

# CITIES AND CLIMATE CHANGE INITIATIVE SIHANOUKVILLE, CAMBODIA: CLIMATE CHANGE VULNERABILITY ASSESSMENT



# SIHANOUKVILLE, CAMBODIA: CLIMATE CHANGE VULNERABILITY ASSESSMENT

Abridged Report on Climate Change Vulnerability in Sihanoukville Municipality  
Research, Analysis, Findings and Recommendations  
May 2012

Sihanoukville, Cambodia: Climate Change Vulnerability Assessment  
Copyright © United Nations Human Settlements Programme (UN-Habitat)  
First edition 2012

United Nations Human Settlements Programme (UN-Habitat)  
P.O. Box 30030, GPO Nairobi 00100, Kenya  
Tel: 254-020-7623120 (Central Office)  
Website: [www.unhabitat.org](http://www.unhabitat.org)

HS Number: HS/114/12E  
ISBN Number(Series): 978-92-1-133403-6  
ISBN Number: 978-92-1-132528-7

## **DISCLAIMER**

The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or regarding its economic system or degree of development. The analysis conclusions and recommendations of this publication do not necessarily reflect the views of the United Nations Human Settlements Programme or its Governing Council.

Cover Photos: © UN-Habitat/Liam Fee, UN-Habitat/Prak Visal/PEMSEA

## **ACKNOWLEDGEMENTS**

Principal author: Liam Fee, Prak Visal, Nay Sally, Vanna Sok  
Contributors: Prak Visal, Nay Sally, Vanna Sok, Chanthy Sam  
Special thanks to the leadership and direction of H.E. S bong Sarath,  
Governor of Preah Sihanouk Province and H.E. Prak Sihara, Deputy Governor of  
Preah Sihanouk Province and Project Director.  
Reviewers: Bernhard Barth, Maria Adelaida Antonette Mias-Mamonong (UN-Habitat)  
Coordinators: Liam Fee, Bernhard Barth  
Editors: Fernando Cabrera Diaz  
Design and layout: United Nations Office at Nairobi (UNON) Publishing Services Section,  
ISO 14001:2004-certified

---

# Contents

1.0 Overview .....	3
2.0 Climate Change Exposure .....	6
3.0 Climate Change Sensitivity .....	8
4.0 Adaptive Capacity to Climate Change .....	12
5.0 Adaptation at Household and Community Levels.....	15
6.0 Analysis and Recommendations .....	19
7.0 Conclusion.....	23





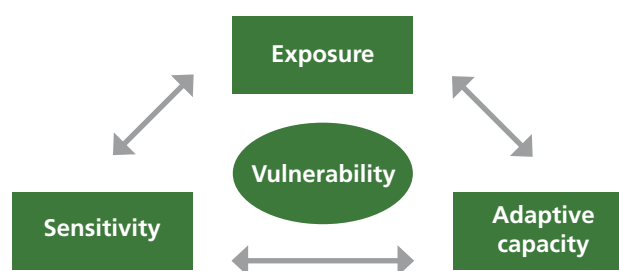


# 1.0

## Overview

The vulnerability assessment in Sihanoukville was designed to measure exposure, sensitivity and adaptive capacity (collectively understood as vulnerability) to climate change in the Municipal area of Sihanoukville. A variety of methods were used in order to establish this: first, a substantial policy and document review. Second, extensive and in-depth interviews were held with a variety of stakeholders at national and local levels. Finally, in-depth vulnerability assessment focus groups were conducted with several communities in Sihanoukville. The assessment also considered stakeholders such as the private sector and non-governmental organizations; and issues such as climate science, economic and urban planning, as well as the link between climate change and environmental concerns in the city, such as waste management.

Cambodia has a sensitive environment, which has suffered from exploitation and management issues. According to vulnerability mapping carried out by the Economy and Environment Programme for South-East Asia, Cambodia, along with the Philippines, is the most vulnerable country to climate change in South-East Asia<sup>1</sup>. This is due to its exposure to floods and droughts; sensitivity through reliance on agriculture and lack of adaptive capacity through a combination of low-levels of income; skill and infrastructure. Relatively little assessment has focused on urban areas in Cambodia, which is partly due to the widely-held perception



that the population is predominantly rural. However, a recent report by the Ministry of Planning puts the urban population at 27.1 per cent<sup>2</sup>.

### 1.1 ASSESSMENT FRAMEWORK

The assessment framework considers vulnerability of being made up of Exposure + Sensitivity-Adaptive Capacity.

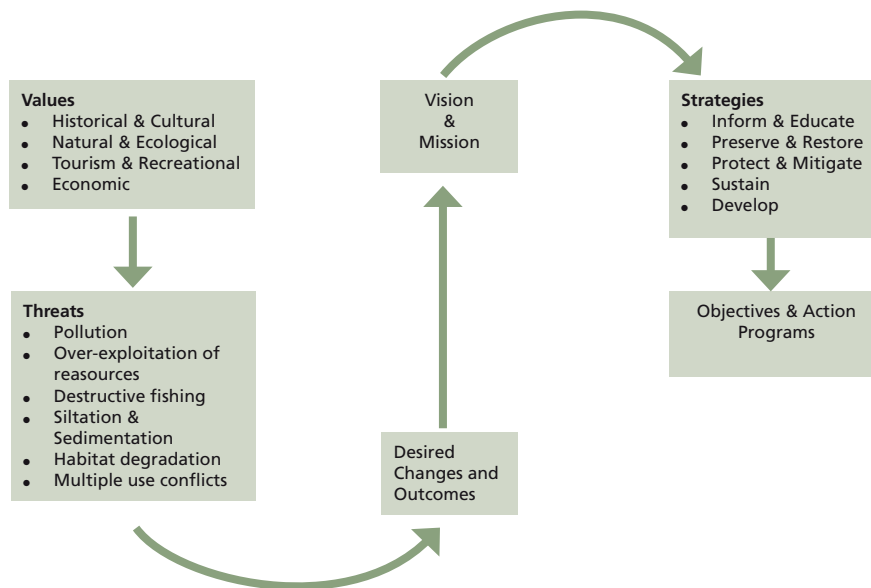
### 1.2 POLICY CONTEXT

Climate change is dealt with in numerous policies that the Royal Government of Cambodia has adapted. Cambodia ratified the United Nations Framework Convention on Climate Change in 1995 and acceded to the Kyoto Protocol in 2002. Also in 2002, the national Government, through the Ministry of Environment, published the Initial National Communication to the Convention. This was the first document which contained a detailed nationwide vulnerability and adaptation assessment, the findings of which are still influential in programming. The National

<sup>1</sup> Yusuf and Fancisco, 2009, Hotspots – Vulnerability Mapping in Southeast Asia

<sup>2</sup> Reclassification of Urban Areas in Cambodia, 2011, National Institute of Statistics, Ministry of Planning

Figure 1: Coastal Management Strategy



Source: Sihanoukville Coastal Strategy, 2002, p.24

Adaptation Programme of Action, detailed in Section 4, carried this forward and was published in 2006. This programme of action recommends various project actions, though only now are these beginning to take place and their implementation remains patchy.

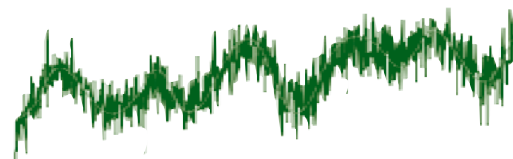
The Rectangular Strategy for Growth, the official framework for economic and social development as outlined in the National Strategic Development Plan, while not specifically tackling climate change mitigation or adaptation, does cover several issues on which climate change can reasonably be expected to have an impact. The Ministry of Environment is preparing a national strategic action plan for climate change.

The above diagram shows the process flow of the coastal strategy. While some of the threats identified in the coastal strategy relate to the scope of this report, its planning process took place in 2001. Rapid development has taken place since then (partially according to the strategy), limiting its relevance. This report, therefore, does not rely heavily upon the coastal strategy.

The Provincial Environmental Management Plan, spanning 2011-2015, has also been prepared. This document remains in draft

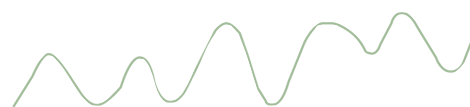
form and has yet to be finalized, approved or incorporated. Presently, the provincial government is deciding whether or not the draft should be realigned to become an overarching “sustainable development plan”. However, the draft does not make extensive provisions for climate change and, given that as of May 2012, the plan had still not been officially approved, it is unlikely to be adopted.

Figure 2: Fluctuations in weather patterns in a given period



Source: GIZ (2009) Climate Change Information for Effective Adaptation; A practitioner’s Manual, p.13

Figure 3: Fluctuations in climate patterns over the same period



Source: GIZ (2009) Climate Change Information for Effective Adaptation; A practitioner’s Manual, p.13

### 1.3 WEATHER AND CLIMATE

Distinguishing weather from climate was vital to the assessment. Such a distinction raises awareness with local stakeholders and generates useful data from communities. Weather is the day-to-day state of the atmosphere in terms of temperature, moisture content and air movements.<sup>3</sup> Weather is therefore something observable, which can change over the course of a few hours, days or weeks.

Climate, however, is a scientific concept measured using an aggregation of weather data or statistics collected over time (at least 10 but more often 30 years). Climate, therefore, is not 'conceivable' in the minds of individuals, whereas weather is. This creates a challenge in community-level vulnerability assessment research, because gaining perceptions of something which is inconceivable (the climate and if it has changed) is difficult, particularly when it is readily confused with the weather (which is conceivable).

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_18851](https://www.yunbaogao.cn/report/index/report?reportId=5_18851)

