Climate Services for Health Readiness Evaluation Toolkit

Evaluatingnationalreadinessto developandbenefitfrom effectivehealth-tailoredclimate services

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Climate services for health decision making

The health community is increasingly concerned with the health impacts of changing climate patterns. To guarantee adequate healthcare services for populations now and in the future, health bodies worldwide need to be able to make informed decisions to anticipate, prepare for, and mitigate climate-related risks to health. Accurate, accessible and interpretable climate information is the cornerstone of these decision processes.

Climate services for health package and present climate information in a way that health professionals and systems can easily understand and integrate into their processes.

Requirements of climate services for health

Climate services for health lie at the interface between the health and climate domains. Global experience developing these services, compiled and analysed through the joint WHO / WMOClimate Services for Healthproject,has shown that their feasibility, usefulness and sustainability heavily depend on three core elements:

1. **Enabling environment:**an adequate enabling environmentthat facilitates its development and incorporation into health planning and policymaking;

2. **Capacity:**adequate levels of capacity to develop, use and sustain the services over time; and,
3. **Research:**robust health and climate data, informationand availability of core underlying evidence on climate and health interactions to identify fit-for-purpose services and support their technical development.

Only when these three core elements are in place can the process to develop climate services for health be effectively initiated. Therefore, before attempting the development of any services, it is fundamental to evaluate the status of these three components to assess feasibility.

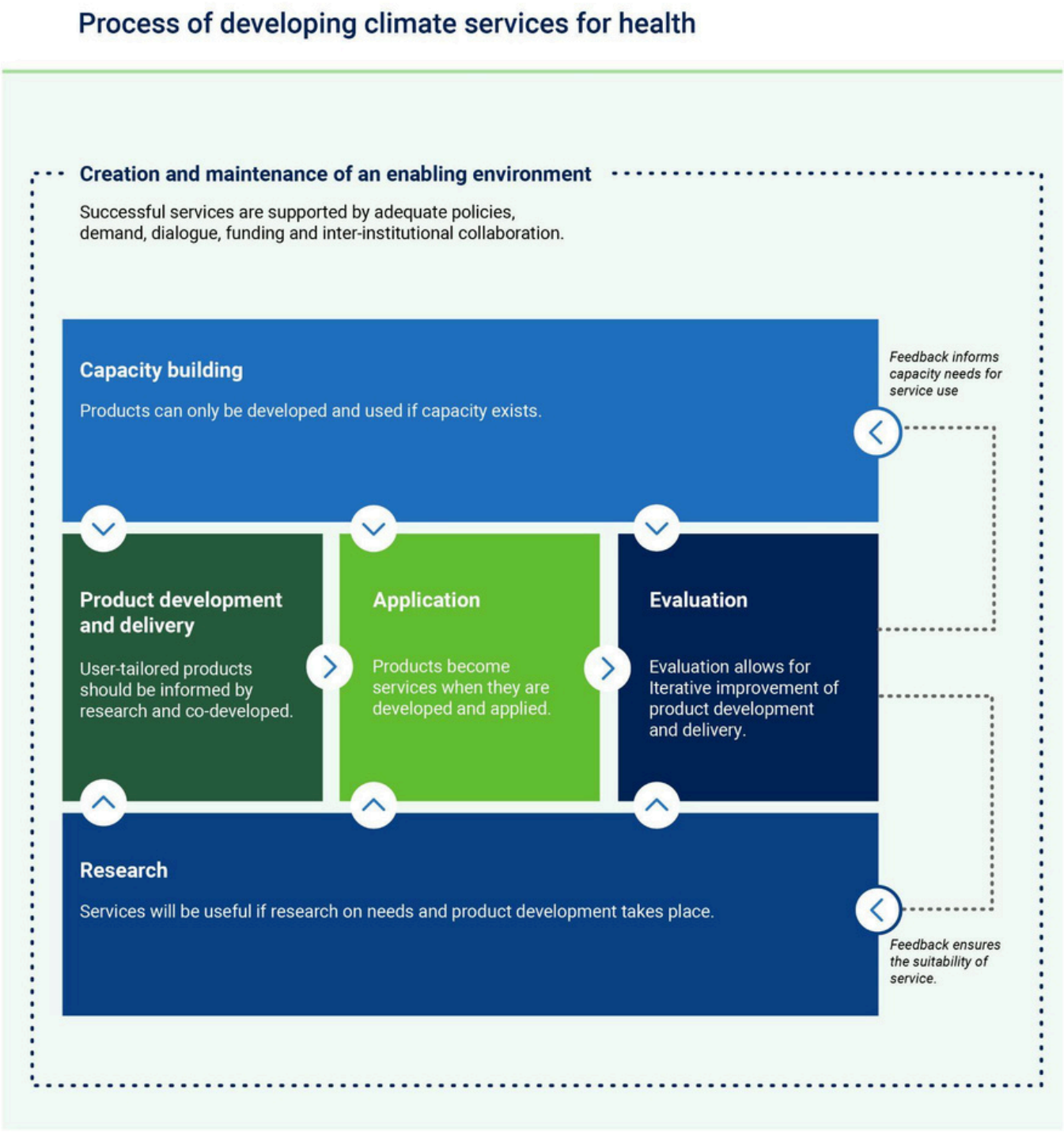

Figure 1. Process of tailoring climate services forhealth

Figure1showstheprocesstodevelopclimateservicesforhealth,fromcreating an enabling environment to product evaluation for iterative improvement.

Readiness Toolkit: Evaluating readiness for climate services development

TheReadinessToolkit has been developed to support countriesinidentifying needs for tailoredclimateservices, and to evaluate the feasibility of development. It does so by guiding countries through a process of understanding their current enabling environment, capacities, and data, evidence and information availability. It is a seven-step additive process to be followed at the national level, with support from external experts. Its main six outputs are:

1. An overview of existing policies in place to support the development of climate services
2. An overview of existing capacities in place to support the development of climate services
3. A summary of evidence of current climate risks and an inventory of existing climate and health data and information
4. The identification of priority of climate information needs
5. Definition of potential services to meet these needs
6. A detailed feasibility evaluation of climate services

Process overview and instructions

Thetoolkit process is divided into two parts.The firstpart providesthe first three outputs (1-3) that evaluate the three core elements: the enabling environment, the existing capacities, and the availability of data, information and evidence, for developing climate services that cater to health-decision making needs. It is designed to be carried out at the national level in collaboration with key stakeholders.

If the current policies, capacities and data/evidence/information are sufficient for the potential development of certain climate services for health, the second part of the process will help identify potential climate services and assess the feasibility of their development. Part 2 is designed to be conducted by an external expert in consultation with the national team.

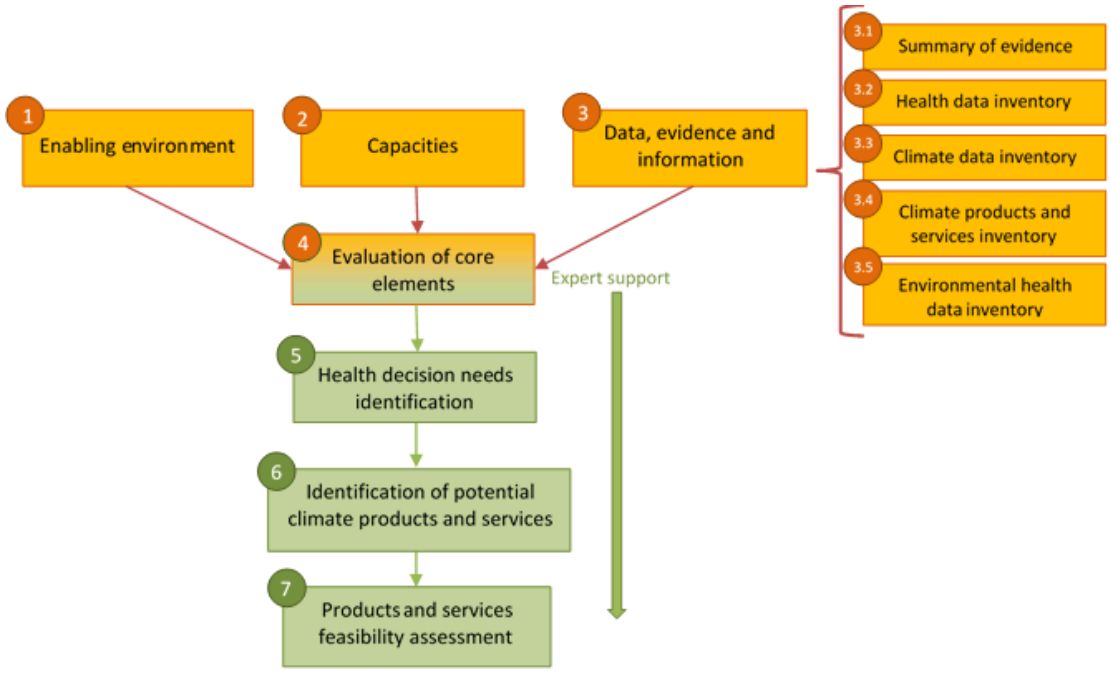

Figure 2. Diagram of the process- In orange steps that belong to the first part of the process and are meant to be carried out without expert support. In green steps that belong to the second part of the process and are meant to be supported by an expert.

To assist in evaluating steps 1-3, supporting templates are available for the national team to use. Summary of instructions for how to fill in each of the templates are provided below:

Part 0: Pre-assessment

Led by: the national team

The national team should try to answer the questions provided in the template. In the case that most of the questions cannot be answered, it indicates the need to build a foundation of national capacity on climate change and health before considering the development of climate services and products for health.

Supporting templates:
0. Pre-assessment template

Part 1: Evaluating the enabling environment, core capacities, and the availability of data, evidence, and information to formulate health decision-making needs

Led by: the national team

This first part of the process comprises five steps as follows. The products compiled as part of steps 1-3 will support the completion of step 4. Step 5 will be based on the results of steps 1-4.

1. EnablingEnvironment

Aims to review and compile key national policies, strategies, plans, and other key information relevant to climate services development.

The national team should liaise with the institutes responsible for climate change, disaster risk reduction and management, and climate services for collaboration and coordination with existing climate change policies and procedures.

Supporting templates:
1.1. *Policies and Plans*
1.2. *Stakeholder mapping*
1.3. *CoordinationandCollaboration mechanisms*
1.4. *Financing Landscape*

2. Capacities

Aims to assess current capacities for climate services development and implementation and identify gaps that need to be strengthened.

The national team should reach out to the respective departments and institutions responsible for the health workforce, disaster risk reduction and management, and public health research to assess the current capacities relevant to climate services development.

Supporting templates:

2.1. *Research Capacity*
2.2. *Humanresources and institutional capacity*
2.3. *Capacitytoaccess and use climate information*
2.4. *Capacitytorespond to extreme weather events*

3. Data,EvidenceandInformation

Aims to identify and provide a description of the available climate and health data, evidence of climate and health linkage, and existing climate services that will serve as the basis for the health-tailored product development.

The national team should reach out to the respective government agencies to collect data and data descriptions on health, climate, environment, and existing climate services and products, in addition to research institutes for gathering scientific evidence of climate change and health linkage.

a. Summary of evidence:

If no vulnerability and adaptation assessment (V&A) has been previously carried out, the national team should seek information from international and national research repositories and national research institutions, the ministry of health, and other relevant resources. The national team should then map the linkages between climate change and health. In order to complete this template, collaboration with researchers or national research institutions in the area of climate change and health is recommended.

Supporting templates:
3.1: Evidence of climate impacts

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b. Health data inventory:

Aims to produce an inventory of all national disease data sets and a summary of the data collection process (case definition, data collection and management system, spatial resolution, frequency of reporting, reporting facilities, etc.).

The national team should contact the respective departments within the Ministry of Health to request they fill in the template.

Supporting templates:
3.2: Disease data availability

c. Climate data inventory

Aims to produce an inventory of available national weather data and the data description (location, measured parameters, frequency of data collection, data completeness, etc.).

The national team should contact the National Meteorological Service, National Agriculture and Water Authorities to request they complete the template.

Supporting templates:
3.3: Climate data inventory

d.Climate services inventory:

Aims toproduceaninventoryof all the climate products and services available in the country and their key features (frequency of data production, spatial coverage, spatial resolutions, level of certainty, etc.)

The national team should contact the National Meteorological Service to request they complete the template.

Supporting templates:
3.4: Climate products inventory

e. Environmental data inventory:

Aims to produce an inventoryofenvironmental data relevant to climate-sensitive diseases that might inform climate services or products for health (water scarcity and quality, air pollution, etc.).

The national team should reach out to the national water authorities and environmental health departments to fill out the template.

Supporting templates:
3.5: Other environmental data

4. Evaluationofcoreelements

Based on the previously collected information, this step aims at generating a snapshot of the status of the three key components for climate services development: enabling environment, capacities, and data, evidence and information availability**.**It also highlights the keygaps in these elements.

Based on the information collected from the previous steps, the national team, together with external experts, should assess the country's overall state of readiness. Specific core elements should be evaluated to identify gaps that need to be improved for climate services development and implementation for the health sector. Detailed instructions and country-based case studies are introduced elsewhere.1

Part 2: Identifying climate services and feasibility evaluation

Led by: external experts in consultation with the national team

5. Identification of health decision needs

Based on the evidence collected and the status of the enabling environment and capacities, this step aims to generate a list of information required to formulate the health decision needs that climate services can support. It serves as the basis to define the needs-tailored potential climate products and services in step 6.

The supporting experts should evaluate the information compiled in steps 1-3 and, in consultation with the

[1] Climate Services for Health Fundamentals and CaseStudies for improving public health decision-making in a new climate

national team, produce a list of climate application areas within the health sector. The experts should consider current decision-making needs and the needs that might emerge under future climate change impacts. For example, the information needs under a potential water-scarce future in some areas of the country.

6. Identification of climate products and services

Aims to identify climate products and services with the capacity to meet the needs formulated by step 5.

The supporting expert is expected to produce a list of candidate climate services or products that meet country needs. Each proposed service or product should be described with as much detail as possible, including a description of their data production frequency, geographical coverage, geographical scales, time scales, data and information requirements, technological requirements, etc.

7. Productsandservicesfeasibility

Aims to assess the feasibility of each of the climate products and services identified. As a bi-product, it will generate a list of gaps in the enabling environment, capacities, and data, evidence and information that will need to be addressed for the services that are rendered unfeasible at this stage.

The expert is expected to evaluate the feasibility of a service or product to be developed by reviewing existing or potential climate services or products. However, this list is not intended to be exhaustive. This step is highly open to expert judgment and criteria for feasibility.

End output

This exercise is expected to result in a Readiness Report that compiles the information collected through the nine templates and includes a final expert judgment statement on the feasibility of each of the climate service and product proposed. The feasibility should be graded as:

a) Currently feasible
b) Feasible with a minor increase in capacity
c) Not yet feasible

For services rendered feasible, a list of service requirements needs to be provided (required expertise, data, systems, etc.). For services rendered “feasible provided minor increases in capacity”, in addition to the list of requirements, a list of capacity building needs should be provided. For services rendered unfeasible, a justification should be provided.

Templates

0: Pre-Assessment Template

Introduction

A pre-assessment before embarking on the Climate Readiness Assessment can help to define the aim and the objective of the assessment. Being clear on what the purpose of the Readiness Assessment is, enables a more effective way of conducting it - focusing on only gathering data and assessing aspects that are relevant. It also identifies the key fundamental elements that need to be in place for climate health service development. Potential gaps need to be addressed before any climate service development can take place.

1. What can a Readiness Assessment deliver?

A Readiness Assessment can help:

- to assess what building blocks for climate service development for the health sector are available to built climate informed decision tools;
- to set realistic expectations in programming;
- to not waste time and resources, but to focus on what is needed and possible;
- to build stepwise capacity toward reliable applications;
- to identify needs for climate information;
- to highlight priority gaps, systems and activities to be prioritized for the next steps;
- to provide a sound basis for judging feasibility and viability of potential applications;
- and to set a baseline to track progress.

2. What kind of climate health service is envisioned to be developed and implemented?

To conduct a meaningful Readiness Assessment, it is important to be clear about the kind of climate service for the health sector that is envisioned to be developed and implemented.

Climate services for the health sector can assist in providing information and data for public health decision making, such as the following:

Disease/Health outcome	Information needs
Malnutrition	I wish I could knowwith more certainty the expected increase in malnutrition cases per province during drought events
Drought	I wish I could anticipate when and where a drought event will occur to pre-position food supplements
Health care accessibility	I wish I could know which populations will have no access to health care during flood events
Cholera	I wish I could know how many days after a flood/drought event, cholera cases are expected to increase
Malaria	I wish I could know if malaria will reach high lands above Xm in the next 30 years
Diarrhoea	I wish I could know where will diarrhoea cases increase/decrease during La Niña events
Cold chain	I wish I could know which health facilities are most at risk of power cuts during extreme events to relocate vaccines and other medicines that require a cold chain.

Heat	I wish I could know when heatwaves may happen this year

Ifno specific climate-sensitive disease or health outcome has been identified as a priority for your country, this Readiness Assessment can still provide guidance on which building blocks have to be strengthened to enable develop and implement climate services for health.

3. What information and insights will this Readiness Assessment provide?

The Readiness Assessment Tool contains three assessment parts, which will provide an overview of the following:

- • Overview of the policies, plans and required systems in place to support and uptake of climate services **(Core element 1: Enabling Environment)**
- • Overview of the key core capacities in place to support and uptake of climate services **(Core element 2: Capacities)**
- • Map of priority climate information and health data available for the development of climate services **(Core element 3: Data, Evidence and Information)**

Based on these results, an expert can deliver in the following step insights into potential climate information services to meet the previously defined climate information needs with a potential detailed evaluation of the feasibility of each of these climate services identified.

4. Before getting started: A pre-assessment of critical fundamental elements for climate information service development and its integration into health systems

Following the pre-assessment tool with guiding questions helps to identify whether gaps or specific capacities need to be addressed prior to developing and delivering effective services and products.

Template 0: Pre-assessment

Please answer the questions below. Ideally, all responses should be positive. The responses would be indicative of the presence of critical fundamental elements for climate service development and implementation in the health sector. If you cannot answer most of the questions, you might want to use the other templates as a means to identify critical gaps and needs that should be addressed before climate service and product development.

Key questions	Responses	Note
Has a National Policy been developed that aims at the integration of climate information services within health systems (e.g. H-NAP document)?		If the answer is no, you might want to start the process of developing a National Adaptation Plan for health (H-NAP). Please refer to the respective WHO guidance document.
Has a Memorandum of Understanding been established between the National Meteorological Service and Ministry of Health or has some kind of formal working relationship been established?		
Based on climate projections, please identify the major Climate Risks for the country.		Ifyou are unable to answer this question, you might want to reach out toyour climate change focal point of your country.
Based on a vulnerability and adaptation assessment (V&A) or expert opinion, identify major health risks for the country.		If you are unable to answer this question, you might want first to conduct a V&A. Please refer to the respective WHO guidance document.
Is climate and health data routinely collected at the district level and national level?		If you are unable to answer this question, please use the template “Core element 3 - Data, evidence and information to guide you.
Is there a national focal point for climate change and health within: A) Ministry of Health, B) Meteorological Service		
Are communication channels in place which enable collaboration across different sectors?		
What is the climate information needed for a specific disease or health outcome (i.e. what climate service for health is needed) for your country?		Ifyou are unable to answer this question, please refer to the existing national document on climate change and health. If these are not available, you might want to conduct a V&A first and start a process of H-NAP in your country.
What is the objective/aim of this Readiness Assessment for your country?		This should be related to the health decision needs identified in national policy or assessment documents.

Core Element 1: Enabling Environment

Introduction

The Enabling Environment is used to determine the level of readiness regarding collaboration and coordination. This includes understanding the existing supporting policies and procedures needed to effectively deliver climate information services to the health sector.

This template assists in assessing the current enabling environment by looking at existing national policies, relevant actors, collaboration and coordination mechanisms and possible available funding. Depending on the objective and aim of conducting this Readiness Assessment, this template can be used to identify current gaps that need to be addressed to enable development and implementation of climate services for health, or to provide a starting point for the process of developing climate information services for the health sector, by gathering and compiling necessary information on the current policy framework, collaboration and cooperation mechanisms and available funding.

Template 1.1 helps to identify relevant documents and policies and to extract information that provide a framework for climate service development, especially in those instances, when an H-NAP document has not been developed yet.

Template 1.2 helps to identify and map relevant actors for climate service development in case climate services Template 1.3 helps to identify necessary coordination and collaboration mechanisms between key actors Template 1.4 helps to sketch out the financing landscape for climate service development.

Template 1.1: Plans and Policies

The table below aims at providing an overview of health priorities for climate change adaptationand of the politicallandscape that will supportclimate service development. In case an H-NAP has beendeveloped and is available, the document might provide answers to thekey questions. If not:

1. Compile the list of documents in the first and second columns and fill inthe name andyear of the publication.
2. Read the guiding questions in Column “Key questions”and “Additionalclarification ofquestions” before you read the documents andrespond to them in Column “Answers” as you find theinformation in the relevant documents.

Resource type	Description	Utility	Name of the document in your country	Year of publication	Key questions	Additional clarification of questions	Answers
National Health strategies and disease control programs for climate sensitive diseases	The national health strategy commonly defines strategic goals for the health sector for five years. Disease Control programs set strategic objectives and activities for the control of specific diseases. Their formulation periods vary.	Understand the overall health and disease specific priorities and whether climate risks have been considered as risk factors for list fulfilment.			What strategies are in place to combat health threats? (See checklist of questions)	What are the strategic priorities/goals of the health sector?	
						What are the main disease control goals?	
						Does the current National Health strategy acknowledge the risk of climate for health?	
						What are the timescales of the risks considered?	
National Health Contingency plans	Health sector preparedness, response, and recovery plans.	Understand the current country strategy to deal with the impact of climate extreme events on health and evaluate the opportunity to improve the use of climate information in such plans is.			Is there a strategy in place to deal with climate extremes from a health standpoint? (See checklist of questions)	For which climate extreme events do preparedness, response or recovery protocols exist?	
						Is climate information currently used to plan/execute action?	

Adaptation plans National Adaptation Plans (NAP), National Adaptation Programs of Action (NAPA) and Health National Adaptation Plan (H-NAP), Intended Nationally Determined Contributions (INDCs)	National adaptation plans are processes to support countries to identify their adaptation needs at different time scales: immediate and most urgent, mid-and long-term. Health National Adaptation Plans help the health sector to define the health specific adaptation needs.	Identify key health adaptation needs and health adaptation projects that might have been previously formulated.			What are the priority adaptation strategies and actions? (see additional questions)	What are the diseases prioritized in these plans? Please list them.	
						Is the integration of climate information services within the health system one of the priority actions and strategies identified? If yes, with which objective or aim?	
Vulnerability and Adaptation Assessment	Assessment of current and future vulnerability (i.e., the susceptibility of a population or region to harm) to the health risks of climate change and of policies and programmes that could increase resilience, taking into account the multiple determinants of climate-sensitive health outcomes	Understand the climate sensitivity of prioritized climate sensitive diseases, current adaptation capacity and strategies and learn about previously identified adaptation options.			What diseases are of concern from a climate sensitive perspective, and do recommendations exist to address them? (See checklist in of questions)	What are the communicable diseases prioritized in this assessment? Do these priority diseases correspond to those identified national adaptation plans and strategies (NAP, NAPAs, iNDCs, H-NAPs)?	
						Is the integration of climate information services within the health system one of the adaptation options identified? If yes, with which objective or aim?	
National Framework for Climate Services	A coordinating mechanism enabling the development and delivery of climate services required at national and local levels	Understand the national strategy for the production and delivery of climate services and the sectors/agencies involved that might be relevant for your future work developing climate services for health.			Does this framework address the needs of the health sector?	Are there any specific services formulated in the framework?	

Template 1.2: Stakeholder mapping

Ifthere has not been a stakeholder mapping conducted as part of an H-NAP process, the following questions can guide identifying important key actors for climate service development.

Key questions

	Responses
Name of your National Meteorological Service	
Is there a separate National Hydrological Service? If yes, please provide the name.	
Is there a specific focal point at the National Met Service and/or at the National Hydrological Service for health related topics? If yes, please provide the name(s).	
Please list the donor agencies funding climate adaptation work in the country	
Are any of these donors funding health-specific adaptation? If yes, please list respective donors.	
List national institutions, such as ministries, organizations, foundations that are managing/regulating relevant environmental health determinants (e.g., water, agriculture, etc.)	
List national institutions conducting research on climate change and health in your country.	
List NGOs, international organizations, foundations, research institutions (etc.) implementing climate resilience and/or adaptation projects or programs at the moment.	
Does the MoH have any partners supporting research on environmental health or climate change and health? If yes, provide the names	

Template 1.3: Coordination and Collaboration mechanisms

The following questions address important coordination and collaboration mechanisms between key actors that are necessary for climate service development.

Key questions	Responses
Is there a multisectoral coordination mechanism to deal with Climate Change Adaptation and/or Mitigation?	
Is the health sector participating in such a mechanism?	
Is the National Meteorological Service participating in such a mechanism?	
Who are the other stakeholders participating in such a mechanism beyond the health sector?	
Does the national health sector have institutional collaboration agreements to implement climate adaptation or resilience building activities? If yes, with whom?	
Does the national health sector have any collaboration agreement or MoU with the National Meteorological Service?	
Has the health sector previously collaborated with the National Meteorological Services?	
Does the health sector have any collaboration agreement or MoU with other sectors (e.g., water, agriculture, etc.) for the management of environmental determinants of health? If yes, which sectors?	
Does the MoH have any partners supporting research on environmental health or climate change and health? If yes, please provide the names.	
Is there a National Framework for climate services?	
Is there a national committee or platform composed of ministries, agencies and other stakeholders that coordinate Disaster Risk Reduction activities at the national to sub-national levels?	
Is the MoH part of that committee on Disaster Risk Reduction?	

Template 1.4: Financing Landscape

The following questions guide an assessment of potential financial resources.

Key questions

Is there government funding available to build health adaptation to climate change?	**Responses**
List all Climate and Health projects that took place in the last five years.	
Is there government funding available for research in climate change and health?	
Which health-determining sector/programs (e.g., Nutrition, WASH, Agriculture) invest in climate resilience and adaptation?	
Is there government or other funding available to improve the existing national disease surveillance or health information systems?	

Core Element 2: Capacity

Introduction

The goal of capacity building is to ensure that adequate human and financial resources, institutional and community skills and know-how are available to allow for appropriate development, optimal use and sustainability of climate services.
This supporting template assists in assessing the current capacities that are relevant for climate service development and identifying gaps that might need to be strengthened. It looks at national research capacities, human and institutional capacities, and the capacity to access and respond to climate information.

Template 2.1 helps to assess current research capacities

Template 2.2 helps to assess current human resources and institutional capacities.

Template 2.3 helps to assess the current capacity to access and use climate information.

Template 2.4 helps to assess the current capacity to respond to climate extreme events.

Template 2.1: Research capacity

The following questions help to assess present research capacity for climate service development.

Key questions	Responses
Are there any research institutions/researchers with expertise on climate change and health in the country? Please provide their names, affiliations, and qualifications.	
Is research on health and climate change prioritized within national health and/or climate change policy, plans or strategies?	
Are there any educational programs on: 1) Climate change, 2) environmental health, and 3) climate and health (Bachelor level and above) in any of the national universities? If there are, list them and provide titles and links.	

Template 2.2: Human resources and institutional capacity

The following questions allow assessing the human resources and institutional capacity for climate service development.

Key questions	Responses
Is there a focal point in the Ministry of Health for climate change and health? Please provide the name and his/her department of affiliation.	
Are there any health programmes with experience in integrating climate and weather information into health decision making, disease surveillance or early warning systems within the Ministry of Health?	
Has any training or information campaign been organized on climate risks to health for the national health workforce?	
How many data scientists/ epidemiologists work at the Ministry of Health and/or the national public health institute?	

Template 2.3: Capacity to access and use climate information

The following questions guide a capacity assessment to access and use of climate information.

Key questions	Responses
Does the national health sector have access to climate and environmental information? If so, to which type of information?	
Is the health sector currently receiving climate information from other sources than the National Meteorological and Hydrological Service? If yes, which sources?	
Is climate information used for health decision making at the moment? Describe how (e.g., planning vaccination campaigns, responding to natural disasters, etc.)	

Template 2.4: Capacity to respond to extreme weather events

The following questions assist in assessing the current capacity to respond to extreme weather events.

Key questions	Responses
Which agency is responsible for disaster risk management and reduction?	
Which health departments or mechanisms are responsible for responding to health emergencies (both epidemics and natural disasters)?	
Does the Ministry of Health receive early warning information from authoritative sources? If yes, for which types of hazards and how is this information received?	
Are there health preparedness, response and recovery plans in place for extreme weather events?	
Is climate information being used to guide preparedness, response, or recovery actions? How is it being used?	

Core Element 3: Data, evidence, and information

Introduction

This template assists in gathering available data, evidence and information that constitute the bedrock for climate service development. It can help to assess whether data availability and evidence have to be first strengthened to develop climate services for health or to identify possible next steps to develop specific climate services for health. Climate services for health begin with research or are based on research on statistical correlations between climate/weather conditions and health outcomes, risk factors, or health service delivery performance. Understanding the “climate signals”, which may play a role in disease outcomes, are required for any application of climate information to decision making.

Template 3.1 helps to gather available evidence on climate impacts on health in the country.

Template 3.2 assists in gathering climate sensitive disease data and assess their suitability for climate service research.

Template 3.3 guides the creation of a climate data inventory and assessing their suitability for climate service research.

Template 3.4 helps to identify existing climate products and services that could inform climate service research.

Template 3.5 guides to identify other environmental data relevant for climate sensitive diseases that could be drawn upon climate service research.

Template 3.1: Evidence of climate impacts

The table below aims at providing an overview of the known health sensitivities to climate change and highlight the knowledge gaps (based on studies that identified statistically significant correlations between climate variables and disease/ health outcomes)

Instructions:

Please only use below tables for the priority disease or health outcome if already determined.

If there is no V&A available in your country, pleasecompile as many articles and grey literature as possible, utilizing theNIEHS climate and health literature portal, which report on statistically significantassociations between weather/climate variables and (priority) diseases or health outcomes in your country. Then, indicate these associations in the table below by adding the reference number in table 2. Please involve your public health institute or researcher in this exercise.

If a V&A exists, please proceed to question 3 below.

Climate-sensitive diseases/health outcomes	Climate Variables and Extreme Events											
	Temperature Related					Rainfall Related		Large scale Phenomenon				
	Max. Temp.	Min. temp.	Average or incremental changes (i.e., for every 1 degree change) in temp.	Heat waves	Droughts/ Dry spells	Rainfall (excluding extreme precipitation events)	Floods/ Extreme precipitation/ Hurricane/ Cyclone/ typhoon	Poor air quality	Sea level rise	High UV	ENSO La Niña	ENSO El Niño
Malaria												
Diarrhoea												
Cholera												
Dengue												
Malnutrition												
Cardiovascular disease												
Respiratory diseases												
Heat stress												
Rotavirus												

Others: _____ _____												

2. Please add the references to the table above.

1 2 3 4 5 6 7 8 …	

3. Please answer the following questions if a national V&A already exists in your country.

Question	Response
If a national V&A exists, which diseases or health outcomes statistically correlate with climate variables?	
If a national V&A exists, which climate related risks have been identified for (primary) healthcare infrastructure, access to and provision of healthcare?	
Is there a standard protocol to monitor and/or evaluate such impacts?	

Template 3.2: Disease data availability

The table below aims at providing an overview of disease data availability. **If you have priority climate sensitivediseases for climate services, please only enter the informationofthese diseases.**

1. Please answer the following question.

Question	Which (priority) climate sensitive diseases have at least 10 years of longitudinal data?
Answer	

2. Please enter the respective information in the table below.

Question		**Answer**
Data collection systems	Which data management system is used for disease data collection?	
	If DHIS2 is used, year of implementation in DHIS2.	
	If DHIS2 is used, what was the system used before DHIS2? Please describe.	
Disease case definition	Case definition	
	Has the case definition changed over the reporting period? When?	
	Are cases identified through active or passive surveillance?	
	Are cases identified through a sentinel surveillance system?	
	If cases are laboratory confirmed, how long does laboratory confirmation take?	
Indicators	Key indicators recorded (if DHIS2 is used please list the data elements)	
	Indicator/data element definition	
Reporting period	Year when reporting started	
	Year when reporting ended	
Spatio-Temporal scales	Frequency of reporting (e.g. daily, weekly)	
	Lowest geographical level of reporting	
Reporting facilities	Number of facilities reporting	
	Names of facilities reporting (please list what level they are at as well): (if a disease is of mandatory reporting, please indicate (e.g. ALL X LEVEL FACILITIES))	
Data accessibility	Please describe the standard procedure to access this data for research purposes.	

	Please specify the department/unit that is responsible for managing the data at the central level.	
	In which format(s) is this data available (e.g. paper-based, csv, ASCII, etc.)? If the format has changed, please add the year from when it is available.	

Template 3.3 Climate data inventory

Thetablebelowaimsatprovidinganoverviewofclimate data availability.

Instructions

Please request the information to be filled in by the National Meteorological and Hydrological services. The Ministry of Agriculture and the Ministry of Water may also have relevant information.

Station name	**Longitude**	**Latitude**	**District name**	**Type (manual or automatic)**	**Managed by:**	**Year data recording started**	**Year when data recording stopped** (please list as "ACTIVE" if the station is still recording)	**Variables available**	**Data completeness** (per variable available)	**Data format** (specify format of the available data for station)	**Period for which data is quality controlled**	**Period of time for the data to be made available electronically from the time of collection**

Additional questions

Question	If data is available from manual and automatic stations, is there any issue around data quality between the two methods (i.e., does manual data undergo a better quality control process than automatic stations)?
Answer	
Question	Has a map been created of the location of all weather stations in the country?
Answer	
Question	How can data be acquired from individual weather stations electronically?
Answer	
Question	Is there a central electronic system for climate data management? If yes, provide the name. When was it implemented?
Answer	
Question	Which locations are regularly producing climate data?
Answer	
Question	Which locations have at least 10 years of climate data?
Answer	

Template 3.4: Climate products inventory

The table below serves to provide an overview of the climate products and services available in your country.

Instructions

Please request the information to answer the following three (3) questions by the National Meteorological and Hydrological services. The Ministry of Agriculture and the Ministry of Water may also have relevant information.

1. Please answer the following questions

GENERAL SERVICES	
Doesyour NationalMeteorological Services(andother relevant institutions) provide data services?	
Are climate observations available free of charge?	
Does your National Meteorological Services have the capacity to do on-demand data rescue?	
Does your National Meteorological Services have the capacity to provide climate data processed as per user requests? (data summaries, interpolated raster layers, custom climate maps and simple statistical analysis)?	
Does your National Meteorological Service provide satellite images and other global or regional data products?	
Is there a multi hazard Early Warning System?	
Is your National Meteorological Services producing Warning Services for the following extremes: Flash floods, Impact- based forecasts, Extreme heat, Cyclones?	
Does your National Meteorological Service use a Flash Flood Guidance System for issuing flash flood warnings?	

2. Please fill in the following table

DESCRIPTION OF SPECIFIC TYPES OF SERVICES												
Type of service	Name of the service provider (please add lines if more than one service is provided per service type)	Name of the service	Description of the service	Link to the service	Frequency of production (e.g., issued once a week, once a month, once a day)	Spatial resolution (e.g,. national, regional, province, district, sub-district)	Temporal resolution (e.g., daily, weekly, monthly information)	Spatial coverage (e.g., available everywhere in the country, available for one specific province/district)	Has/is the information provided by this service ever validated?	For forecasts / predictions: What is the skill of it? Please explain if the skill varies by region/season	Is the national health sector using this product?	If yes, how is this product being used at the moment?
Weather forecasts												
Sub-seasonal forecasts												
Seasonal forecasts												
Decadal forecasts												
Downscaled climate projections												
Climate analysis and diagnostics												
Early Warnings (please add a line by type of EW)												
Drought monitoring												

3. Please answer the following questions:

Question	
Are there any climate services for health in place?	
Is there an inventory of past climate extreme events? If so, how far back does this data go?	

Template 3.5: Other environmental data

Instructions: The two tables below aim at providingan overview of other environmental or entomological data relevant for climate sensitive diseases.

WATER QUALITY DATA (e.g. water testing for ground water or stream water quality)

1. Please request the information to be filled in the table below by the Ministry of Water. Ministries related to environmental quality may also have relevant information.

Station name	Variable Collected (list 1 variable per line for each station)	Longitude	Latitude	District name	Type (manual or automatic)	Managed by:	Year data recording started	Year when data recording stopped (please list as "ACTIVE" if the station is still recording)	Data completeness (per variable available)	Data format (specify format of the available data for station)	Period for which data is quality controlled	Period of time for the data to be made available electronically from the time of collection

ENTOMOLOGICAL DATA

2. Please request the information to be filled in the table below by the environmental health department, or by other Ministries, which collect entomological data.

Variable Collected (list 1 variable per line for each location)	Location of data collected	District name	Frequency of data collection	Year data recording started	Year when data recording stopped (please list as "ACTIVE" if the station is still recording)	Data completeness (per variable available)	Format in which data is available (e.g. excel file, paper based)