

Appendix 4. Looking Abroad: How Other Nations Approach a National Climate Assessment

Introduction

The U.S. National Climate Assessment (NCA) is far from the only national assessment of climate impacts, risks, and adaptation in the world. There are a number of assessment products from other countries, each with its own distinct development process, structure, and intended purpose. This appendix is intended to place the Fourth National Climate Assessment (NCA4) within a broader international landscape of assessment activities and to compare it with other approaches.

The approach taken in this appendix has been to select a small set of assessment models from geographically varied nations with diverse capacities to conduct such assessments. Information on the assessment mandates and requirements, process, content structure, and international dimensions are included for each assessment. Because this appendix is intended to be illustrative rather than comprehensive, it does not summarize every report produced internationally—including, for example, the most recent climate assessment produced by the European Union.¹

Selected National Climate Assessments

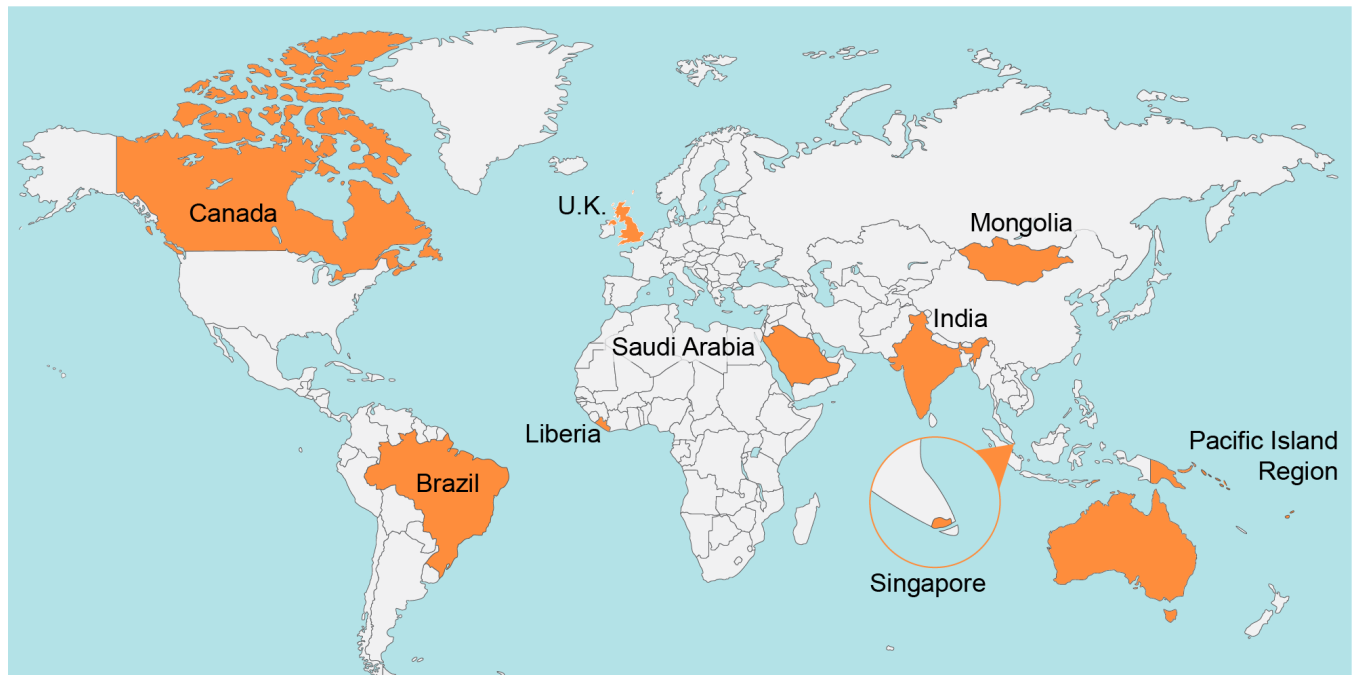


Figure A4.1: The U.S. National Climate Assessment represents one model for conducting national climate assessments, but there are many other national assessment models from countries around the world. Table A4.1 highlights key attributes for each national assessment model chosen for inclusion in this appendix, namely the assessment model type, a link to the assessment website, and the number of assessments to date (and the years they were completed). Source: USGCRP.

This appendix, one of several new additions to the NCA, was made in response to gaps identified in previous NCAs, as well as public input during the NCA4 scoping process—namely, to integrate the international context across NCA4 and, specifically, to include how NCA4 relates to complementary international assessment efforts. Therefore, in addition to this appendix, NCA4 includes a new national-level topic chapter focusing on U.S. international

interests (see Ch. 16: International). The Hawai'i & U.S.-Affiliated Pacific Islands and (new) U.S. Caribbean regional chapters are intended to provide an entry point for Small Island Developing States (SIDS) to consider similarities in the risks they face and inform adaptation efforts within their own borders. Moreover, numerous case studies embedded throughout the report examine transboundary and international trade and economic issues.

Table A4.1: Summary of Assessment Models by Country

Nation(s)	Assessment Model	Number of Assessments to Date
Brazil	Not mandated by law, developed by a scientific panel established by ministerial ordinance, and modeled after IPCC assessment reports. http://www.pbmc.coppe.ufrj.br/en/	1 assessment (2013)
Canada	Not mandated by law, developed by federal government departments and modeled after the NCA4. http://www.nrcan.gc.ca/environment/impacts-adaptation/10029	6 assessments (1998, 2008 [2], 2014, 2016, 2017)
India	Not mandated by law, developed by domestic research institutions established by ministerial ordinance. http://www.moef.nic.in/division/indian-network-climate-change-assessment	1 assessment (2010)
Liberia	Not mandated by law, developed with U.S. support to fill knowledge gaps resulting from intra-national conflict. https://www.researchgate.net/publication/237102310_liberia_climate_change_assessment	1 assessment (2013)
Mongolia	Not mandated by law, developed by ministerial climate change office. http://www.jcm-mongolia.com/wp-content/uploads/2015/11/MARCC-Final-Bk-2014-book-lst.9.17-ilovepdf-compressed.pdf	2 assessments (2009, 2014)
Pacific Islands	Not mandated by law, developed as a collaborative regional-scale assessment between Australian agencies and Pacific countries. https://www.pacificclimatechangescience.org/publications/reports/	1 assessment (2011)
Saudi Arabia	Not mandated by law, voluntarily developed by national government as part of UNFCCC reporting requirements. http://www.cdmdna.gov.sa/report/40/third-national-communication-of-the-kingdom-of-saudi-arabia	3 assessments (2005, 2011, 2016)
Singapore	Not mandated by law, commissioned by government, and developed by a mixed team of national and international partners. http://ccrs.weather.gov.sg/Publications-Second-National-Climate-Change-Study-Science-Reports/	1 assessment (2015)
United Kingdom	Mandated by law, developed by a statutory independent committee. https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/uk-climate-change-risk-assessment-2017/	2 assessments (2012, 2017)

Federative Republic of Brazil^{2,3}

Overview

Brazil released a National Assessment Report on Climate Change (RAN1) in 2013. The report was produced by a national scientific panel established by the government and was modeled on the Assessment Reports produced by the Intergovernmental Panel on Climate Change (IPCC). The RAN1 describes observed and projected impacts, assesses vulnerabilities in different national sectors and regions, and identifies options for adaptation measures. The report is intended to inform the development of the country's national planning activities related to climate change.

Assessment Mandate and Objectives

While Brazil does not have a nationally mandated climate assessment, the government has recognized the need for a national scientific body capable of providing policymakers at the federal, state, and local levels with objective information on the environmental, social, and economic effects of climate change. To this end, the Brazilian Panel on Climate Change (PBMC) was created in 2009 by a joint ordinance of the Ministry of the Environment and the Ministry of Science, Technology, Innovation and Communication.

The structure of the PBMC is based on the IPCC and includes a Steering Committee, Scientific Committee, Executive Secretariat, Working Groups, and Technical Support Units. The Panel is responsible for creating a range of policy-relevant products, including National Assessment Reports that provide a comprehensive scientific assessment of climate changes relevant to Brazil, Special Reports focusing on specific topics, and Technical Reports to help develop methods for monitoring and evaluating Brazil's greenhouse gas emissions. The PBMC represents the first national effort to consolidate and organize existing knowledge on climate change in Brazil onto a single platform.

The Panel's report is intended to support the development and implementation of public policies such as the National Plan on Climate Change, Sectoral Mitigation and Adaptation Plans to Climate Change, and the National Adaptation Plan. As of October 2017, the RAN1 was the only national assessment report published by the Panel.

Assessment Process

Under the supervision of the PBMC's Steering Committee, the RAN1 report was written by approximately 100 scientists drawn from national research institutions and distributed across the Panel's three Working Groups (WGs), each of which composed a separate volume for the report. The Panel's Scientific Committee, composed of the coordinators of the WGs, developed the scope of each WG volume, coordinated the drafting of the report, and provided guidance to authors and reviewers throughout the process. The Panel's Steering Committee selected the authors through a public call, approved the Scientific Committee's proposed scoping for the report, approved the various drafts, and provided general direction for the Panel's work. At the end of the process, a Summary for Policy Makers was approved by the PBMC Plenary, which included the Steering and Scientific Committees' memberships, as well as representatives from federal and state governments. In the RAN1, the PBMC made use of the work of a range of observational and modeling research programs that have recently been developed in Brazil at the national and state levels.

Assessment Content Structure

The RAN1 report consists of three separate volumes, each of which is produced by one of the PBMC's three WGs and matches the structure of the IPCC Assessment Reports: Volume 1: The Scientific Basis of Climate Change; Volume 2: Impacts, Vulnerability and Adaptation; Volume 3: Mitigation of Climate

Change. Volume 1 surveys the current state of the scientific knowledge of climate change in Brazil and South America. Volume 2 evaluates the projected climate impacts and vulnerabilities across a range of natural systems, in five national regions (Northern, Northeast, Southern, Southeast, Center-West), and in key societal sectors (Rural and Urban communities, Energy, Industry, and Transportation). A topic receiving special focus is the impact of climate change on human health, well-being, and safety. Each volume was originally drafted in Portuguese but also has an accompanying Executive Summary in English.

International Dimensions

The RAN1 report does not explicitly consider the international dimensions of the impacts of climate change on Brazil. Some findings of the assessment were, however, incorporated into Brazil's 2016 National Communication, which it shared with the international community as part of its United Nations Framework Convention on Climate Change (UNFCCC) reporting requirements. The work of the PBMC is also intended to support international cooperation among developing countries and help countries build their capacity to respond to climate change through the sharing of assessment methodologies, the knowledge gained from these assessments, and Brazil's own national experiences with climate change. This is part of the PBMC's efforts to advance greater South-South dissemination and capacity building. The PBMC also received support from the British Government's Department for International Development.

Canada⁴

Overview

The government of Canada has completed six national-scale science assessments of climate change impacts and adaptation since 1998. Each assessment has included regional and/or sectoral analysis. Led by federal government

departments, these assessments involved multiyear, collaborative processes that engaged academia, all levels of government, industry associations, Indigenous organizations, and the private sector. The current assessment process was launched in 2017 and will be completed in 2021.

Assessment Mandate and Objectives

National assessment products, rather than being nationally mandated, are deliverables of government programs supported through specific federal budget cycles. Assessment processes focus on the development and dissemination of products that synthesize and provide value-added analysis of the current state of knowledge. Assessments build awareness of the issues; inform research priorities, policy responses, and adaptation strategies; and enhance capacity to undertake adaptation. These goals are achieved through an inclusive, scientifically rigorous assessment process and the resulting reports.

Assessment Process

The lead federal department (currently, Natural Resources Canada) works with contributing departments to coordinate the assessment process and provide other secretariat functions. A multi-stakeholder advisory committee oversees the process and provides guidance and input throughout, from scoping to post-release. Subject matter experts are engaged as lead and contributing authors, while expertise in areas such as information technology and technical editing is contracted, as required. In addition, each assessment process includes extensive peer review to ensure accuracy and relevance. New elements of the current assessment process include a greater focus on communications, increased engagement of a broad range of Canadians, and the development of a suite of products that will be released over the assessment cycle, rather than just one large volume at the end.

Assessment Content Structure

Canadian assessments focus on climate change impacts and adaptation and draw from all relevant existing sources of knowledge (peer-reviewed publications, gray literature, Indigenous knowledge, and practitioner experience). Climate trends and projections for Canada are included to establish a robust, national overview of current and future changes in physical climate, in the context of informing the impacts and adaptation discussions. Since assessment activities are not legislated, there is flexibility in determining the content and structure, and these decisions take user needs into account. Past assessments have taken either a regional approach—addressing all major regions of Canada or a specific sensitive region (for example, marine coasts)—or a sectoral approach, focusing on a specific sector (for example, health or transportation) or multiple sectors within one volume. Increased engagement, interest, and resources have allowed the current assessment process to expand to include both regional and sectoral volumes, as well as stand-alone reports on climate trends and projections (led by Environment and Climate Change Canada) and on health issues (led by Health Canada).

International Dimensions

The 2008 assessment⁵ included a chapter titled “Canada in an International Context.” This chapter examined how climate change impacts on other countries, and their adaptation responses, could affect Canada. Sections focused on continental effects (North America), the surrounding oceans, and global impacts. The chapter also discussed Canada’s international obligations on adaptation. The 2021 assessment will include a chapter on international dimensions that addresses transboundary issues, trade and supply chains, and linkages between adaptation, sustainable development, and disaster risk reduction globally.

Republic of India⁶

Overview

In 2010, India produced an assessment focused on a combined regional and sectoral analysis of climate change impacts through 2030. While not mandated by law, the federal government called for the assessment to be produced by domestic research institutions. The report represents the nation’s first attempt to produce its own comprehensive climate impacts assessment and provides an integrated assessment of four primary regions and four primary sectors of key economic importance to the country. It focuses on observed and projected impacts and potential adaptation measures.

Assessment Mandate and Objectives

While India does not have a nationally mandated climate assessment, the government has stated the need for a comprehensive framework for assessing national- and state-level climate impacts, drawing from domestic technical and policy expertise. In 2009, the Ministry of Environment and Forests established the Indian Network for Climate Change Assessment (INCCA) to conduct research on climate drivers and impacts, prepare assessments of national vulnerability and adaptation, develop decision-support systems, and build capacity for the management of climate risks and opportunities. The broad purpose of the INCCA is to build an independent national research capacity for understanding and responding to climate change and to reduce dependence on external assessments and information sources.

Assessment Process

The INCCA brings together 125 research institutions and more than 250 scientists from across the country. The 2010 assessment report was prepared by 43 researchers from 18 separate institutions, led by the Ministry of Environment and Forests (now the Ministry of Environment, Forest and Climate Change). The Ministry also organized a series

of consultative meetings in 2009 and 2010 to inform the report's development. For the analysis of current and projected climate risks, the report utilized both historical observations and high-resolution climate projections using modeling tools obtained from the United Kingdom's Hadley Centre for Climate Prediction and Research.

Assessment Content Structure

The INCCA 2010 report is organized as a “4×4” assessment model that explores the impacts of climate change through the 2030s focused on four key climate-dependent sectors of the Indian economy (Agriculture, Water, Natural Ecosystems and Biodiversity, and Human Health) in four climate-sensitive regions (the Himalayan region, the Western Ghats, the Coastal Area, and the North-East region). The report provides an introduction to the INCCA framework, a discussion of regional climate observations and projections, an assessment of each sector and region, and an assessment of research needs moving forward.

International Dimensions

The INCCA 2010 report does not explicitly consider the international dimensions of the impacts of climate change on India. The findings of the assessment were, however, subsequently updated and incorporated into India's 2012 National Communication, which India shared with the international community through the UNFCCC. The reports were also produced using financial and technical support from international partners.

In January 2015, the United States and India created the Partnership for Climate Resilience. This Partnership aims to strengthen scientific cooperation on climate research and improve information available to decision-makers, building on the 2010 climate change assessment. Experts from the National Oceanic and Atmospheric Administration and academia,

with support from the State Department, have partnered with Indian scientific experts and institutions to develop downscaled data for the Indian subcontinent at higher resolution than was previously available and to improve the capacity of local decision-makers to understand, predict, and plan for current and future impacts of climate variability and change.

Republic of Liberia⁷

Overview

In 2013, the U.S. Agency for International Development (USAID) Mission in Liberia commissioned the Republic of Liberia's Climate Change Assessment with involvement from the Liberian government. This international support provided Liberia with additional capacity to advance climate science data to the benefit of Liberian decision-makers. The assessment focused on potential climate change impacts on key Liberian natural resources and used refined downscaled modeling to produce data more targeted to the needs of Liberian decision-makers.

Assessment Mandate and Objectives

In March 2013, the Liberia USAID Mission produced Liberia's Climate Change Assessment to analyze natural resource vulnerabilities with respect to USAID climate change programs in the country. A key motivation for the report was to fill the knowledge gap caused by the loss of climate and environmental information during the country's civil wars. Its objectives were, broadly speaking, twofold: 1) assess the vulnerabilities of natural systems, and 2) provide a knowledge base to promote national climate resilience and improve the condition of rural subsistence farming communities.

Assessment Process

Although this assessment was not nationally mandated or produced by the national government, several Liberian agencies were engaged in developing the assessment in partnership

with U.S. federal agencies. It was prepared by the U.S. Department of Agriculture's Forest Service International Programs and reviewed by USAID. To achieve its objectives, the Liberia USAID Mission, in collaboration with the U.S. Forest Service, tasked a multidisciplinary team from the Forest Service Southern Research Station with conducting a climate change assessment. The team briefed Liberian agencies and civil society on the results. It also provided USAID and the Environmental Protection Agency of the Republic of Liberia with the modeled climate data and targeted training on how they might use the data.

Assessment Content Structure

The report focuses on the potential impacts of climate change on agriculture, fisheries, forests, energy, and mining. The assessment also touches on social vulnerability and the capacity of key segments of the Liberian population to adapt to current and projected climate change. It also examines the impacts on society from policy responses to climate change.

International Dimensions

This assessment was launched and largely conducted by an external international entity, namely USAID, though the Liberian government was involved in the process. The climate projections also utilized modeling tools and data obtained from the international community.

Mongolia⁸

Overview

The government of Mongolia has produced two Mongolia Assessment Reports on Climate Change (MARCC), in 2009 and 2014. The assessments are intended to serve as a definitive source of information on the latest research on climate change as it relates to Mongolia. This includes observed and projected climate changes; impacts on environmental, economic, and social sectors; and information

on societal responses to climate change. The findings and recommendations of the MARCC reports are intended to feed into the country's national development programs and climate action plans.

Assessment Mandate and Objectives

While there is no explicit legal mandate for the MARCC, it does exist within an evolving national legal and policy framework to address climate challenges and meet Mongolia's obligations under international agreements on the environment and climate change. Under the country's revised Law on Air (2012), the Ministry of Environment and Tourism manages a Climate Change Coordination Office (CCCO), which implements Mongolia's commitments to the UNFCCC and integrates climate change issues into other national sectors. In addition, a National Action Programme on Climate Change (NAPCC), approved by Parliament in 2011, defines strategic objectives and outlines specific activities to integrate climate change concerns into national development plans and action plans. The MARCC 2014 report is intended to support the NAPCC by presenting the most current knowledge of observed and projected climate change. It does so by describing climate impacts on human and natural systems, highlighting strategies and technology needs for mitigation/adaptation measures, presenting a national greenhouse gas (GHG) inventory, and explaining the policy framework for climate action in Mongolia. The report is designed for use by a wide audience: government officials, policy- and decision-makers, members of professional societies and scientific communities, educators and students, and the general public.

Assessment Process

The MARCC 2014 report was prepared under the supervision of the chair of the CCCO, with logistical and technical support from CCCO staff. Financial support for preparation and

publication of the report was provided by the German development agency GIZ (German Corporation for International Cooperation) on behalf of the German Federal Ministry for Economic Cooperation and Development. Subject matter experts wrote each chapter. The document was originally drafted in Mongolian and then translated into English. In its presentation of current and projected climate change, MARCC 2014 made use of the IPCC's Fifth Assessment Report (AR5).

Assessment Content Structure

The MARCC 2014 report begins with basic information on observed and projected climate change in Mongolia, organized at the national and regional level. Subsequent chapters organize the impacts of climate change sectorally, on a range of natural and human systems. For natural systems, the report focuses on soil and pasture, forest ecosystems, fauna, water resources, natural disasters, land degradation and desertification, and dust/sand storms. For human systems, the report focuses on animal husbandry, agriculture, poverty and human development, infrastructure, and human health. Later chapters review adaptation options and possible mitigation measures, including a national GHG inventory and related technology issues. The final chapter covers policy frameworks, legal instruments, and institutional arrangements.

International Dimensions

While neither the MARCC 2009 nor the MARCC 2014 explicitly considers the international dimensions of climate change impacts on Mongolia, both reports do provide descriptions of the international policy setting within which Mongolia's climate change efforts exist. In particular, the MARCC 2014 describes in detail Mongolia's recent engagement with a range of international organizations to develop its domestic climate change policy and related interventions, in general. In addition, both the

2009 and 2014 MARCC reports were produced with financial and technical support from international partners.

Pacific Islands⁹

Overview

The Australian government published a Climate Change in the Pacific (CCP) report in 2011. The regional-level report provides a peer-reviewed scientific assessment of how the climate of the western Pacific region is changing. The report was produced through a collaboration between Australian government agencies and Pacific countries. It reviews current trends and projections of climate change for 14 Small Island Developing States (SIDS) and Timor-Leste, and identifies research and knowledge gaps in the region.

Assessment Mandate and Objectives

The significant research gaps identified in the IPCC's Fourth Assessment Report (AR4) served as the foundation for the creation of Australia's Pacific Climate Change Science Program (PCCSP). The objectives of the program are to conduct comprehensive climate change science, build capacity in partner countries across the Pacific to undertake scientific research, and disseminate information to partner countries' stakeholders and other parties. As part of Australia's five-year International Climate Change Adaptation Initiative, the PCCSP produced the Climate Change in the Pacific report in 2011. The report is intended to help countries in the Pacific prioritize adaptation measures, assess their vulnerability, develop adaptation strategies, and address research gaps described in the IPCC's AR4.

Assessment Process

The PCCSP is a collaborative research partnership among Australian government agencies, 14 Pacific Island countries, and Timor-Leste, as well as regional and international organizations. The 14 Pacific countries are the Cook

Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Sāmoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. To ensure that research is of relevance to partner country decision-makers, coordinated information sharing, capacity building, and engagement have been conducted throughout all research areas and among all partner countries.

Assessment Content Structure

This report contains two volumes. The first provides a detailed assessment and analysis of changes in the observed and projected climate of the PCCSP region. The second includes climate change reports for each partner country. Each of the 15 reports includes sections on seasonal cycles, climate variability, observed annual trends, and projections for atmospheric and oceanic variables.

International Dimensions

Climate Change in the Pacific is a regional scientific assessment supported by the government of Australia that involves collaboration with multiple countries, both within the Pacific region and beyond it through the contributions of international organizations.

Kingdom of Saudi Arabia¹⁰

Overview

The government of the Kingdom of Saudi Arabia (KSA) has voluntarily produced three assessments of the nation's vulnerability to climate change. The most recent national vulnerability assessment was completed in 2016 and incorporated into the National Communication submitted by the KSA to satisfy its UNFCCC reporting requirements. The vulnerability assessments identify current and future climate-related impacts as well as potential adaptation measures in specific sectors. They also identify knowledge gaps to be addressed by future assessments.

Assessment Mandate and Objectives

While the KSA does not have a nationally mandated climate assessment, it is required, as part of its reporting obligations and commitments under the UNFCCC (Article 12 and subsequent decisions taken at Conferences of the Parties), to submit National Communications that provide certain information related to its greenhouse gas (GHG) emissions and the implementation of actions to address climate change. These reports provide the international community with a recent inventory of each Party's GHG emissions, a description of the policy initiatives that the country has taken to respond to and prepare for climate change, and any other information relevant to the implementation of its commitments under the UNFCCC. As part of this reporting, the KSA has included a national climate assessment in all of its National Communications, submitted in 2005, 2011, and 2016. These assessments analyze regional climate trends and projections and their impacts on a range of nationally important sectors.

Assessment Process

The KSA's most recent National Communication was produced by a Designated National Authority, in coordination with a team of academics, consultants, and other experts drawn from relevant government ministries, research institutions, and other organizations. In particular, the General Authority of Meteorology and Environmental Protection (the Kingdom's environmental agency) and the Ministry of Energy, Industry and Mineral Resources played important roles in its development. The report was produced with assistance from the national oil and gas company (Saudi Aramco), the United Nations Environment Programme, and the Global Environment Facility. For the analysis of current and projected climate risks, the report utilized historical observations and high-resolution climate projections using modeling tools obtained from the United

Kingdom’s Hadley Centre for Climate Prediction and Research.

Assessment Content Structure

Within the KSA’s Third National Communication, the climate assessment component includes a chapter focusing on climate science, describing baseline conditions, recent trends, and future climate scenarios, as well as the methodologies employed and climate model outputs. Subsequent sectoral chapters describe vulnerabilities and identify national adaptation measures covering the areas of water resources, desertification, agriculture and food security, and human health. Each of these chapters offers more detailed and technical discussion of the sectoral impacts as well as recommendations for future research to address information and data gaps.

International Dimensions

The KSA’s National Communications have not explicitly considered the international dimensions of climate change impacts on the country. The reports reflect the country’s ongoing engagement with the UNFCCC process for assessing climate-related risks and developing policies to address them. The reports were also produced using financial and technical support from international partners.

Republic of Singapore¹¹

Overview

The Republic of Singapore’s National Climate Change Studies are voluntary reports, commissioned by the government and produced by a mixed team of national and international partners. Singapore has undertaken two studies, the first of which was completed in 2015 and the second of which is currently underway and will include a vulnerability analysis.

Assessment Mandate and Objectives

The National Environment Agency of Singapore (NEA) commissioned the current National

Climate Change Study in recognition of the island nation’s increasing vulnerability to climate change. The purpose is to assess the current and projected impacts from climate change, focusing on variables of greatest importance to the country (temperature, precipitation, and sea level), and to assess the vulnerability of various sectors to a changing climate. The results of the study will feed into the next stage of Singapore’s national adaptation planning efforts.

Assessment Process

The NEA leads the development of the study, which is divided into two phases. Phase 1, which was published in 2015, provided long-term climate projections, while Phase 2, currently under development, will assess the vulnerability of Singapore’s population, environment, and infrastructure to a changing climate. The work on Phase 1 was performed jointly by experts from the Centre for Climate Research Singapore and the Met Office Hadley Centre in the United Kingdom, with contributions from partners at the Australian Commonwealth Scientific and Industrial Research Organisation and the United Kingdom’s National Oceanography Centre–Liverpool. The focus of the Phase 1 study was to produce high-resolution regional climate and sea level projections that extend to 2100. To ensure that outcomes from the study would be of use to decision-makers, stakeholder engagement was integrated early on in the process, with representatives from a range of national agencies taking part. In particular, engagement activities involved stakeholders’ focusing on six thematic clusters: coastal protection; water resources and drainage; public health; network infrastructure; building, structure, and town infrastructure; and biodiversity and greenery.

Assessment Content Structure

The Phase 1 report of Singapore’s Second National Climate Change Study is made up

of 10 primary chapters, each focusing on a specific element of the modeling process that generated the high-resolution projections to be used in the vulnerability assessment. The report also includes detailed technical appendices and supplementary information.

International Dimensions

Phase 1 of the current study was completed in close partnership with the United Kingdom and Australia. Additionally, the foundation for its scientific assessment stemmed from work conducted by the IPCC. The completed study will not explicitly consider international effects.

United Kingdom¹²

Overview

The government of the United Kingdom (UK) is legally required to produce a Climate Change Risk Assessment (CCRA) every five years and then develop National Adaptation Programmes to address those risks and build resilience to climate change. The core component of the CCRA is an independently produced Evidence Report that assesses climate risks and impacts in the UK. The Evidence Report feeds into a high-level Synthesis Report that identifies key areas of climate risk to be prioritized for action. The government evaluates this Synthesis Report and produces its final Risk Assessment, which is presented to Parliament. The most recent Evidence Report was developed using a risk-based framing and explicitly considers the international dimensions of climate impacts to the UK.

Assessment Mandate and Objectives

The 2008 Climate Change Act requires the UK government to present a CCRA to Parliament every five years. The purpose of the assessment is to evaluate the risks that current and predicted climate change impacts pose to the UK and, ultimately, to guide the development of National Adaptation Programmes

for the UK and its component countries (the administrations of England, Northern Ireland, Scotland, and Wales).

Assessment Process

Under the 2008 Climate Change Act, two CCRAs have been completed, one in 2012 and the most recent in 2017. The Act establishes an independent body, the Committee on Climate Change, whose Adaptation Sub-Committee (ASC) was responsible for the CCRA Evidence Report and Synthesis Report in 2017. The Evidence Report summarizes the current state of knowledge of climate risks and opportunities in the UK and identifies priority areas needing urgent further action over the next five years. For the most recent Evidence Report, the ASC convened teams of experts to assess a wide range of climate risks and opportunities and assign urgency scores to inform national adaptation planning. The analysis was supplemented by several specially commissioned research studies on specific climate impacts and was informed by engagement with and review by stakeholders inside and outside of the government and across all four UK countries. The Synthesis Report, authored by the ASC, summarizes the Evidence Report and then identifies six areas of risk to be managed as priorities for the next five years. For the most recent CCRA, the government largely approved the conclusions from the various products of the ASC, which it produced in its final UK Climate Change Risk Assessment 2017.

Assessment Content Structure

The most recent Evidence Report includes multiple individual products. The main report is an independent analysis authored by academics, consultants, and other experts in the public and private sectors, as well as civil society organizations throughout the UK. It reviews evidence for current and future climate change in the UK, provides a description of the assessment methodology, and includes

technical chapters focused on specific sectors. Separate national summaries, authored by the ASC, present evidence specific to Scotland, England, Northern Ireland, and Wales.

International Dimensions

The CCRA Evidence Report has expanded since its inception to examine impacts at increasingly wider scales, both across sectors and geographically. While the focus of the first report was on a limited set of direct impacts within the UK, the most recent CCRA also considers the impacts on the UK from international effects, both direct (for example,

through disruption of trade and supply chains) and indirect (for example, through price volatility of imported commodities). These topics are explored in a dedicated international dimensions chapter.

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On the Web: <https://nca2018.globalchange.gov/chapter/appendix-4>

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