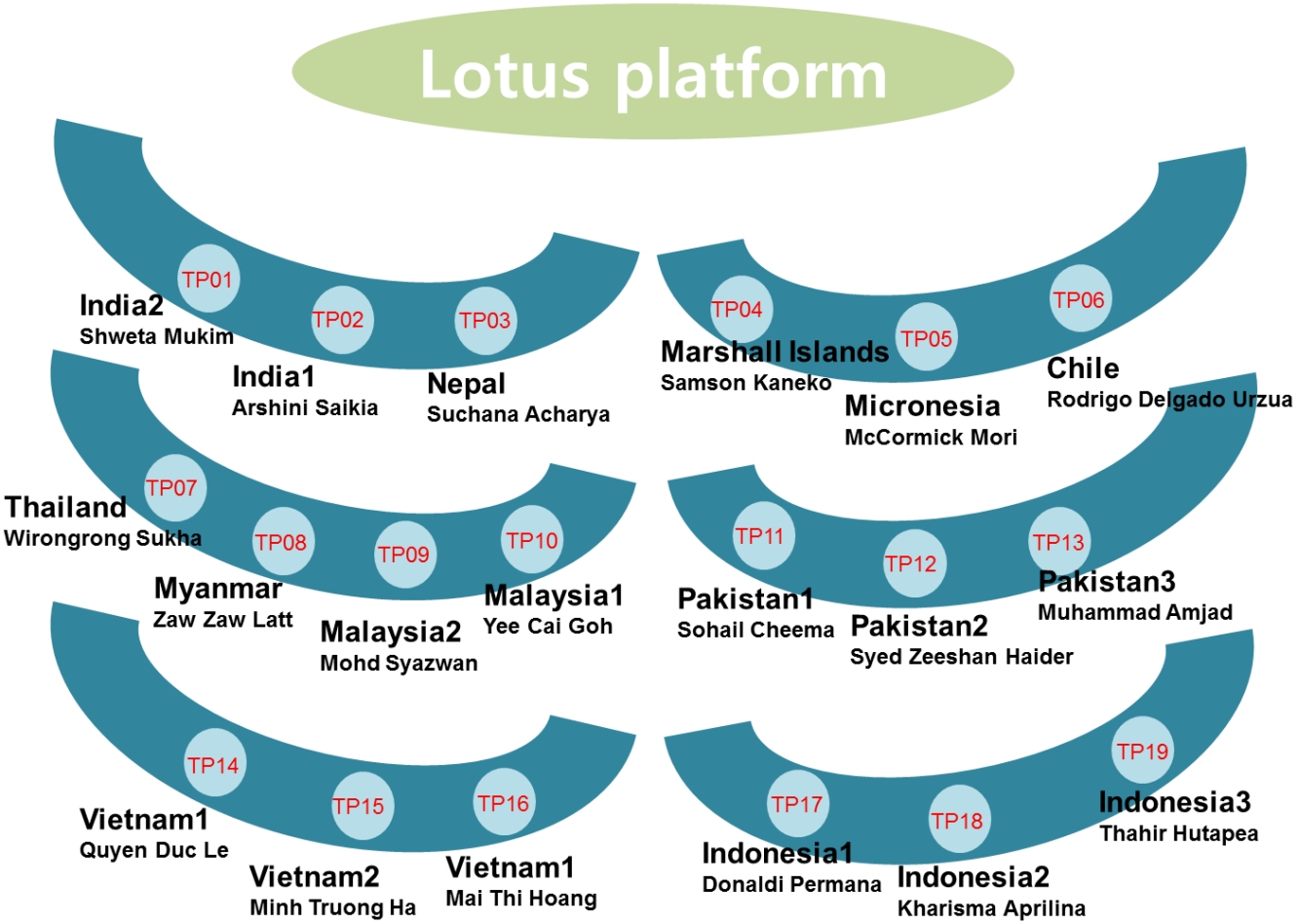
APCC Training Program on
"Generation of regional climate data derived from statistical downscaling techniques"

Hyung-Il Eum

APEC Climate Center (APCC)

Attending countries

➢ **18 people from 10 countries**



Program

Date	Morning (09:00~12:15)	Afternoon (13:30~18:00)	Evening (18:30~20:00)
12.7(Mon)	- Quick R start ‣ by Dr. Moosup Kim	- SDS practice 1 : Weather generator ‣ by Dr. Moosup Kim	Welcome Dinner
12.8(Tue)	- Model Output Statistic (MOS) ‣ by Dr. Bradfield Lyon	- Climate Prediction Tool ‣ by Dr. Bradfield Lyon	Understanding of Korean Culture
12.9(Wed)	- Fundamental Statistics ‣ by Dr. Jaepil Cho	- SDS practice 2 : Data analysis ‣ by Dr. Jaepil Cho	LAB
12.10(Thu)	- Introduction of Statistical Downscaling ‣ by Dr. Hyung-Il Eum	- SDS practice 3 : Long-term trend preserving statistical downscaling techniques ‣ by Dr. Hyung-Il Eum	LAB
12.11(Fri)	- Applications of Statistical Downscaling Techniques ‣ by Dr. Hyung-Il Eum - Participant Presentation I	- Participant Presentation II - Closing Ceremony	
12.12(Sat)	Field Trip		

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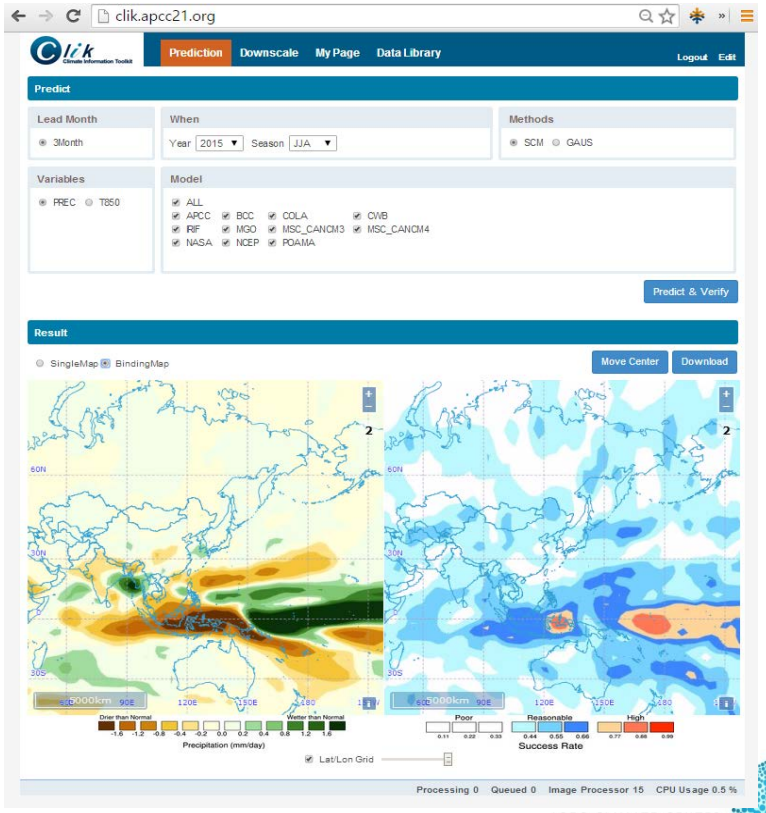
Session 1 (8/22)

- **Introduction of R language (Instructor: Dr. Kim)**
  - Installation of R
    - R studio
  - Intrinsic functions frequently used

- **Application of weather generator**
  - Understanding the structure of R program
  - Generating downscaled data at multi-site
    - Precipitation, maximum and minimum temperatures
- **Downscaling of seasonal forecasting**

Session 2 (8/23)

- **CLimate Information toolKit (CLIK)**
  - Instructor: Jin Ho Yoo
- **Seasonal forecasting tool**
- **Introduction of climatology**



Session 3 (8/24)

- **Application of quantile mapping (Instructor: Dr. Cho)**
  - Bias-correction
    - Quantile mapping
  - Bias-correction/spatial disaggregation
    - Generation of downscaled CMIP5 projections

- **Donwscaling ensemble seasonal forecastings**
  - Moving window approach
- **Data analysis**
  - Extreme climate indices
  - Box-plot, trend, etc

Session 4 (8/25)

- **Introduction of statistical downscaling**
  - Why & How
- **Basic statistics**
  - Probability
    - Probabilistic variables
    - Distributions
  - Quantiles
- **Climate change projections**
- **Long-term trend preserving statistical downscaling techniques**

Last day (8/26)

- **Applications of statistical downscaling methods**
  - Agricultural and hydrologic models
  - Reservoir operations
  - Fire early warning system
  - Drought forecasting
- **Presentation**
  - Essential part to practice what you have learn
  - Actively utilizing Lab (6:00-8:00 PM)

Presentation

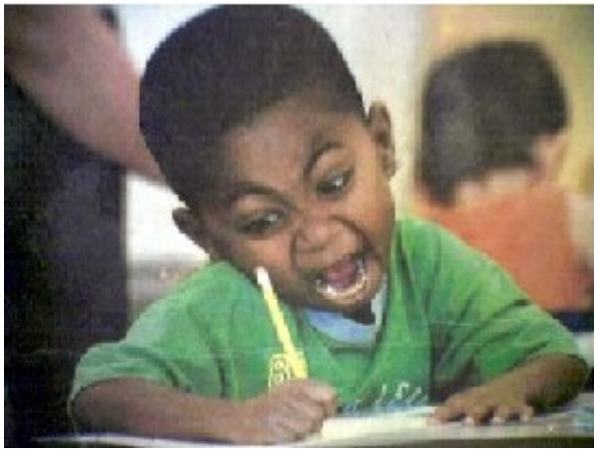
- **Each person' work**
  - With contents produced by this training program
- **Contents necessary for presentation**
  - Motivation
    - Brief talk about characteristics for the area of interest
  - Climate characteristics
    - E.g. monthly average, variance
  - Results
    - Analysis on downscaled data
    - Climate change
  - Conclusions

What can you bring from the TP?

- **Understanding Statistical downscaling techniques**
- **Practicing CLIK**
- **R language**
- **R programs**
  - Weather generator
  - MME seasonal forecast downscaling
  - Long-term trend preserving statistical downscaling
  - Data analysis
- **Downscaled data**
  - Your own work at stations of your interest

Please help me !!

- **Hard work!**



- **Attention to instructors**

Please help me !!

- **Remain seated please !!**

- **Do not bring foods in Lotus…Please!!**

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