



# Analysis of RCM results over Philippines

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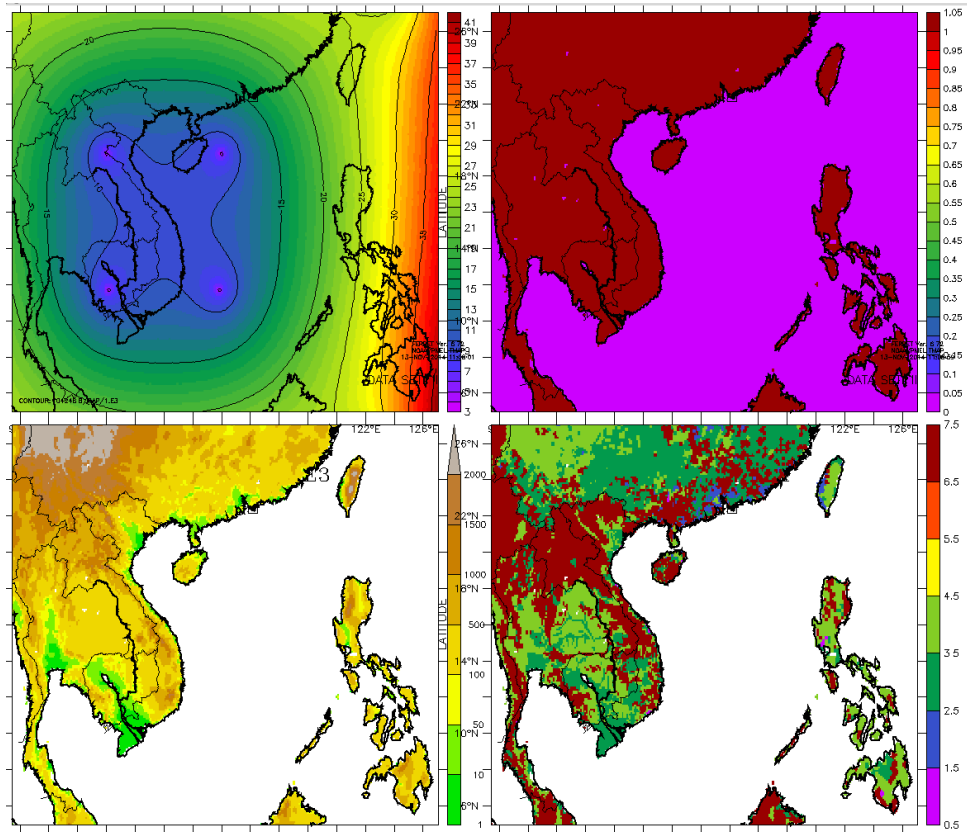
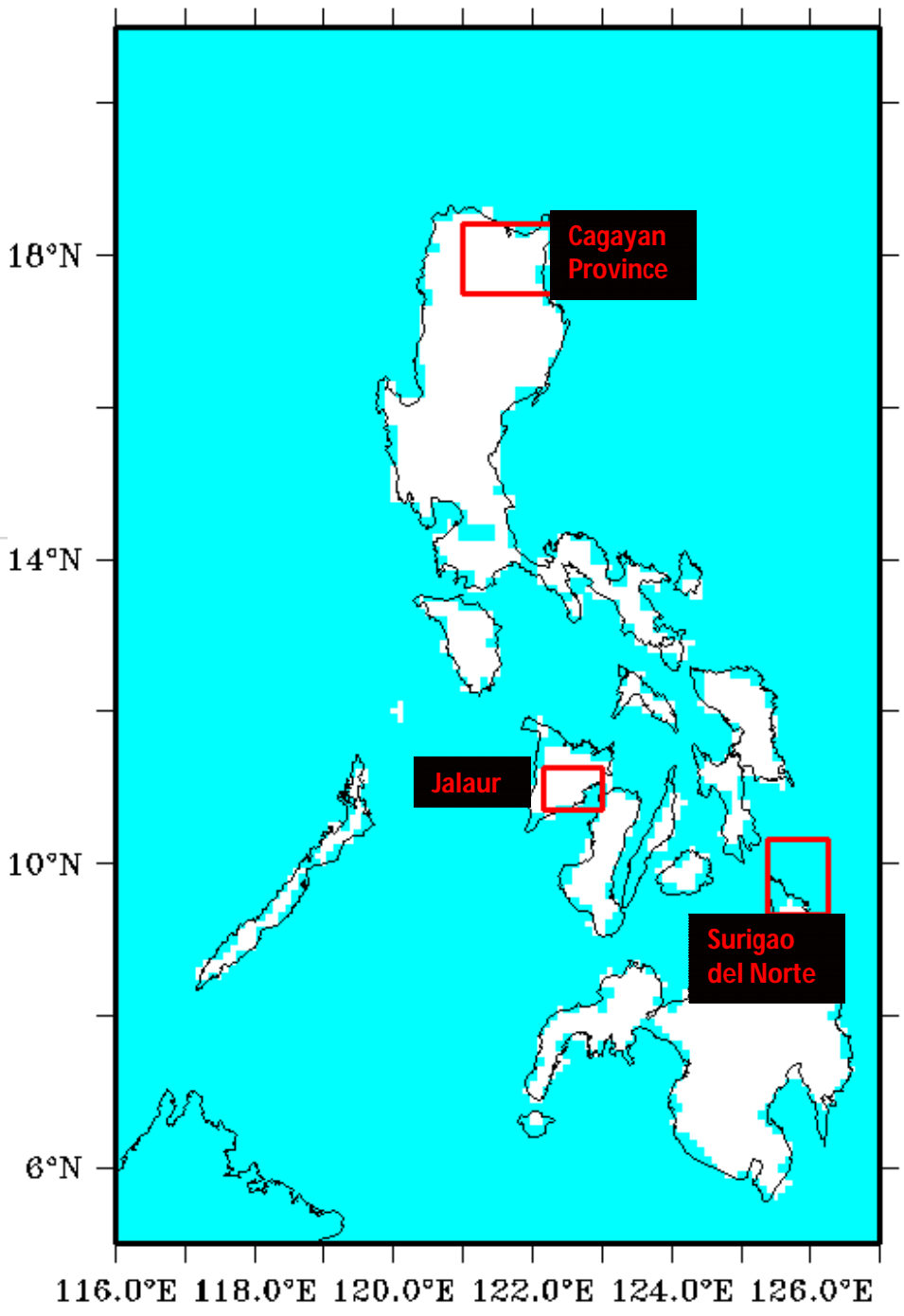
[www.csiro.au](http://www.csiro.au)

Funded by the World Bank PhilCCAP project



Right: Map of Philippine land area (white areas) from the model simulations with the three sub-regions (red labelled boxes) for which time series data is presented in this report.

Below: CCAM grid and other surface data



# Change in annual average screen Temperature (°C)

Time series plots for the Philippines and the three subregions

RCP4.5 (left column) and RCP8.5 (right column)

**Black** is mean changes

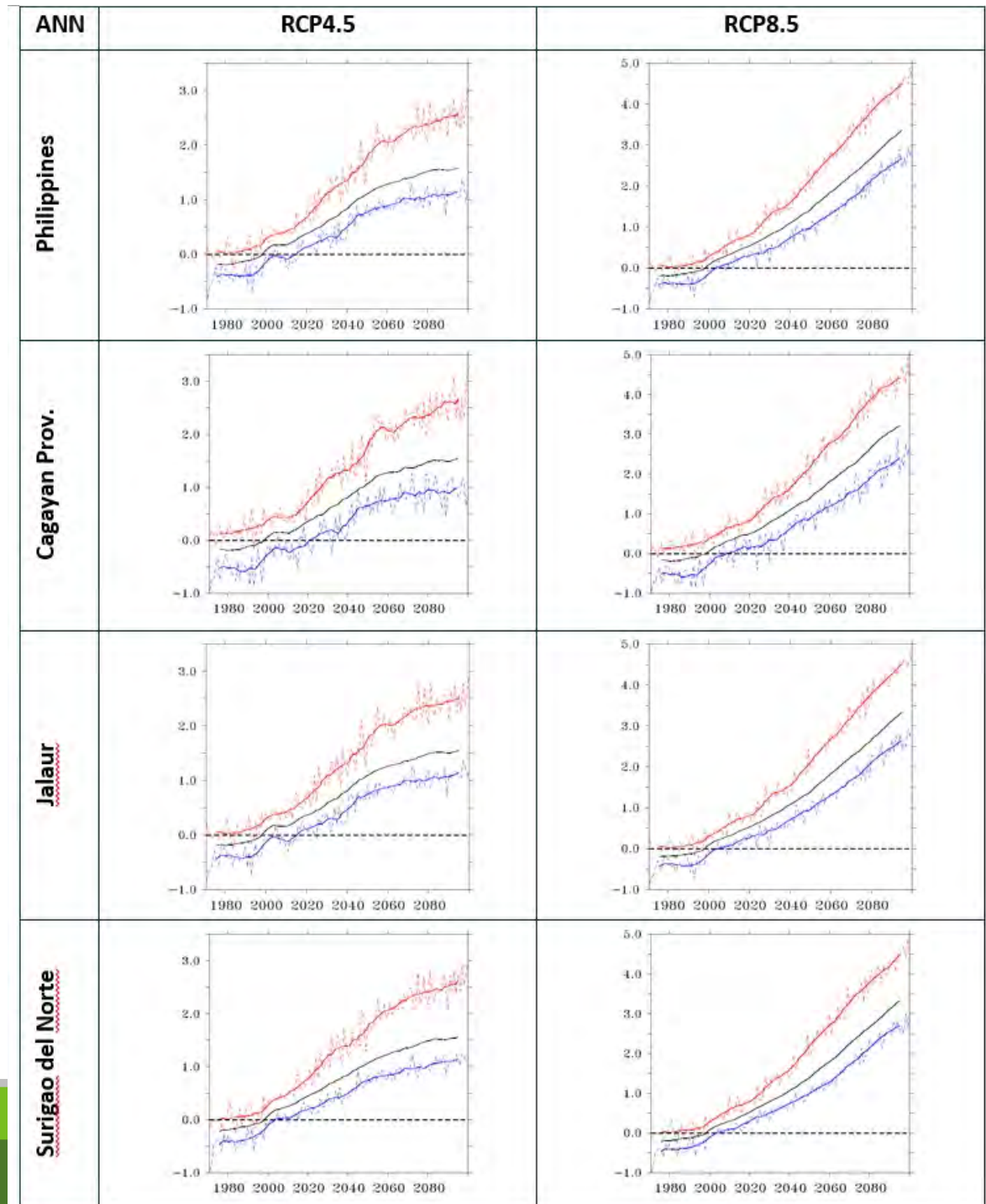
**Red** is 90<sup>th</sup> percentile changes

**Blue** is 10<sup>th</sup> percentile changes

Solid lines show the 10-year running mean

Dashed red and blue lines show individual annual values

Dashed black line is zero change



# Change in annual average screen Temperature (°C)

Time series plots of change in the annual average air temperatures (°C) for the Philippines and the three subregions.

RCP4.5 (left column) and RCP8.5 (right column)

**Black** line is ensemble mean changes

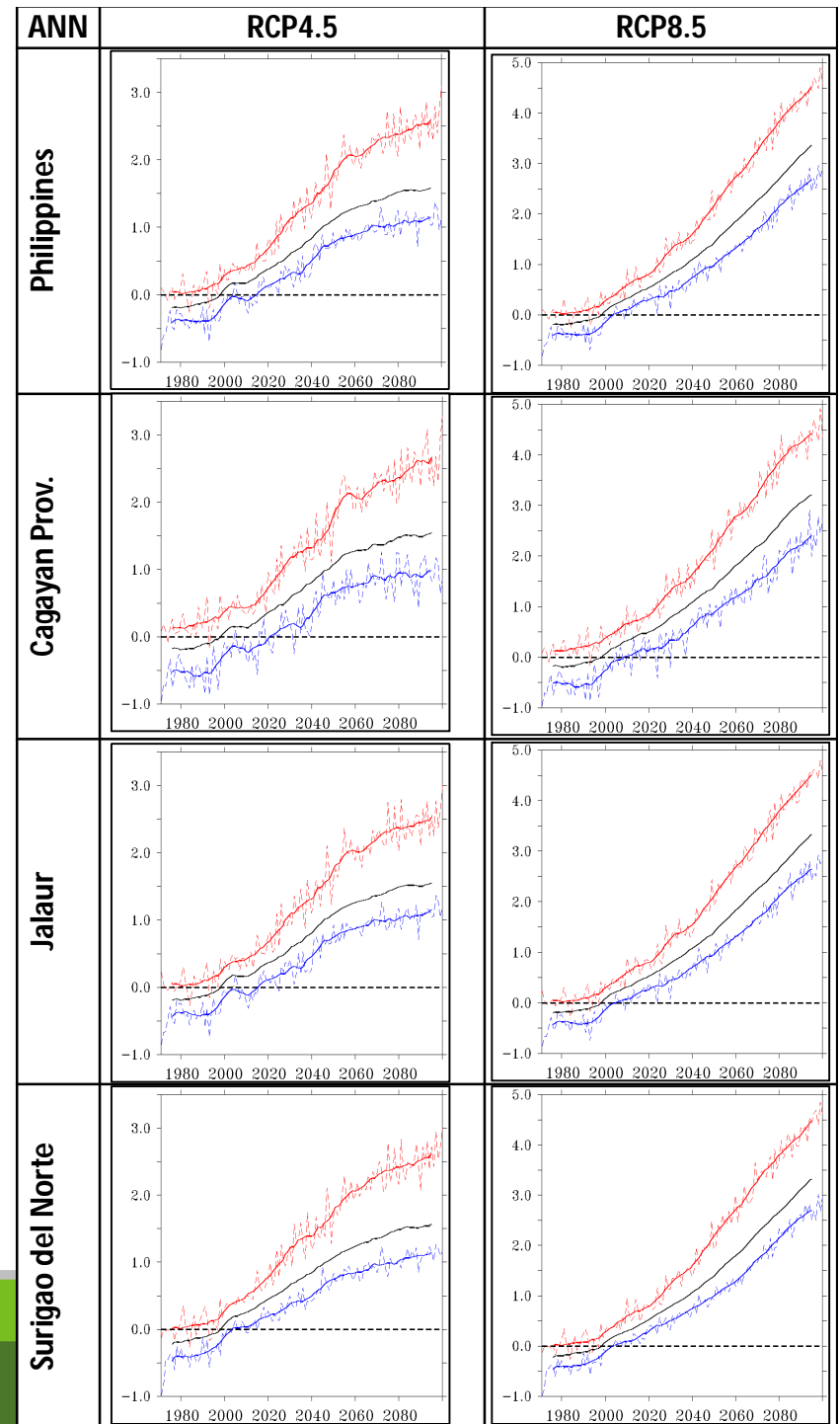
**Red** line is 90<sup>th</sup> percentile changes

**Blue** line is 10<sup>th</sup> percentile changes

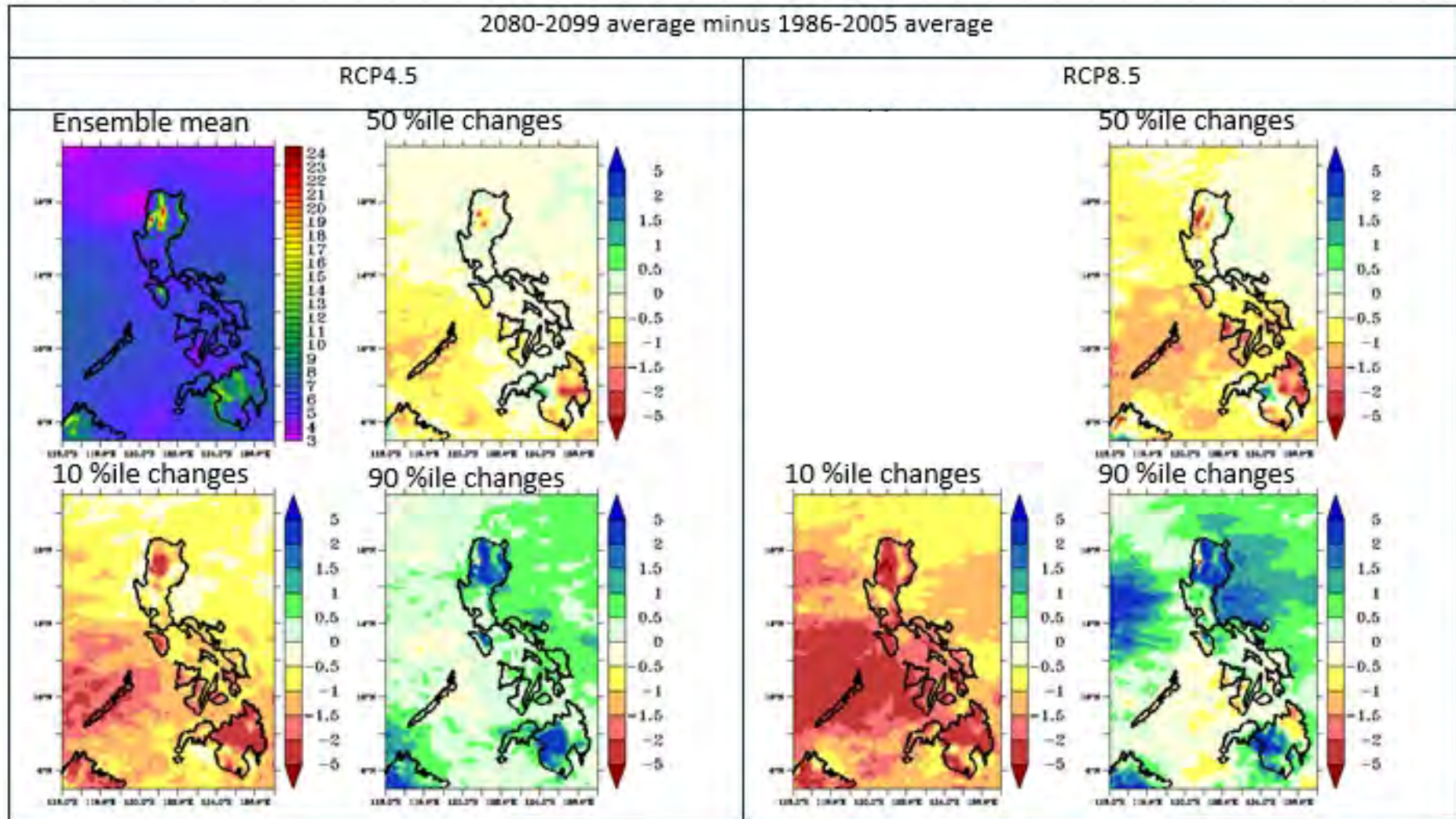
Solid lines show the 10-year running mean

Dashed red and blue lines show individual annual values

Dashed black line is zero change



# Average annual daily rainfall



3-26: Average daily rainfall rate (mm/day) for 1986-2005 (top left), and 50<sup>th</sup> (top right), 10<sup>th</sup> (bottom left) and 90<sup>th</sup> (bottom right) percentile changes for 2080-2099 relative to 1986-2005 for RCP4.5 (left) and RCP8.5 (right) based upon the six CCAM simulations.

# Change in annual rainfall (mm/day)

Time series plots for the Philippines and the three subregions

RCP4.5 (left column) and RCP8.5 (right column)

**Black** is mean changes

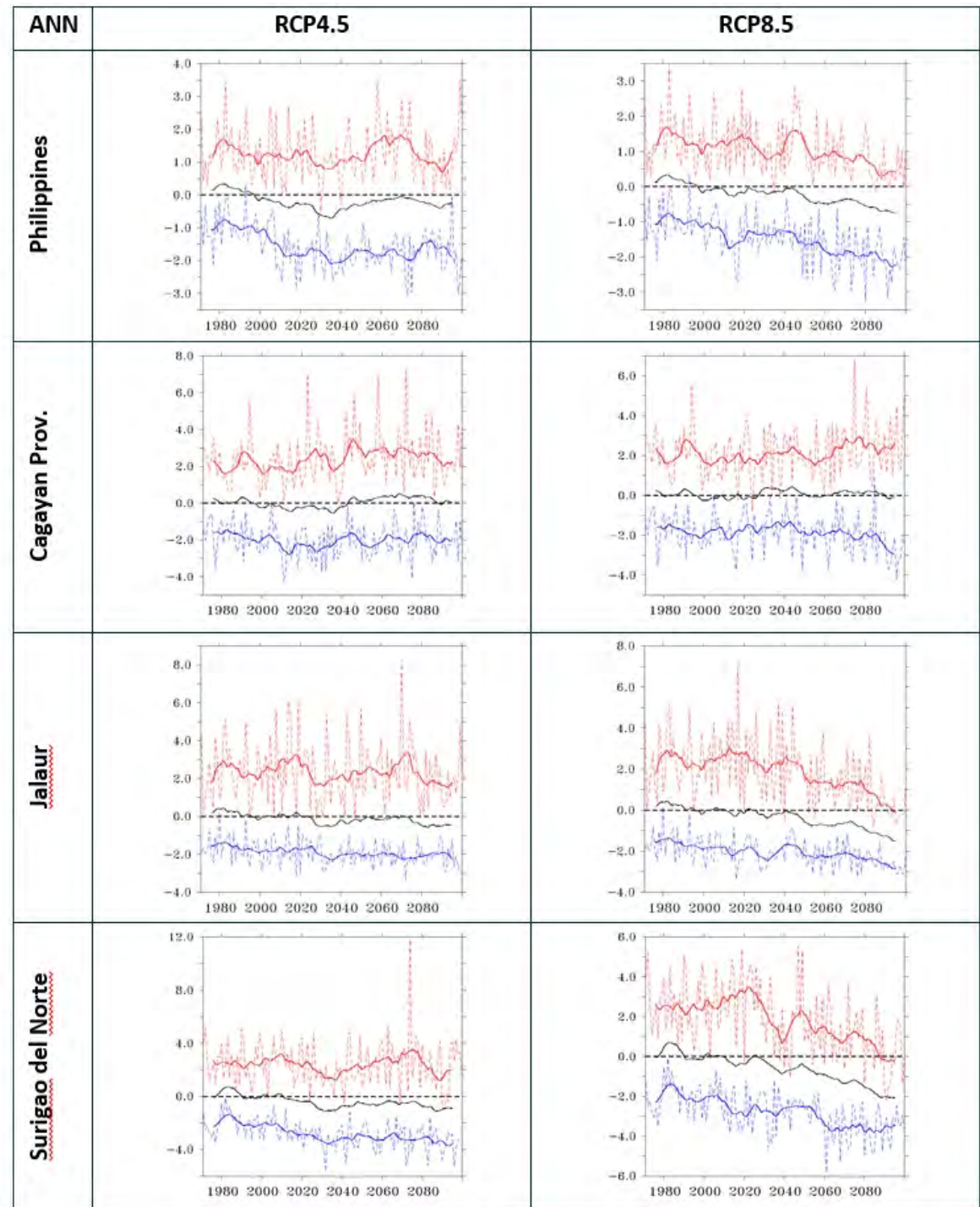
**Red** is 90<sup>th</sup> percentile changes

**Blue** is 10<sup>th</sup> percentile changes

Solid lines show the 10-year running mean

Dashed red and blue lines show individual annual values

Dashed black line is zero change



# Change in seasonal rainfall (mm/day)

Time series plots for the Philippines and the three subregions

RCP4.5 (left column) and RCP8.5 (right column)

**Black** is mean changes

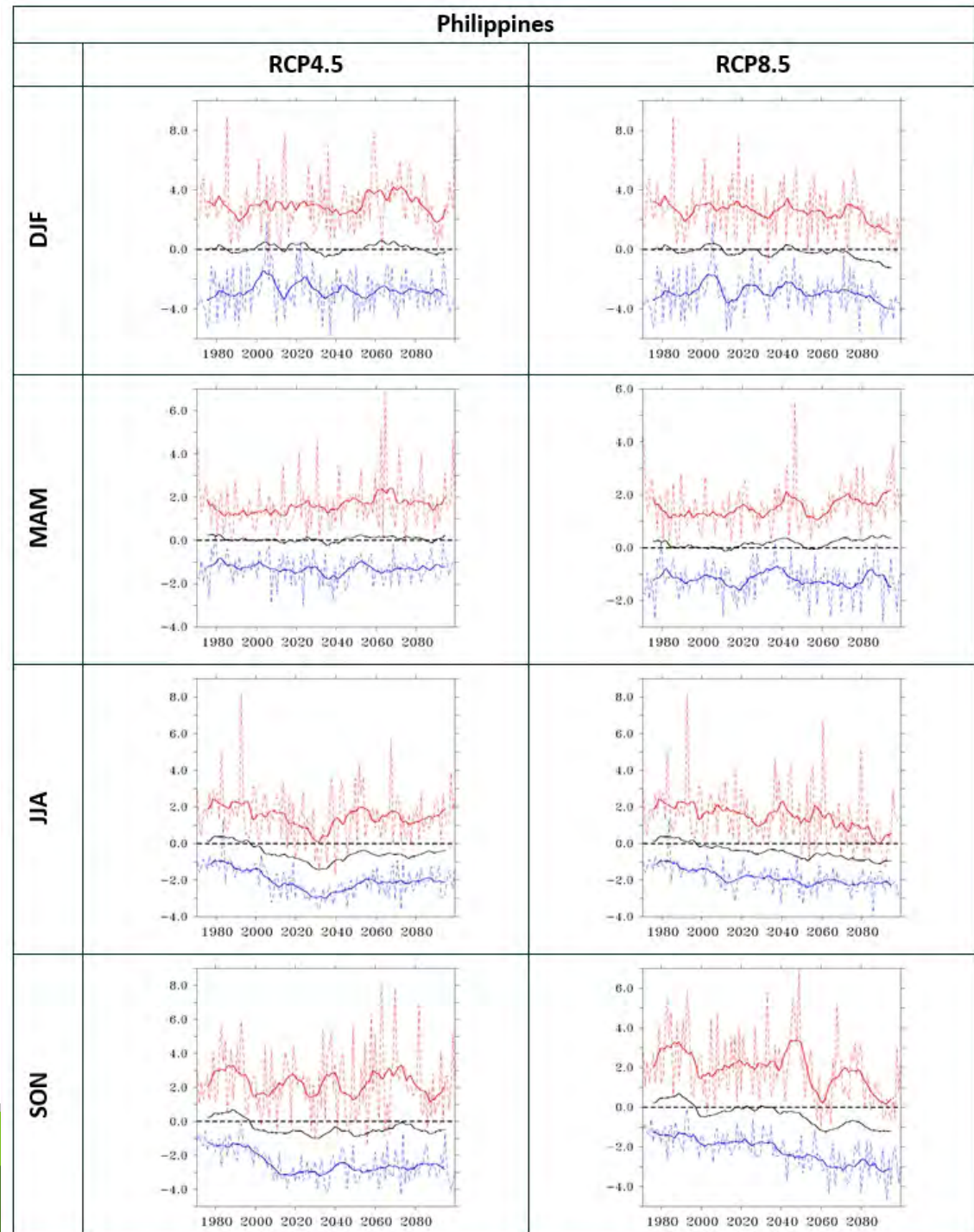
**Red** is 90<sup>th</sup> percentile changes

**Blue** is 10<sup>th</sup> percentile changes

Solid lines show the 10-year running mean

Dashed red and blue lines show individual annual values

Dashed black line is zero change



# Change in number of days with more than 100 mm

Time series plots for the Philippines and the three subregions

RCP4.5 (left column) and RCP8.5 (right column)

**Black** is mean changes

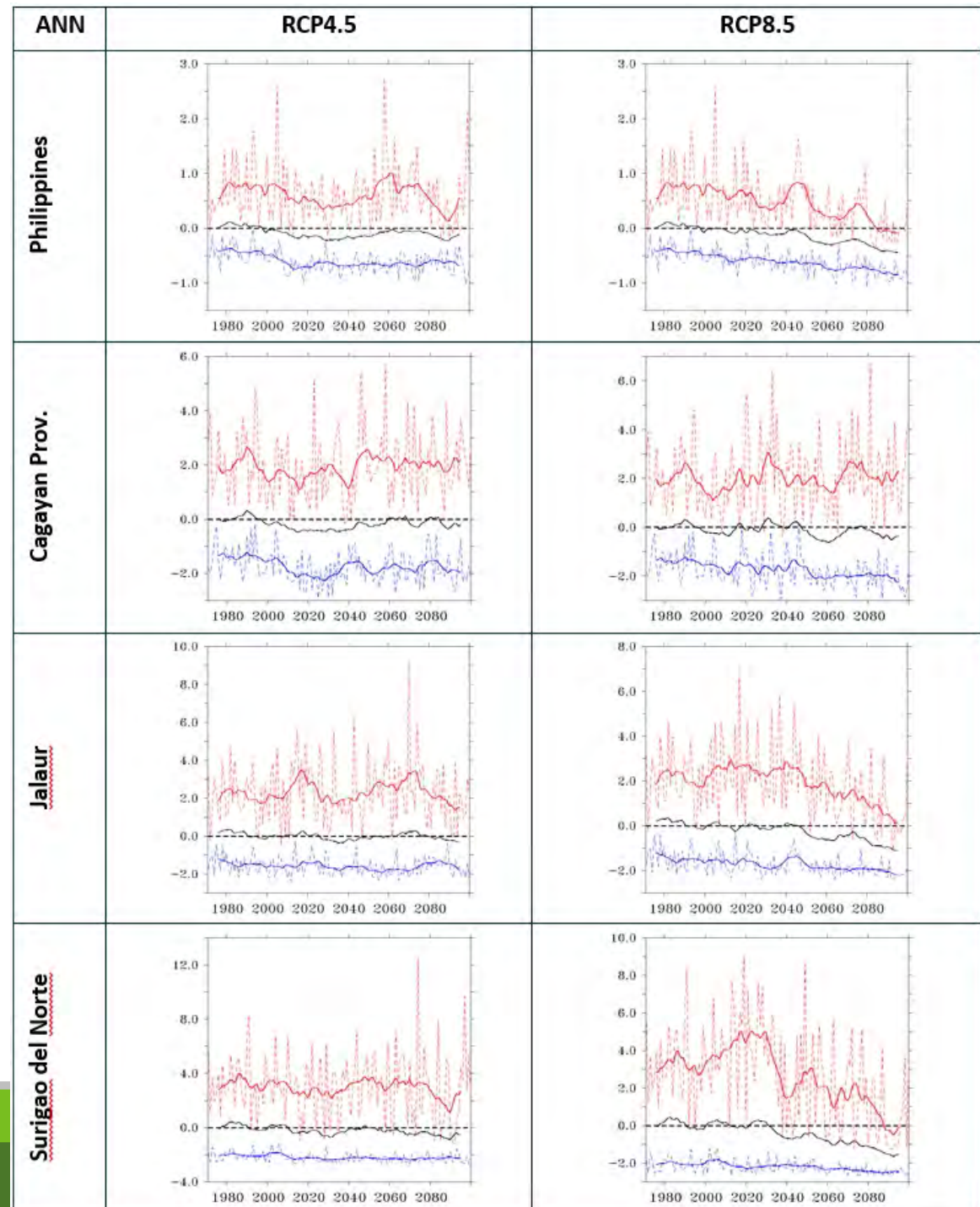
**Red** is 90<sup>th</sup> percentile changes

**Blue** is 10<sup>th</sup> percentile changes

Solid lines show the 10-year running mean

Dashed red and blue lines show individual annual values

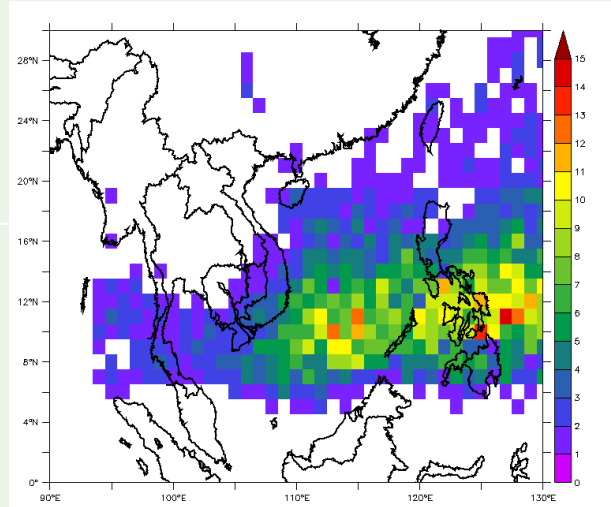
Dashed black line is zero change



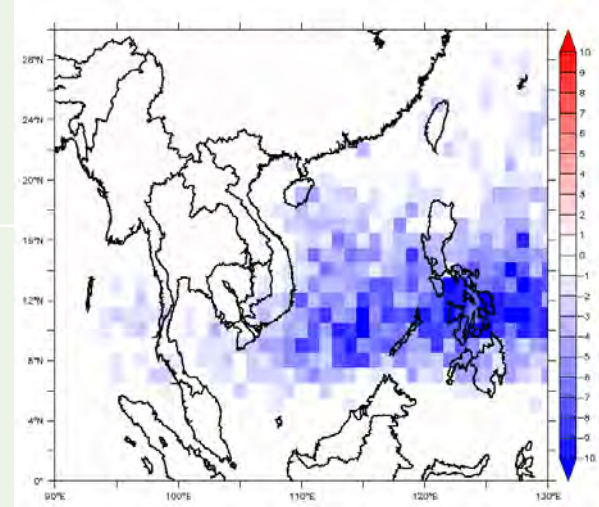


# Tropical Cyclone Density (RCP8.5)

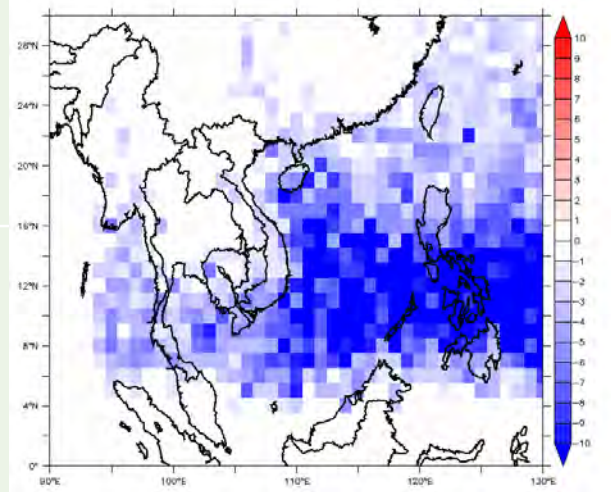
Ensemble mean 1986-2005



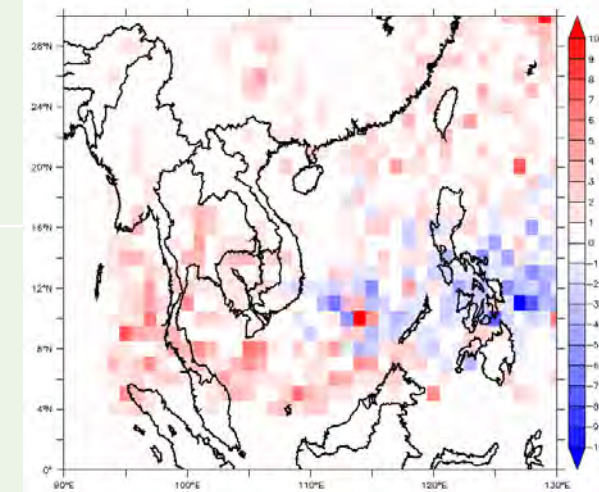
50<sup>th</sup> percentile change 2090 minus 1995



10<sup>th</sup> percentile change 2090 minus 1995



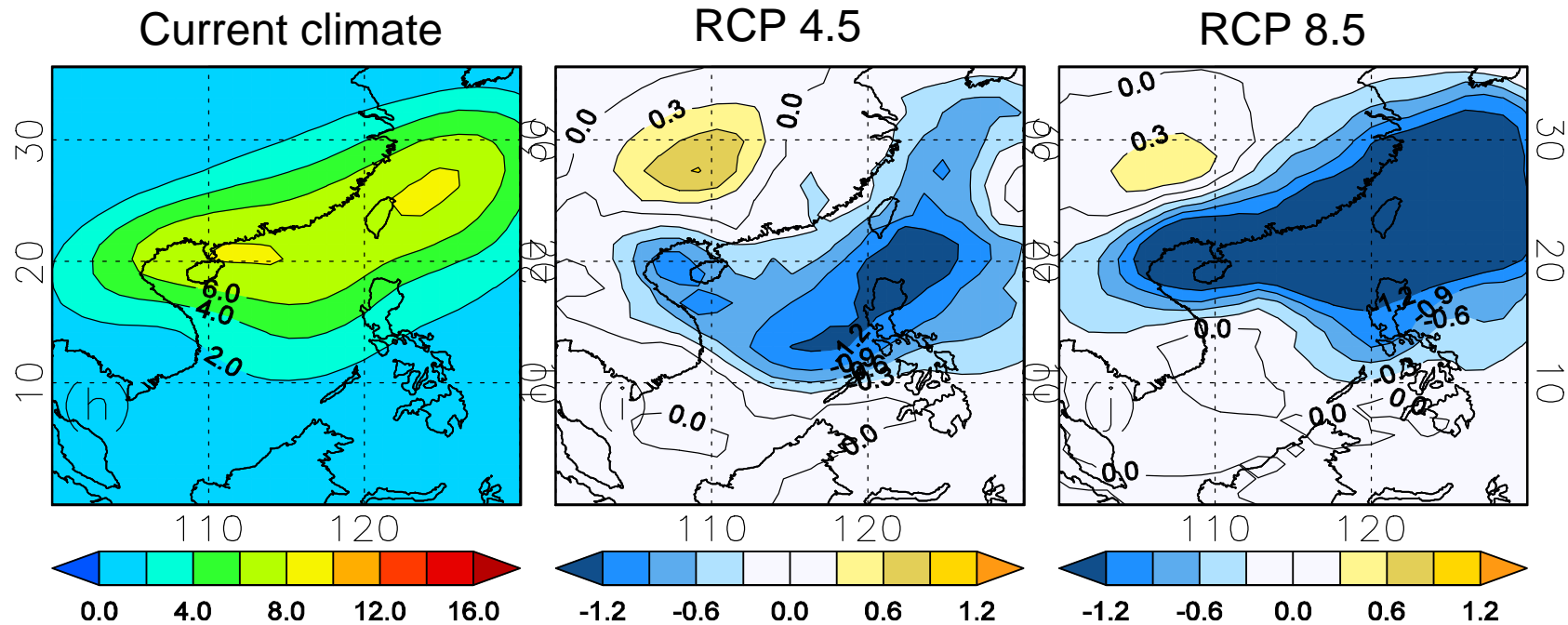
90<sup>th</sup> percentile change 2090 minus 1995



7-1: Average tropical cyclone density for the 1986-2005 period (top left), and 50<sup>th</sup> (top right), 10<sup>th</sup> (bottom left) and 90<sup>th</sup> (bottom right) percentile changes for 2080-2099 relative to 1986-2005 for RCP8.5 based upon the six CCAM simulations.

# Tropical Storm Track Density – future projection

TC Occurrence: downscaled HadGEM2-ES baseline and RCP (4.5 and 8.5) scenario change 2069-2098 minus 1961-1990

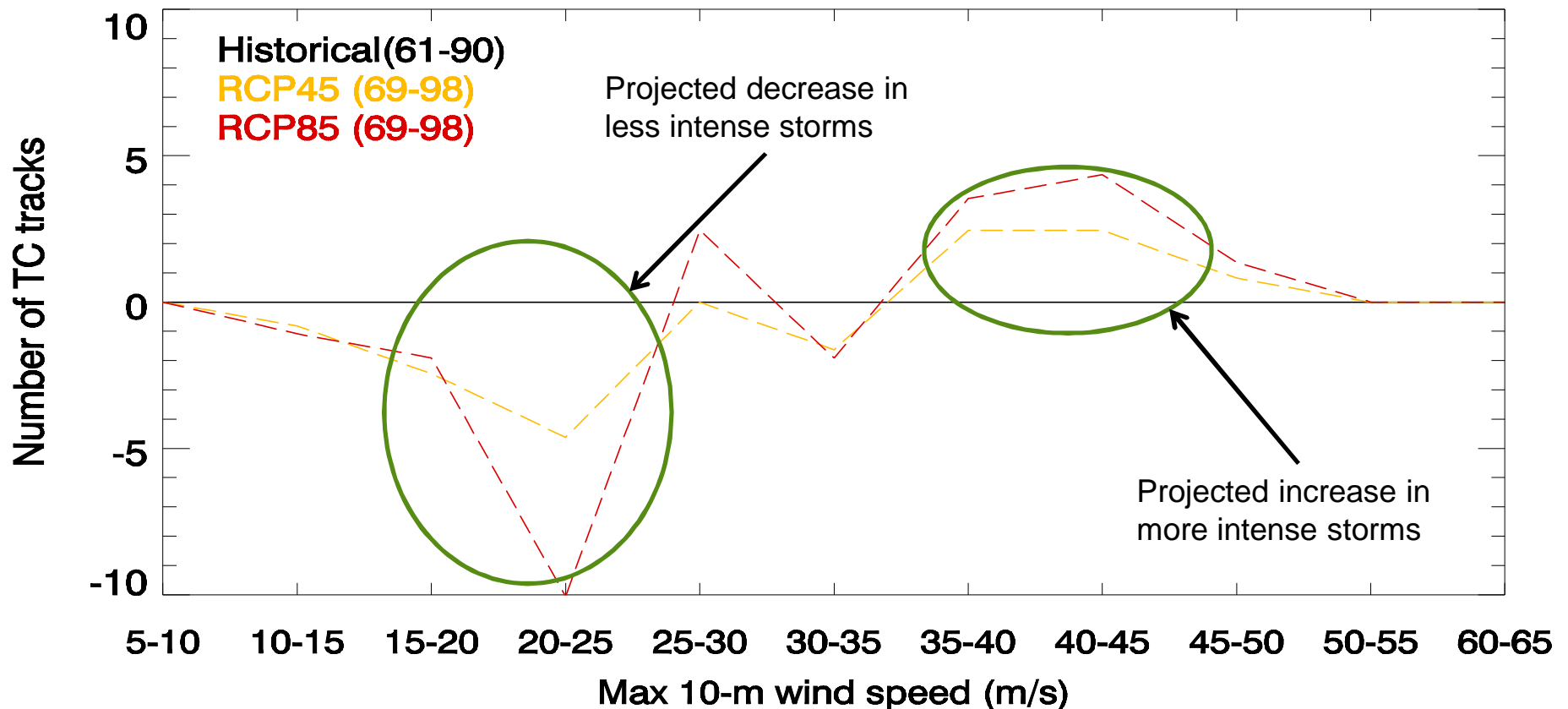




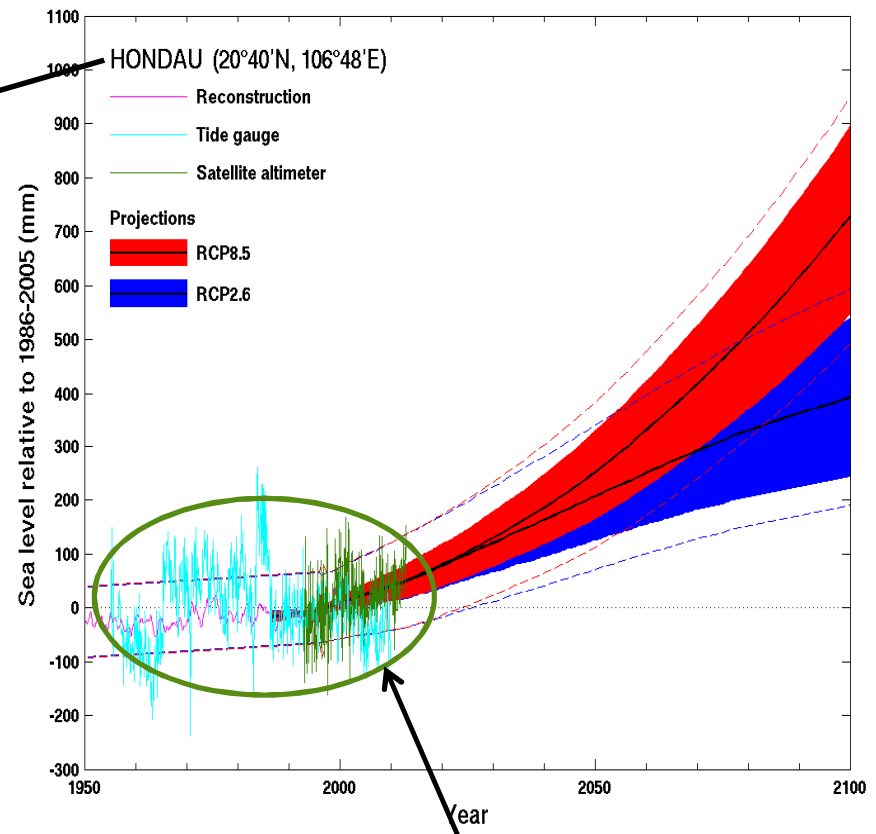
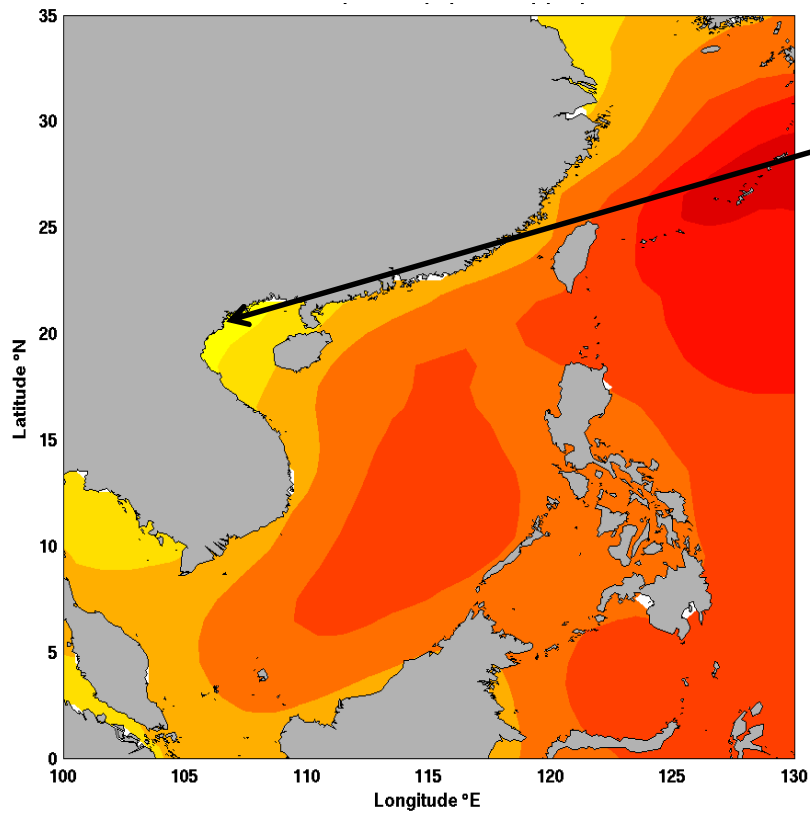
Met Office  
Hadley Centre

# Tropical storm analysis – future projection

➤ Proportional change of TC number categorised by maximum 10-m wind speed : downscaled HadGEM2-ES baseline and RCP (4.5 and 8.5) scenarios



# Sea-level rise projections



End-of-Century,  
higher greenhouse gas scenario

Note baseline shifts:  
Need to maintain  
high quality data

# Thank you

## FOR MORE INFORMATION CONTACT:

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## Regional Climate Projections Consortium and Data Facility for Asia and the Pacific

Use of climate services in Asia and the Pacific is challenged by limited reliable climate information, insufficient capacity to interpret and use climate information, and limited technical and financial resources.

The Regional Climate Projections Consortium and Data Facility (RCCDF) will develop a community of practice to provide this in a cost-effective and sustainable manner through capacity building. The RCCDF project<sup>1</sup> will address these challenges by providing:

1 Access to climate information.



2 Guidelines and examples for conducting impacts and vulnerability assessments.



3 Knowledge sharing and learning.



### RCCDF GOALS:

- Adopt best practices for adaptation planning
- Support learning by doing
- Develop in-country capacity for using climate information in impacts and vulnerability assessments
- Implement and support the portal (an online resource with links to data and information)
- Increase collaboration on assessment of common regional climate impacts

### THE RCCDF WILL PROVIDE ACCESS TO:

- Available current and future climate information
- Guidelines on how to develop, interpret and use climate information
- An online web interface (portal) to provide access to the guidelines, learning materials and other related services.

<sup>1</sup> The project is being implemented by the Asian Development Bank through the technical assistance for Regional Climate Projections Consortium and Data Facility in Asia and the Pacific (TA 8359-REG) financed by the Japan Fund for Poverty Reduction.