

New Climate Risk and Adaptation Country Profiles for PPCR Pilots

PPCR Pilot Country Meeting

June 23, 2011

Claudio Forner, CIF AU

Country profiles

- In cooperation with GFDRR and the Environment Department of the WB
- For all SCF countries
- Targeted and based on their priorities
- A means to bring all information to a single place
- Start of a process for countries to take ownership of these profiles

Contents

- Overview (geography, economy, population)
- Climate baseline
- Current climate trends
- Climate future
- Hazards
- Adaptation (where available, based on available material: SPCR, NAPA, etc.)

Climate Risk and Adaptation Country Profiles

Select a Country



This series of 49 climate risk and adaptation profiles offers a common platform to guide access, synthesis, and analysis of relevant country data and information for Disaster Risk Reduction and Adaptation to Climate Change. The profiles are geared towards providing a quick reference source for development practitioners to better integrate climate resilience in development planning and operations. Users are able to evaluate climate-related vulnerability and risks by interpreting climate and climate-related data at multiple levels of detail. Sources on climate and climate related information are linked through the country profiles' on-line platform, which is periodically updated to reflect the most recent publicly available climate analysis. The series is developed by the Global Facility for Disaster Reduction and Recovery (GFDRR), the Global Support Program of the

Recent Trends	
mean annual temperature since 1960	0.8°C ▲
'hot' days per year since 1960	+46 days ▲
'hot' nights per year since 1960	+63 days ▲
average 'cold' days per year	-19 days ▼
mean rainfall	Explore Further

Key Sectors
Agriculture
Forestry
Water Resources
Public Health
Coastal Zones

[Explore Further](#)



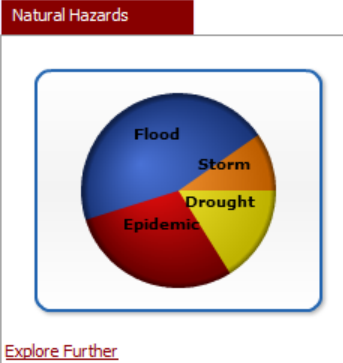
Select a layer to visualize it on the map.

Legend

★ Major Cities

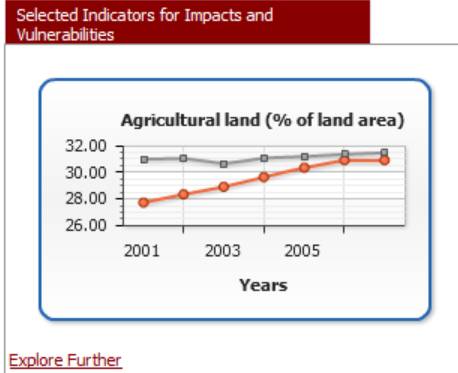
Layers

- Major Cities
- Major Rivers
- Water Bodies
- Roads
- Wetlands
- Elevation



Overview

Cambodia is part of mainland Southeast Asia. Bordered by Laos, Thailand, and Vietnam and with a coastal region on the Gulf of Thailand, it covers an area of 181,040 square kilometers. The Mekong River is the most prominent geographical feature of the country, flowing directly from the north to the Mekong Delta of Vietnam in the south. The Tonle Sap Lake, an outlet of the Mekong River during the rainy season, is located in the country's northwest region. Cambodia's topography includes the low-lying central plains of the Mekong, which are surrounded by mountainous and highland regions. The country's coastline measures 435 km. The population of Cambodia was 14.5 million in 2010, with 80% living in rural areas. 52% of the population lives in the central plains, 30% in the surroundings of Lake Tonle Sap, 11% in the highlands and mountains, and only 7% along the coast. The national average population density is low for the region at 75 people per km². Cambodia's Gross Domestic Product (GDP) is USD 10354 million per annum, and the country's economy relies primarily on agriculture (33% of GDP and employing 57% of the country's labor force), industry (predominantly garments - 21% of GDP and employing 15.9% of the country's labor force), and services (42% of GDP and employing 26% of the country's labor force). Annual GDP growth rate has fluctuated widely from 5 to 13% in the 2000s. In 2008, GDP grew by 6.5%, with agriculture, fisheries and forestry accounting for 32.4 % of GDP, industry for 22.8 %, and services for 38.8%. The contribution of industry to GDP has doubled since 1993, but a substantial proportion of the population is still dependent on the farming and fisheries sectors. Cambodia is vulnerable to floods and droughts, mostly due to reliance on agriculture and fisheries.



Recent Trends

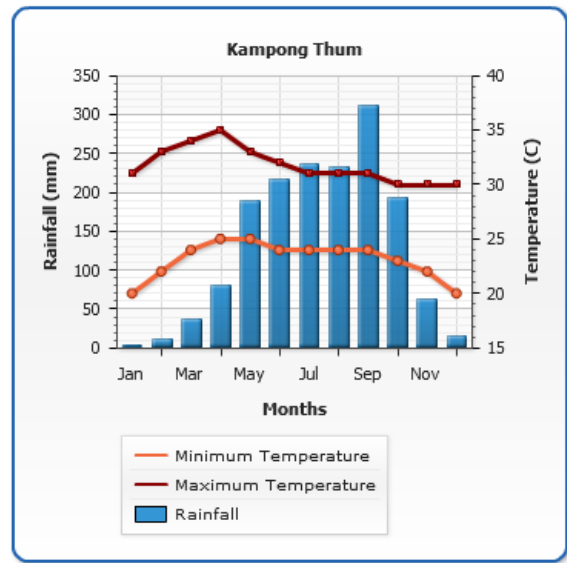
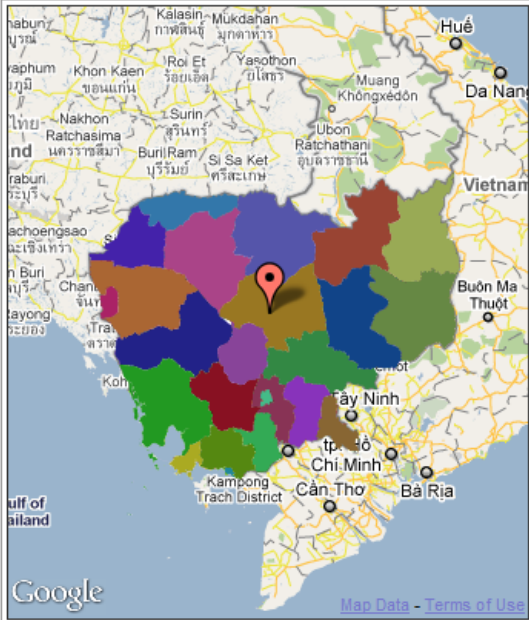
mean annual temperature	0,8°C since 1960 ▲
'hot' days per year	+46 days since 1960 ▲
'hot' nights per year	+63 days since 1960 ▲
average 'cold' days per year	-19 days ▼
mean rainfall	inconsistent projections ▼

Key Trends

- RAINFALL**
- Mean rainfall over Cambodia are unclear, with some areas experiencing increases and others decreases but these changes are not statistically significant.
- TEMPERATURE**
- The rate of temperature increase is most rapid in the drier seasons (December-January-February and March-April-May), increasing 0.20-0.23°C per decade, and slower in the wet seasons (June-July-August and September-October-November), increasing 0.13-0.16°C per decade.

Annual Climate Characteristics

Click on the map to view the historical climate chart for that province.

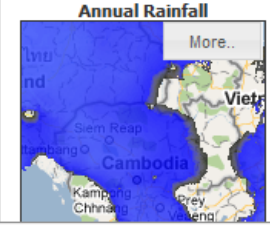


[To learn more about the data click here.](#)

Key Climate Periods

- The monsoon driven rainy season (May-October) with south-westerly winds ushers in clouds and moisture which accounts for anywhere between 80-90 percent of the country's annual precipitation.
- The dry season (November - April), brings cooler temperatures, particularly

Historical Climate Maps



Major Climate Processes

- Summer monsoon
- El Niño Southern Oscillation
- La Niña
- South-westerly winds

Impacts on Climate

- Creates high temperatures and two seasons in a tropical climate
- Average temperatures are relatively uniform across the country
- Some areas receive more than 5000 mm of rainfall during the wet season

At a Glance

Temperature	projected to increase	▲ 0.7 to 2.7°C by 2060s
	'hot' days	▲ 14-49% by 2060s
	'hot' nights	▲ 24-68% by 2060s
	'cold' days and nights	▼
Rainfall	during monsoon season	▲

Key Climate Changes

- Mean annual temperatures are projected to increase across Cambodia by 0.7-2.7°C by the 2060s, and 1.4-4.3°C by the 2090s.
- All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in current climate, with hot days increasing by 14-49% and hot nights increasing by 24-68% by 2060.
- All projections indicate decreases in the frequency of days and nights that are considered 'cold,' with these events becoming exceedingly rare.
- As yet it is not possible to get a clear picture for precipitation change, due to large model uncertainties, however increases in rainfall appear to be likely during the monsoon season for Cambodia.

Climate Charts

Move the marker to view the projected climate charts.



What does the chart show?

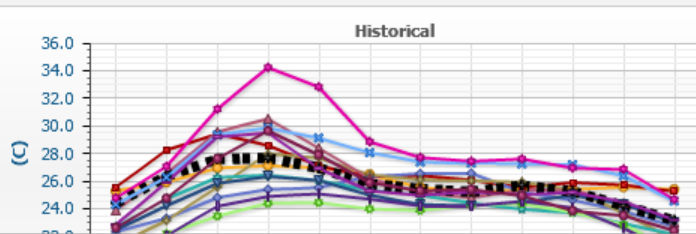
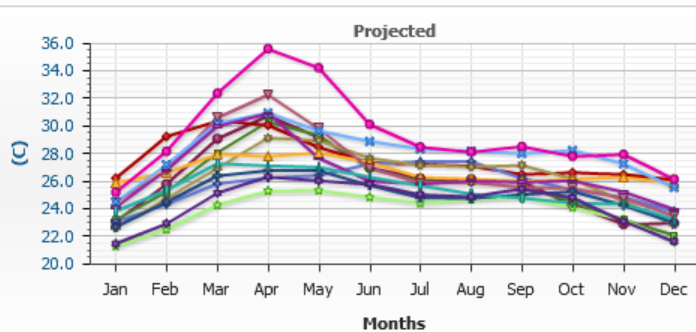
This chart shows how well the best available climate models capture the seasonal cycle of climate rainfall and/or temperature for the zone selected. The thick line of the historical period represents a proxy measure of actual historical climate that can then be used to compare the historical cycle captured by climate models.

*****Caution*****

This information takes the values of a 2 degree (~450km²) climate models at the selected site and returns the average for the region.

Choose your variable: **Temperature** | Choose your time period: **Future 2020-2039** | View mean or change: **Mean** | **GRAPH IT** | **PRINT IT**

Historical (1980-1999) and Future (2020-2039) Temperature mean Projections

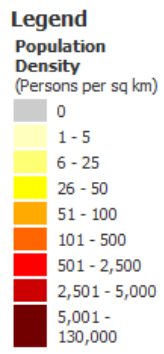
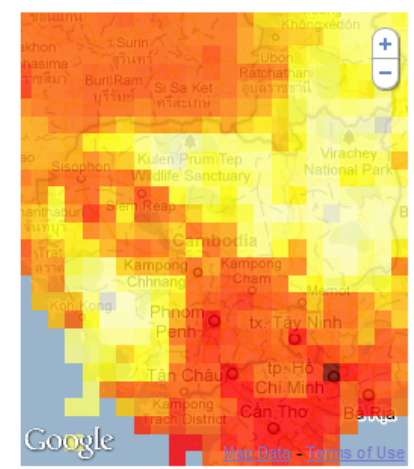


Legend
Global Climate Models

- bccr_bcm2.0
- ccma_cgcm3.1
- cnrm_cm3.0
- csiro_mk3.5
- gfdl_cm2.1
- gfdl_cm2.0
- giss
- ingv_echam4.0
- inmcm3.0
- ipsl_cm4.0
- miub_echo
- miroc_3.3medres
- mpi_echam5
- mri_cgcm2.3.2a
- ukmo_hadcm3

Implications for Disaster Risk Management

- ➔ Increased intensity of rainfall during the monsoon seasons could significantly impact flood response management across the Mekong.
- ➔ Sea level rise threaten the country's low-lying areas, including settlements, beach resorts, seaports, coastal fisheries, and mangrove forests.
- ➔ Droughts are already a common occurrence in Svay Rieng province, and projected rising temperatures could exacerbate an already vulnerable situation, pushing communities in the area beyond their coping range.



- Layers**
- Population 2000
 - Population 2015
 - Number of children under the age of 5
 - Prevalence of Child Malnutrition
 - Irrigated Cultivated Land Year 2000
 - Rainfed, Cultivated Land, Year 2000
 - Crop Land

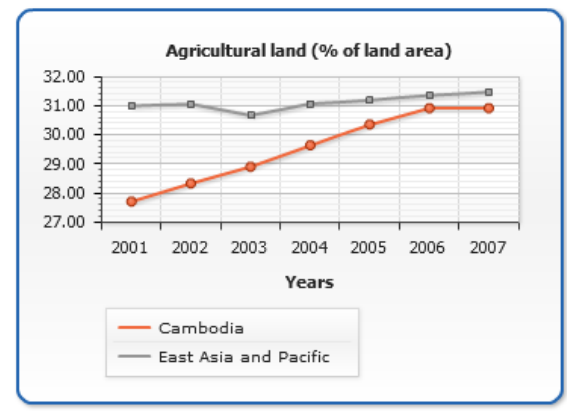
Data description: Gridded Population of the World, Version 3 (GPWv3) estimates population for the year 2000 (in 2.5 minute grid cells) by using raw count and population density datasets.

Source link: [Columbia University's CIESIN](#)

Further reading: [GFDRR Country Disaster Risk Management Programs](#)

Vulnerability Indicators

Agricultural land (% of land area)



countryadaptationprofiles.gfdr.org