



# **Climate change impacts on human health**

**World Meteorological Organization (WMO) Submission to UNFCCC- Nairobi work programme (NWP)**

September 2016

# A. CLIMATE AND HEALTH PROJECTS

*Relevant Impact Topics: New projects developed in response to need for global action and technical support for understanding and adapting to (1) Changes in geographic distribution of disease; (2) new and emerging health issues (3) effects on health and productivity in the workplace // notably work on extreme heat.*

## 1. WMO-WHO Joint Office for Climate and Health Office

**Partners:** WHO/WMO/Government of Norway



**Countries of Focus:** Global

**Activity:** The WMO-WHO joint office for Climate and Health Office was established in mid-2014, and provides WMO with new technical expertise in public health; provides WHO with technical expertise in climate services; and serves to strengthen the WHO and WMO technical collaboration and liaison with other health partners to improve available information and evidence for climate adaptation and risk management decision-making.

On behalf of WHO, this office leads the implementation of Health activities under the Global Framework for Climate Services (GFCS) to accelerate health sector access to and use of relevant climate, weather, and environmental information for health risk management. The joint office focuses on advancing policy and strategic support for climate services and health; supporting project and research development and implementation; strengthening relevant climate services for health partnerships and collaboration; and building capacity through awareness raising, outreach, and technical guidance.

### **Outputs:**

- Strengthened coordination and collaboration between WHO and WMO on climate and health matters
- Enhanced regional networks of climate and health professionals
- Increased activity of National Meteorological Services in supporting health research, evidence, and programming;
- Training Resources and Guidance Documents on Climate Services for Health

### **Challenges:**

- Sustainable funding
- Inadequate awareness and use of available climate information with health relevance
- Inadequate tools and methods to facilitate customized climate information product development
- Limited number of institutions with expertise in climate service development and use

**Good Practices in Climate Services for Health:** see Knowledge Product *1 Climate Services for Health: Improving Public Health Decision Making in a new climate [case studies]* Chapter 8 Lessons and Good Practices in Climate Services for Health

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## 2. Global Framework for Climate Services (GFCS) Adaptation Programme in Africa: Building Resilience in Disaster Risk Management, Food Security, Nutrition and Health

**Partners:** WHO/WMO/IFRC/WFP/NORAD

**Relevant Link:** <http://www.who.int/globalchange/projects/gfcs/en/>



**Countries of Focus:** Malawi/Tanzania

The GFCS demonstration project aims to increase the resilience of people most vulnerable to the impacts of weather and climate-related events through the development, implementation and evaluation of a joint multi-sectoral programme on Climate Services. The project implemented in Malawi and Tanzania, is helping to build integrated frameworks for climate services and has brought together multisectoral research and implementing partners to enhance initiatives in climate services, food security, nutrition and health as well as disaster risk reduction.

**Activity:** WHO, supporting the Ministries of Health to implement the climate services for health component, is working to improve evidence and information for adaptation and risk management of climate sensitive diseases of concern, notably malaria and cholera. WHO is testing a holistic approach to climate service development and use; supporting the Ministries of Health (MOH) and NHMSs to conduct training, and helping to improve understanding, and mainstreaming of climate information and services to national health policies and practice.

### **Outputs:**

- (Tanzania) Maproom of historic climate data for Health users, installed at Tanzania Meteorological Agency. <http://maproom.meteo.go.tz/maproom/>
- (Tanzania) National Scale Health Vulnerability and Adaptation Assessment Report.
- (Study of influence of El Nino on Malaria, Cholera, and other diseases in Tanzania
- (Malawi) Maproom of historic climate data for Health users, installed at Malawi Department of Meteorology and Climate Change
- (Malawi) National Scale Health Vulnerability and Adaptation Assessment Report
- National Health Adaptation Plans (HNAPs) (in progress in both)
- Multiple technical trainings of health professionals in the use of climate information

**Challenges:** quality and availability of data, both health surveillance and historic climate observations; low technical capacity of health and meteorological professionals and researchers; lack of data sharing policies and interoperable data management systems; inadequate awareness and mainstreaming of climate risk management.

**Plans 2017-2019:** Development of National Health Adaptation Plan, training, awareness raising, and development of specific decision tools including malaria and cholera risk indices and early warning products in relation to local flood and drought risks.

### 3. Extreme Heat and Health Partnership and Climate Services in South Asia

**Partners:** WHO/WMO in collaboration with numerous international, regional and national partners.

**Countries of Focus:** Global, South Asia Focus (Pilots in India, Bangladesh, Pakistan, Thailand, Sri Lanka)

**Activity:** In response to growing concern and increasing impacts of extreme heat events in South Asia, the WMO and WHO/WMO Joint office have kick-started activities to increase capacity, evidence, and sharing of information and experiences specific to implementing extreme heat health warning systems and action plans. Activities consider impacts and extreme heat exposure risk management for indoor and outdoor workers.

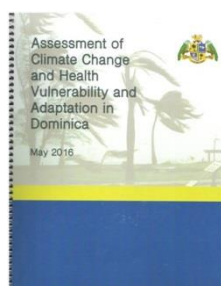
- Relevant Links: <http://www.wmo.int/pages/prog/wcp/wcsp/rcofs/sascof/health/csf-health.php>
- Regional Expert Scoping Meeting Report and action plan  
<http://www.wmo.int/pages/prog/wcp/wcsp/rcofs/sascof/health/documents/1st-South-Asia-Climate-Services-Forum-for-Health.pdf>

**Planned outputs for 2017-2019:**

- Needs and Gaps Analysis identified priorities for research, information, and evidence
- Resource mobilization and development of national pilot projects to test new technology for heatwave prediction, early warning, and use
- Establish a regional community of practice to share experience and information, accelerate evidence generation, and improve information available to inform heat health action plans.
- Establish a Global Heat Health Information Network (GHHIN) to develop global scale stocktaking, agenda setting, and knowledge sharing on the impacts and responses to extreme heat events.

## B. CLIMATE AND HEALTH IMPACT STUDIES

*Relevant Impact Topics: Study conducted to understand (1) Changes in geographic distribution of disease; (2) new and emerging health issues*



### 1. Study: Dominica Health Vulnerability and Adaptation Assessment Report

**Partners:** Ministry of Health of **Dominica**, WMO, WHO/PAHO, Health Canada, Caribbean Institute of Hydrology and Meteorology, Australian National University

**Countries of Focus:** Dominica

**Activity/Outputs:** National Scale Health Vulnerability and Adaptation Assessment Report (document available upon request) to identify health sector climate vulnerability, inform a national health adaptation plan and climate service needs, and improve existing diagnostic tools for other SIDS.

**Methods:** The [WHO Climate and Health Vulnerability and Adaptation Assessment Guidelines](#) were used to guide the methods of this study.

**Findings:** Dominica is already experiencing the impacts of climate change through extreme weather events such as warming trends and decreased precipitation.

- Mosquito vectors for diseases of concern (e.g., dengue, malaria, chikungunya) are endemic to Dominica and are affected by temperature and precipitation
- A number of groups including the Kalinago, children and the elderly are more vulnerable to multiple risks
- Annual crop yield is projected to decrease like in the rest of the Caribbean
- Changing climatic conditions combined with socio-economic factors are increasing the populations risk of exposure to contaminated food and water source

**Challenges:** quality and availability of historic climate observations, low technical capacity of health professionals and researchers

**Next Steps:** this studies provide baseline information to guide health action planning, and has stimulated interest for additional studies in the region.

**Relevant Link:** [http://www.paho.org/ecc/index.php?option=com\\_content&view=article&id=496:dominica-launches-report-on-assessment-of-climate-change-and-health-vulnerability-and-adaptation&Itemid=259](http://www.paho.org/ecc/index.php?option=com_content&view=article&id=496:dominica-launches-report-on-assessment-of-climate-change-and-health-vulnerability-and-adaptation&Itemid=259)

## 2. Study: Health Vulnerability and Adaptation Assessments

**Partners:** WHO/GIZ

**Countries of Focus:** Ethiopia, Madagascar, Malawi, Tanzania, Zambia. New studies underway in 2016 in Benin, Guinea, Mali, and Burkina Faso.

**Activity/Outputs:** WHO supported five national scale Health Vulnerability and Adaptation Assessments to be conducted in 2015 (documents available from WHO upon request).

**Methods:** The [WHO Climate and Health Vulnerability and Adaptation Assessment Guidelines](#) were used to guide the methods of this study.

**Challenges:** quality and availability of health surveillance data as well as historic climate observations; training and mentoring required due to low technical capacity of health professionals and researchers to conduct national research.

**Next Steps:** these studies provide baseline evidence and information for NAPS and ongoing national projects.

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### 3. ENSO and Health: Global, Regional, and Country Impact Reports



WHO undertook a global review of impacts and vulnerabilities of health to the 2015 El Niño, with the support of the WHO/WMO joint office. These products enhanced preparedness and response efforts to current health risks and responses of the El Niño event in high risk countries. Regional and High impact country reports were also prepared.

Relevant Links: [http://www.who.int/hac/techguidance/preparedness/el\\_nino\\_2015\\_2016/en/](http://www.who.int/hac/techguidance/preparedness/el_nino_2015_2016/en/)

- A. Global Report: **Global Overview of El Niño and Health Impacts:** (Jan 2016 34 pages) [http://www.who.int/hac/crises/el-nino/who\\_el\\_nino\\_and\\_health\\_global\\_report\\_21jan2016.pdf?ua=1](http://www.who.int/hac/crises/el-nino/who_el_nino_and_health_global_report_21jan2016.pdf?ua=1)
- B. **Country Impact Reports and Regional Impact Summaries** can be found here: <http://www.who.int/hac/crises/el-nino/en/>
- C. **Summary Report: January 2016** [http://www.who.int/hac/crises/el-nino/flyer\\_21jan2016.pdf?ua=1](http://www.who.int/hac/crises/el-nino/flyer_21jan2016.pdf?ua=1)
- D. **Report Update: April 2016** [http://www.who.int/entity/hac/crises/el-nino/flyer\\_26april2016.pdf?ua=1](http://www.who.int/entity/hac/crises/el-nino/flyer_26april2016.pdf?ua=1)

## C. CLIMATE AND HEALTH KNOWLEDGE PRODUCTS

*Relevant Impact Topics: Knowledge products created to inform understanding and management of (1) Changes in geographic distribution of disease [notably Climate Service related products]; (2) new and emerging health issues [notably ENSO and health products] (3) effects on health and productivity in the workplace [notably heat health].*

### 1. Climate Services for Health: Improving Public Health Decision Making in a new climate [case studies]



Climate services are mission-oriented processes driven by societal needs, which result in the production and delivery of relevant, authoritative, timely and usable information about climate change, climate variability, trends, and impacts to improve decision-making in climate sensitive sectors. Climate services for health are an emerging technical field for both the health and climate communities. The Climate Services for Health Case Study Project showcases 40 examples that can help readers better understand what, how, and why health tailored climate services can support health solutions to managing climate risks. The publication presents a common framework for developing climate services for health, and highlights common needs and good practice

**Relevant Link** (document download): <http://public.wmo.int/en/resources/library/climate-services-health-case-studies>

**Publication Date:** 2016 220 pages

**Countries of Focus:** Global. Examples from Asia, Africa, Europe, North America, Australia and Pacific Islands.

**Lessons Learned:** Chapter 8

Tailoring climate information for health is a new and complex domain. Lessons from multidisciplinary teams around the world show there is often a common pathway to identify, envision, develop and apply climate services; as well as best practices which can improve information available to inform climate change adaptation and risk management.

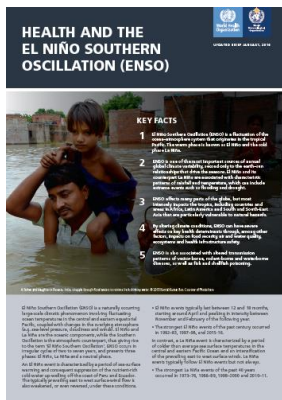
4. Following careful problem definition, six common components frequently comprise the approaches taken to develop and deliver climate products and services for health. These include activities to create an enabling environment, build capacity, conduct research, develop and deliver products and services, apply the knowledge, and evaluate the products and user experience. Each component serves a specific goal in the overall process. These components are not necessarily sequential, but very often must occur simultaneously to design, develop, and apply useful weather and climate services.
5. Five common actions that have helped the necessary partnerships flourish: Spend time to define the problem and the knowledge needs; plan so as to create not only a reliable climate product, but also a support system, which can sustain the product or service until it becomes a mainstreamed health application; pursue co-development to help create relevant and reliable products that are fit-for-purpose and have the greatest utility and impact; build adequate financial and human resources to sustain the services; include informed communication planning to ensure the information is actionable.

**Target Audience:** health and meteorological sector researchers and professionals



## 2. ENSO and Health Factsheet

WHO/WMO Joint Office for Climate and Health issued a Factsheet in 2015, summarizing the evidence of health impacts of the El Niño Southern Oscillation (ENSO) as part of a wider WHO effort to review the current health risks and responses of the El Niño event in high risk countries.



Factsheet: Online. <http://www.who.int/globalchange/publications/factsheets/el-nino-and-health/en/>

Factsheet PDF: [http://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmocms/s3fs-public/news/related\\_docs/WHO-WMO\\_EL-NINO\\_FACTSHEET\\_FINAL%20%281%29.pdf](http://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmocms/s3fs-public/news/related_docs/WHO-WMO_EL-NINO_FACTSHEET_FINAL%20%281%29.pdf)

<http://public.wmo.int/en/media/news/who-wmo-brief-health-and-ens>

## 3. Health and Sanitation aspects of Flood Management

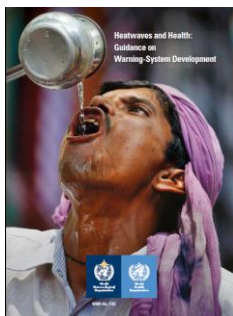


Partners: WMO, Global Water Partnership

Link to document:

[http://www.apfm.info/publications/tools/Tools\\_23\\_Health\\_and\\_Sanitation\\_Aspects\\_of\\_Flood\\_Management.pdf](http://www.apfm.info/publications/tools/Tools_23_Health_and_Sanitation_Aspects_of_Flood_Management.pdf) Publication Date: December 2015

## 4. Heatwaves and health: Guidance on warning-system development



This Guidance has been developed jointly by WMO and WHO to outline for practitioners in both NMHSs and National Health Services (NHSs) the issues surrounding the general heat–health problem and present how an understanding of the biometeorology, epidemiology, public-health and risk-communication aspects of heat as a hazard can be used to inform the development of an HHWS as part of a wider HHAP. The Guidance places emphasis on the practical aspects of HHWSs at a generic level and is not intended to be prescriptive.

Publication Date: 2015

Target Audience: health and meteorological sector researchers and professionals

Relevant Links : <http://www.who.int/globalchange/publications/heatwaves-health-guidance/en/>



## 5. ClimHealth Africa

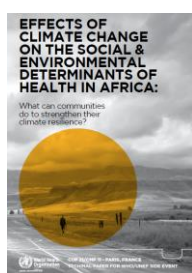
**Partners:** ClimHealth Africa Secretariat is the WHO Africa Regional Office. The WMO is a founding member and supporting partner of ClimHealth Africa. The network includes international and regional expert institutions and national government representatives. <http://www.climhealthafrica.org/partners>

**Activity:** Clim-Health Africa serves as a virtual hub where expertise is shared, in order to develop the capacity of African health and climate communities, institutions, practitioners and negotiators to understand and integrate climate change challenges into policy, socio-economics, planning and programming.

Relevant Links: <http://www.climhealthafrica.org>

**Knowledge Products of WHO Africa Regional Office, associated with ClimHealth:**

<http://www.climhealthafrica.org/resources#reports-and-publications>



### **Report: Effects of Climate Change on the Social & Environmental Determinants of Health in Africa**

**Link:** <http://www.climhealthafrica.org/wp-content/uploads/2016/01/Effects-of-Climate-Change-on-the-Social-and-Environmental-Determinants-of-Health.pdf>



### **Report: Second Synthesis Report on the Situation Analysis and Needs Assessments for the Implementation of the Libreville Declaration on Health and Environment in Africa**

**Link:** [http://www.climhealthafrica.org/wp-content/uploads/2016/01/Second-Synthesis-Report\\_2015.pdf](http://www.climhealthafrica.org/wp-content/uploads/2016/01/Second-Synthesis-Report_2015.pdf)



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