Technical series on

Adapting to Climate Sensitive Health Impacts

Undernutrition

World Health Organization

Adapting to climate sensitive health impacts: undernutrition

ISBN 978-92-4-151556-6

Suggested citation. Adapting to climate sensitive health impacts: undernutrition. Geneva: World Health Organization; 2019. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders. To submit requests for commercial use and queries on rights and licensing, see http://www.who.int/about/licensing.

Printed in Switzerland

Cover photo (from left to right): Department for International Development/Pippa Ranger, Sanofi Pasteur/Norbert Domy, EC/ECHO/Martin Karimi
Editing and design by Inís Communication – www.iniscommunication.com

Technical series on

Adapting to Climate Sensitive Health Impacts

Undernutrition

World Health Organization

Acknowledgments

This document was prepared by Joy Shumake-Guillemot, Elena Villalobos Prats, Amy Savage and Diarmid Campbell-Lendrum of the WHO Department of Public Health, Environmental and Social Determinants of Health. WHO also wishes to extend its gratitude to the following reviewers and contributors within WHO: Adam Bradshaw, Francesco Branca, Lina Mahy, Marina Maiero, Tara Neville, Kim Petersen and Angelika Maria Tritscher.

Lastly, WHO acknowledges the contributions provided by Dominik Dietler, Michael Benusic and Benedetta Rossi while they were interning or consulting with WHO.

Series introduction

A vulnerability and adaptation (V&A) assessment is a vital first step in adapting to climate change. This technical guide on V&A assessment for undernutrition and climate change is part of a series of World Health Organization (WHO) guidance aiming to inform the management of priority climate-sensitive health impacts to climate change. Specifically, this document is intended for use in conjunction with the general WHO guidance on conducting health vulnerability and adaptation assessments "*Protecting health from climate change: vulnerability and adaptation assessment*" (available from: http://www.who.int/entity/globalchange/publications/Final_Climate_Change.pdf, accessed 12 November 2018).

This technical series was created with a two-fold purpose: (i) to help clarify the relationships and casual links that exist between climate change and priority health outcomes; and (ii) to offer specific direction and resources for assessing these associations and designing adaptation options for protecting health in a changing climate.

Each guide follows the same structure of the V&A assessment process and provides specific resources and information on the priority theme as follows:

Section1. **Conducting a thematic study within a V&A assessment** describes how to use this guide in conjunction with the main V&A assessment guidance, and includes additional considerations for setting up a thematic assessment.

Section2. **Overview** comprises a general introduction on the targeted topic, including definitions, the scope and scale of its global burden and causal mechanisms.

Section3. **Climate change and the priority health issue** explains how a specific health outcome is influenced by climate variability and climate change.

Section4. **Identifying vulnerable populations** provides suggestions on how to determine populations and regions that are vulnerable to the health impacts of climate variability and change.

Section5. **Establishing baselines** suggests relevant dimensions and metrics that can be used to understand current health and risk conditions, and form the basis of a study that can also be monitored over time.

Section6. **Assessing sensitivity** provides guidance on different options and variables that can be used to understand and measure the degree to which climate variability and change influences the distribution and occurrence of the health outcome of interest.

Section7. **Anticipating future risks and impacts** explains ways to understand how changing climatic conditions may influence future health status for priority populations and regions.

Section8. **Identifying adaptation options** provides suggestions and resources on how to identify weaknesses in current and planned interventions, and prioritize relevant responses to prevent and adequately manage climate-related health risks.

Section9. **Monitoring adaptation progress** presents considerations for informing decisions and monitoring relevant changes in population health status, exposure to climate hazards, relevant risk factors, as well as the effectiveness of protective measures in place.

Section10. **Conclusions**

References, terminology and available resources and tools are provided throughout or as annexes.

Contents

Table of Tables

Table of Figures

Abbreviations

AIDS	acquired immune deficiency syndrome
BMI	body mass index
CO_2	carbon dioxide
DALY	disability adjusted life years
DHS	demographic and health surveys
ENSO	El Niño–Southern Oscillation
FAO	Food and Agriculture Organization
FEWS	Famine Early Warning System
GINA	Global database on the Implementation of Nutrition Action
HIV	human immunodeficiency virus
ICN_2	Second International Conference on Nutrition
IMPACT	International Model for Policy Analysis of Agricultural Commodities and Trade
IPC	Integrated Food Security Phase Classification
IPCC	Intergovernmental Panel on Climate Change
IYCF	infant and young child feeding
JMP	WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene
LMIC	low- and middle-income countries
MICS	multiple indicator cluster surveys
NAPs	national adaptation plans
NLIS	Nutrition Landscape Information System
RUTF	ready-to-use therapeutic food
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	UN International Children's Emergency Fund
UNSCN	UN System Standing Committee on Nutrition
V&A	vulnerability and adaptation
WASH	water, sanitation and hygiene
WB	World Bank