
- ❖ Provider gives climate data and users use it without considering climate characteristics sensitive to their applications.



**Q1. Can one GCM or downscaling method be perfect for all different applications?**

**Q2. If answered "no", which downscaling method and GCMs are appropriate for a specific application?**

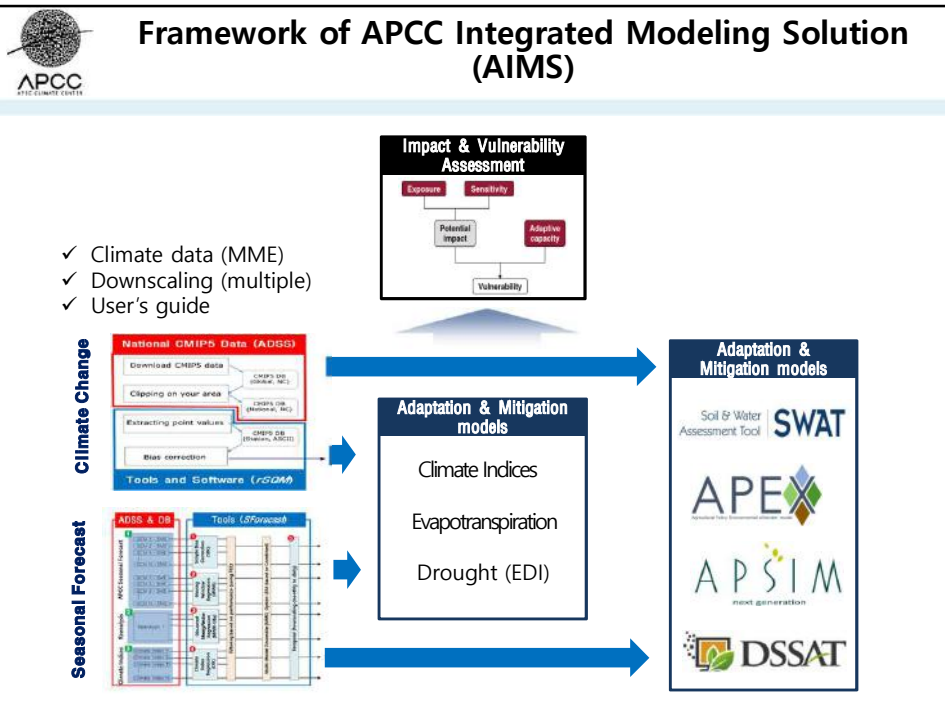
**Q3. Is there any user-centered climate service?**



**APCC Integrated Modeling Solution (AIMS)**

- Download: [aims.apcc21.org](http://aims.apcc21.org)
- User interface

The user interface is shown in two screenshots. The left screenshot shows a 'Sign in' window with fields for 'Email address', 'Email', 'Password', and 'Remember me', along with a 'Sign in' button and links for 'Sign up' and 'Forgot your password?'. The right screenshot shows the main 'New Project' interface. It features a navigation bar with a home icon, a gear icon, and a user profile icon. The main content area is titled 'New Project' and includes a section 'Please select a climate data type:' with a list of options: 'Climate Change' (Climate change data type), 'Seasonal Forecast' (Seasonal forecast data type), and 'Climate Change with Sample Data' (This project setup includes Korean peninsula observation data). A 'News' section on the right lists several releases: 'Version 1.1.2 is released' (2017/12/28), 'Version 1.1.1 is released' (2017/12/22), 'Version 1.1.0 is released' (2017/12/20), 'AIMS online forum is now open. All your questions about AIMS can be posted here' (2017/12/19), 'Version 1.0.0 (beta) is released' (2017/12/1), and 'Version 0.8.0 (beta) is released' (2017/08/15). The APCC logo is visible in the bottom right corner.



## 2018 APEC Climate Center Training Program

### User-oriented Statistical Downscaling of Climate Change Scenario for Agriculture and Water Resources

**Provider-centered**

*What is your favorite GCMs and downscaling methods?*

**User-centered**

**using AIMS**



## Topics and financial support

| Sessions           | Contents  |
|--------------------|---|
| Lectures           | Understanding climate information (seasonal prediction and climate change scenario) and introduction to climate information produced by APCC  |
|                    | <b>Downscaling of climate change scenarios</b><br>- User interface and steps to using climate change scenario data<br>- Introduction to downscaling methods<br>- Case studies on using climate change scenario data |
| Practical Sessions | Introduction to APCC seasonal prediction and downscaling  |
|                    | <b>Producing downscaled climate change scenario data for each nation and user-oriented analysis of climate characteristics</b><br><b>Assessment of climate change impact on drought using EDI</b>                   |
| Presentation       | Participant's presentation based on the results of the lecture and the practical session  |

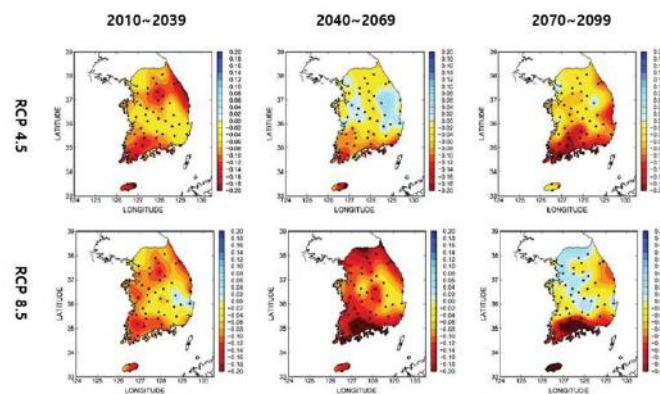
### Financial Support

- Airfare, accommodation and per-diem will be supported by APCC



## Expected output from the training workshop

- Downscaled climate change projections on their own observation stations (29 GCMs, 2 downscaling methods)
- Impacts on drought characteristics (intensity, duration, frequency) on their own countries as below
- Research papers (if participants want)



Intensity changes





## APCC's Capacity Building Platform

### Research Level

#### Young Scientist Support Program (YSSP) (3 month)

- Scientists
- 3-months
- Climate and Application Sectors
- Learn technical know-how related to horizontal integration including downscaling
- Need to collaborate with departments in each nation

#### Downscaling Training Program (1 week)

- 2017: User-oriented Statistical Downscaling of Climate Information in Agriculture and Water Resources



## 2018 APEC Climate Center Downscaling Training Program

- **Period:** Monday 15th – Saturday 20th October 2018
- **Location:** APEC Climate Center, Busan, Korea
- **Topic:** User-oriented Statistical Downscaling of Climate Change Scenario for Agriculture and Water Resources
- **Target Applicants:** Scientists and working level staff from national research institutes in agriculture and/or water-related fields in developing countries, preferably APEC economies
- **Closing Date:** Friday 31st August 2018 by 23:59 (Korea Standard Time)
- **Application Form & Detailed Information:** [http://apcc21.org/notice/apccnewsView.do?lang=en&bbsId=BB\\_SMSTR\\_000000000016&nttId=5664](http://apcc21.org/notice/apccnewsView.do?lang=en&bbsId=BB_SMSTR_000000000016&nttId=5664)
- **Contact Information:** [daeinkang@apcc21.org](mailto:daeinkang@apcc21.org)



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# Thank You!