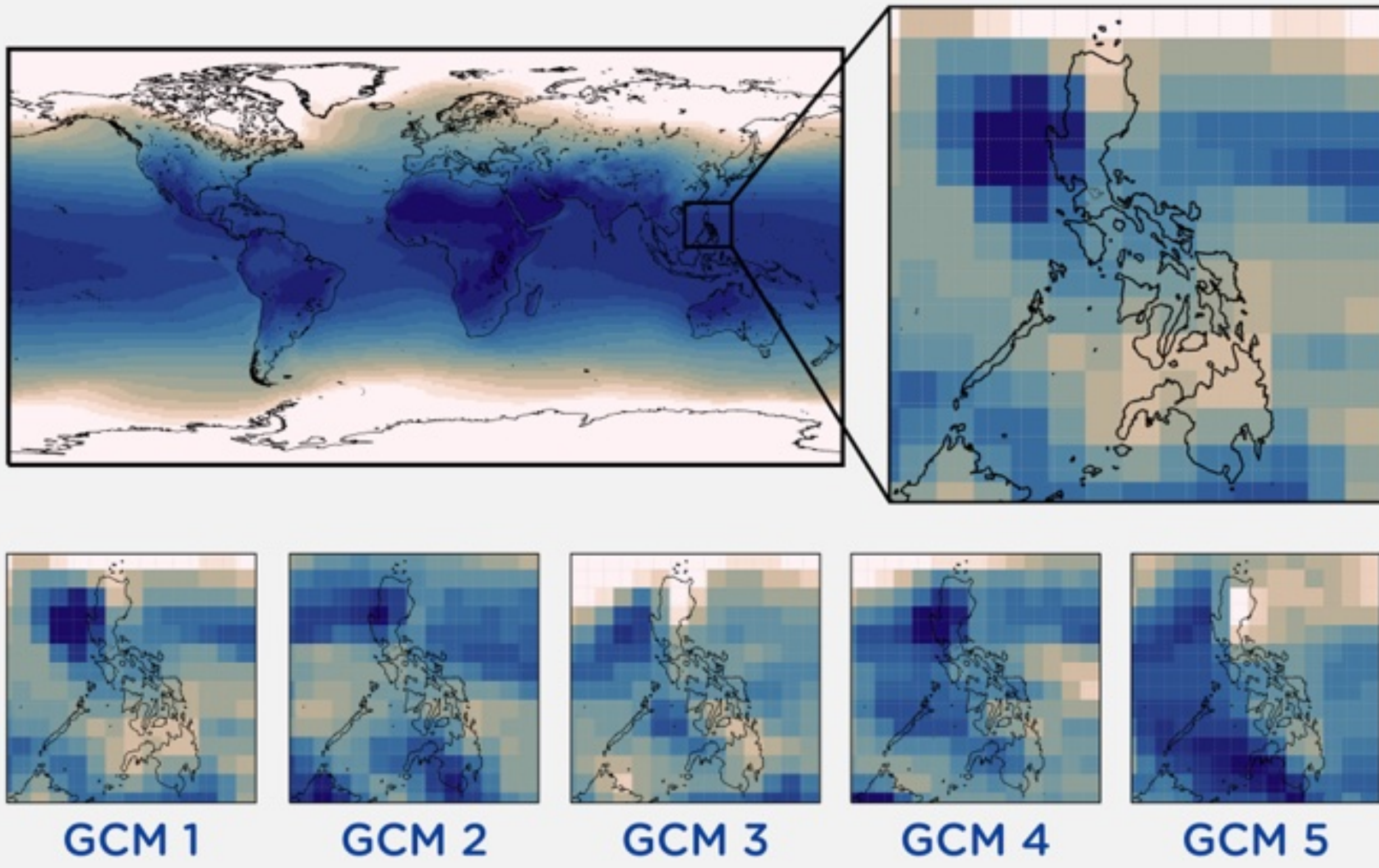# HOW LOCALIZED CLIMATE PROJECTIONS ARE DEVELOPED, VALIDATED, AND UTILIZED

DOWNSCALE PROJECTIONS
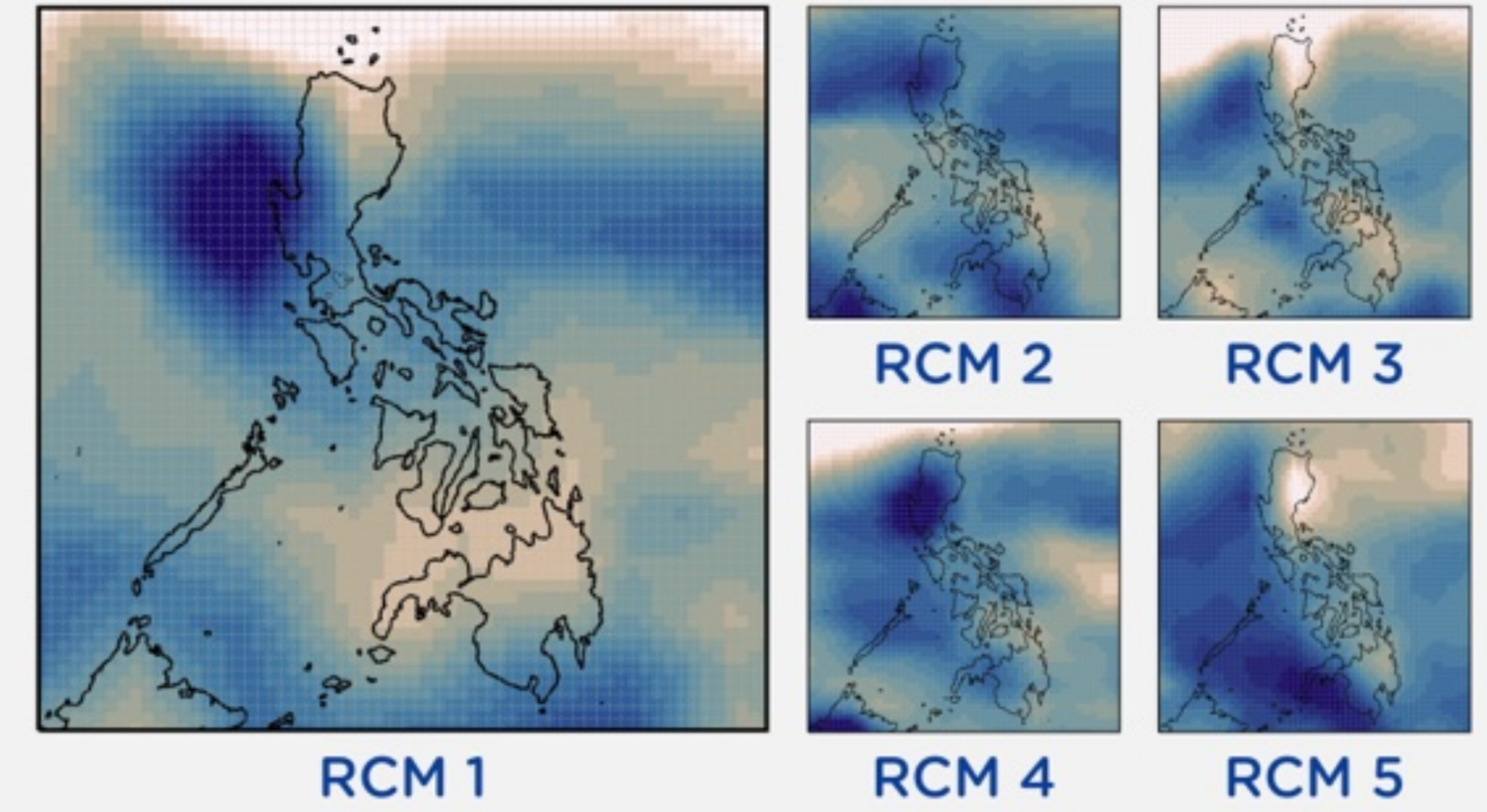
GCM (100-200km)
GLOBAL CLIMATE MODEL (GCM)

GCM 1 GCM 2 GCM 3 GCM 4 GCM 5

GCMs are complex computure programs that simulate climate patterns for the whole globe on a very large scale

1 DOWNSCALE

RCM (25km)
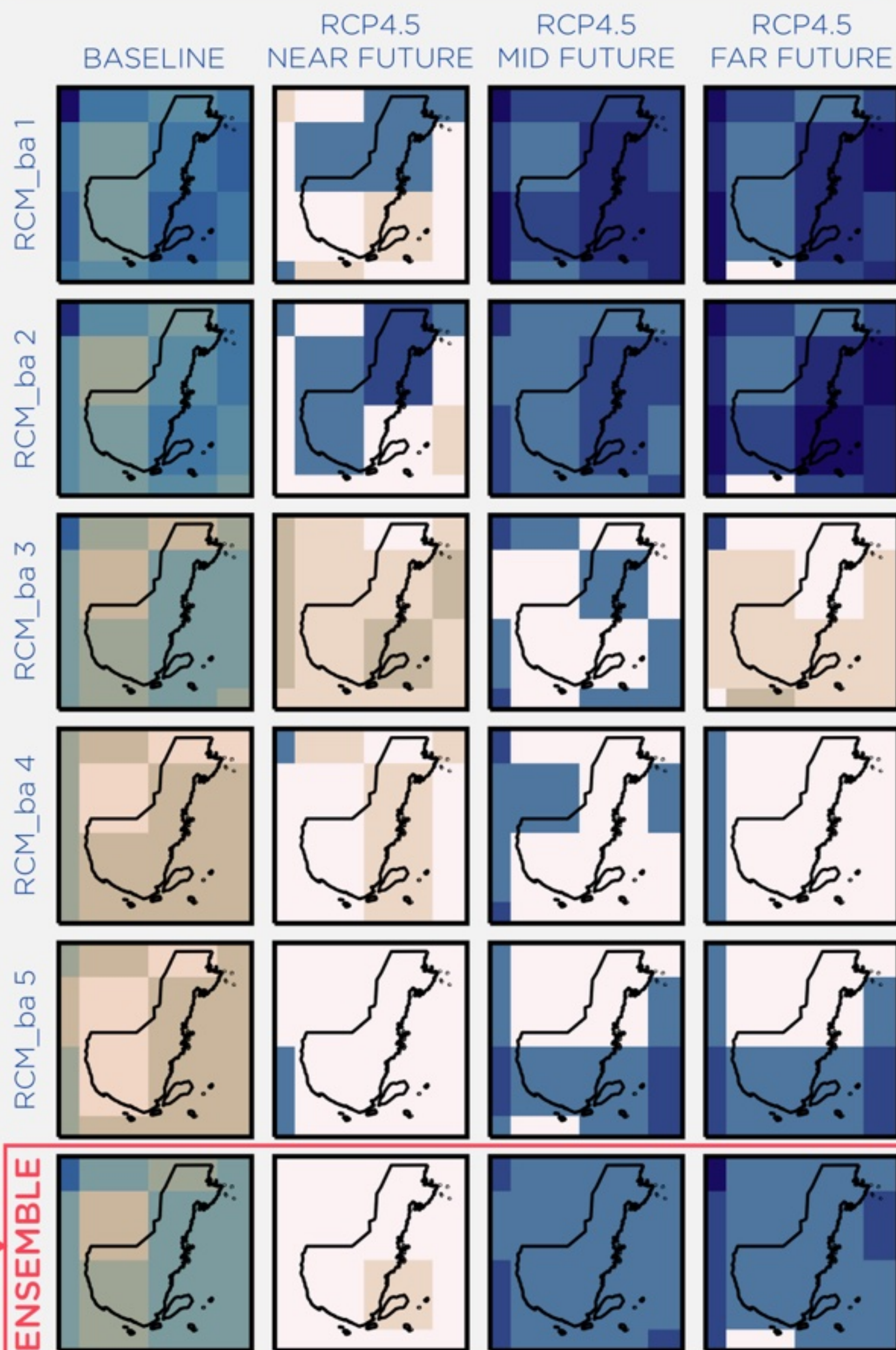**REGIONAL CLIMATE MODEL (RCM)**

RCM 2 RCM 3
RCM 1 RCM 4 RCM 5

RCMs are complex computure programs that simulate local climate patterns zoomed in on specific areas on a finer scale

2 EVALUATE

CLIMATE PROJECTION ENSEMBLE

5 GET ENSEMBLE MEAN OF RCMs

	BASELINE	RCP4.5 NEAR FUTURE	RCP4.5 MID FUTURE	RCP4.5 FAR FUTURE
RCM_ba 1				
RCM_ba 2				
RCM_ba 3				
RCM_ba 4				
RCM_ba 5				
ENSEMBLE				

Climate ensemble is the average of a collection of comparable model simulatins

MODEL EVALUATION and BIAS ADJUSTMENT

BIAS
RCM
OBSERVATIONS or ERA5

3 BIAS CORRECT
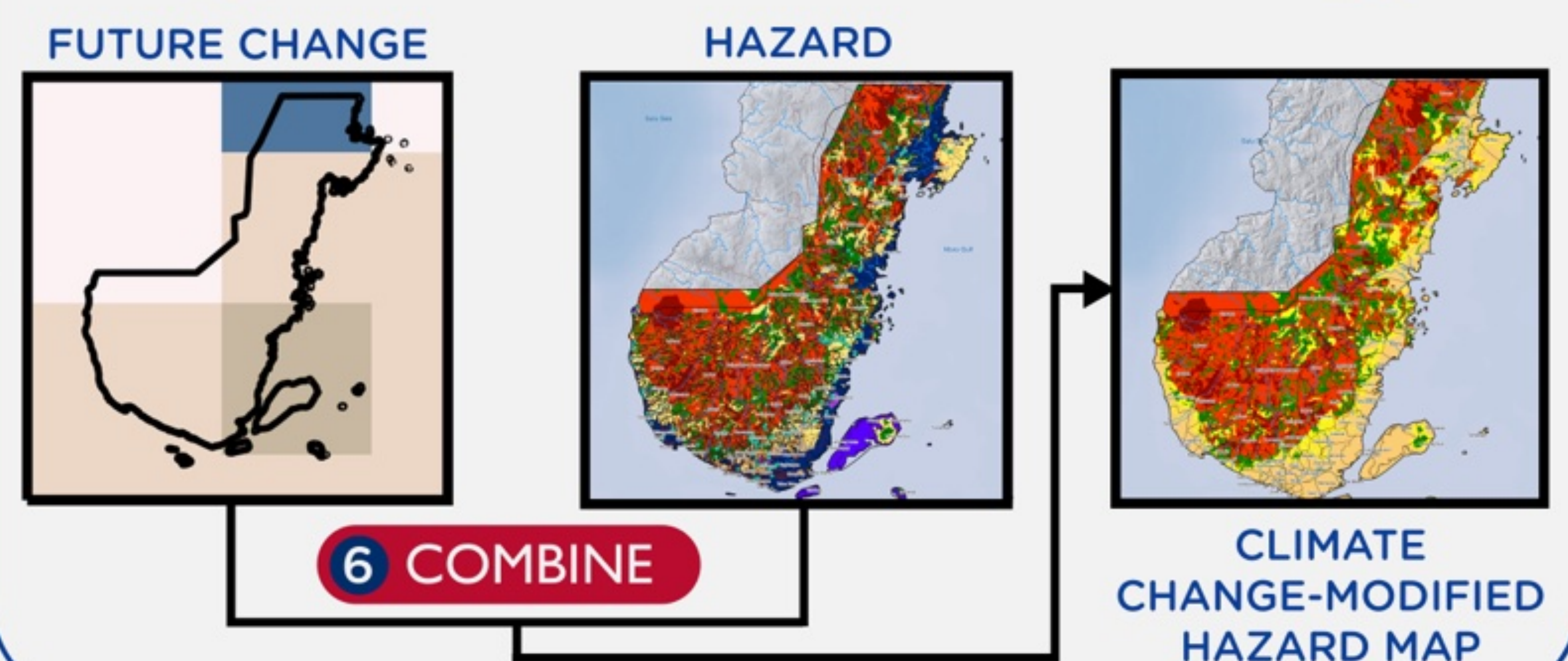
bias-adjusted RCM (RCM_ba)
OBSERVATIONS or ERA5

Bias adjustment method is a method used to 'adjust' the mean, variance, and/or distribution of GCM or RCM climate data using observations and/or reanalyses datasets.

>> closer values but still retains climate change signals

4 APPLY BIAS CORRECTION METHOD TO EACH RCM

CLIMATE CHANGE-MODIFIED HAZARD MAP

FUTURE CHANGE HAZARD

6 COMBINE

CLIMATE CHANGE-MODIFIED HAZARD MAP

For more information: Alan Silayan - Chief of Party
Email: alanluis.silayan@crs.org | Contact details: 09175258473