

# S2S-SEA Workshop Series: Lessons learnt and moving forward

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## OVERVIEW

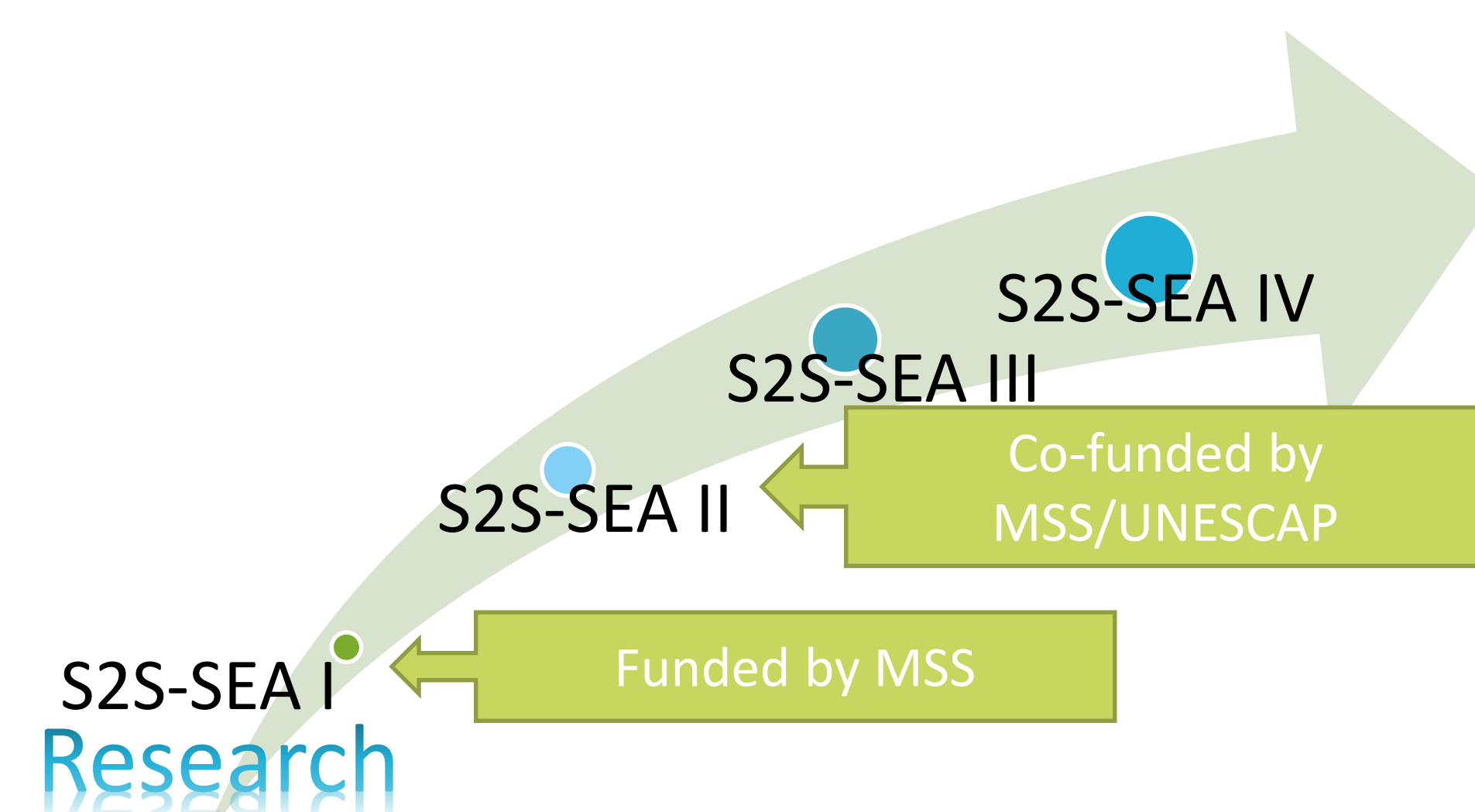
### Aims

- Provide training to participants in generating products tailored for risk- and impact-based predictions on the S2S timescale
- Familiarise participants with the S2S databases
- Improve the regional understanding of mechanism of S2S predictability
- Equip the participants with the knowledge to investigate the skill and usefulness of the S2S forecasts in applications

### Background

Southeast Asia Climate: There are two monsoon seasons for Southeast Asia: Northeast or Winter Monsoon during DJF, affecting mainly the central and southern region; and Southwest or Summer monsoon, bringing rain to northern Southeast Asia. Weather and climate phenomena important to the region include the El Niño Southern Oscillation, Indian Ocean Dipole, Madden-Julian Oscillation (MJO), tropical cyclones, and monsoon surges. All of these phenomena have the potential to cause climate-related calamities on seasonal or shorter timescales in the region.

Previous work has highlighted the **relatively high skill over the region** (e.g. Li & Robertson, 2015) → **potential for subseasonal products**



### Workshops

Series of four 5-day workshops (above) organized by the Meteorological Service Singapore (MSS) as host of the ASEAN Specialised Meteorological (ASMC: [asmc.asean.org](http://asmc.asean.org)). Each workshop is a mixture of lectures and practicals, along with time to work on group projects. During the workshop, each participant installs a virtual machine onto their own laptop, ensuring all the appropriate tools installed and allowing the participants to continue to explore afterwards.

## PAST WORKSHOPS

### S2S-SEA I

27 Feb – 03 Mar 2017

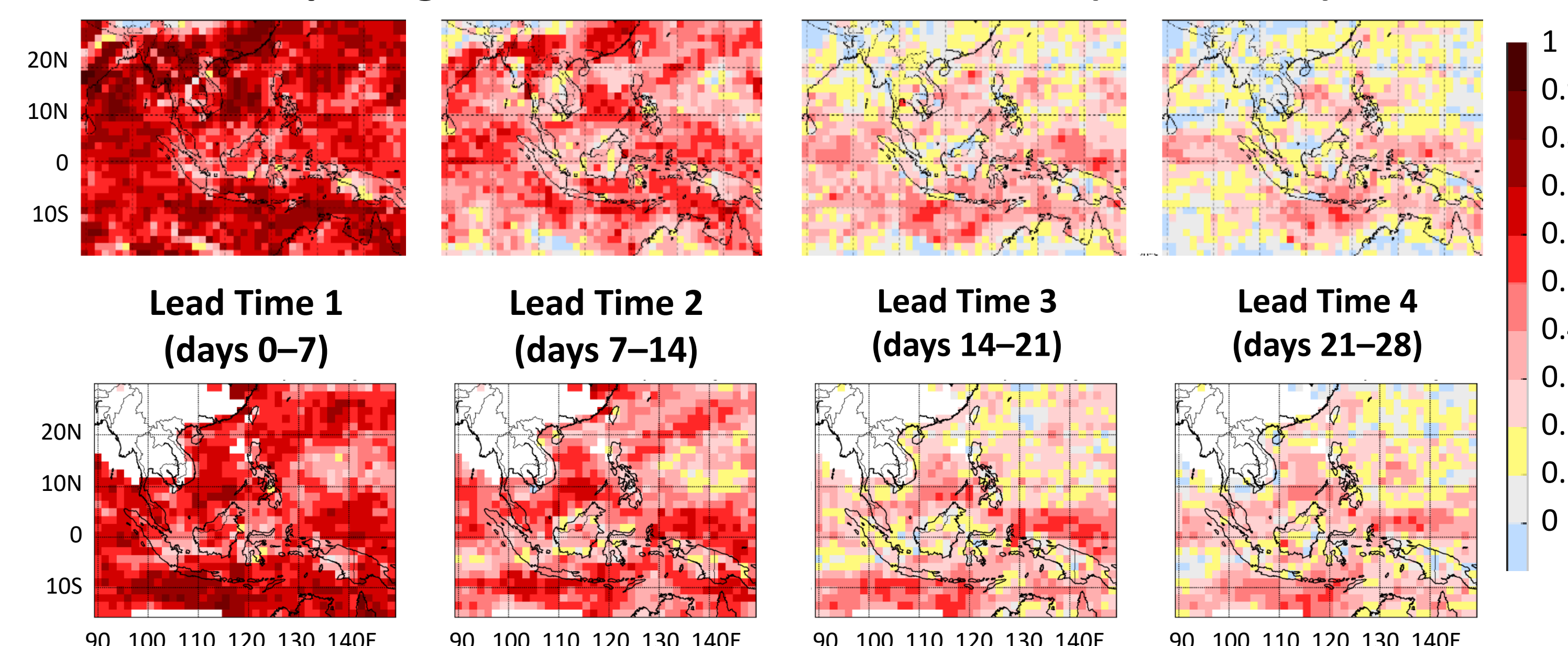
Covered:

- Introduced subseasonal forecasts and the S2S Prediction project
- Rainfall and temperature weekly anomalies (Figure 1a)
- Conducted case study analysis (IRI Data Library)
- Discussed with participants possibly of other variables

Outcomes:

- Generally, ECMWF model was skilful, some regions had higher skill
- Participants found the course useful and would recommend to colleagues

**Figure 1a. Weekly Rainfall : Anomaly Correlation Coefficient comparing TRMM with ECMWF Dec 2017 (1998-2014)**



**Figure 1b. Weekly Number of Dry Days : Anomaly Correlation Coefficient comparing TRMM with ECMWF Dec 2017 (1998-2014)**

13 – 18 Aug 2018

Covered:

- Number of days below a certain percentile (dry days) in 7 and 14 day windows (Figure 1b)
- Participants extended to days above threshold using python scripts
- Participants compared dry days with/without using CCA (PyCPT)
- Started discussions with end users

Outcomes:

- Some SEA regions high skill, but regions don't necessarily match demand
- Care is needed regarding short, intense meso-scale events
- Better prediction where there is a large scale driver

### S2S-SEA II

### Workshops

- Various skill level and experience throughout the region
- Repeat participation is often difficult, but necessary for continuity
- Variables of interest for the region: extreme rainfall events (TCs, drought, flood), temperature extremes (for health sector and fisheries)
- S2S is approached differently by different countries (e.g. extension of seasonal forecast or weather forecast)



### Product Development

- Already 10-day forecasts from Indonesia and Philippines (probabilistic)
- Need to convince users of the usefulness of new products while managing expectations
- Availability and access of subseasonal model information is a limitation for some countries
- Need to define priorities (financial and manpower limitations)
- Possibility to collaborate with private companies for designing products

### Future

- Extremes are important for the region; need to consider ensemble plume, probabilistic forecasts during practicals
- Need to engage with user-community to develop appropriate products and tools
- Start engaging with regional institutions first
- Develop case studies to demonstrate S2S potential in Southeast Asia

#### Further information

S2S-SEA II Workshop Wiki <https://github.com/S2S-SEA/workshop2/wiki/>  
S2S-SEA I Workshop Wiki <https://github.com/S2S-SEA/workshop1/wiki/>

#### Acknowledgments:

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