Introduction to the Climate Projections Guidance

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Aug 2016

www.csiro.au

The project is being implemented by the Asian Development Bank through the technical assistance (TA 8359-REG) financed by the Japan Fund for Poverty Reduction.

ADB

From the People of Japan

Griffith UNIVERSITY

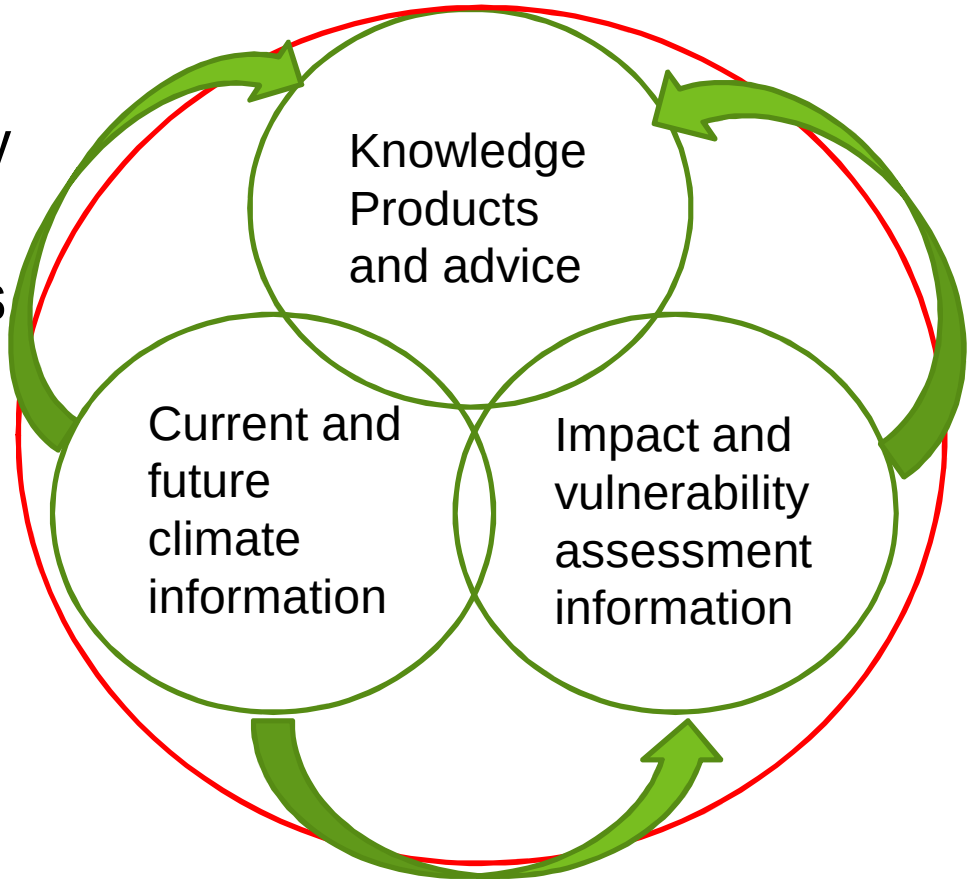
CSIRO

Framework - Guidance

General guidance on how to :

1) Use climate information
2) Do an impact and vulnerability assessment
3) Develope knowledge products

Guidance on how to connect the various components

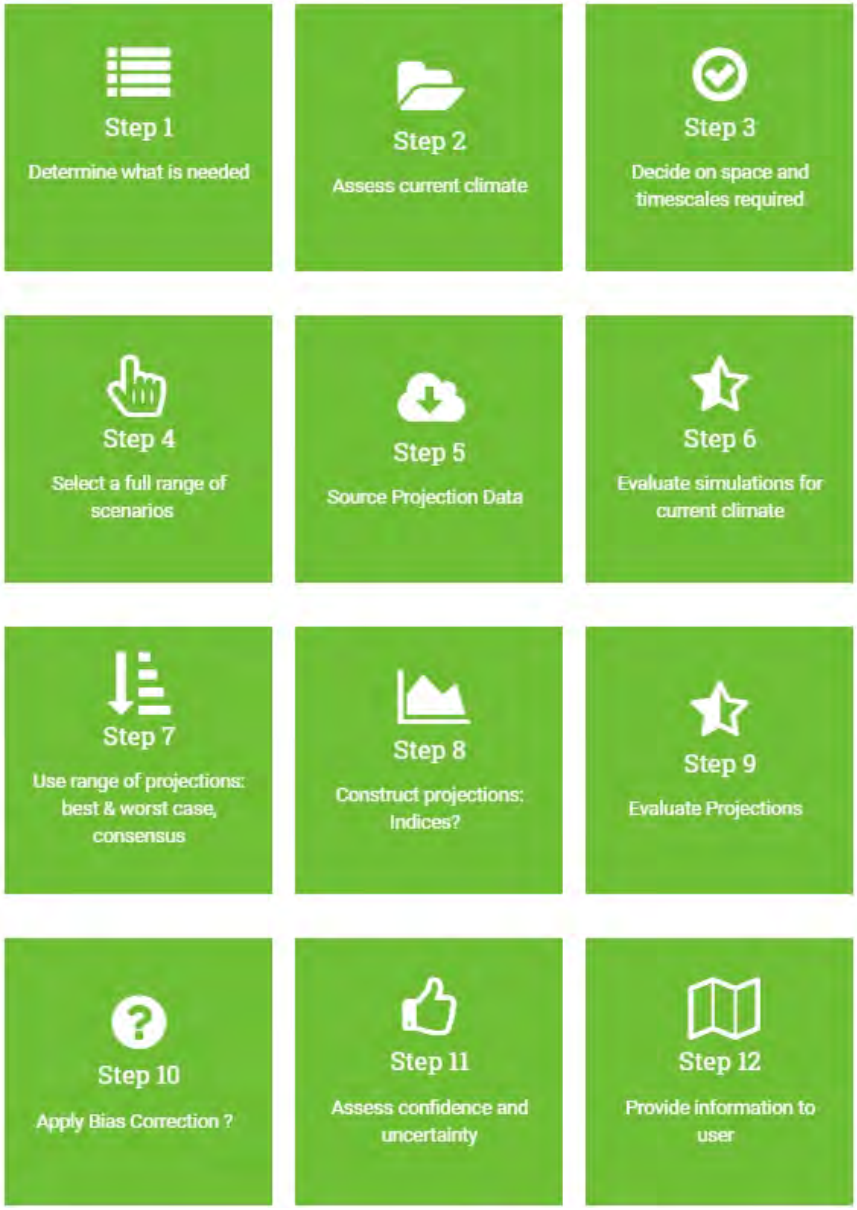


Climate Projections

Contents

ACCESS CLIMATE SCIENCE DATA

The following sections give twelve steps to consider when selecting appropriate climate information and services. These are summarised in the Overall Climate Guidelines flowchart below.



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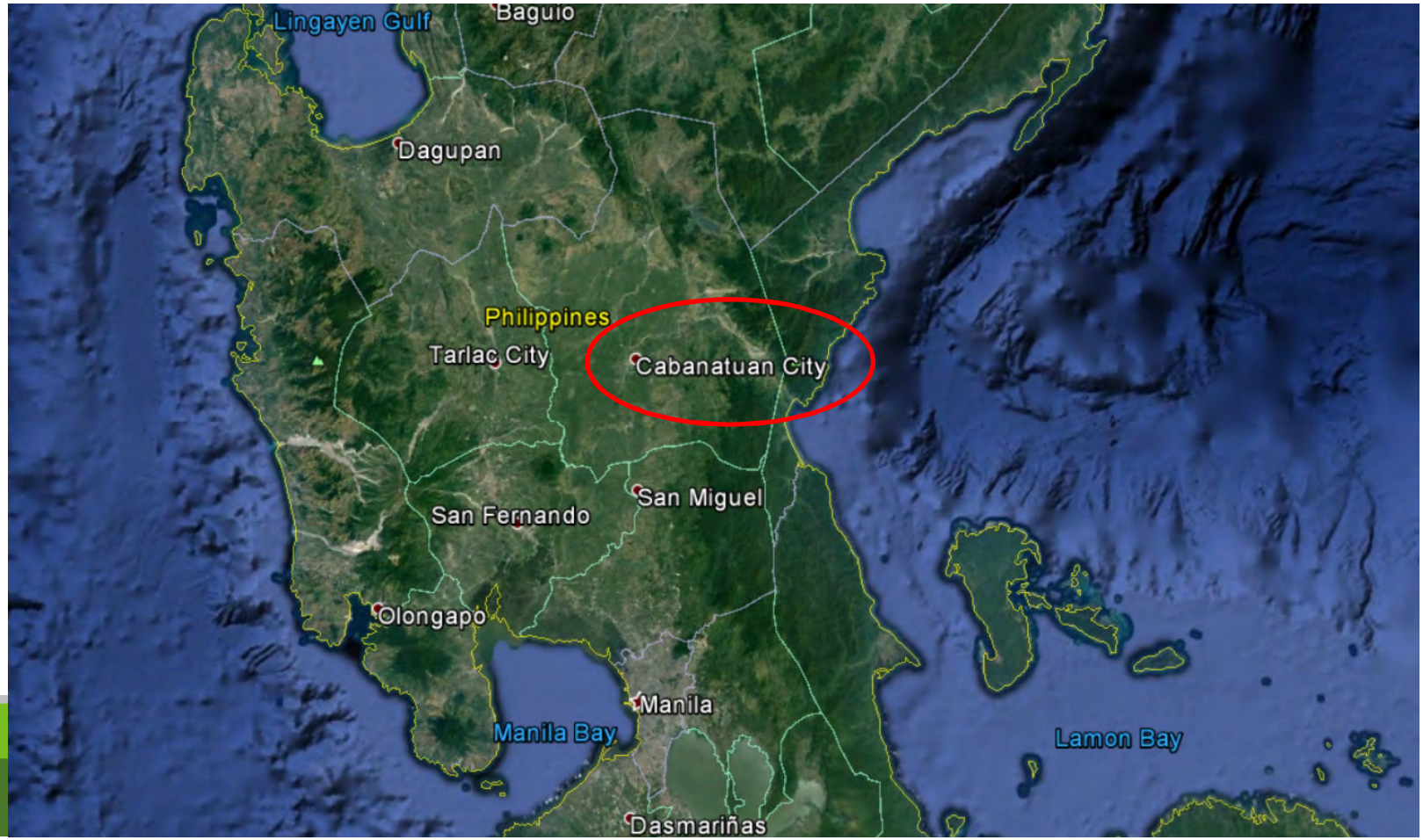
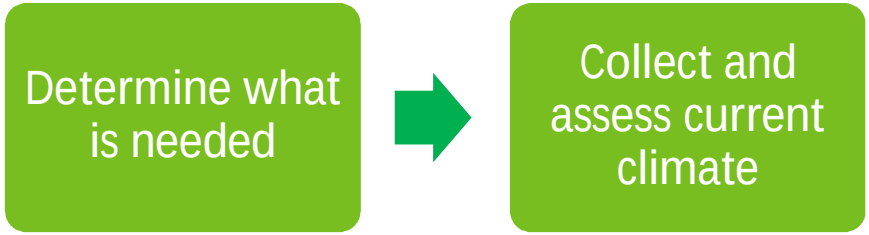
Climate Assessment Flowchart

Determine what is needed

Irrigation canal design needs daily:
Rainfall and temperature



Climate Assessment Flowchart



Station data for:
Cabanatuan City, Nueva Ecija
CLSU Muñoz Nueva Ecija

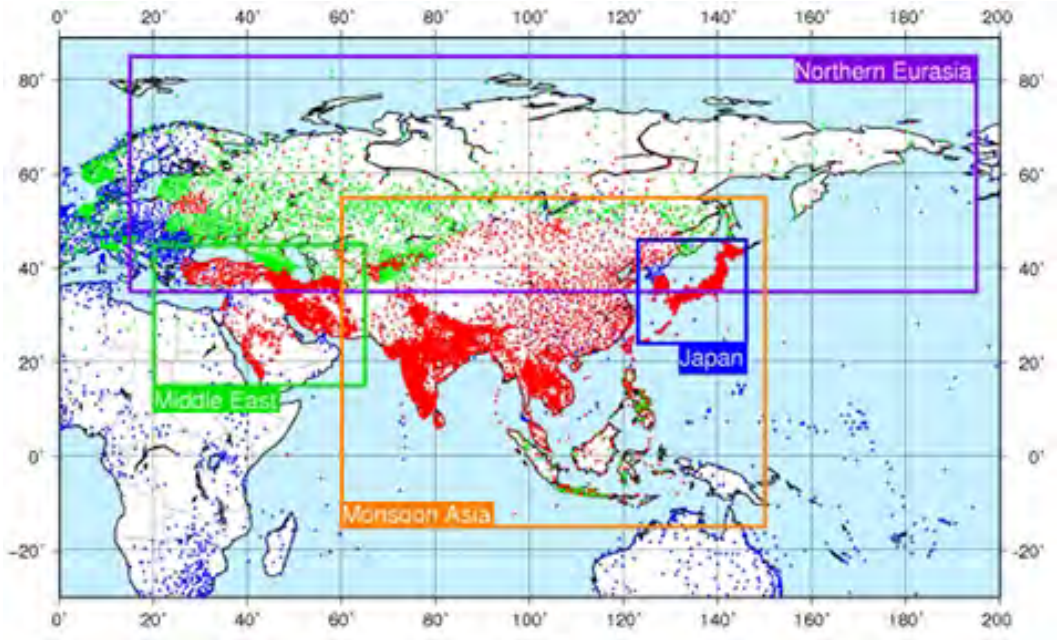
Example of gridded data

APHRODITE: Asian Precipitation - Highly-Resolved Observational Data Integration Towards Evaluation of Water Resources

Years of Record: 1951/01 to 2007/12

Type of data product: Gridded rainfall and temperature from obs

Institution and PI: University of Tsukuba, Japan Meteorological Agency/ Akiyo Yatagai



Cuurent version: V1101 Download »Readme

Name	Domain	Resolution	Period
Monsoon Asia (MA)	60°E-150°E, 15°S-55°N	0.5° and 0.25°, daily	1951-2007
Middle East (ME)	20°E-65°E, 15°N-45°N		
Russia (RU)	15°E-165°W, 34°N-84°N		

Current version, with Rain/Snow discrimination: V1101R2 Download »Readme

Name	Domain	Resolution	Period
Monsoon Asia (MA)	60°E-150°E, 15°S-55°N	0.5° and 0.25°, daily	1961-2007

AphroTemp Current version: V1204R1 Download »Readme

Name	Domain	Resolution	Period
Monsoon Asia (MA)	60°E-150°E, 15°S-55°N	0.5° and 0.25°, daily	1961-2007

APHRO_JP Current version: V1207 Download »Readme

Name	Domain	Resolution	Period
Japan (JP) (Kamiguchi et al. 2010, 2011)	123°E-146°E, 24°N-46°N	0.05°, daily	1900-2011

http://www.chikyu.ac.jp/precip/index.html

APHRODITE evaluation

https://climatedataguide.ucar.edu)

Key Strengths:

- High density and quality station network.

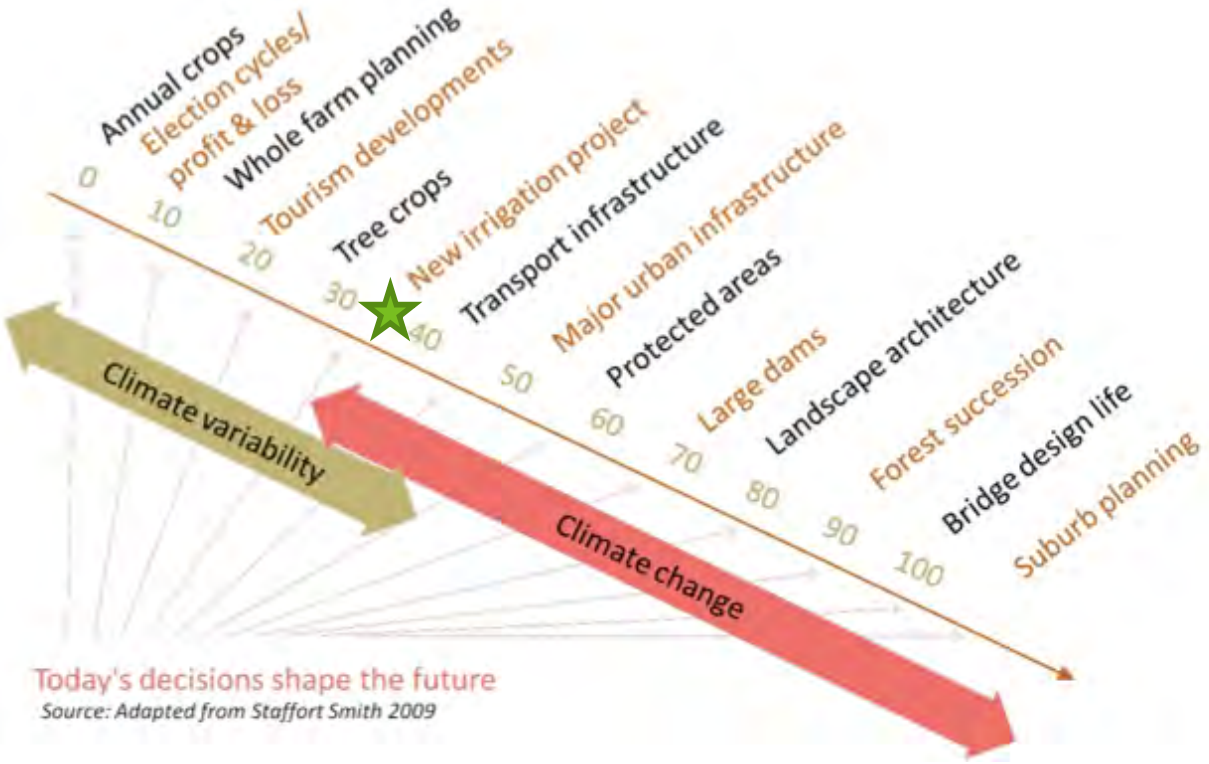
Key Limitations:

- Station network changes with time and season.
- We do not homogenize the observed time series of temperature data. Changes in gauges, location of the stations, and many other factors might cause discontinuity of observation data.
- Lack of observation data (in India, Indonesia and Papua New Guinea)

Climate Assessment Flowchart

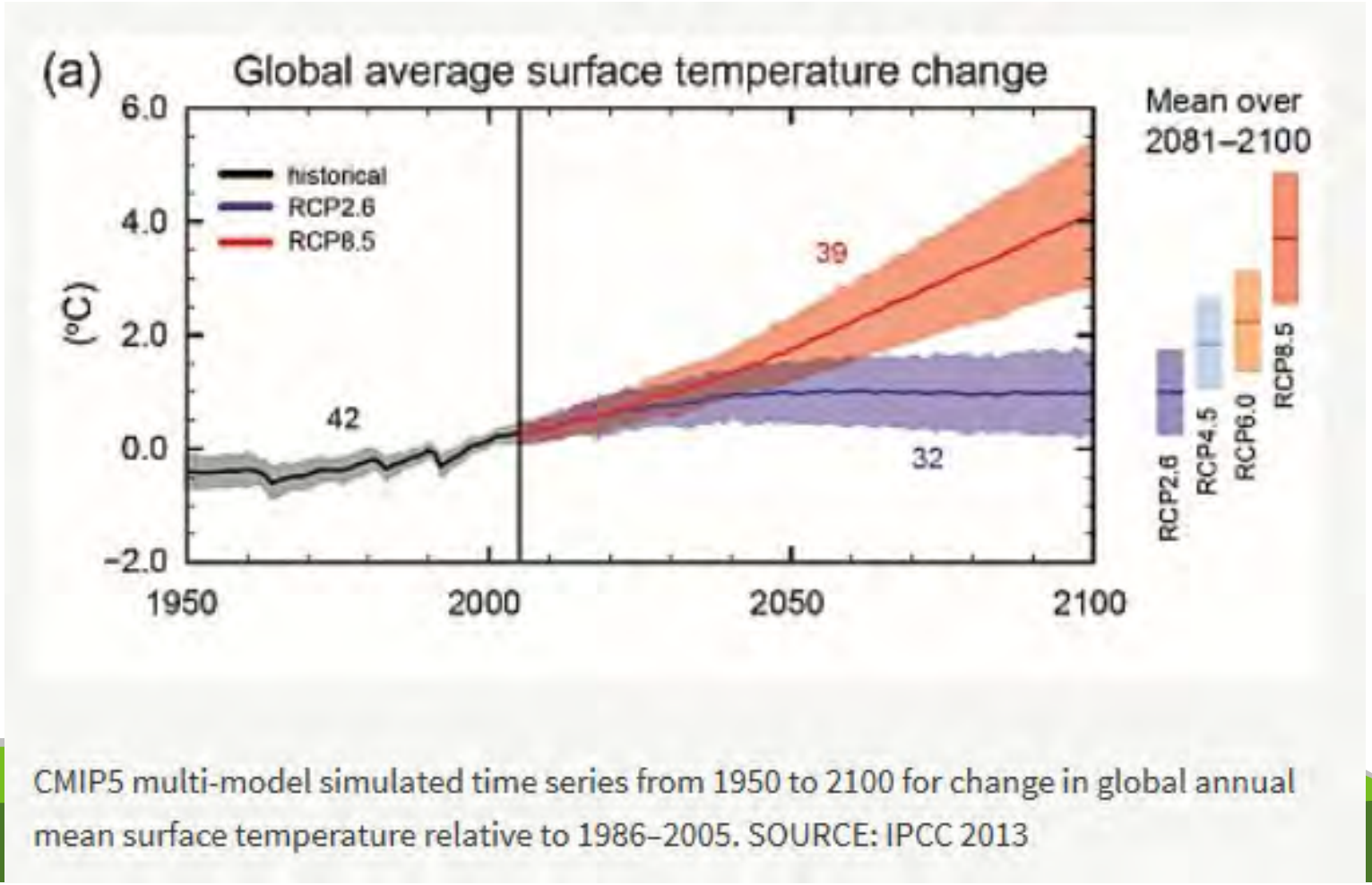
Determine what is needed → Collect and assess current climate → Decide on space and timescale required

Planning Horizons: Time Scales Relevant for



Climate Assessment Flowchart

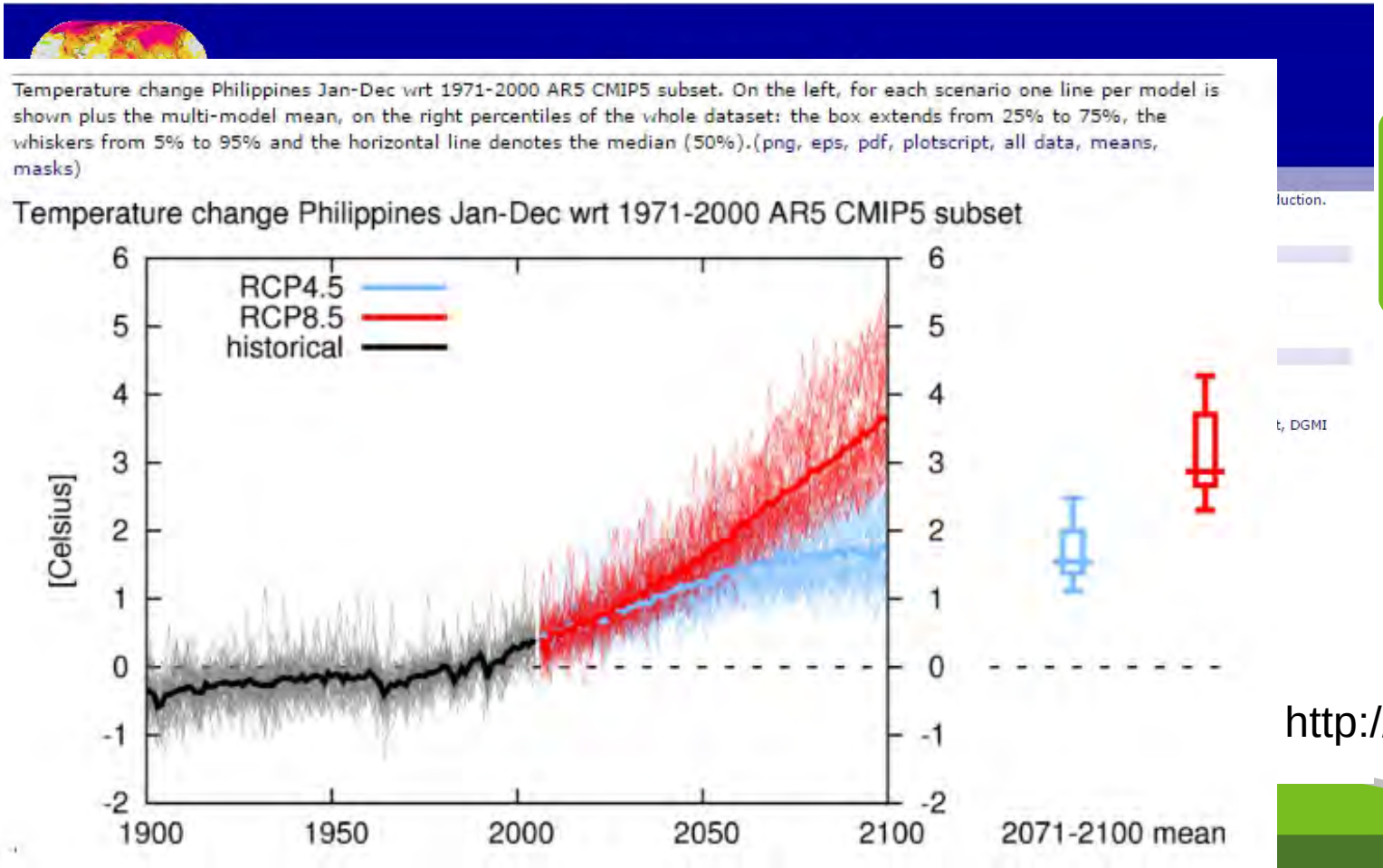
Determine what is needed → Collect and assess current climate → Decide on space and timescale required → Select scenario



CMIP5 multi-model simulated time series from 1950 to 2100 for change in global annual mean surface temperature relative to 1986–2005. SOURCE: IPCC 2013

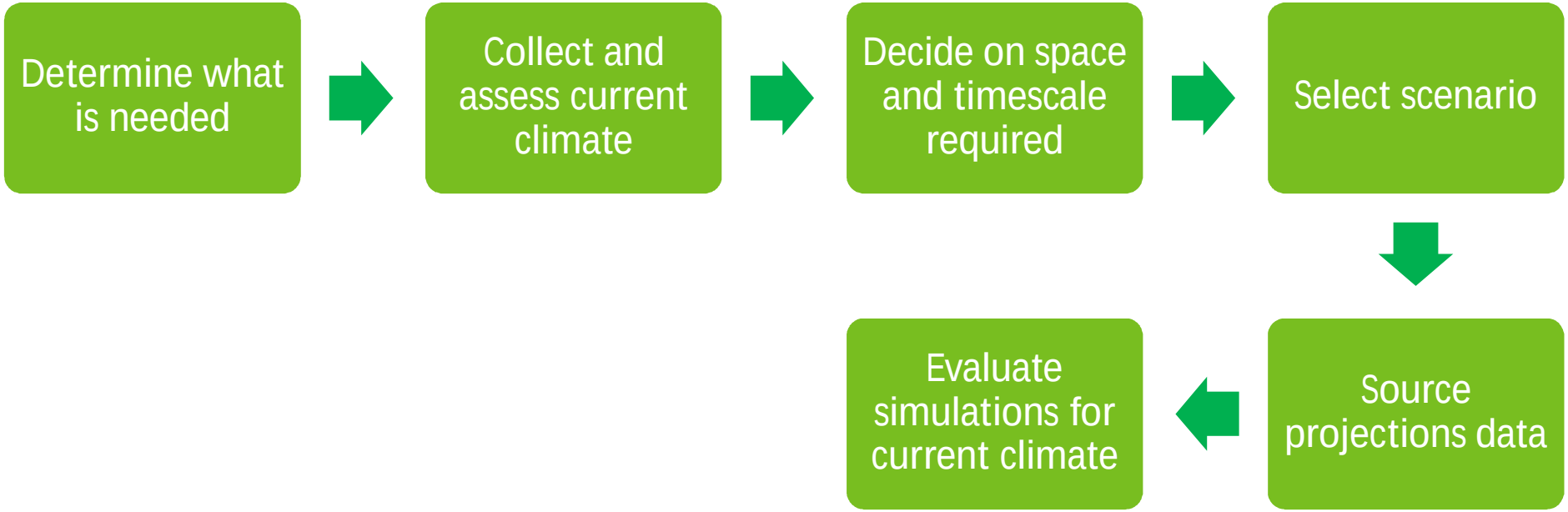
Climate Assessment Flowchart

Determine what is needed → Collect and assess current climate → Decide on space and timescale required → Select scenario → Source projections data

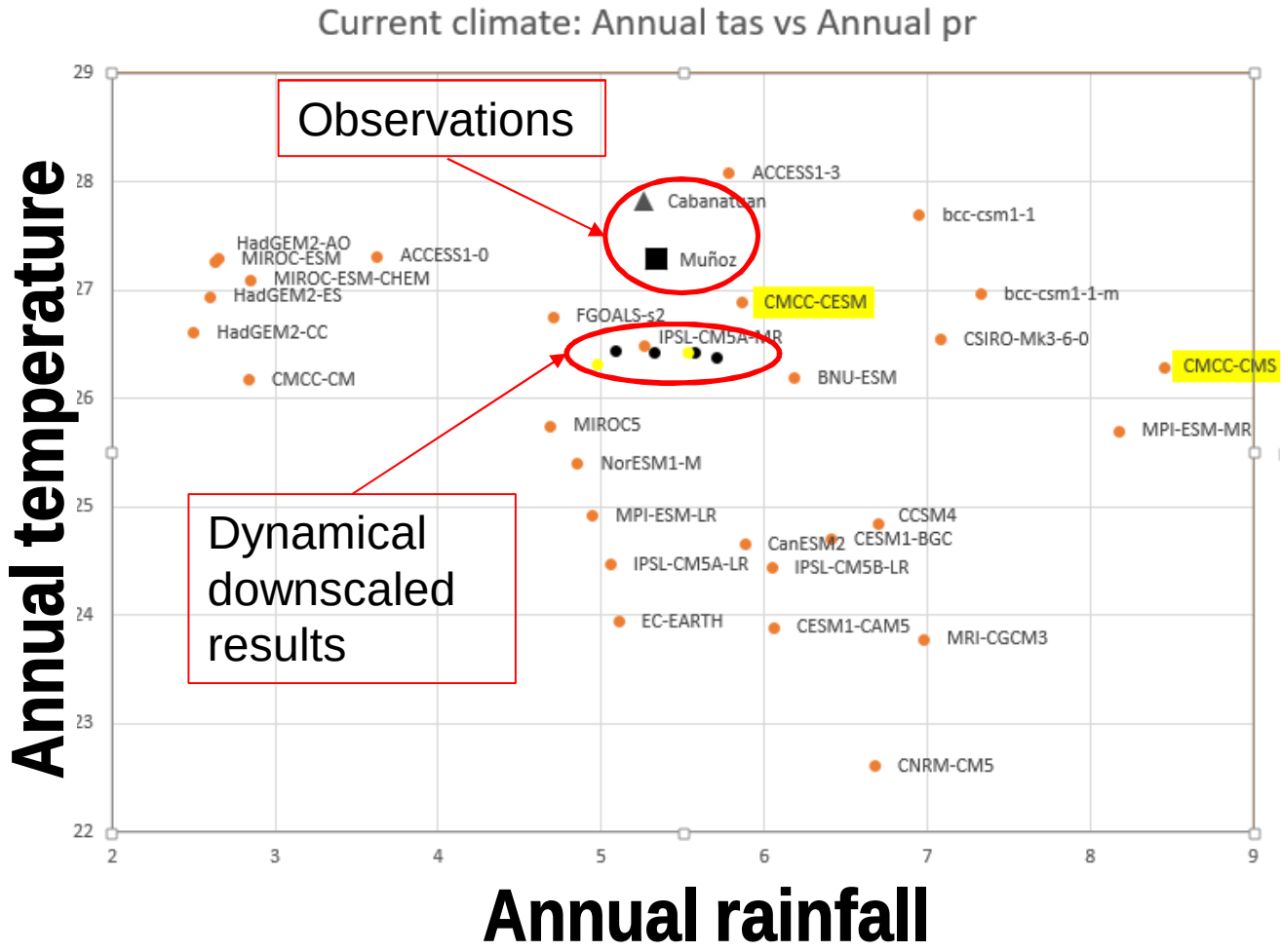


http://climexp.knmi.nl/

Climate Assessment Flowchart

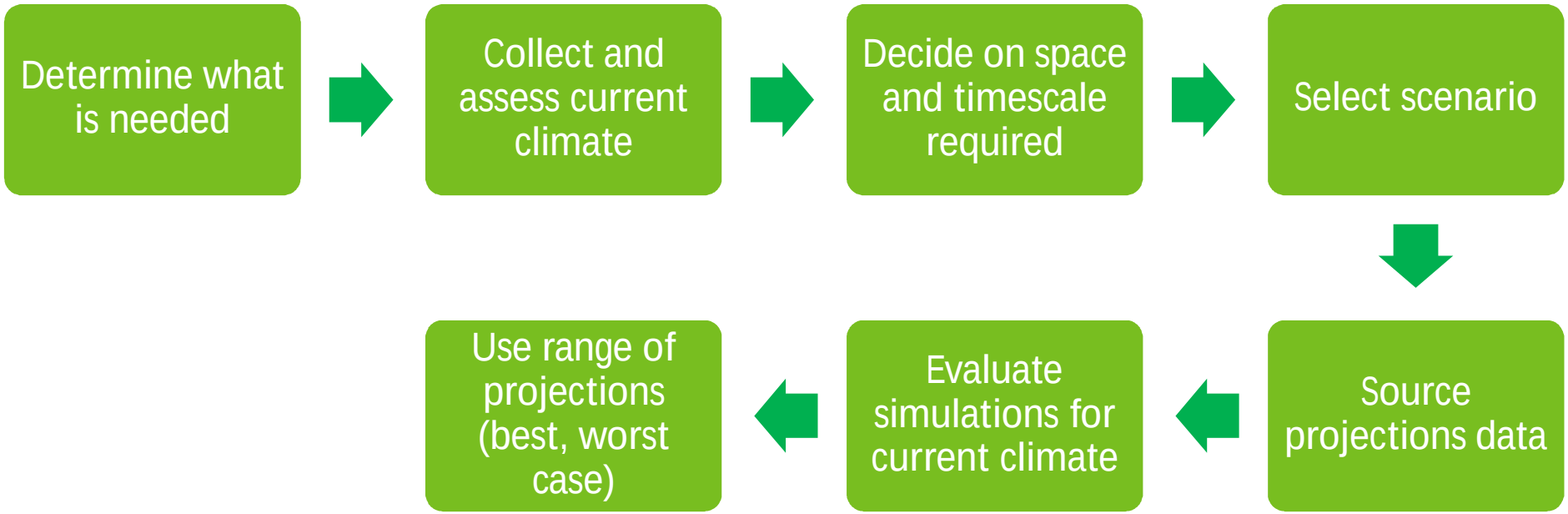


Case Study Example

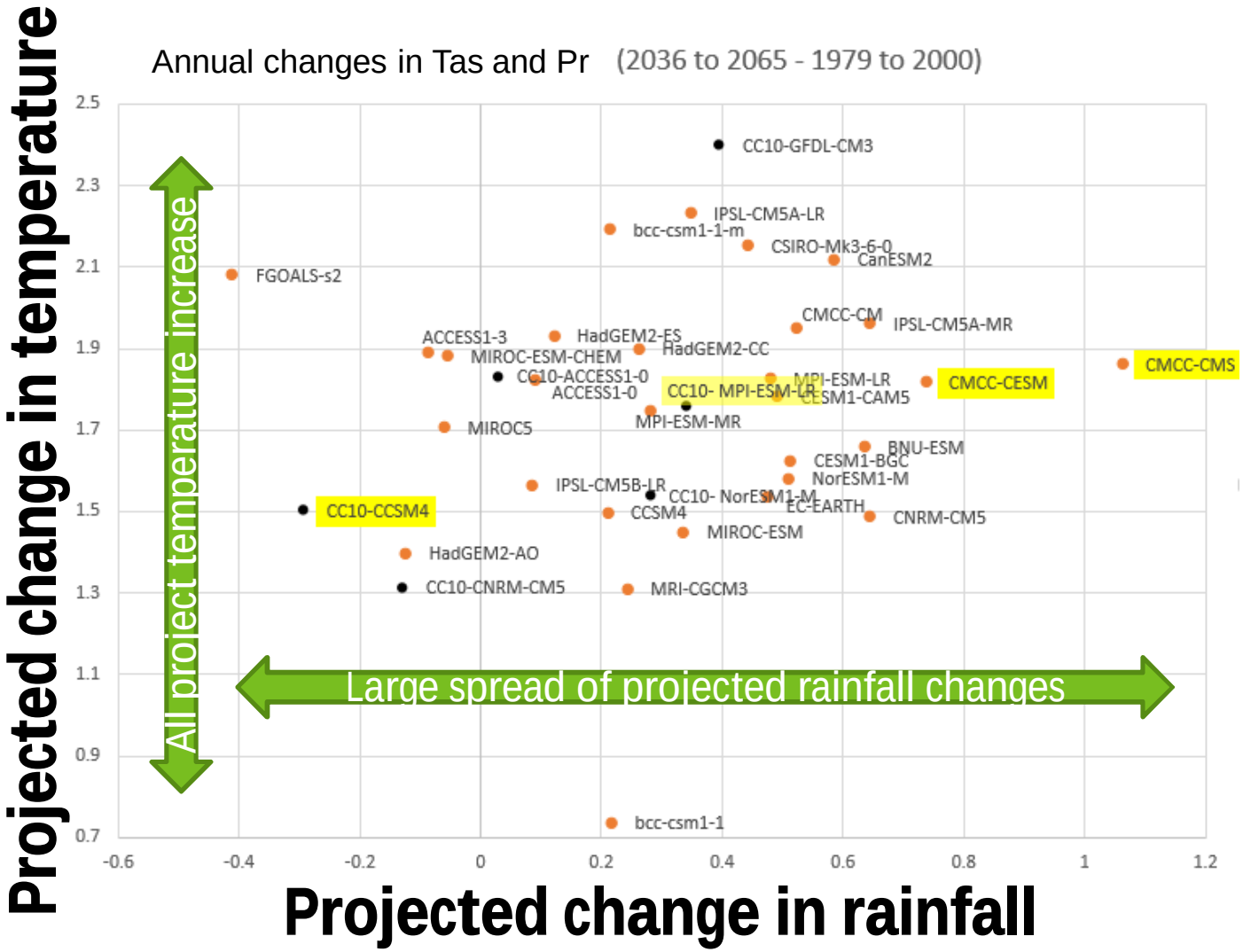


Plot of mean annual temperature (°C) and rainfall (mm/day) for the baseline period for global climate models (orange markers), regional climate model output (black and yellow dots) and observational data (black square and triangle). The models selected for the case study are indicated in yellow highlight for GCMs and yellow dot for RCMs.
Location: Cabanatuan City

Climate Assessment Flowchart

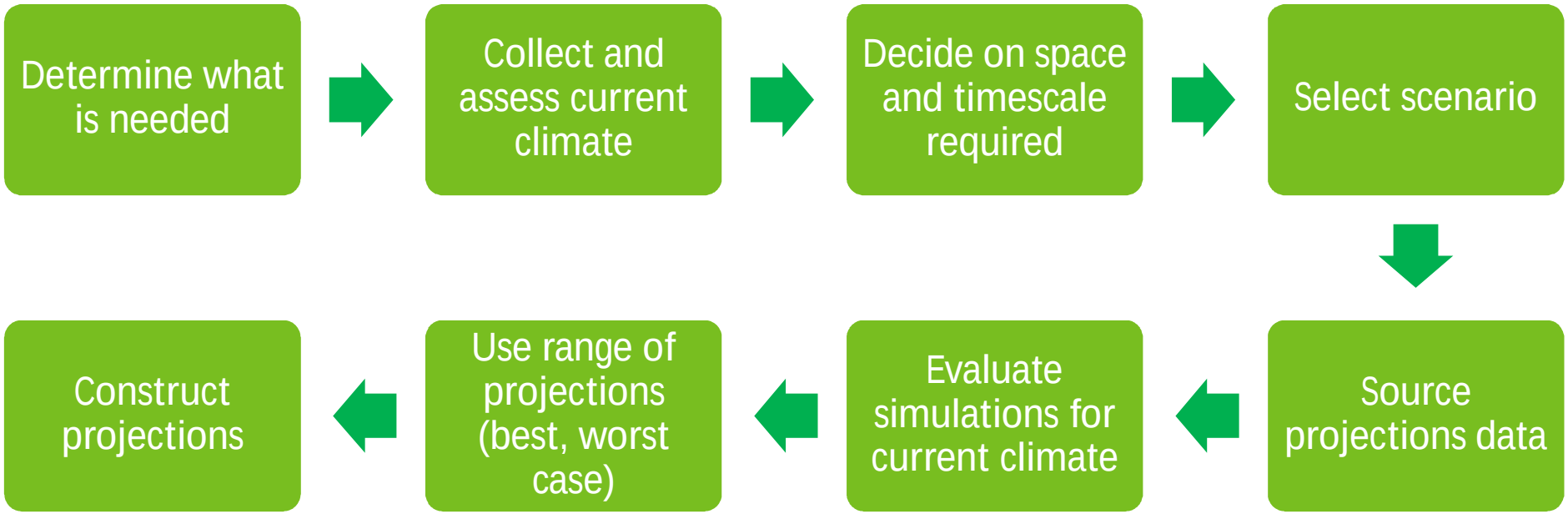


Case Study Example



Plot of changes in annual rainfall (mm/day) and annual surface air temperature (°C) for the period 2036-2065 minus the period 1971-2000 for global climate models (orange markers), regional climate model output (black dots). The models selected for the case study are indicated in yellow highlight. Location: Cabanatuan City

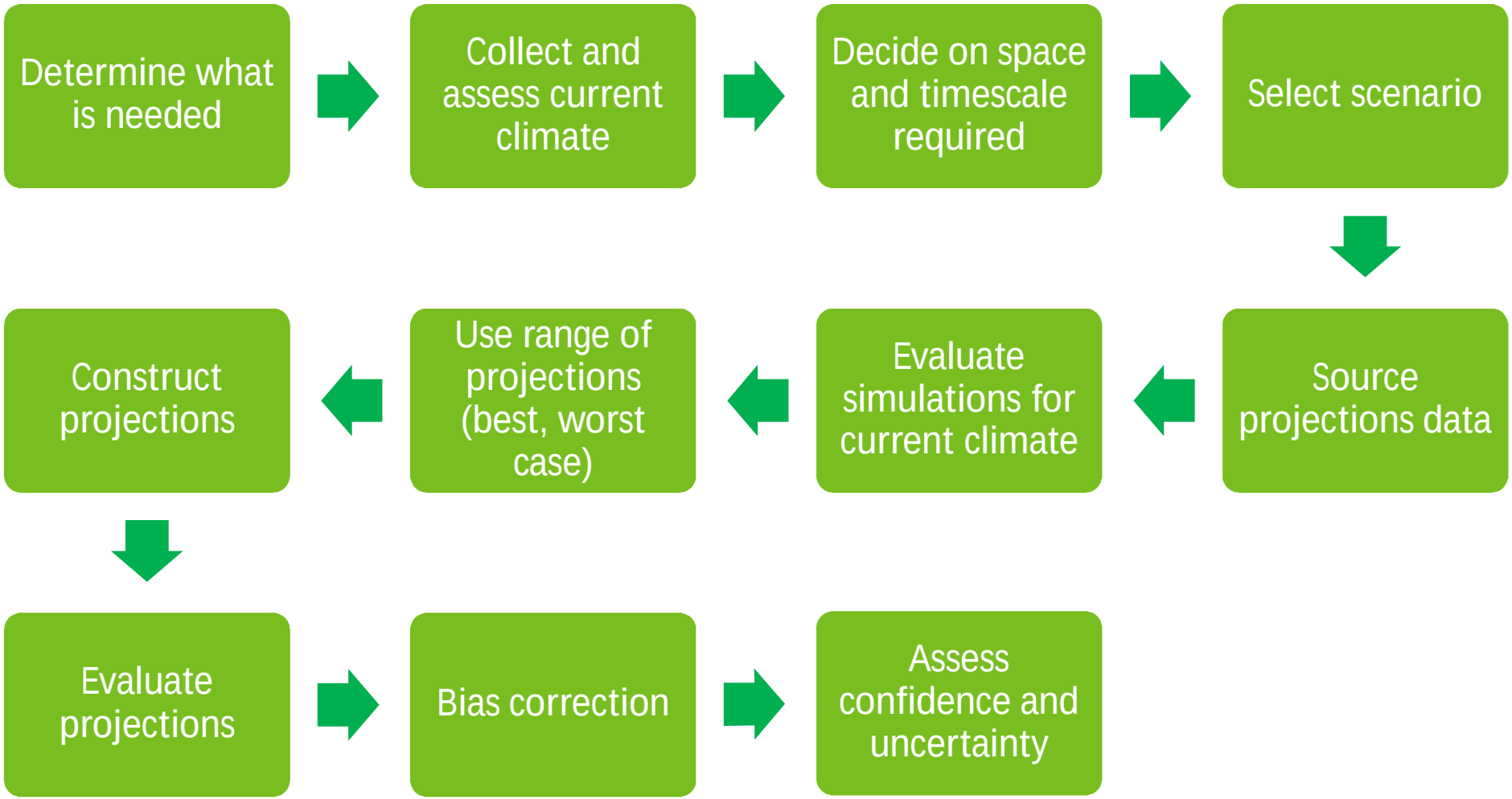
Climate Assessment Flowchart



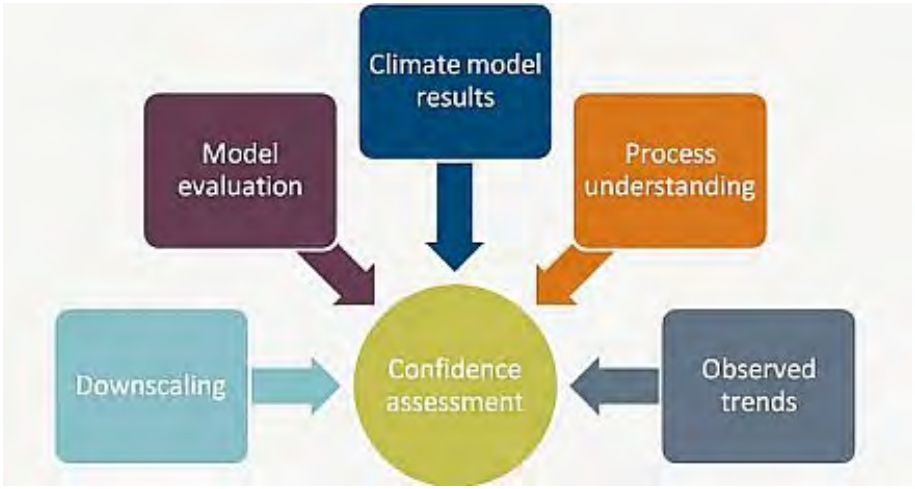
Need to consider

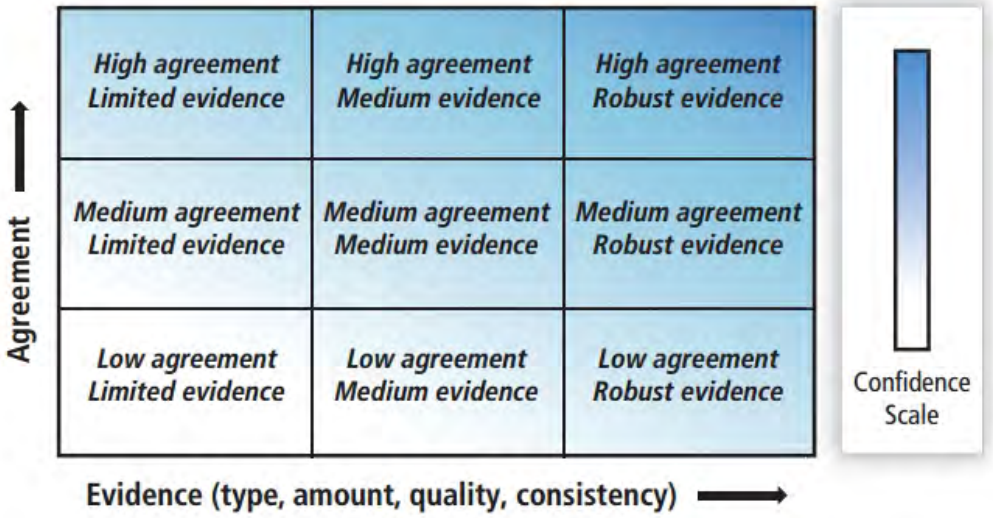
1) 10 day totals
2) 20th %tile

Climate Assessment Flowchart



Uncertainty and confidence in projections

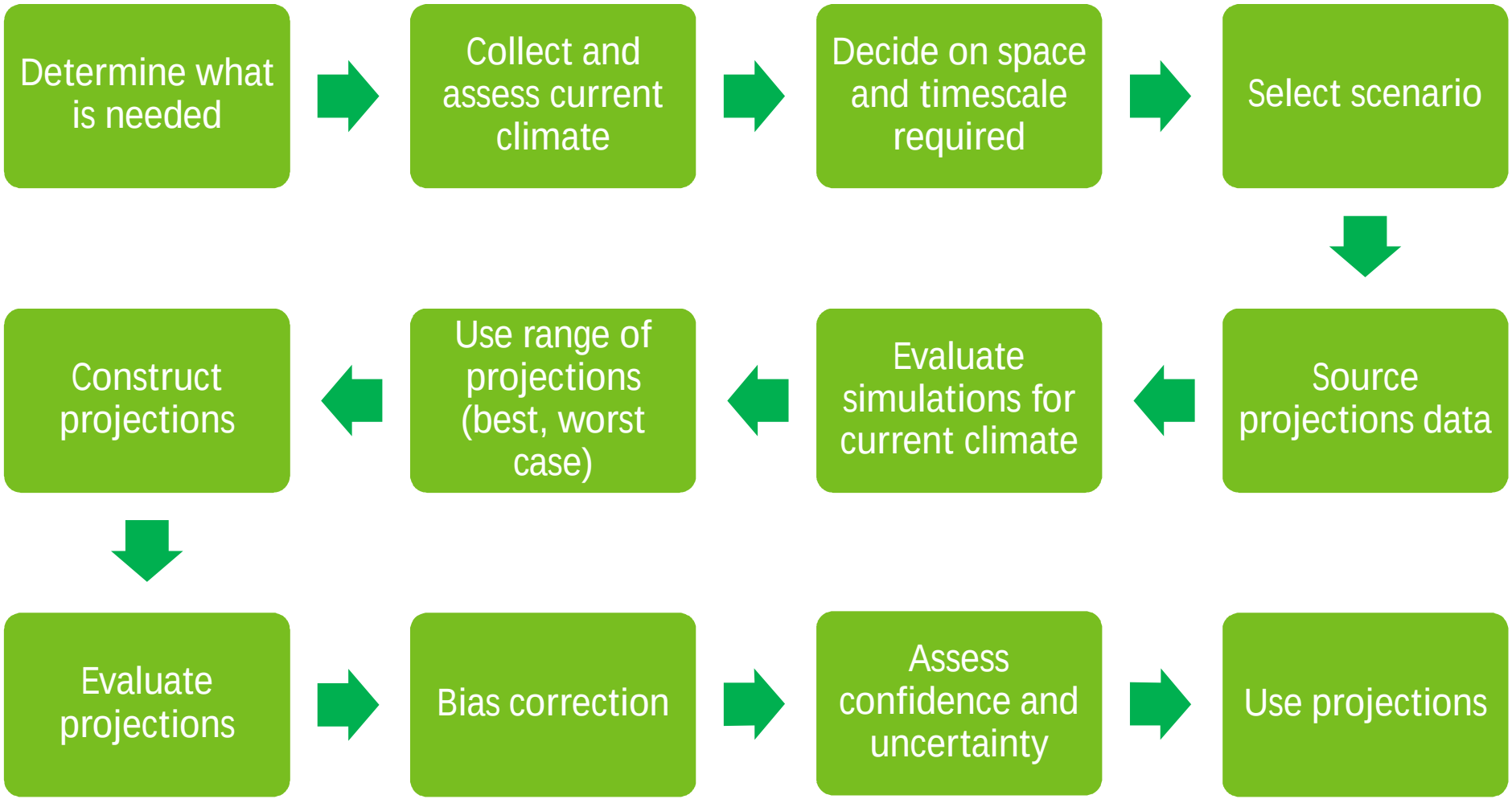




Five lines of evidence to consider when assessing confidence in projections

IPCC

Climate Assessment Flowchart



Thank you

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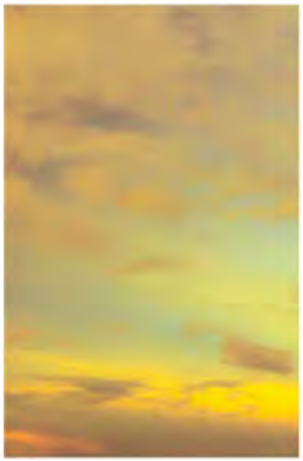
Regional Climate Projections Consortium and Data Facility for Asia and the Pacific

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[1] 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.

[1] 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.