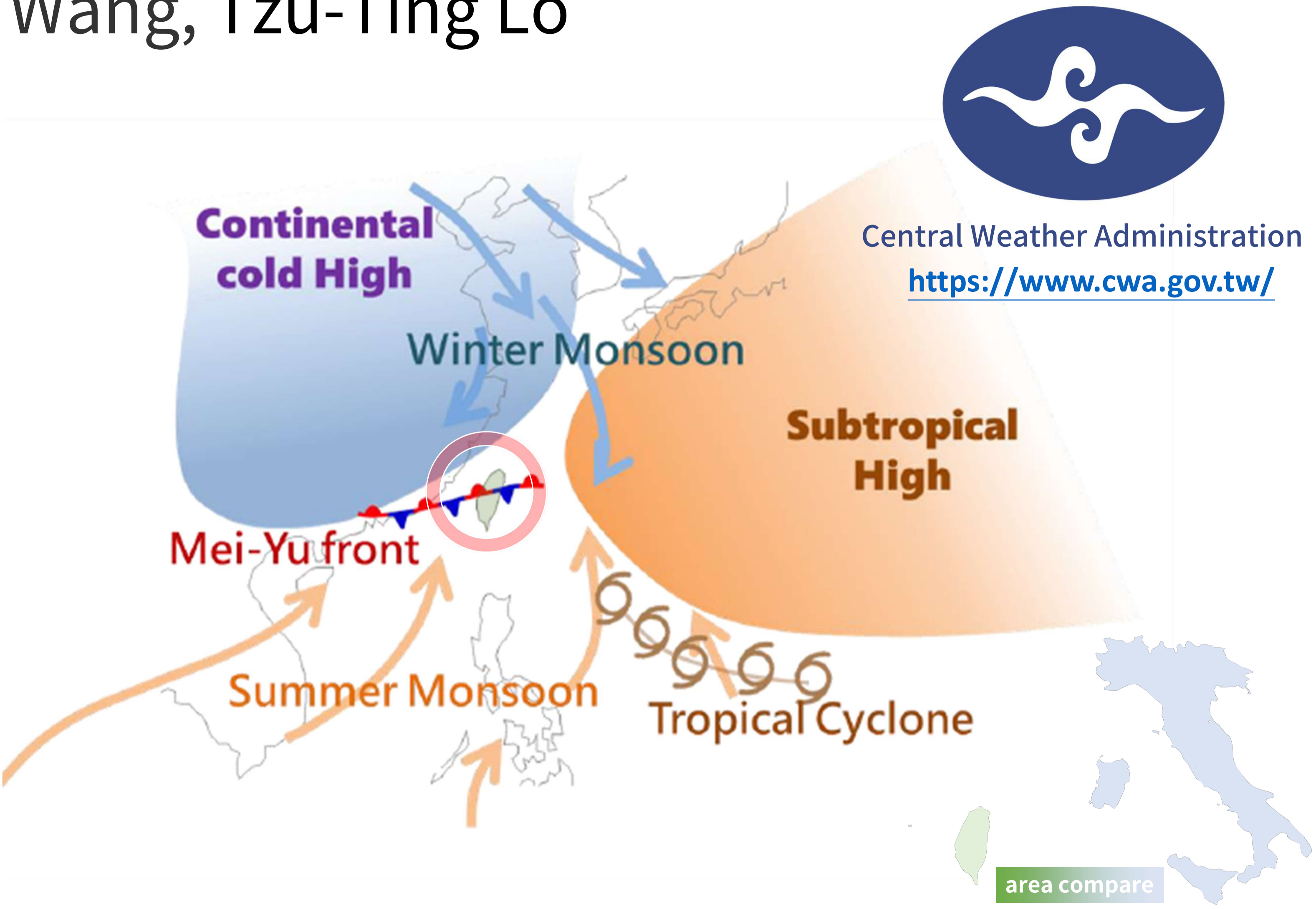
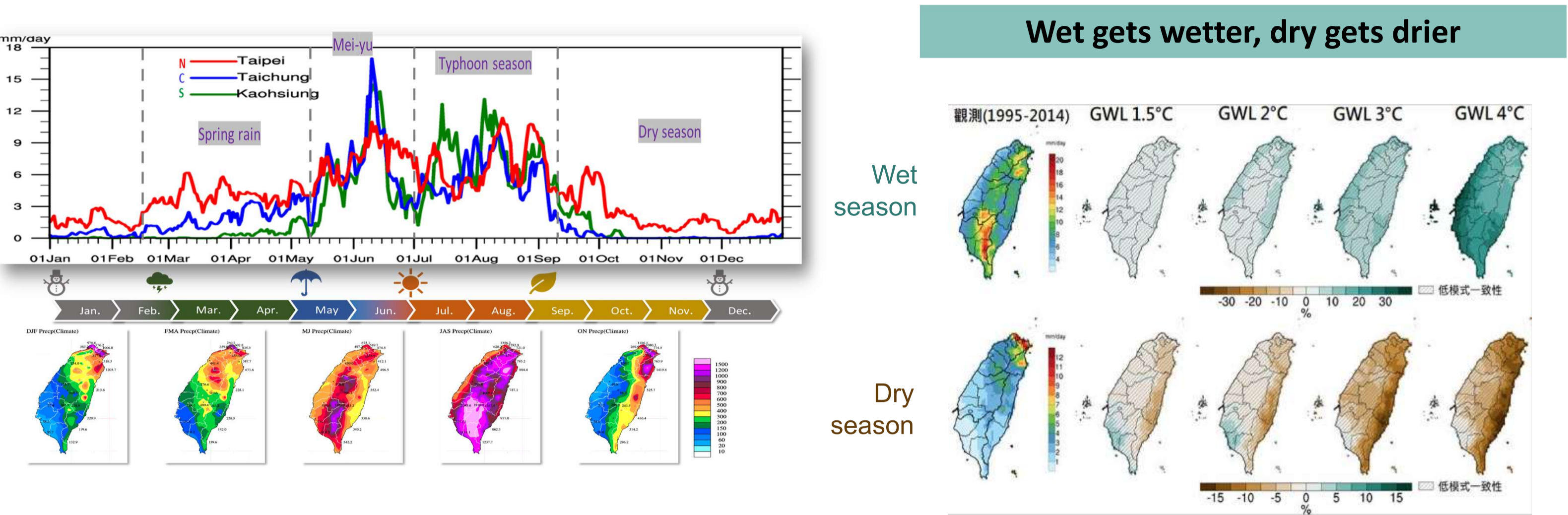


Tailoring sub-seasonal to seasonal forecast information for Water Resources Management in Taiwan

Meng-Shih Chen, Ching-Teng Lee, Hsiao-Chung Tsai, Ren-Feng Liu, Wan-Yu Chang, Yun-Ching Lin, Chi-Cha Wang, Tzu-Ting Lo

Background

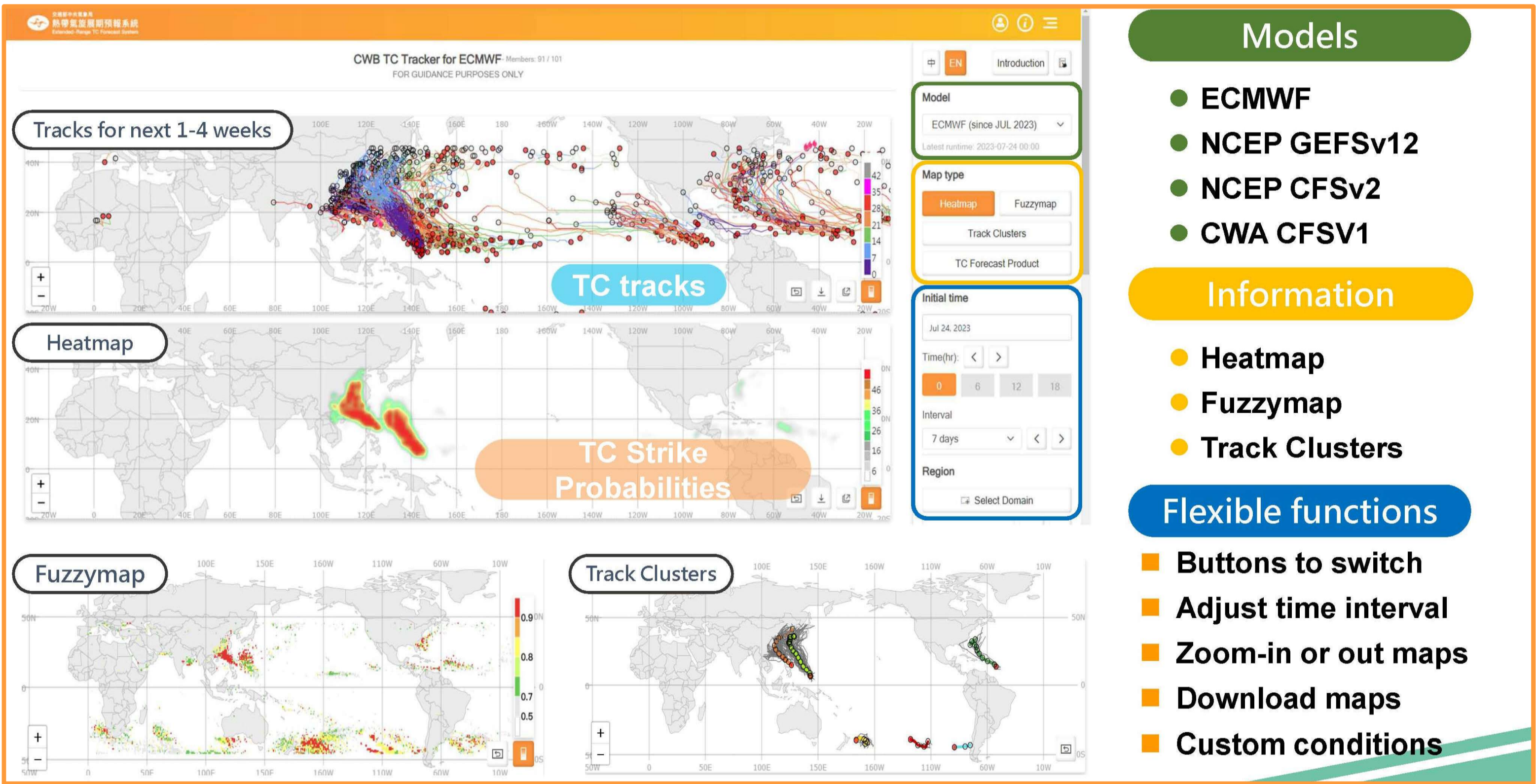
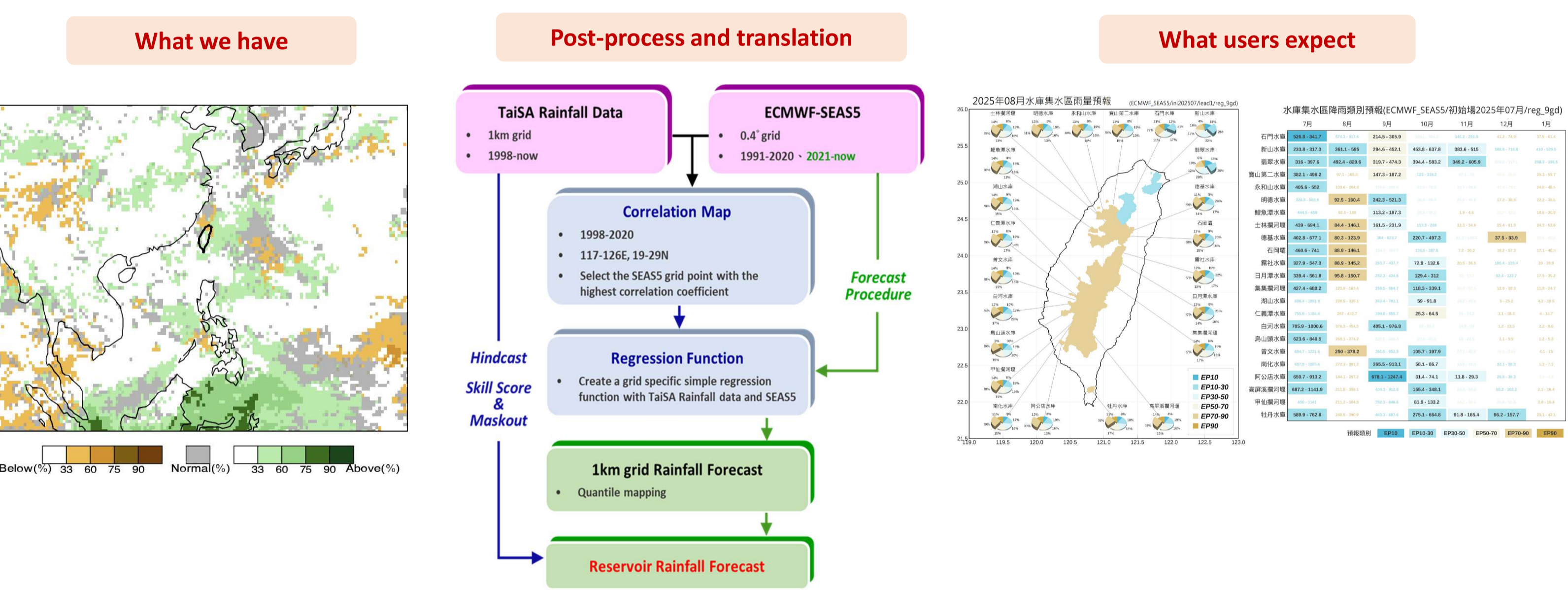
Taiwan is located between the Asian continent and the Pacific Ocean, with steep terrain. The annual average rainfall is 2,161 mm, mainly contributed by the Mei-Yu (plum rain) and typhoons. However, rainfall is unevenly distributed, and the available water per capita is below the global average.



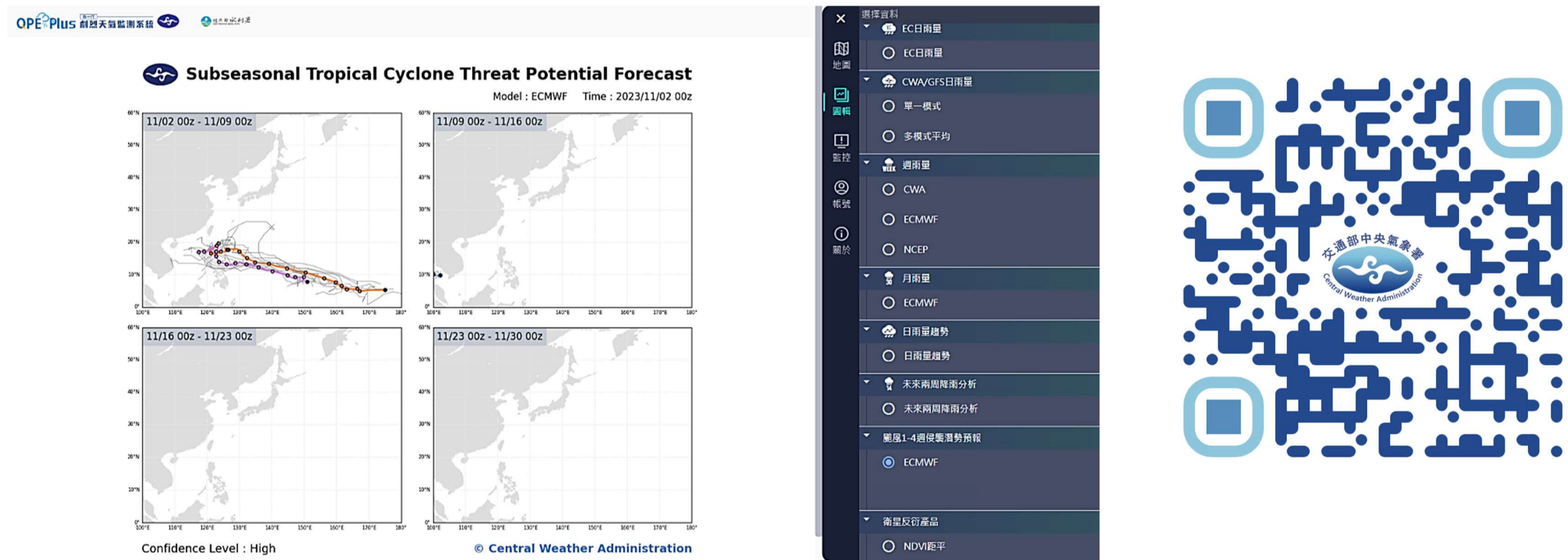
Challenges

- Increasing frequency of extreme weather due to climate change.
- Severe drought in Taiwan during 2020–2021.
 - Early end of the Mei-Yu season and no typhoon landfalls.
 - Major economic and industrial impacts, including the semiconductor industry and hydropower.

Application of ECMWF Data and Processing Methods



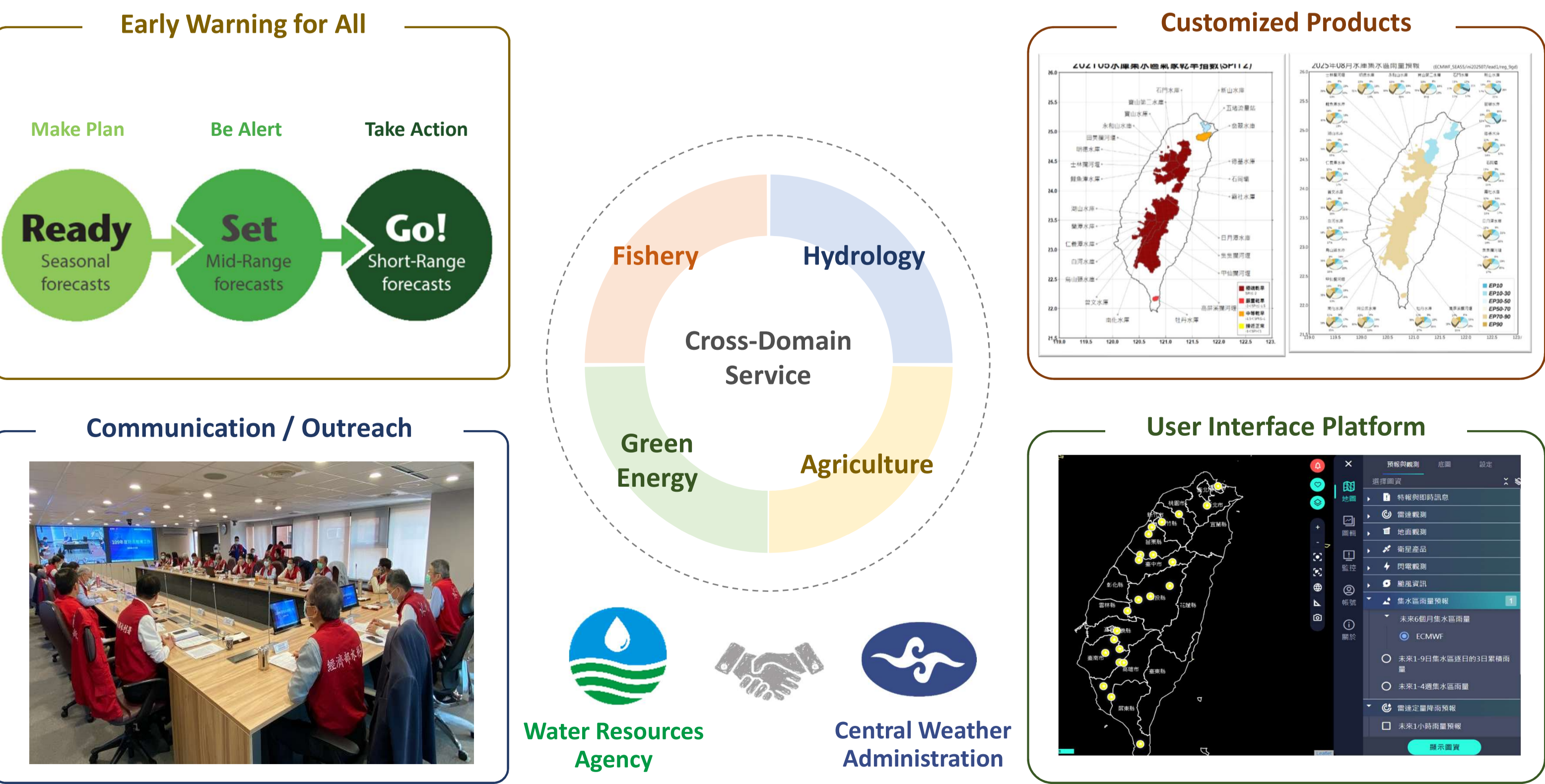
Extended-Range TC Forecast System <https://tctracker.cwa.gov.tw/>



Customized display platform for WRA

Enhancing Early Warning and Disaster Response

- Real-time drought monitoring for reservoir catchments.
- Use of Standardized Precipitation Index (SPI) for drought assessment.
- Provide seamless rainfall and inflow forecasts.



Future Perspective

Through the development of AI downscaling (CorrDiff) technology, we translate ECMWF model forecast data into user-friendly forecast information to enhance the cross-sectoral application benefits of climate services.

