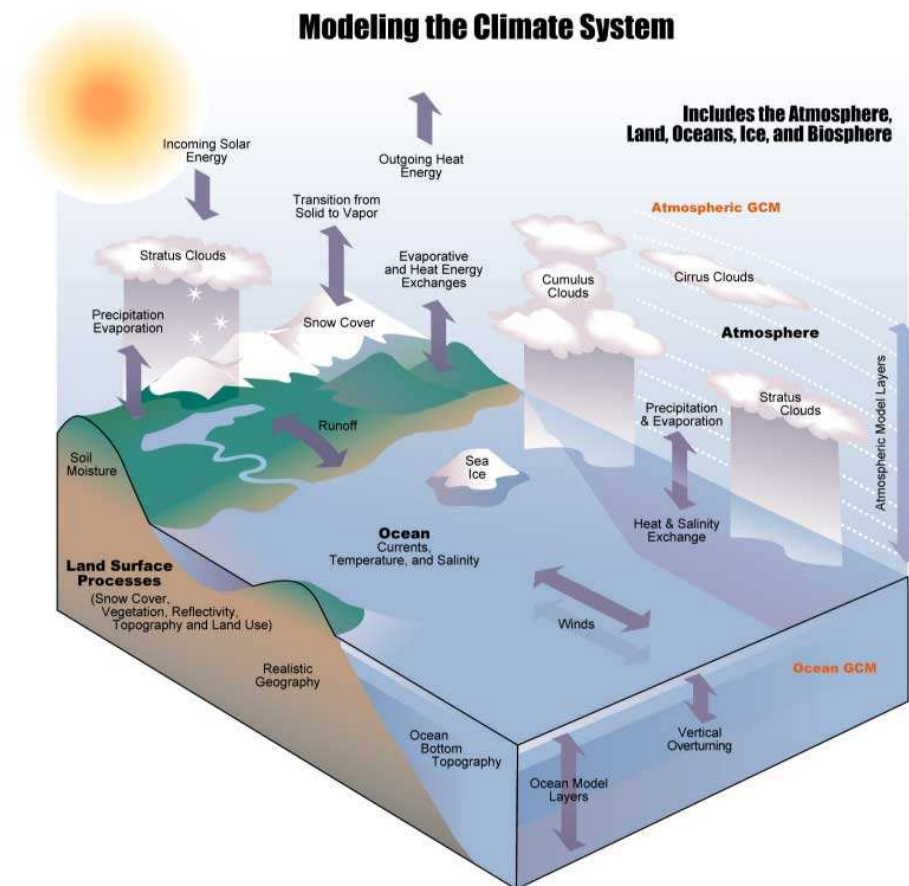


RA V Seminar, Honiara, Solomon Islands, 1-4 Nov 2011



Kian Hoe CHEW
Climate Science
Dept,
Meteorological
Service
Singapore



Our Role in Climate Service

- Provide climate services and support to ministries and public agencies in Singapore
- Develop capacity for regional climate modeling
- Develop capacity to understand the climate impacts due to climate change or natural variability over Singapore and region



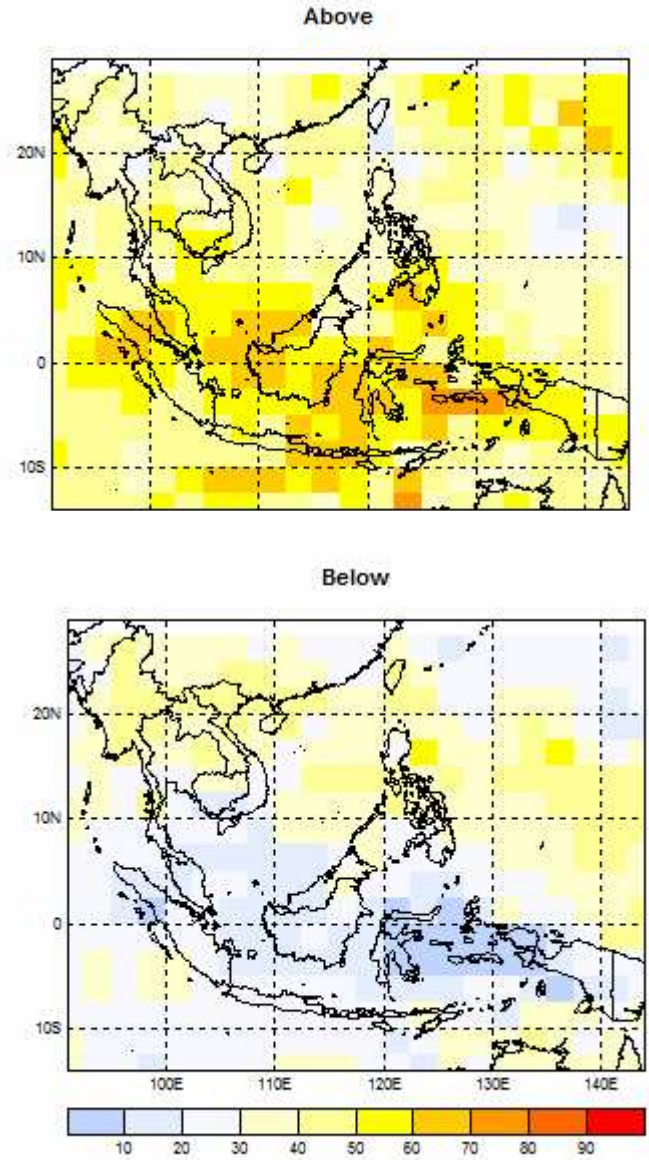
Our Role in Climate Service

- Develop and tailor climate prediction products to the needs of our users
- Carry out in-house research to understand local weather and climate
- Collaborate with established climate centres on projects to enhance understanding and prediction of local and regional climate



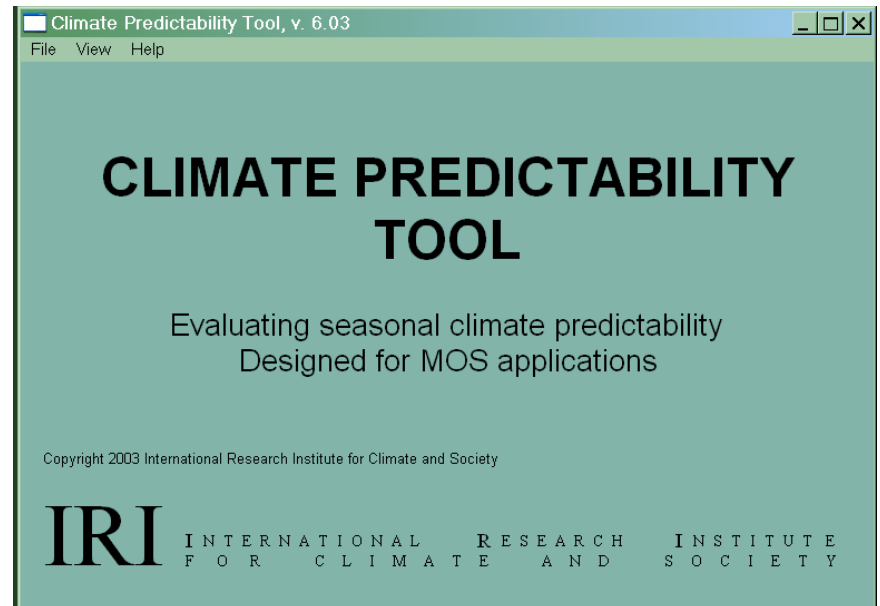
Short term Climate Prediction

- Climate forecasts beyond 2 weeks and more
- Techniques available depend on GCMs run by established climate centres or historical SSTs.



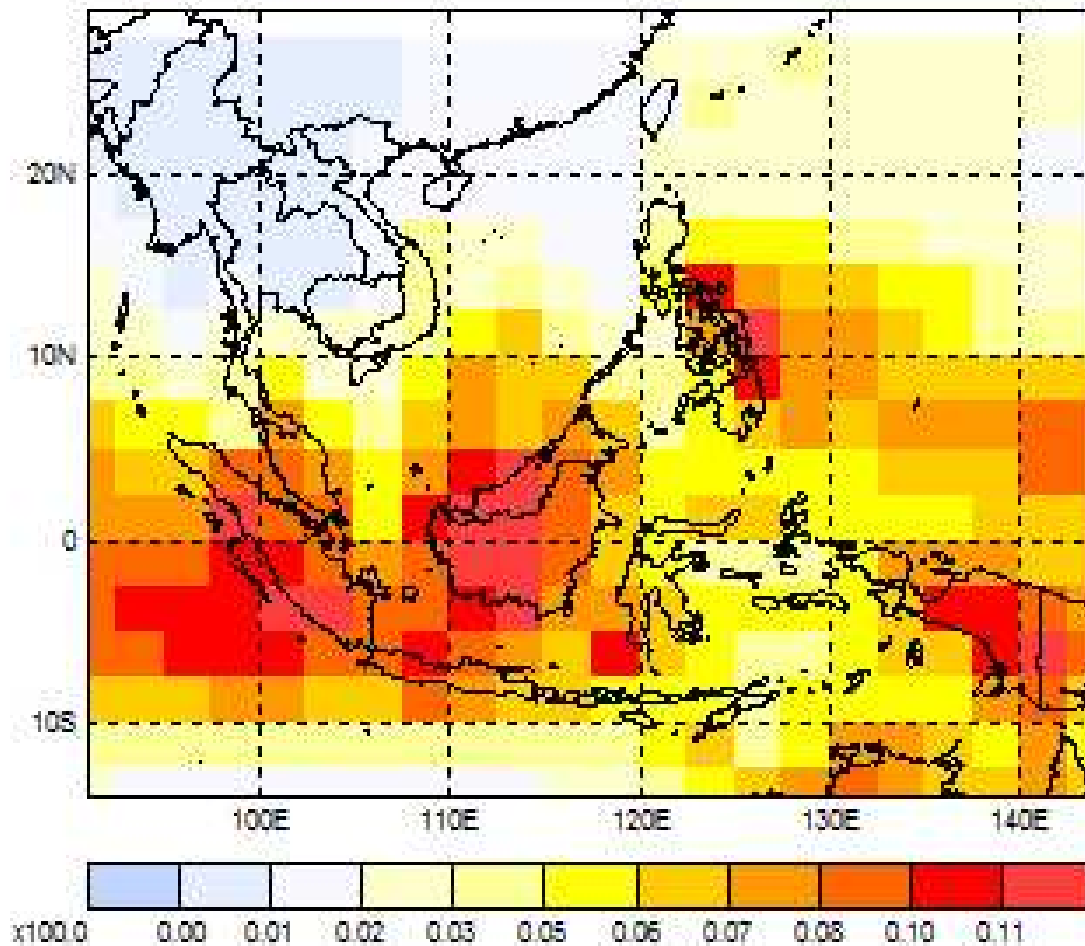
Short term Climate Prediction

- Statistical-based tools e.g. Climate Prediction Tool (CPT) developed by IRI(Columbia, USA), Seasonal Climate Outlook in Pacific Island Countries (SCOPIC) by BOM (Australia) , produced rainfall amount and rain-day freq for next 6 months
- Use Asia Pacific Climate Center (Korea) web-based toolkit to produce Multi-Model Ensemble forecast for Singapore



ASEAN Climate Forecast

Rainfall rate forecast (mm/day) for NDJ 2011,
Forecasts



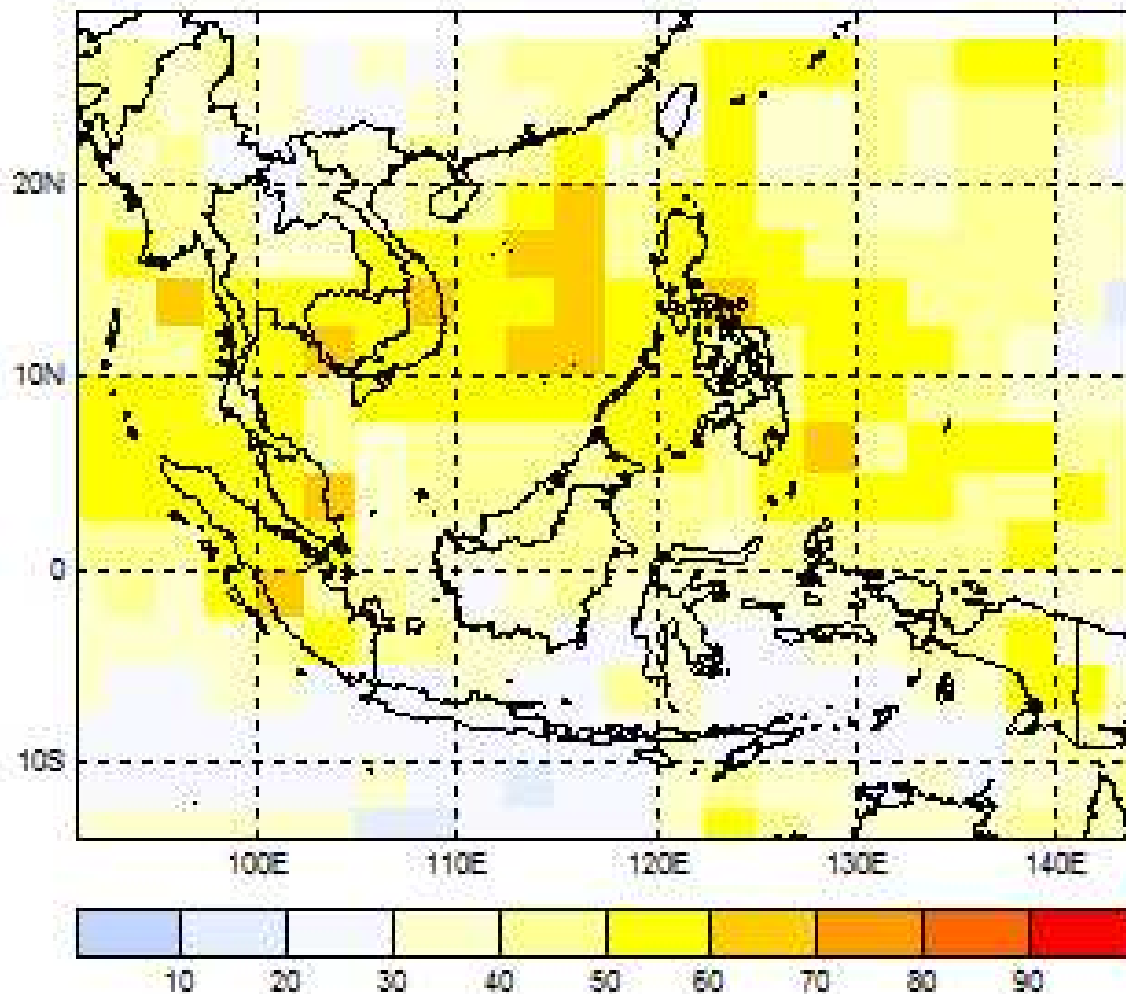
Collaboration effort agreed during IRI/ Asean Specialised Meteorological Centre (ASMC) workshop in Singapore, May 07 using CPT.

Available on ASMC website. ASMC is hosted by Met Service Singapore

ASEAN Climate Forecast

Probabilistic Forecast of Rainfall for NDJ 2011

Above



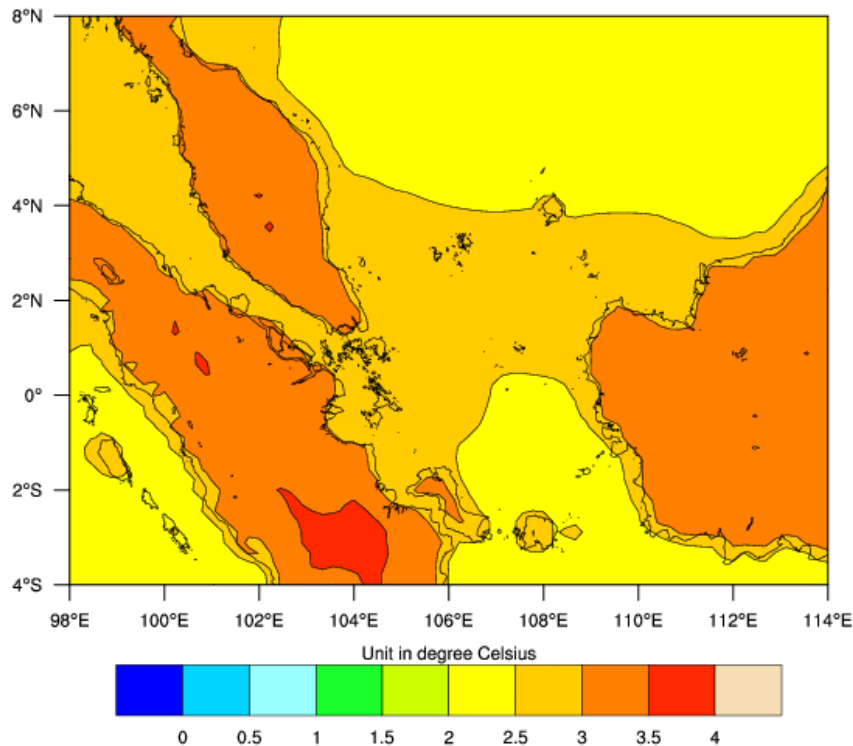
- **Above normal rainfall** over most part of Southeast Asia (between 0 and 20N) this coming season
- Available on ASMC website

Scenario-based climate projections

- Use UK Hadley Centre PRECIS model to study climate change impacts over Singapore and region
- Change in Mean Temp and Rainfall of PRECIS driven by Echem and HadCM3Q boundary data with 25 km resolution

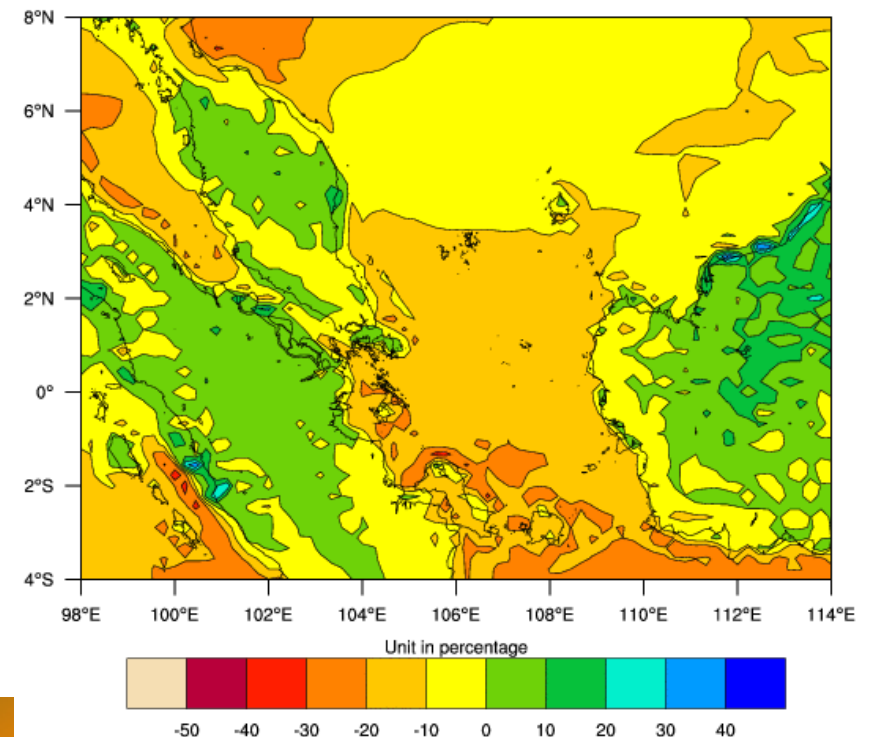
Future Change in Temperature (1970-2000 to 2070-2100)

At 1.5m level from mean of Echem, Hadcm3q0, q3, q10 & q11



Future Percentage Change in Rainfall (1970-2000 to 2070-2100)

Mean of Hadcm3q0, q3, q10 & q11



Climate Studies

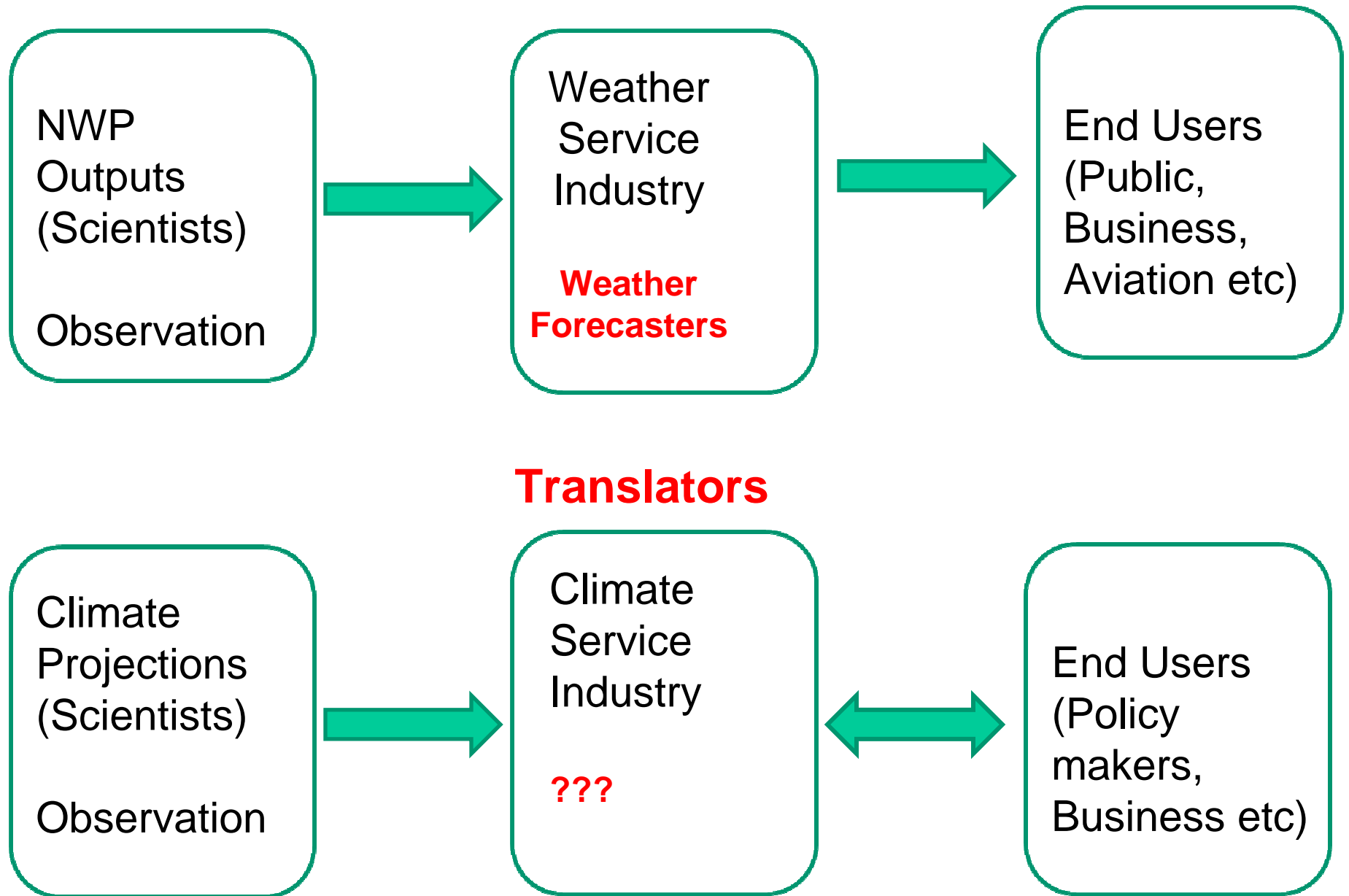
- Use of WRF and RegCM3/4 to do climate simulation studies. Conduct studies on impact of land use on local rainfall to support policy making decision.
- Statistical study of rainfall patterns over different parts of Singapore, extreme rainfall trends to support public utilities.

Climatology

- Enhance the climate data archive to meet increasing demands for data.
- Intranet (Zeus) for access of Climo data
- Provision and sales of climate data



Our challenges (seasonal to long-term)



Our opportunities (long-term)

- Collaborative studies with ASEAN Nat Met Services initiated by Met Service Singapore with UK Met Office:
 1. Climate Indices Study of long-term climate trend of maximum, minimum temperature and precipitation in South east Asia using RCimDex, 2011-2012.
Pooling/sharing of climate indices more acceptable than sharing of observation data
 2. South east Asian long-term climate projection (CORDEX) using RCMs, 2012-2013Useful outflow of information for climate services

Thank you

