

# Asia Water Cycle Initiative

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# **MAJOR ISSUES AND NEEDS RELATED TO THE WATER CYCLE AND WATER RESOURCES MANAGEMENT IN ANGAT BASIN**

**a) Development of a more accurate short and long-term weather/climate forecast model**

**b) Streamflow forecast model for the basin/watershed**

**c) Decision support system for the management of the water resource of the basin/watershed**



N



● Sibul Spring

Legend:

- Telemetering Rain GS
- ⊗ Telemetering Rain/WL GS
- △ Telemetering WL GS
- Basin Boundary
- River Course
- Dam and Reservoir

San Rafael

Norzagaray

Ipo dam

Angat dam

Talaguio

Maputi

Matulid

Ipo SB  
(117 sq. km)

Angat Basin





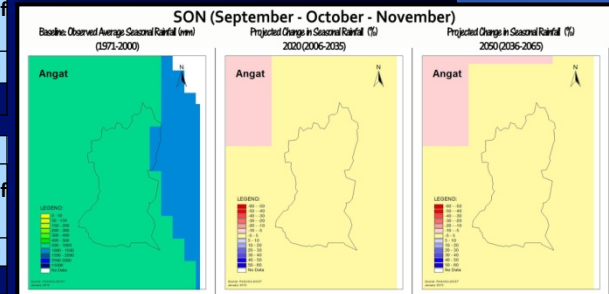
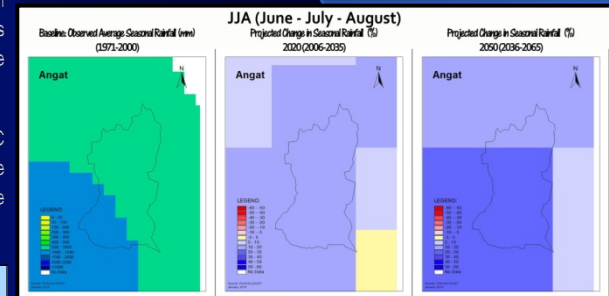
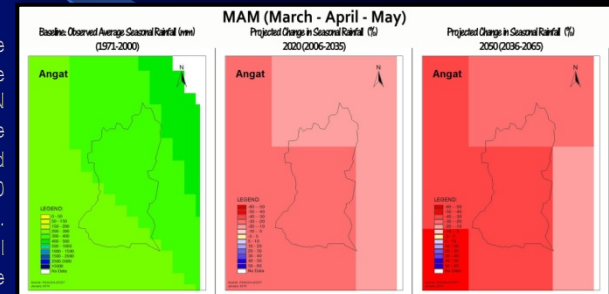
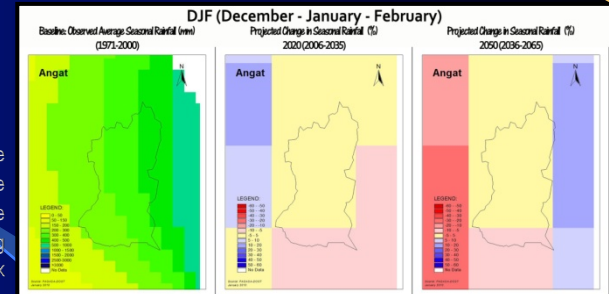
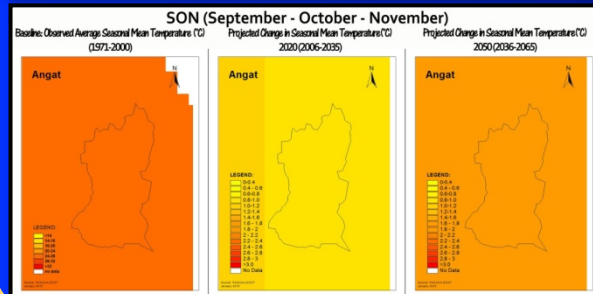
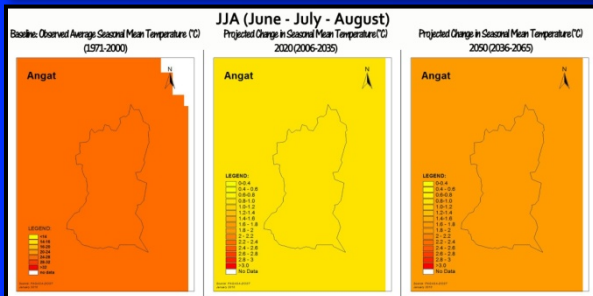
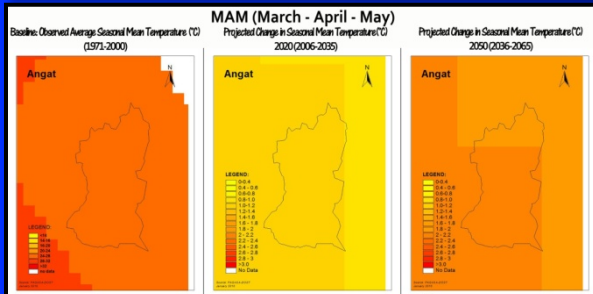
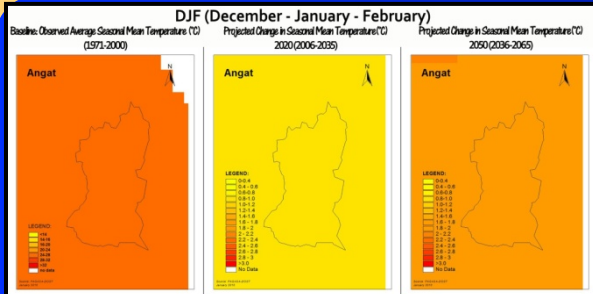
### Abstract

## Climate Change Projections for the Angat Dam using PRECIS

In this study we evaluate the future changes in temperature and precipitation in two time periods (2020 and 2050) over the Angat Dam using the regional climate model PRECIS. The boundary data used was provided by the Hadley Centre using HadCM3, downscaled to grid resolution 0.22° x 0.22° (25km x 25km) with the A1B emission scenario.

Results show that there is a generally decreasing trend in the projections of rainfall for the Angat Dam as seen in the reductions in rainfall during the months of DJF, MAM and SON both in 2020 and 2050. There is spatial difference in the projected rainfall changes during the months of DJF, MAM and JJA. The southern part of the Angat Dam being drier in 2020 and 2050 in DJF with an average reduction -2.7 to -4.9%. MAM will be drier becoming greater with time with rainfall reductions much greater in the southern and central part of the basin (-21.6 to -33.9%). For the month of SON average rainfall reduction is from -1.7% to -3.2%. Increases in rainfall is expected in JJA with greater increase in 2050 especially in the southern and central part of the watershed. (14.7% to 23.8%).

Projections of temperature show an average increase of 0.9°C to 2°C in 2020 and 2050 with greatest increase during the months of MAM. The southern and central part of the watershed will likely experience higher temperature in 2050.



TEMPERATURE											
OBSERVED BASELINE (1971-2000)				PROJECTED CHANGE of 2020 (2006-2035)				PROJECTED CHANGE of 2050 (2036-2065)			
DJF	MAM	JJA	SON	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
25.1	27.1	26.4	26.0	0.9	1.1	0.9	1.0	1.8	2.0	1.7	1.9

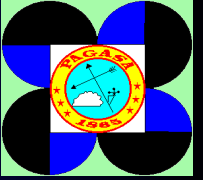
  

RAINFALL											
OBSERVED BASELINE (1971-2000)				PROJECTED CHANGE of 2020 (2006-2035)				PROJECTED CHANGE of 2050 (2036-2065)			
DJF	MAM	JJA	SON	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
359.3	331.8	956.1	934.5	-2.7	-21.6	14.7	-1.7	-4.9	-33.9	23.8	-3.2

# AWCI demonstration project

- Climate change projection using other GCMs
- Climate change projection to a finer resolution





# Thank You!

“tracking the sky . . . helping the country”