World Health Organization

Technical Webinar Series Climate Change and Health

Climate resilient and environmentally sustainable health care facilities

10 July 2024

9:30 – 11:00 CEST

15:00 – 16:30 CEST

WHO Technical Webinar Series

https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/country-support/webinars

World Health Organization

Date & time (CEST)	Topic*
24th April 2024	Getting started: climate change and health vulnerability & adaptation assessments
30th April 2024	WHO as an Accredited Implementing Entity of the Adaptation Fund; Accessing AF funding for Climate Change and Health
15th May 2024	WHO Operational Framework for building climate resilient and low carbon health systems
12th June 2024	Developing a Health National Adaptation Plan: Introduction
19th June 2024	GIS and risk mapping in climate change and health vulnerability & adaptation assessments
10th July 2024	Climate resilient and environmentally sustainable health care facilities
17th July 2024	Quantitative approaches for Vulnerability & Adaptation assessments: sensitivity analyses and projecting future health risks of climate change
18th Sept 2024	Integrating health in NDCs and LT-LEDS
25th Sept 2024	Developing a Health National Adaptation Plan: Quality criteria for HNAPs
16th Oct 2024	Conducting a gender analysis for climate change and health vulnerability & adaptation assessments

Interpretation

AM session: English, French and Arabic
PM session: English, French and Spanish

To activate interpretations (in English):

1. Click on the interpretation icon.
2. Select ”English”
3. **Optional :** mute original audio

Pour activer les interprétations (en français):

1. Cliquez sur l'icône d'interpretation
2. Sélectionnez ”Français”
3. **Facultatif :** couper le son d'origine

Para activar interpretación (en español)

1. Haga clic en el icono de interpretación.
2. Seleccionar ”Español”
3. **Opcional:** silenciar el audio original

لتفعيل التفاسير باللغة العربية

1. اضغط على أيقونة التفسير.
2. اختر "العربية"
3. اختياري: كتم الصوت الأصلي

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AM Session

Agenda

Time	Agenda item	Speaker
9:30 – 9:35 (5 minutes)	Welcome and Housekeeping	Dr Yiqi Pan, Technical Officer, Climate Change and Health Unit, WHO
9:35 – 9:40 (5 minutes)	Opening remarks	Dr Amy Savage, Technical Officer, Climate Change and Health Unit, WHO
9:40 – 10:10 (30 minutes)	Technical presentation: Introduction to Climate Resilient and Environmentally Sustainable Health Care Facilities	Mr Saleh Rababa, Consultant Health and Climate Change, WHO EMRO
10:10 – 10:30 (20 minutes)	Country experiences: CRESHCFs	Dr Abbas Shahsavani, Ministry of Health and Medical Education, Islamic Republic of Iran Dr Do Manh Cuong, Deputy Head of Environmental and Community Health, Vietnam Health Environmental Management Agency (VIHEMA), MoH Vietnam
10:30 – 10:50 (20 minutes)	Interactive activity	
10:50 – 10:58 (8 minutes)	Group feedback	Breakout group volunteer Moderated by Mr Saleh Rababa
10:58– 11:00 (2 minutes)	Close webinar	Dr Yiqi Pan, Climate Change and Health Unit, WHO

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Building climate resilient and low carbon health systems

Saleh Rababa
Consultant
Healthand Climate Change
WHO/EMRO

World Health Organization

ATACH
Alliance for Transformative Action on Climate and Health
WHO hosted network

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Climate change

Health risk

Vulnerability factors
- Demographic
- Geographical
- Biological factors & health status
- Sociopolitical
- Socioeconomic
- Health system capacity
- Gender & equity

Climate-related hazards
- Extreme weather events
- Heat
- Sea level rise
- Air pollution
- Vector distribution & ecology
- Water scarcity
- Reduced food production

Exposure
- People & communities
- Health workforce
- Infrastructure
- Energy systems
- Water systems
- Food systems
- Health systems

Environmental threats and GHG emissions

Health outcomes

- Injury and mortality from extreme weather events
- Heat-related illness
- Respiratory illness
- Water-borne diseases and other water-related health impacts
- Zoonoses
- Vector-borne diseases
- Malnutrition and food-borne diseases
- Noncommunicable diseases (NCDs)
- Mental and psychosocial health

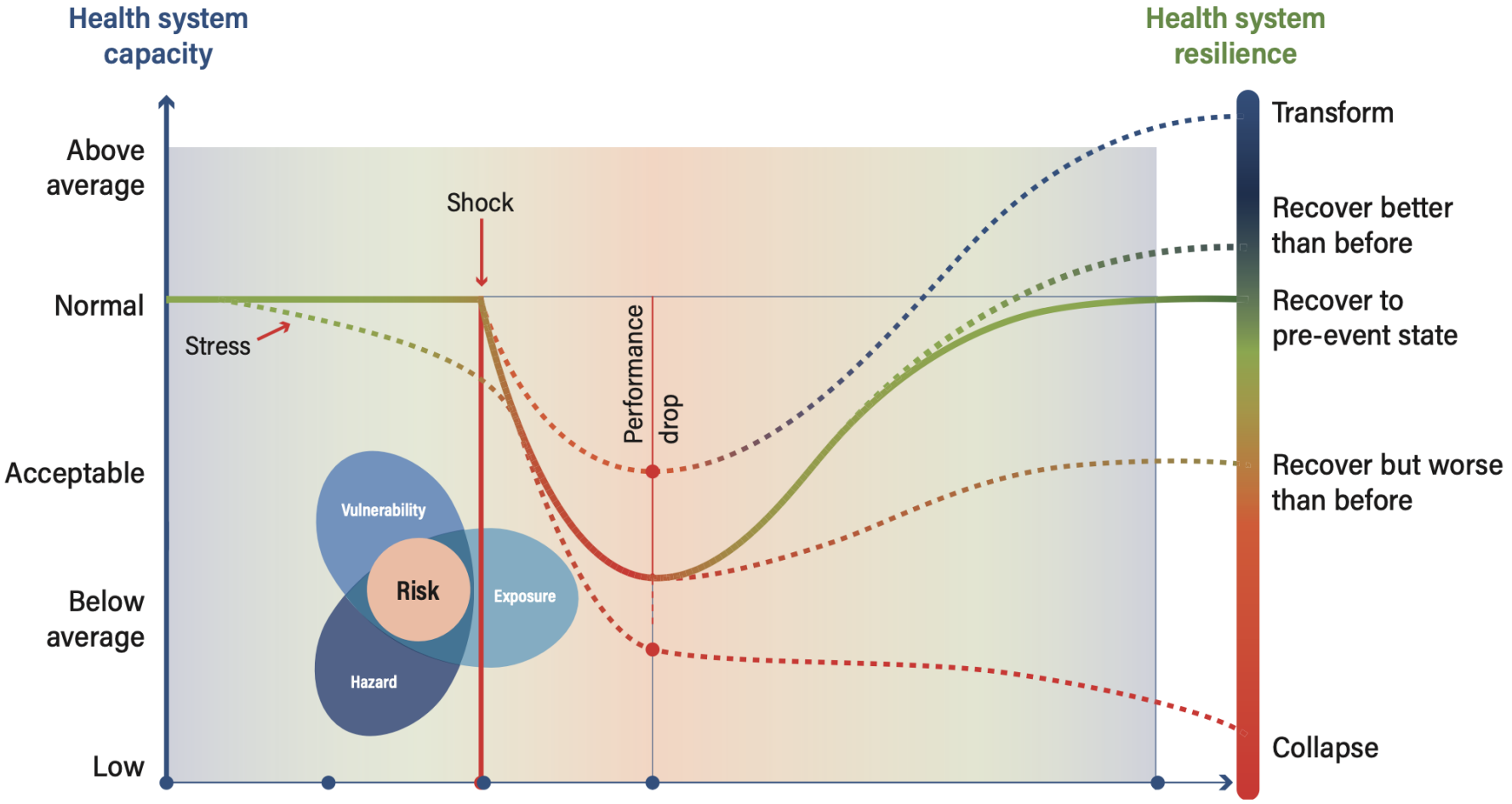
Health systems & facilities

- Impacts on health care facilities
- Effects on health systems

Action is needed now for what is happening not only for what is coming!

Applying a climate resilience approach to health systems

The degree of resilience that a system possesses is a function of the strength of the hazard, the current vulnerabilities in the system and the extent of exposures.



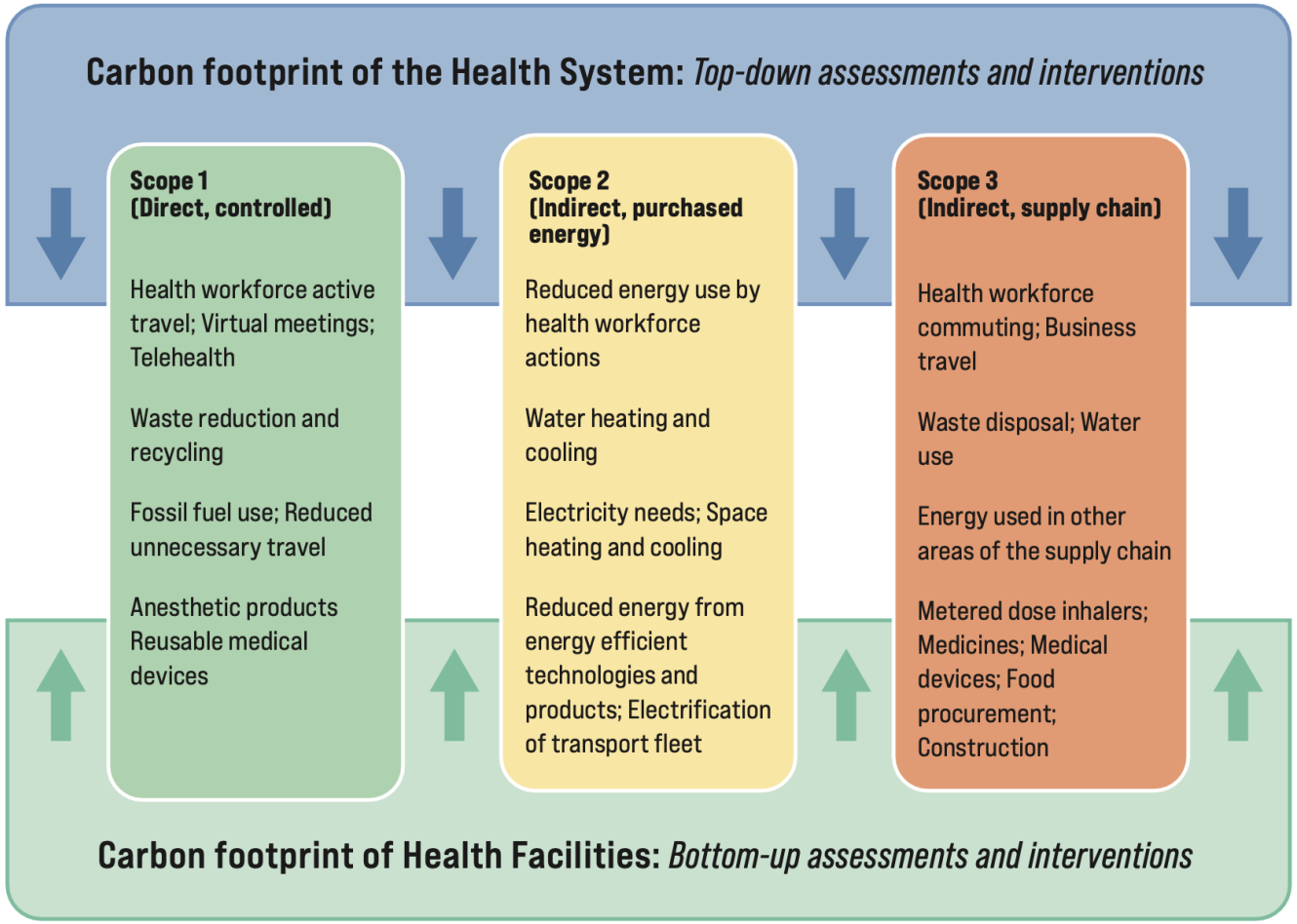
The process to building climate resilience occurs in two principal ways:

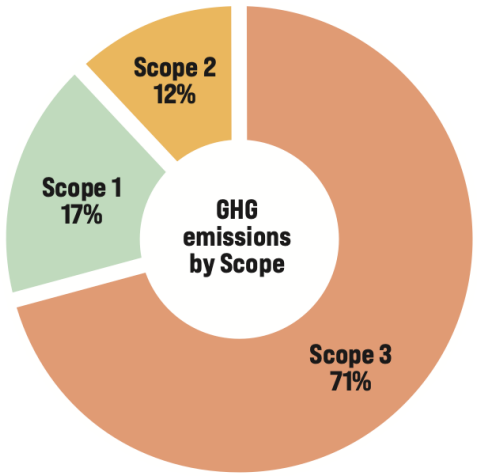
(i) reducing climate-related health risks (including hazards, exposures, and vulnerabilities; and

(ii) developing specific health system capacities, integrating climate perspectives to health policy and operations.

Applying a low carbon approach to health systems

Conceptual framework for low carbon health systems and health facilities (linking health system areas, Scopes, and approaches, with selected examples).





The process to estimate carbon footprint of health systems and facilities can be conducted with two different approaches:

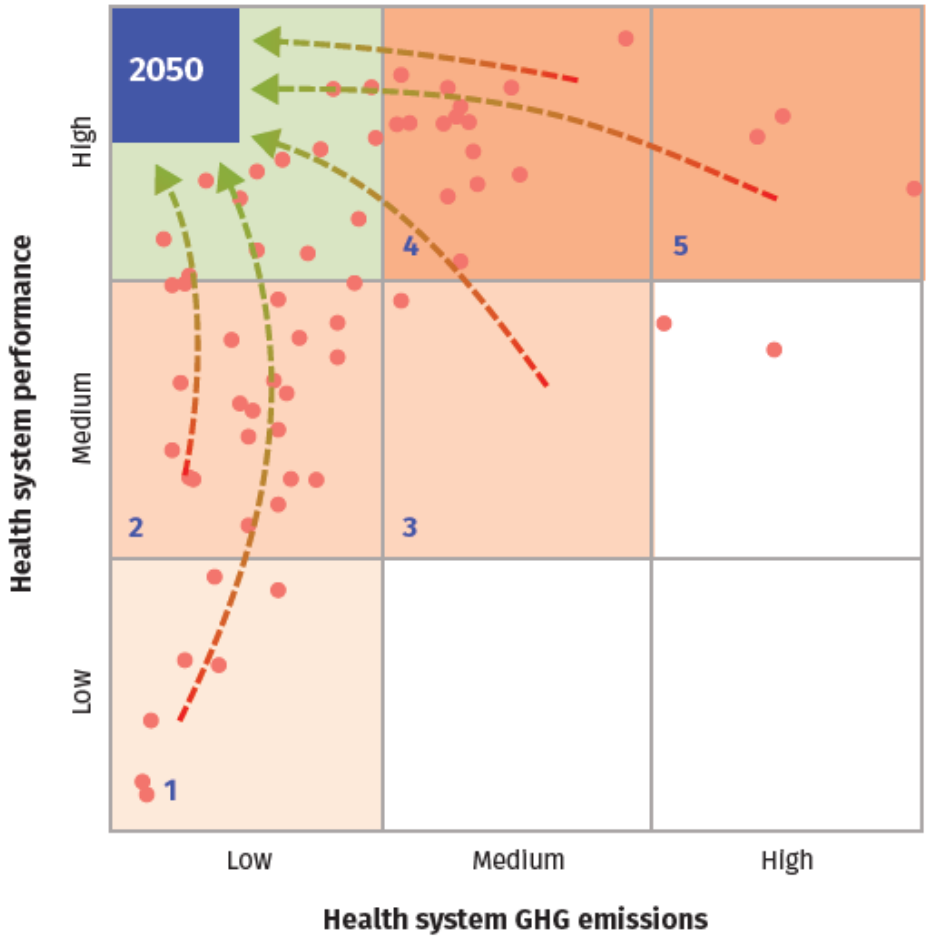
(i) Top-down: estimating the total of GHG emissions of the whole health sector; and

(i) Bottom-up: are based on counting activities across a health system.

Note: Hybrid approach combines the breadth of a top-down approach with the detail and insight of a bottom-up approach.

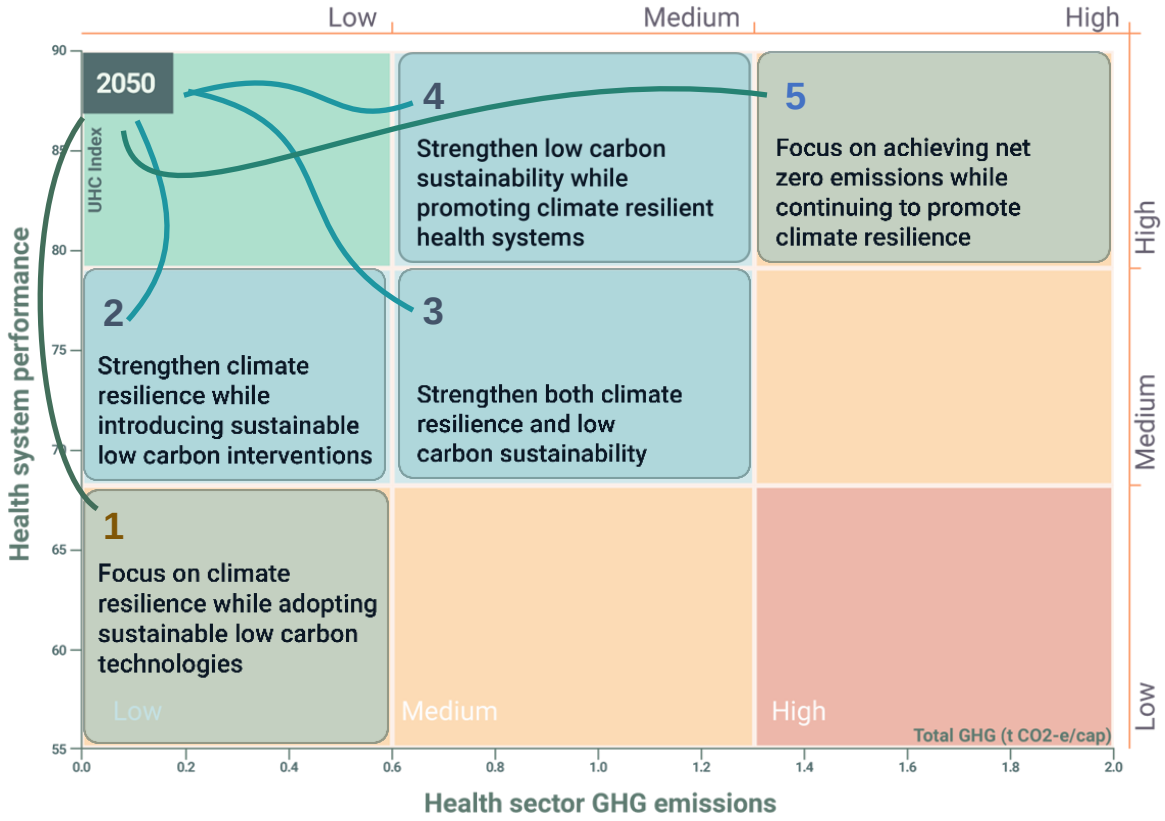
Health systems performance, health sector GHG per capita emissions, and CCH capacity

Fig. 5.4. Different pathways to maximize health systems performance, including climate resilience while minimizing GHG emissions



Pathways to strengthen climate resilience and low carbon sustainability :

differences across countries



Universal health coverage index by health GHG per capita emissions

Climate resilient and environmentally sustainable low carbon health system

Climate resilient health system

V&A
- Climate Change and Health Vulnerability and Adaptation Assessment
- At community/health system level and at healthcare facility level

HNAP
- A Health National Adaptation Plan is developed based on the results of the V&A assessment
- Includes the plan to implement priority adaptation needs and measures

NAP
- The ultimate goal is to integrate the HNAP into the overall National Adaptation Plan

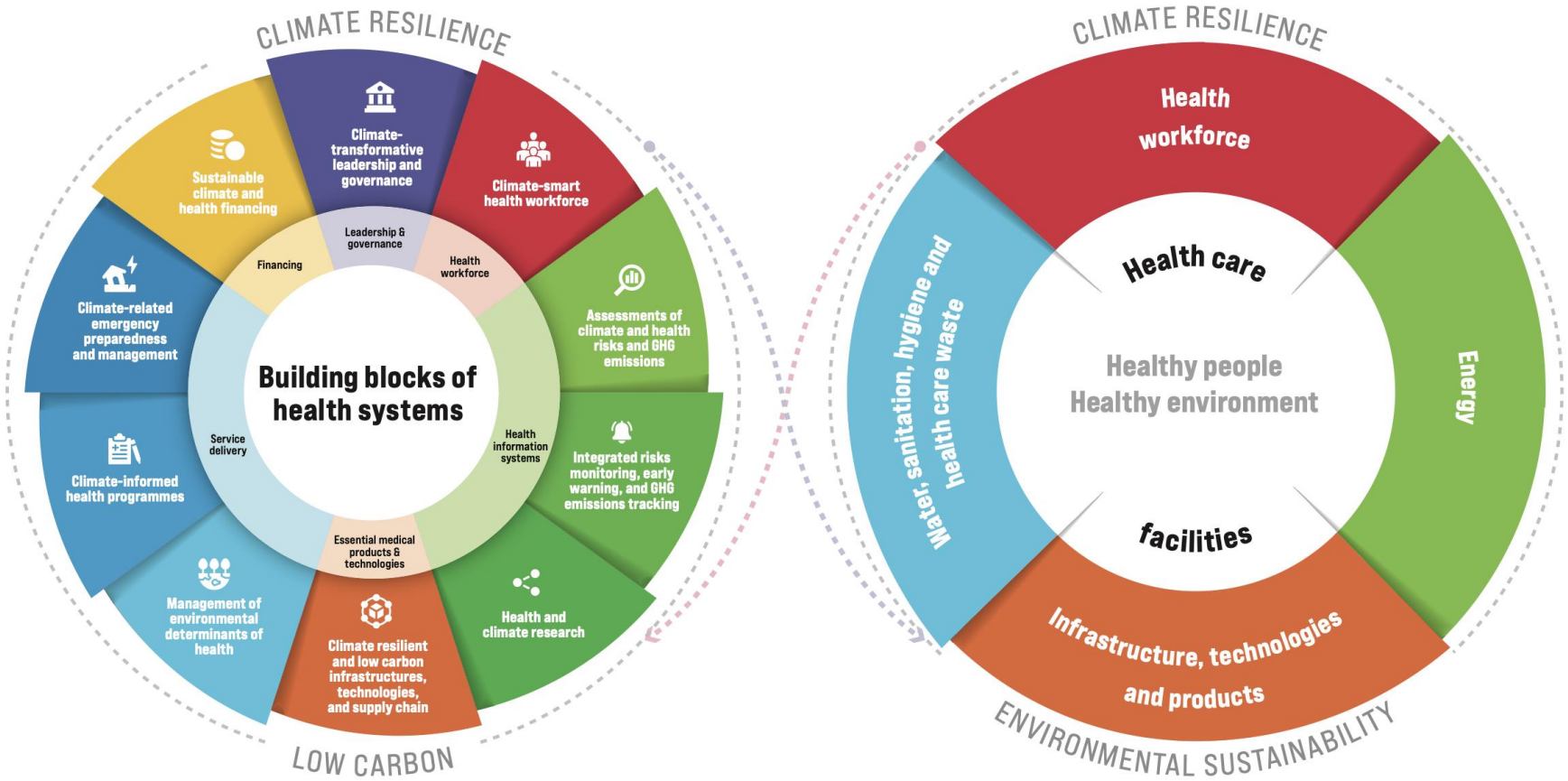
Sustainable low carbon health system

Assessment
- A baseline assessment of the carbon footprint of the health system
- The assessment will also include the healthcare facilities at all levels and supply chains

PoA
- The results of the assessment will indicate the major emissions hotspots.
- A plan of action to reduce these emissions will be developed

Net Zero
- The ultimate goal is to reach a net zero health system in regard to carbon emissions

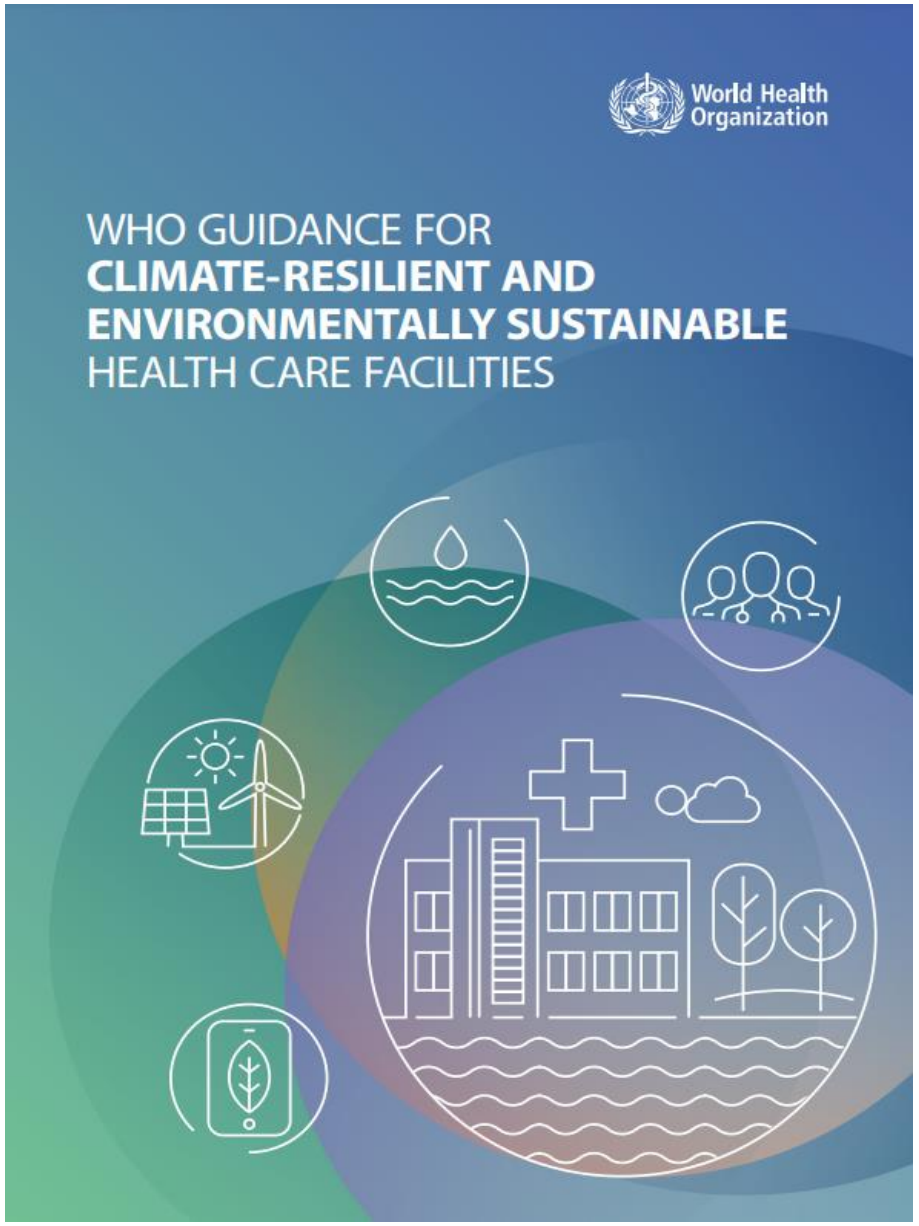
More focussed approach at HCF level under overall system's approach



Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities

Goals

- increase the **climate resilience**
- to **protect and improve** the **health** of their communities in an unstable and changing climate
- **optimizing the use of resources**
- **minimizing** the release of **wastes** by becoming environmentally sustainable.



What are climate resilient and environmentally sustainable health care facilities?

Climate resilient and environmentally sustainable health care facilities:

- anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses
- minimize negative impacts on the environment
- restore and improve the environment (where possible)

HEALTH WORKFORCE:
adequate numbers of skilled human resources with decent working conditions, empowered and informed to respond to these environmental challenges.

WATER, SANITATION, HYGIENE AND HEALTH CARE WASTE MANAGEMENT:
sustainable and safe management of water, sanitation and health care waste services.

ENERGY:
sustainable energy services.

INFRASTRUCTURE, TECHNOLOGIES AND PRODUCTS:
appropriate infrastructure, technologies, products and processes, including all the operations that allow for the efficient functioning of the health care facility.

Climate resilient health care facilities

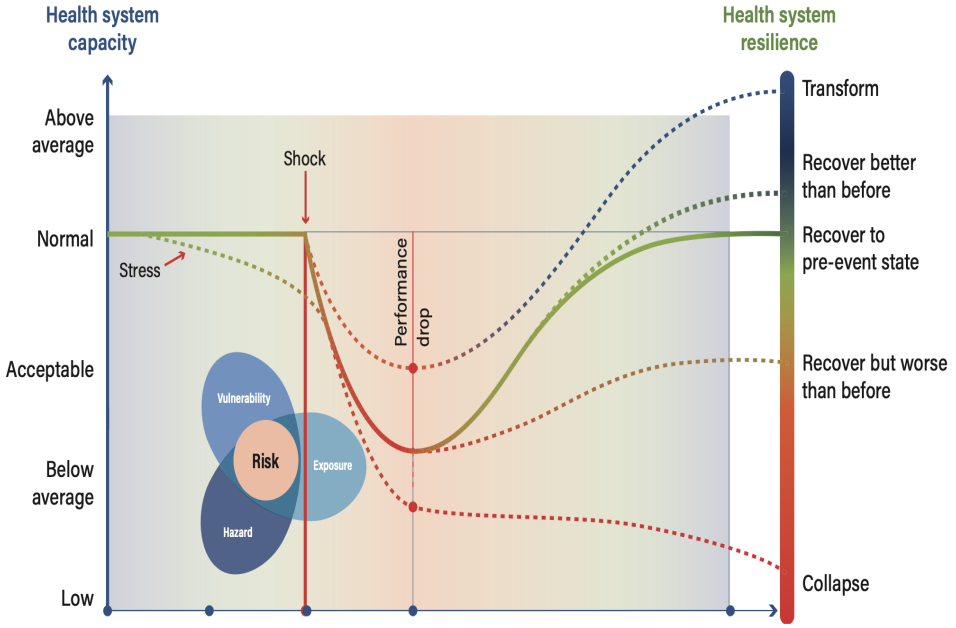
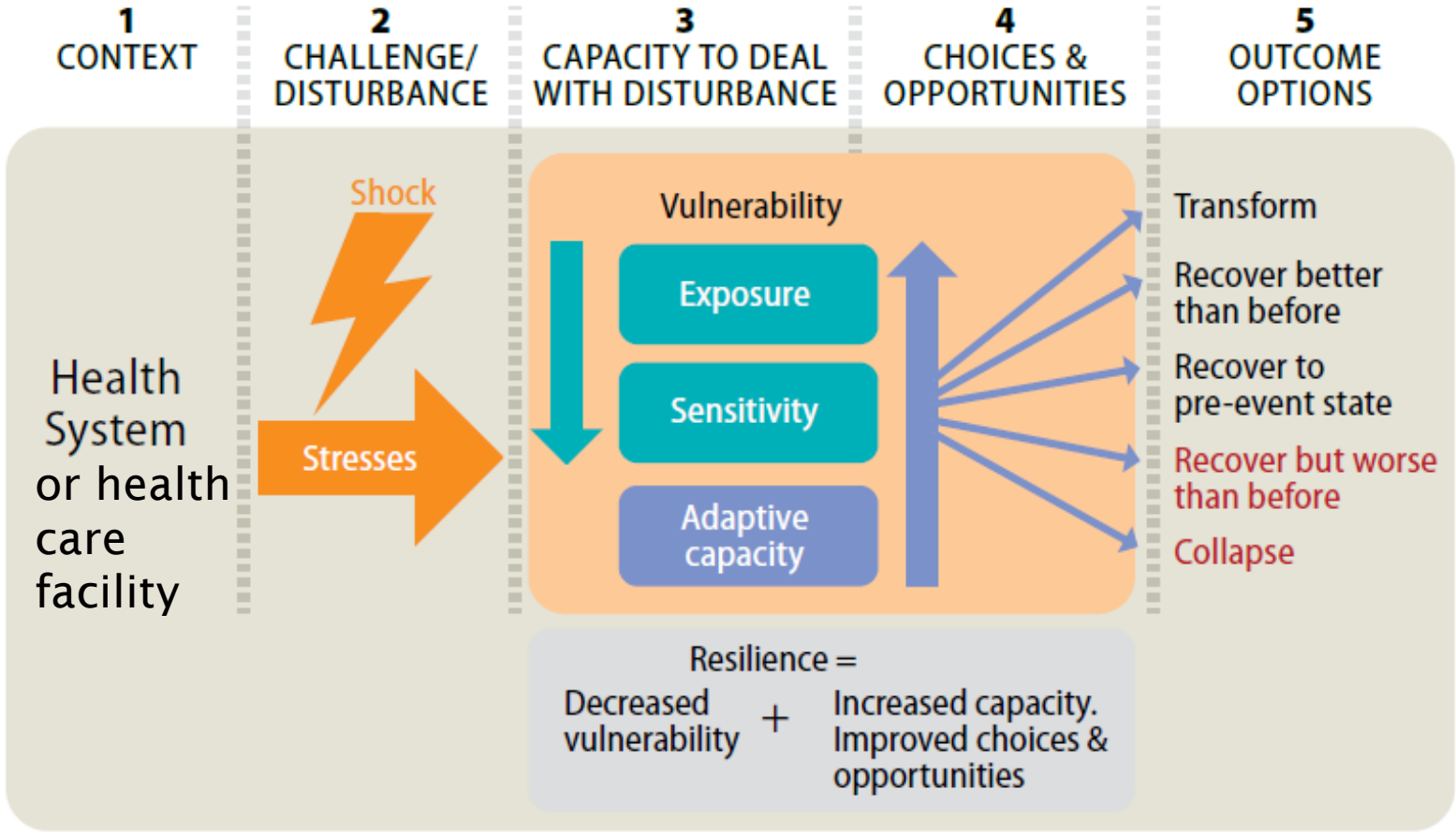
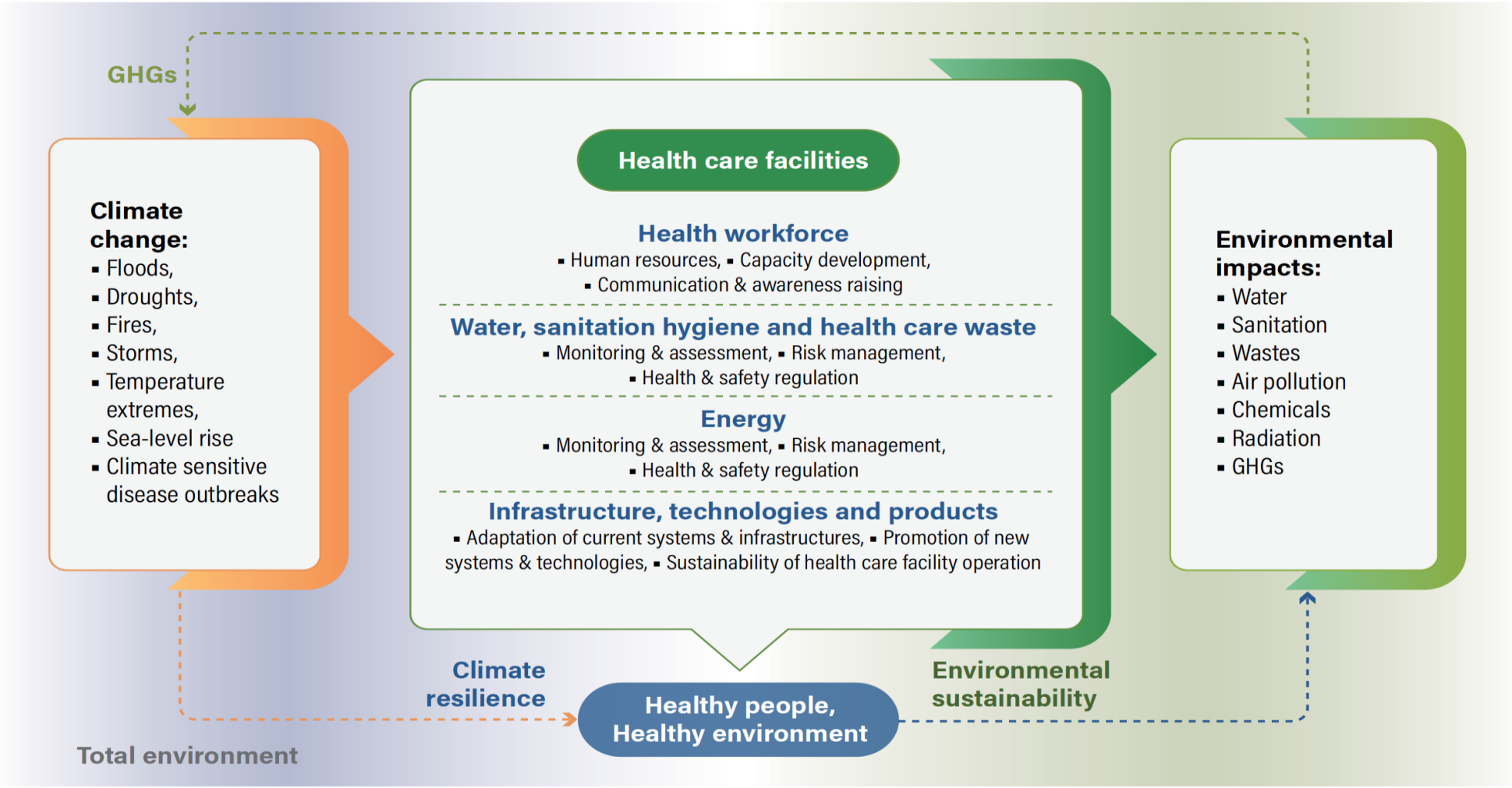


FIGURE 2: Conceptual framework for resilience



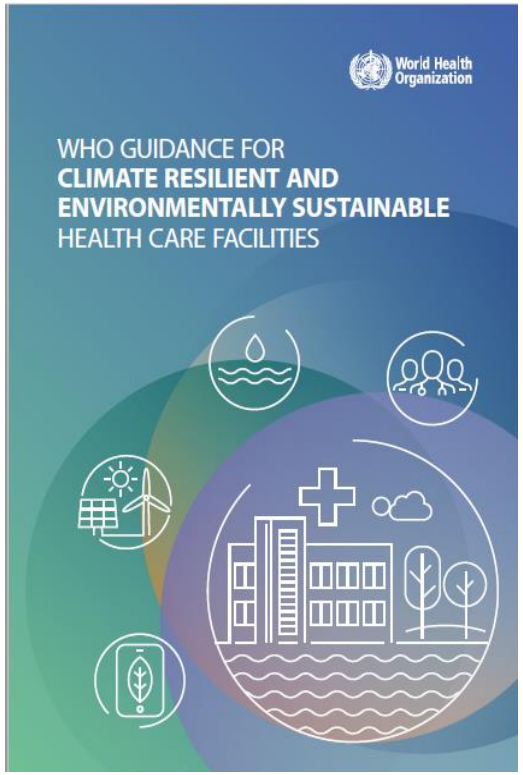
Framework for building CRESHCFs

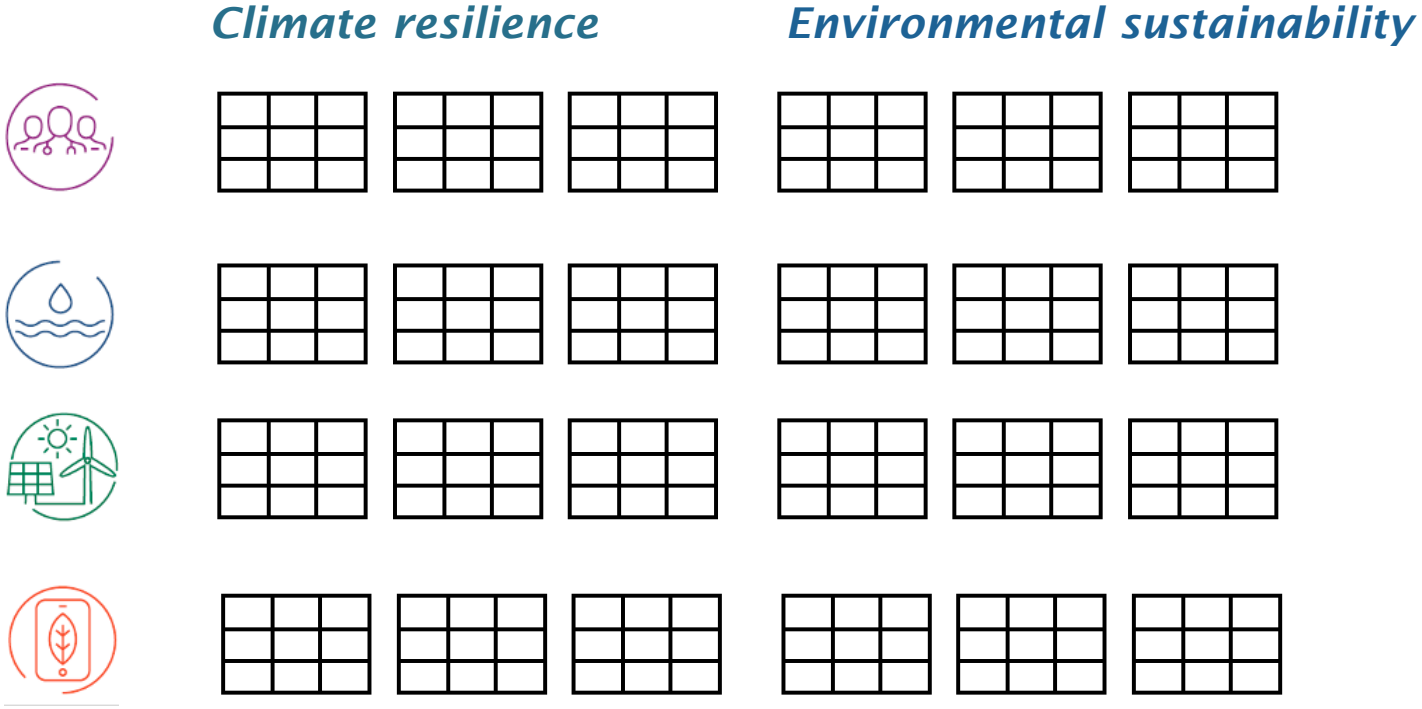


Interventions

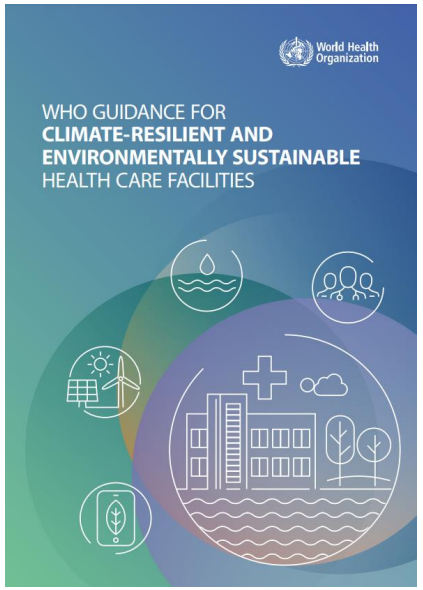
X 4 areas
3 objectives each
For climate resilience and environmental sustainability

24 tables of interventions





Health workforce interventions



Interventions table 4.1.1A – Human resources: Health care facilities having sufficient number of health workers with healthy and safe working conditions, capacity to deal with health risks from climate change, as well as the awareness and empowerment to ensure environmentally sustainable actions.

(Health workforce – climate resilience)

Interventions (level of achievement) **Low, unavailable, unable** **Medium, in progress, incomplete** **High, completed, achieved**	**Action level**			**Observations**
Assessment of potential workplace hazards that may arise in emergencies, and planning to address measures to reduce those hazards	☐	☐	☐	
Health workers and local communities work together to promote a health care facility environment safe from climate-related impacts*	☐	☐	☐	
Established systems for management of occupational safety and health in all health care facilities	☐	☐	☐	
Identified minimum needs in terms of health care workers to ensure the operational sufficiency of every health care facility department, in case of climate related disaster or emergency	☐	☐	☐	
Established a system of rapidly providing health workers (such as voluntary medical personnel) with necessary credentials in an emergency situation, in accordance with health care facility and health authority policies*	☐	☐	☐	

Interventions table 4.3.1C – Health and safety regulation: Regulations on energy use and access are implemented taking into consideration climate variability and change, and environmental sustainability.

(Energy – climate resilience)

Interventions (level of achievement) **Low, unavailable, unable** **Medium, in progress, incomplete** **High, completed, achieved**	**Action level**			**Observations**
Updated building insulation and windows to comply with energy codes	☐	☐	☐	
Emergency electricity generators available to provide required electrical power if the municipal grid, or if the internal normal electrical system fails*	☐	☐	☐	
Critical back-up power supplies available for building infrastructure (such as electrical power, heating and cooling)*	☐	☐	☐	
Solar water heaters available for health care facility's hot water needs	☐	☐	☐	
Backup energy equipment sufficiently elevated in areas prone to floods and anchored in areas prone to strong winds	☐	☐	☐	
Adequate backup energy source is available if the main source fails during an extreme weather event	☐	☐	☐	
Adequate lighting, communications, refrigeration and sterilization equipment are available during climate related disasters or emergencies	☐	☐	☐	

Interventions table 4.3.2C - Health and safety regulation: Regulations on energy use and access are implemented taking into consideration climate variability and change, and environmental sustainability.

(Energy – environmental sustainability)

Interventions (level of achievement) **Low, unavailable, unable** **Medium, in progress, incomplete** **High, completed, achieved**	**Action level**			**Observations**
Established education and awareness campaigns to reduce energy use with the participation of all staff	☐	☐	☐	
Developed system of good practices of energy use conservation with incentives	☐	☐	☐	
Developed a culture of energy saving by turning off office lights, computers and other equipment, and unplugging electronic devices when not in use	☐	☐	☐	
Established strategies to lower energy use	☐	☐	☐	
Designed features that maximize natural ventilation such as high ceilings, large windows and skylights (without compromising the structural integrity of the building)	☐	☐	☐	
Developed an energy management plan to measure energy consumption*	☐	☐	☐	
Optimized the use of on-site renewable energy	☐	☐	☐	
Renewable energy powers energy efficient	☐	☐	☐	

Checklists to assess vulnerabilities in health care facilities in the context of climate change.

Aga Khan Development Network Carbon Management Tool

Health Care Without Harm Climate Impact Checkup Tool

Awareness, political commitment and community engagement

INTERVENTION PROCESS

1 Assemble and train a multisectoral operative team

2 Establish the baseline

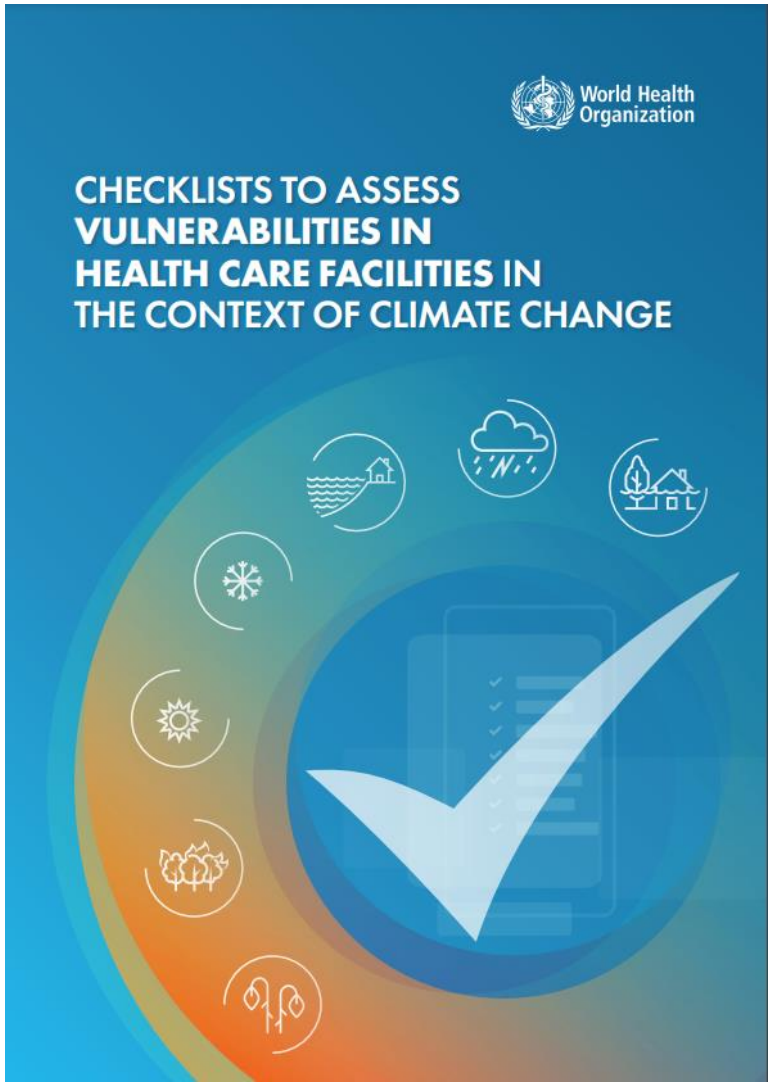
3 Define and prioritize short- and long-term interventions

4 Develop and implement an improvement plan

5 Monitor and evaluate improvements

Climate resilient and environmentally sustainable health care facility

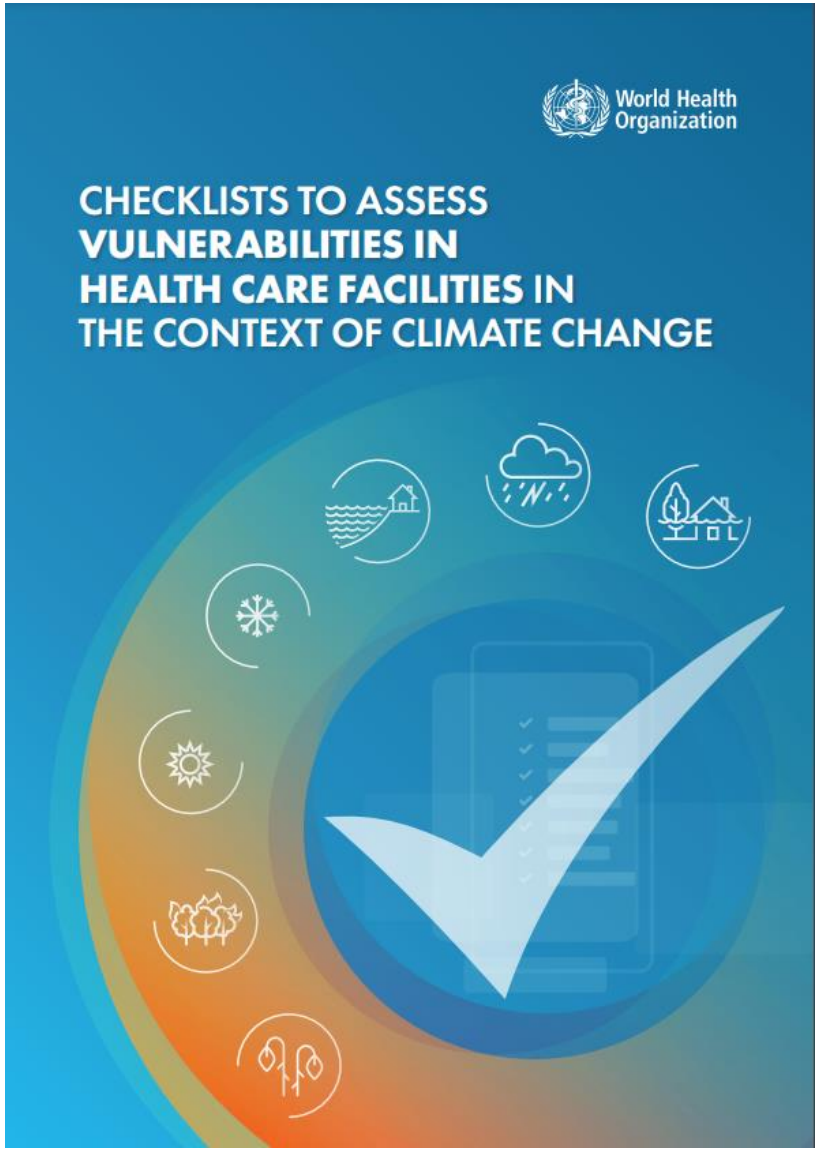
Checklists to Assess Vulnerabilities in Health Care Facilities in the Context of Climate Change



Goals:

Complementary tool to the WHO Guidance for CRESHCFs

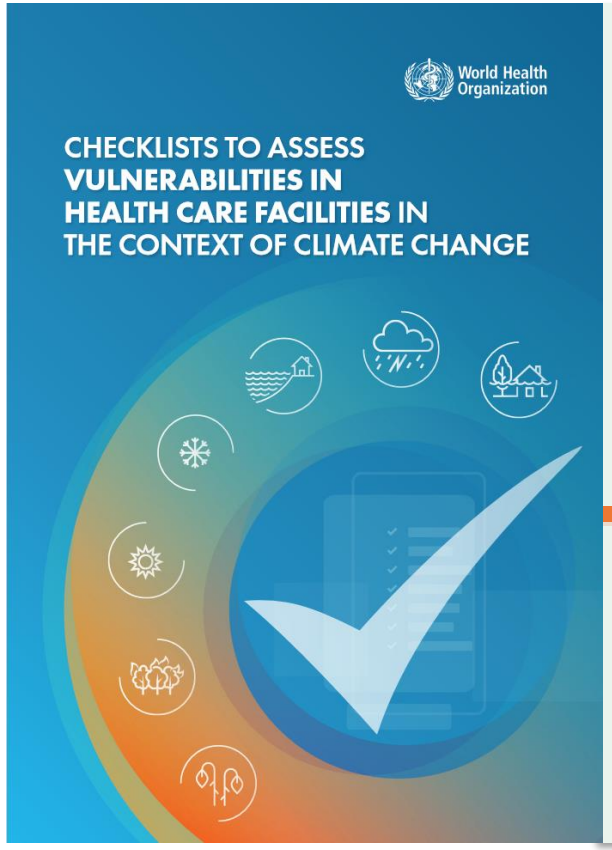
Primary purpose: to support users in establishing a **baseline** for climate **resilience** in health care facilities.



Assessing Vulnerabilities in Health Care Facilities

Steps:

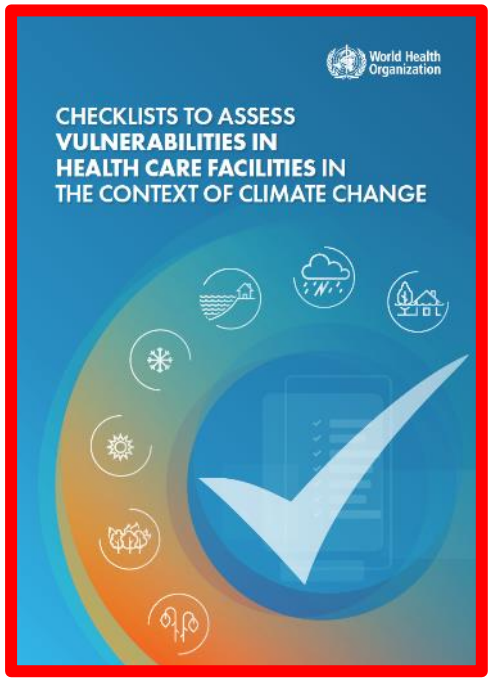
1. Identify climate **hazards** of concern
2. Assess current **vulnerability** for each of the hazards, in each of the key components of health care facilities
3. Understand potential **impacts** posed by climate variability and change in each of the key components of health care facilities

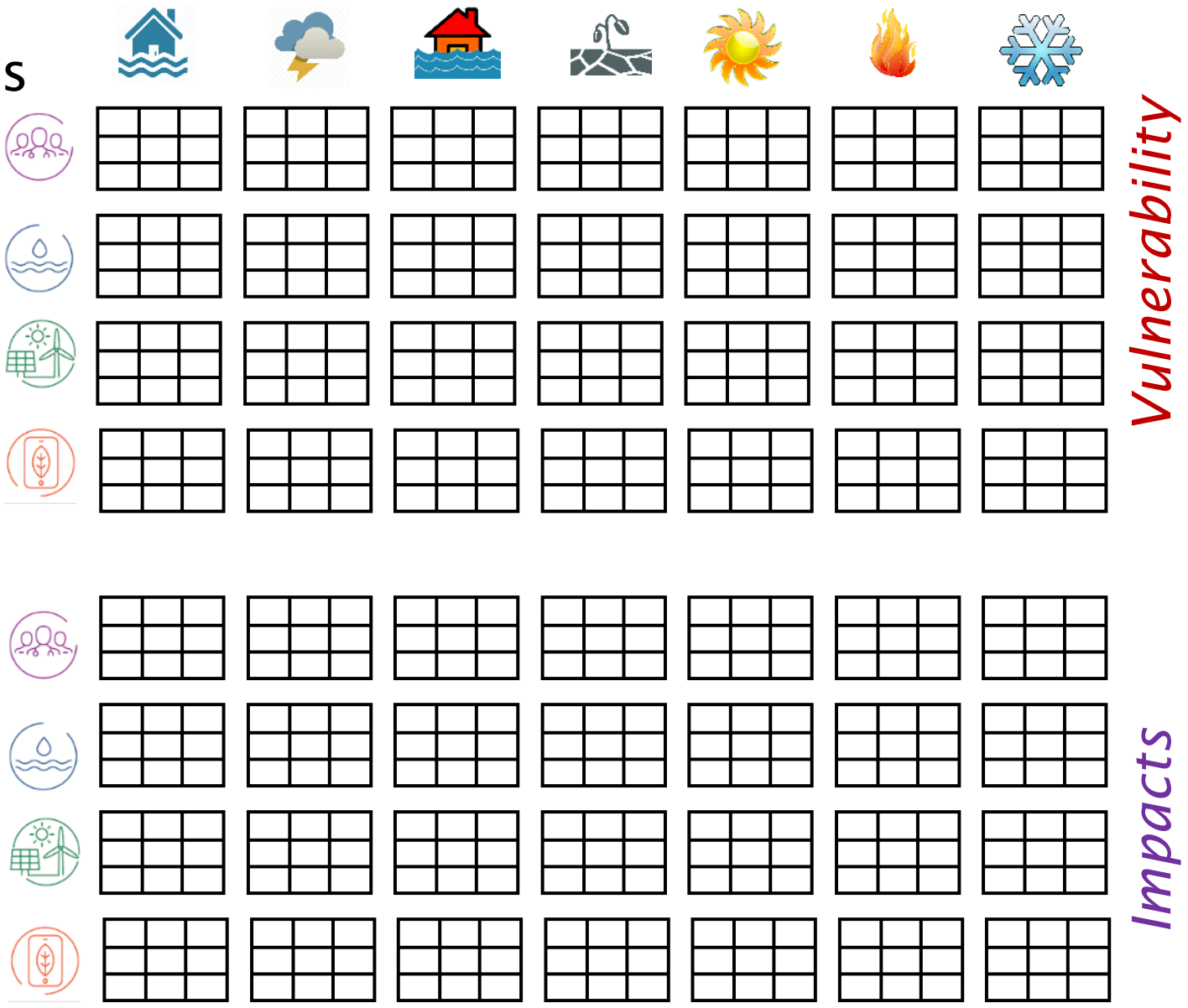


X

7 hazards
4 areas
For vulnerability and impacts

56 assessment tables





CHECKLIST FOR ASSESSING VULNERABILITY TO FLOODS

FLOODS		Vulnerability level		
High: unprepared; unable to respond (Higher risk) **Medium:** basic or incomplete preparation; low level of response (Medium risk) **Low:** prepared; able to respond (Lower risk)		High	Medium	Low
HEALTH WORKFORCE	**Is the health workforce,**			
	(Human resources)			
	provided with programmes for supporting staff with regards to mental health, injuries, medical treatment and related support measures?*	☐	☐	☐
	equipped with an emergency plan for shift relay or replacement of health professionals to ensure that staff get adequate rest?*	☐	☐	☐
	prepared with a contingency plan for accessing additional health workforce to strengthen performance capacity?*	☐	☐	☐
	provided with an information system to manage occupational safety and health in the facility during a flood?	☐	☐	☐
	equipped with an emergency plan to protect health workers from multiple biological and chemical hazards?	☐	☐	☐
	provided with a postflood employee recovery assistance programme according to staff needs?	☐	☐	☐
	equipped with a coordinated plan, including volunteers on standby, to assist during an emergency or to support health professionals?*	☐	☐	☐

Understand potential impacts

	Health workforce	WASH and healthcare waste	Energy	Technologies, infrastructure, products
INCREASED TEMPERATURE	• Affecting workers with pre-existing conditions (respiratory and cardiovascular diseases, overweigh)	• Reduced access to freshwater • Water source contamination by pathogens and metals	• Gradual increase in the use of electricity for cooling purposes	• Additional treatment of drinking water • Need insulation, cooling and dehumidification
FLOOD	• Health workers are not able to arrive at or depart from the health care facility	• Water contamination • Lost sharps containers and hazardous waste bins	• Damage to emergency generator or other sources of energy	• Damage to building access • Damage to medical equipment and devices
STORM	• Reduced performance capacity, • Deaths, injuries or illness	• Disruption of water supply, wastewater and sewage systems	• Power outages (wind- and lightning-related) • Interruption of acute medical care	• Damage to infrastructure from high winds • Disruption to building access
SEA-LEVEL RISE	• Impacts on respiratory disease due to indoor mold growth	• Saltwater intrusion in water and wastewater containment systems	• Disruption of internal and external communication and information systems	• Damage to access systems (elevators, ramps, corridors, garage) • Increased costs of building maintenance

	Health workforce	WASH and healthcare waste	Energy	Technologies, infrastructure, products
DROUGHT	• Increased threat of noncommunicable diseases from poor air quality and higher temperatures to the health workforce	• Insufficient water availability to provide health care services • Low water quality	• Disruption of energy-dependent water pumping and treatment • Intermittent power delivery	• Interruption of water and food supply chains
HEATWAVE	• Increased heat stress effects (heat exhaustion and heat stroke)	• Increased water demand • Water source contamination	• Power outages • Loss of vaccines, drugs, and other medical supplies	• Damage to medical equipment • Increased demand for cooling and rest areas for staff
WILDFIRE	• Loss of work capacity due to smoke, ash and high temperature • Effects on mental health of staff	• Shortage of safe water • Reduced capacity to use equipment that require potable water	• Increased demand for energy consumption from air conditioning	• Increasing indoor air contamination from smoke, threatening the health of patients and staff
COLD WAVE	• Life-threatening risks from exposure to excessive cold • Reduced performance capacity	• Increased likelihood of water pipes bursting and water freezing • Loss of water pressure	• Disruption of internal heating systems • Difficulty in providing thermal comfort	• Increased electricity demand • Damage to water pipes from cold exposure

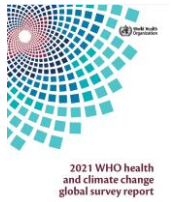
IMPACTS CHECKLIST FOR FLOOD EVENTS

HEALTH WORKFORCE		
LEVEL OF IMPACT		
MAJOR	**MODERATE**	**MINOR**
☐ Deaths or life-threatening injuries or illness (e.g. drowning, hypothermia and infectious diseases, such as diarrhoeal diseases, leptospirosis, cholera, vectorborne diseases)	☐ Serious harm, injury or illness requiring hospitalization or medical treatment	☐ Minor injuries to health workers, not requiring immediate medical treatment
☐ Health professionals are not able to arrive at or depart from the health care facility	☐ Health professionals have difficulty in arriving at or departing from the health care facility	☐ Difficulty in providing usual treatment and medication
☐ Large loss of work capacity	☐ Reduction in health workforce functions	☐ Reduced primary services at home for communities
☐ Cessation of critical programmes or services	☐ Restrictions to provide services and programmes	☐ Service delivery and programme delays
☐ Significantly reduced performance capacity of health workforce needing additional support (local, regional or national)	☐ Unable to provide adequate care to patients	
☐ Effects on mental health of staff due to disaster trauma, loss of a family member, friends or patients	☐ Increased work overload along with stress	
☐ Increased demand for health services from infectious diseases (water-, food- and vector-borne diseases), animal bites (including poisonous animals), respiratory infections, zoonotic diseases (rodentborne diseases such as, hantavirus pulmonary syndrome, leptospirosis), noncommunicable diseases, electrical shock and toxic chemicals exposure	☐ Facility overcrowding	
	☐ Increased infectious disease cases among health workers from water and health care waste contamination	

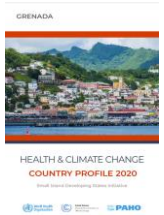
Understand potential impacts

FLOOD

• Health workers are not able to arrive at or depart from the health care facility	• Water contamination • Lost sharps containers and hazardous waste bins	• Damage to emergency generator or other sources of energy	• Damage to building access • Damage to medical equipment and devices



WHO Health and Climate Change Global Survey (2021)



Health and climate change country profiles

Checklists to assess vulnerabilities in health care facilities in the context of climate change.

Aga Khan Development Network Carbon Management Tool

Health Care Without Harm Climate Impact Checkup Tool

Awareness, political commitment and community engagement

INTERVENTION PROCESS

1 Assemble and train a multisectoral operative team

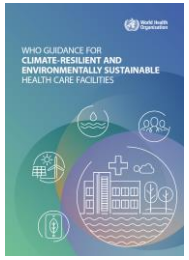
2 Establish the baseline

3 Define and prioritize short- and long-term interventions

4 Develop and implement an improvement plan

5 Monitor and evaluate improvements

Climate resilient and environmentally sustainable health care facility



WHO Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities

WHO Operational Framework for Building Climate Resilient and Low Carbon Health Systems

Thank you

Country experience: Implementing CRESHCFs

AM Session

Dr Abbas Shahsavani
Ministry of Health and Medical Education, Islamic Republic of Iran

World Health Organization

I.R. Iran’s experience:

Climate Resilience and Environmental Sustainability (CRES) Assessment of Healthcare Facilities (HCFs) and Adaptation Strategies for Interventions

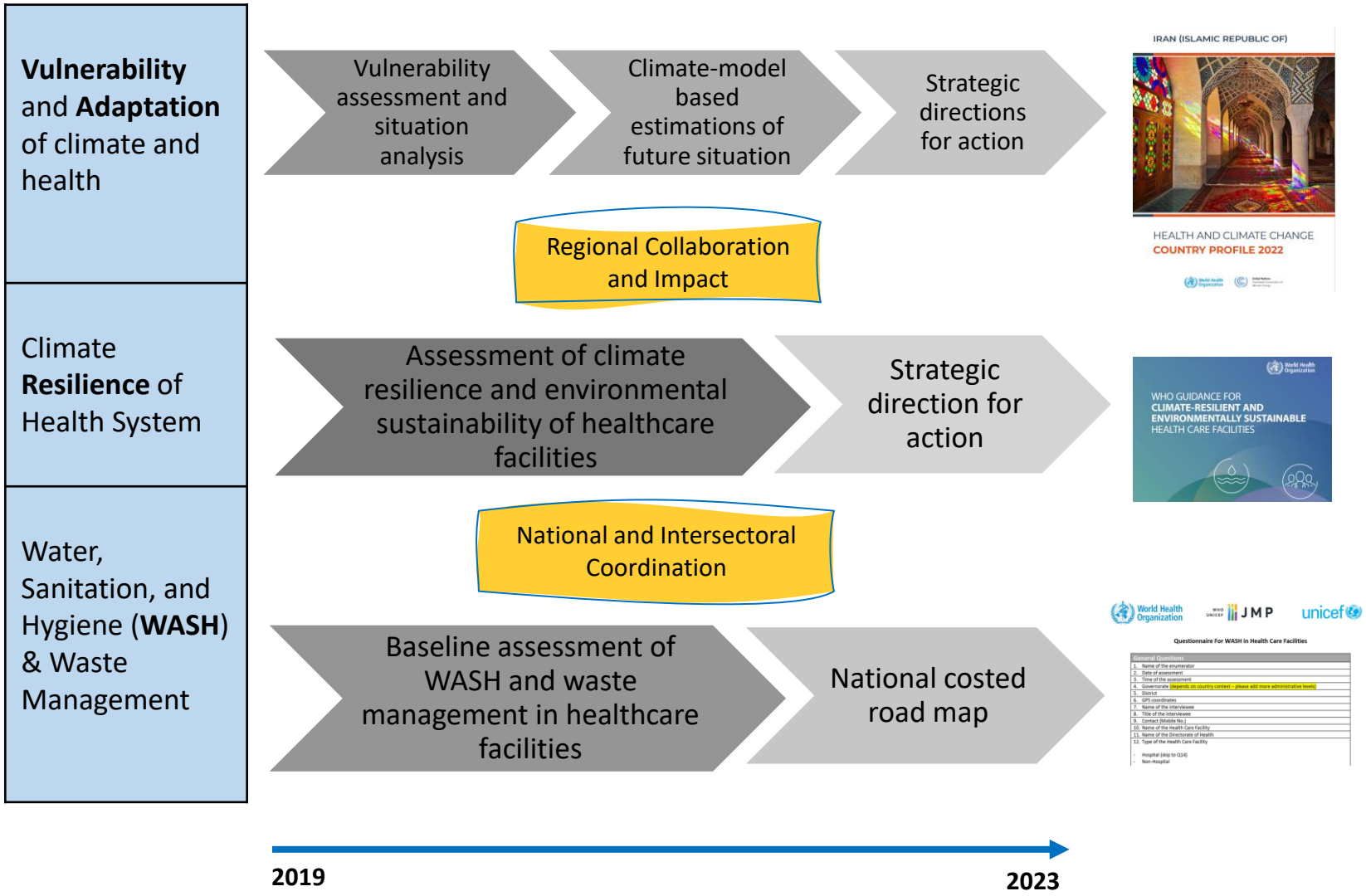
Dr. Abbas Shahsavani

Head of Air Health and Climate Change Office, Ministry of Health and Medical Education (MOHME)

Strategic approach of MOHME in addressing climate change and health

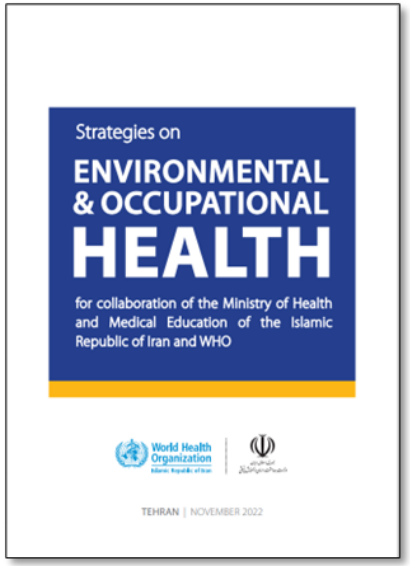
Synergic and incremental approach for developing the National Health Adaptation Plan; started with assessments:

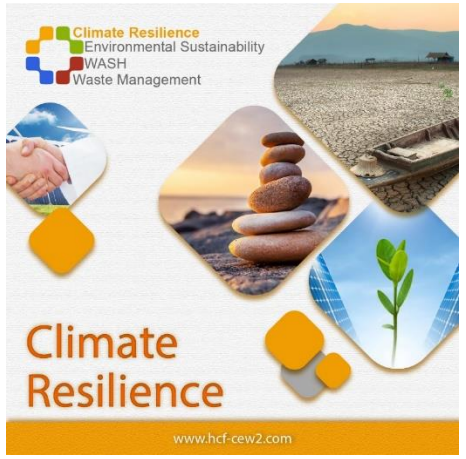
- **Vulnerability** and **Adaptation** of climate and health and strategic directions
- Climate **Resilience** of Health System and strategic directions
- Water, Sanitation, and Hygiene (**WASH**) & Waste Management and a costed road map

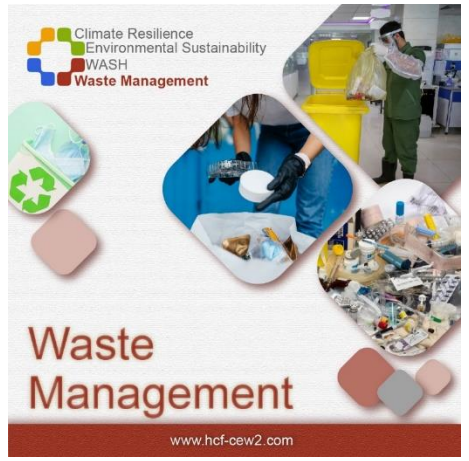


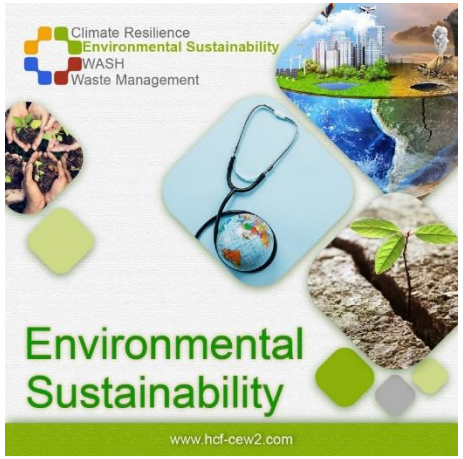
Actions taken, cont’d

- Developed a joint MOHME - WHO 5-year strategic framework of action on environmental and occupational health subjects, with special focus on climate change and health
- Building capacity for estimating and evaluating carbon footprints in selected healthcare facilities. (AKDN tool)
- Creating a comprehensive document to strengthen Iran's health system's resilience and promote its environmental sustainability in the face of climate change impacts.
- Innovative, Evidence-Based Solutions Toolbox for Improving Climate Resilience, Environmental Sustainability, WASH, and Waste Management

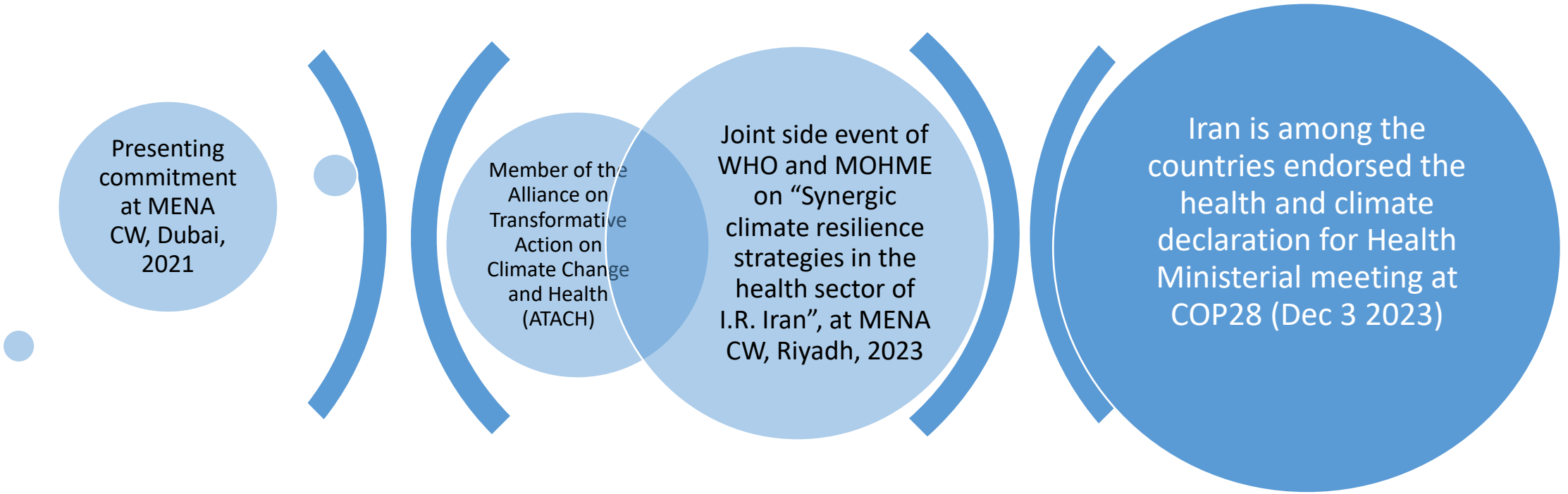








Political Commitments



Following COP26 health program, MOHME of I.R. Iran officially committed to build a climate resilient and environmentally sustainable health system

Addition to the initial commitment: making significant strides towards achieving Net zero carbon emissions in the healthcare sector by 2060.

“Islamic Republic of IRAN and Climate Change ”

- 80% of Iran is arid and semi-arid
- Iran is among the Low Middle Income Countries
- Iran experiences one-third of the global average rainfall
- Three times the global average evaporation,
- Three times the global per capita average of desert areas (7.5 million hectares of desert hotspots)
- One-third of the global average per capita forest coverage
- High rate of soil erosion
- High frequency of extreme weather events such as floods, droughts, sand and dust storms and forest fires

Assessing the climate resilience and environmental sustainability of healthcare facilities in selected medical universities

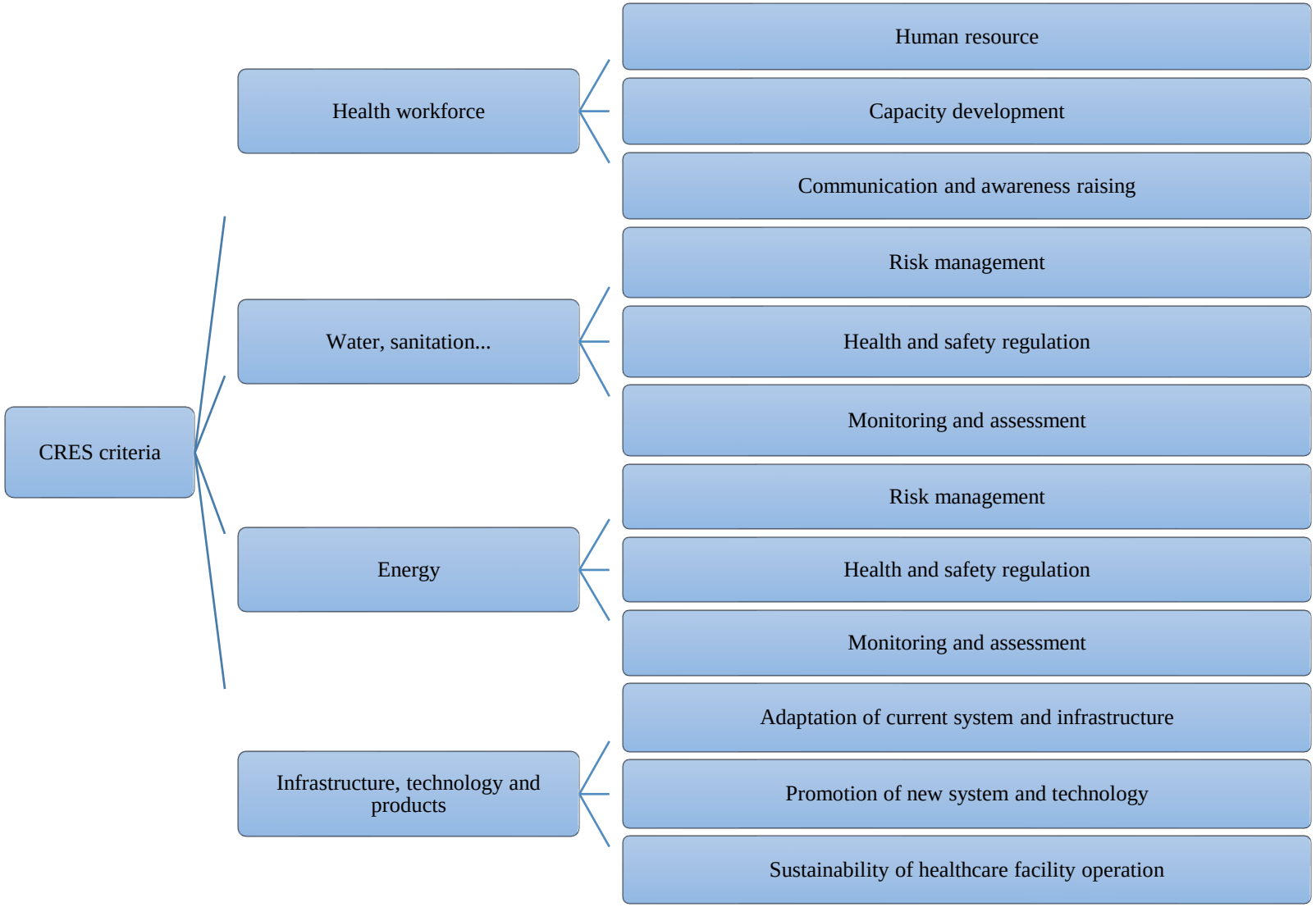
Healthcare facilities, as the first and last lines of defense against the unfavorable results of climate change, have a pivotal role in providing services for the individuals affected by extreme weather conditions and other long-term threats resulting from climate change.

Methodology

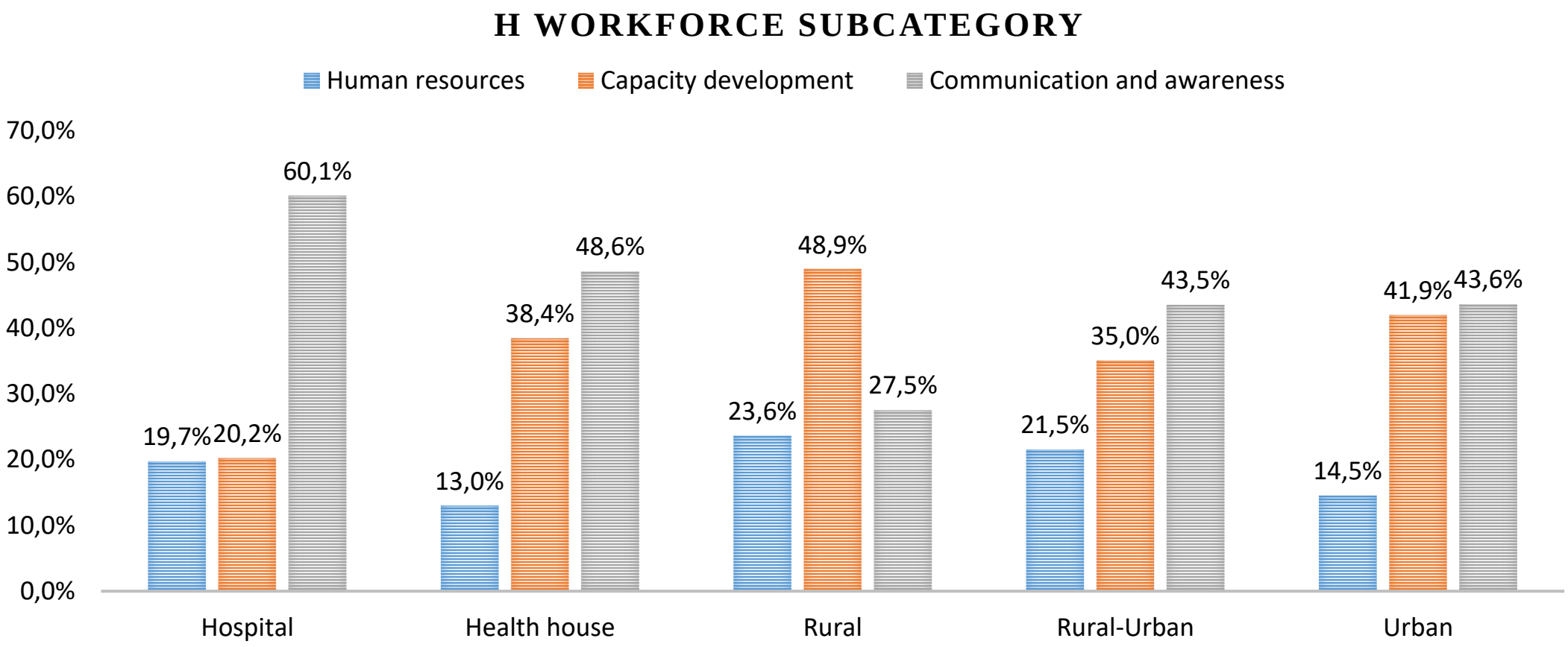
- Sample size: 267 Healthcare Facilities (HCFs)
- HCFs in this project include all types, from Hospitals (48), to Health Houses (65), Rural (69), Urban (50), and Rural-Urban(35) Health centers.
- Data collection tool
- Main factors or areas of evaluation Sub-factors or sub-areas of evaluation
- Data analysis (Entropy and TOPSIS)

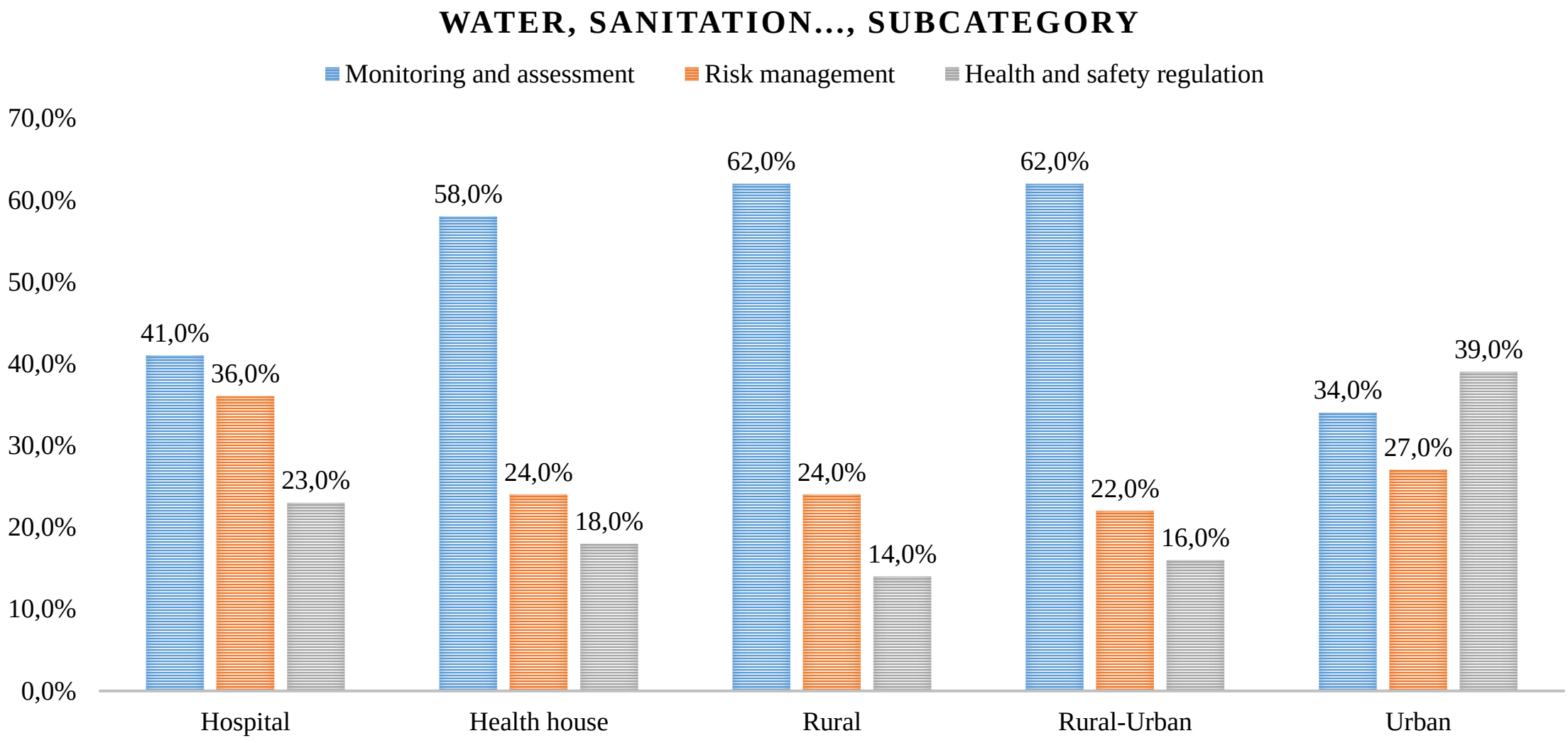
Interventions (level of achievement) **Low, unavailable, unable** **Medium, in progress, incomplete** **High, completed, achieved**	**Action level**			**Observations**
Assessment of potential workplace hazards that may arise in emergencies, and planning to address measures to reduce those hazards	☐	☐	☐	

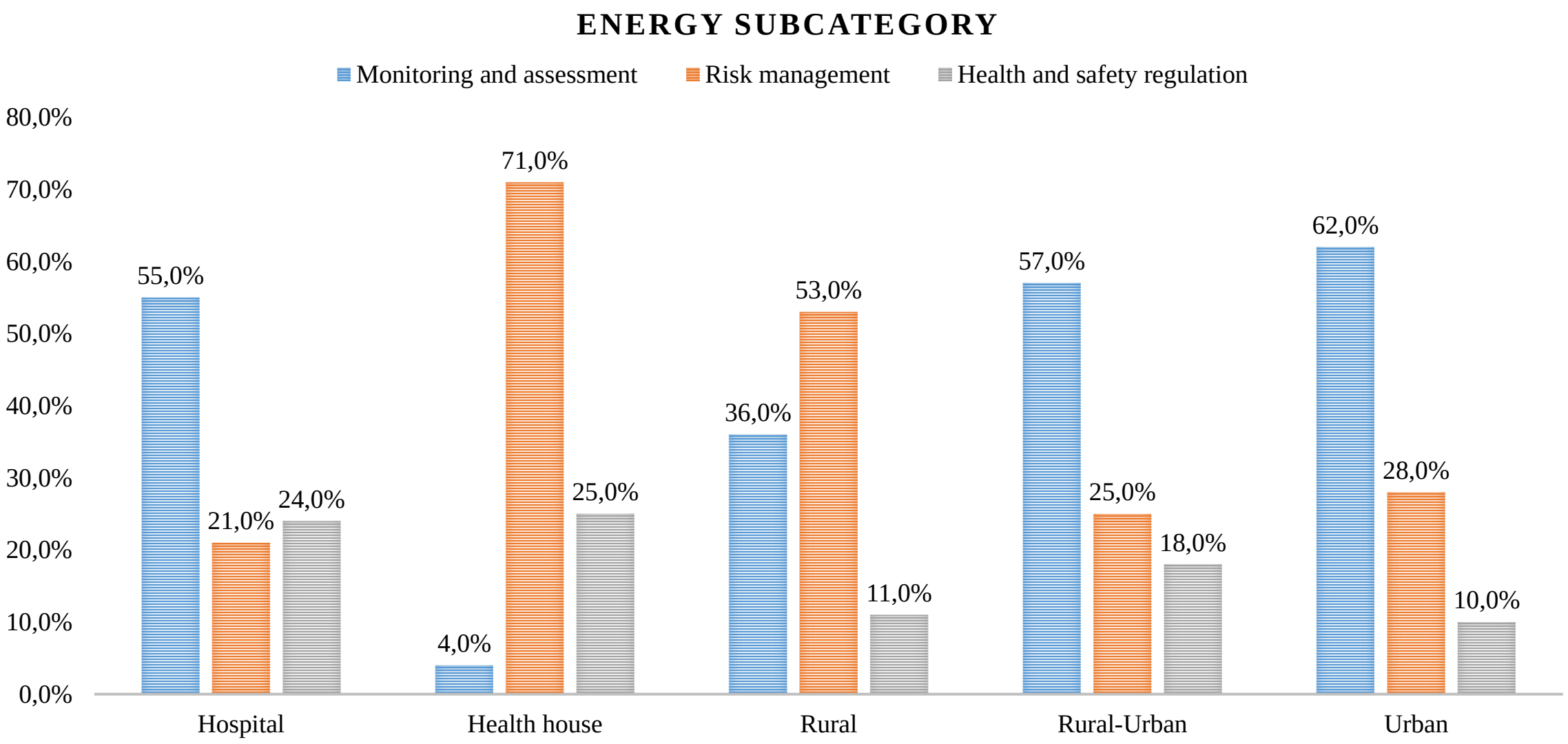
Evaluation Criteria

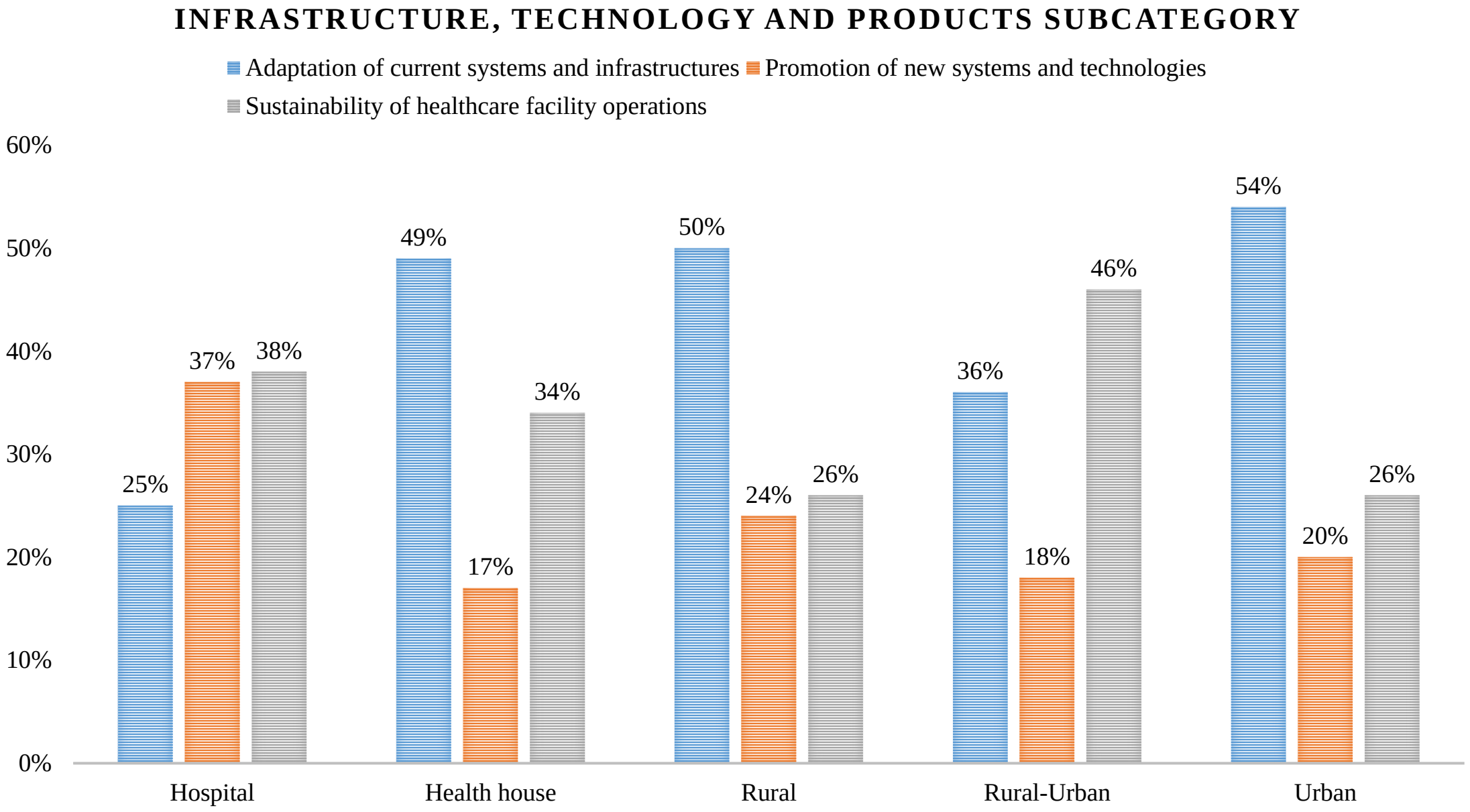


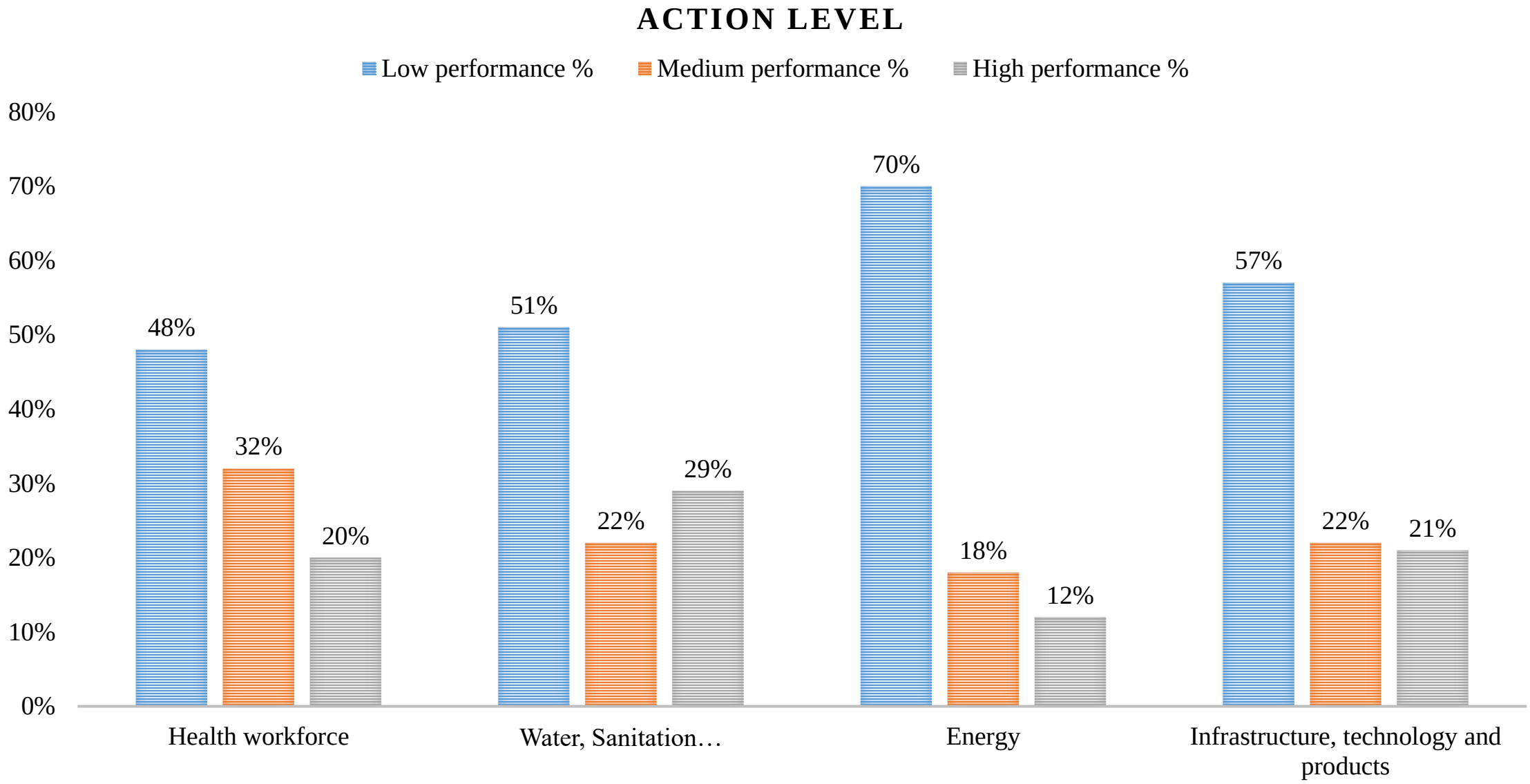
Main findings




WATER, SANITATION..., SUBCATEGORY
Monitoring and assessment
Risk management
Health and safety regulation
70,0%
60,0%
50,0%
40,0%
30,0%
20,0%
10,0%
0,0%
41,0%
36,0%
23,0%
58,0%
24,0%
18,0%
62,0%
24,0%
14,0%
62,0%
22,0%
16,0%
34,0%
27,0%
39,0%
Hospital
Health house
Rural
Rural-Urban
Urban

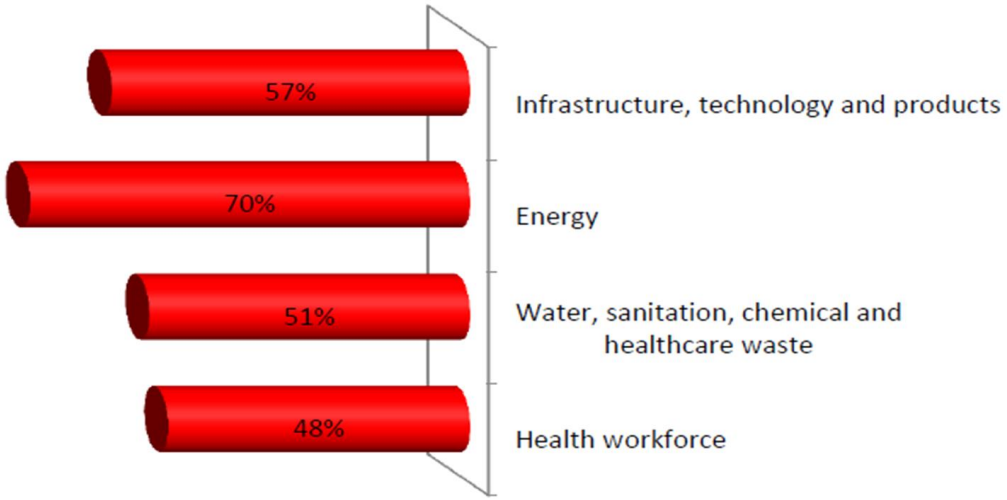

ENERGY SUBCATEGORY
Monitoring and assessment
Risk management
Health and safety regulation
80,0%
70,0%
60,0%
50,0%
40,0%
30,0%
20,0%
10,0%
0,0%
55,0%
21,0%
24,0%
4,0%
71,0%
25,0%
36,0%
53,0%
11,0%
57,0%
25,0%
18,0%
62,0%
28,0%
10,0%
Hospital
Health house
Rural
Rural-Urban
Urban

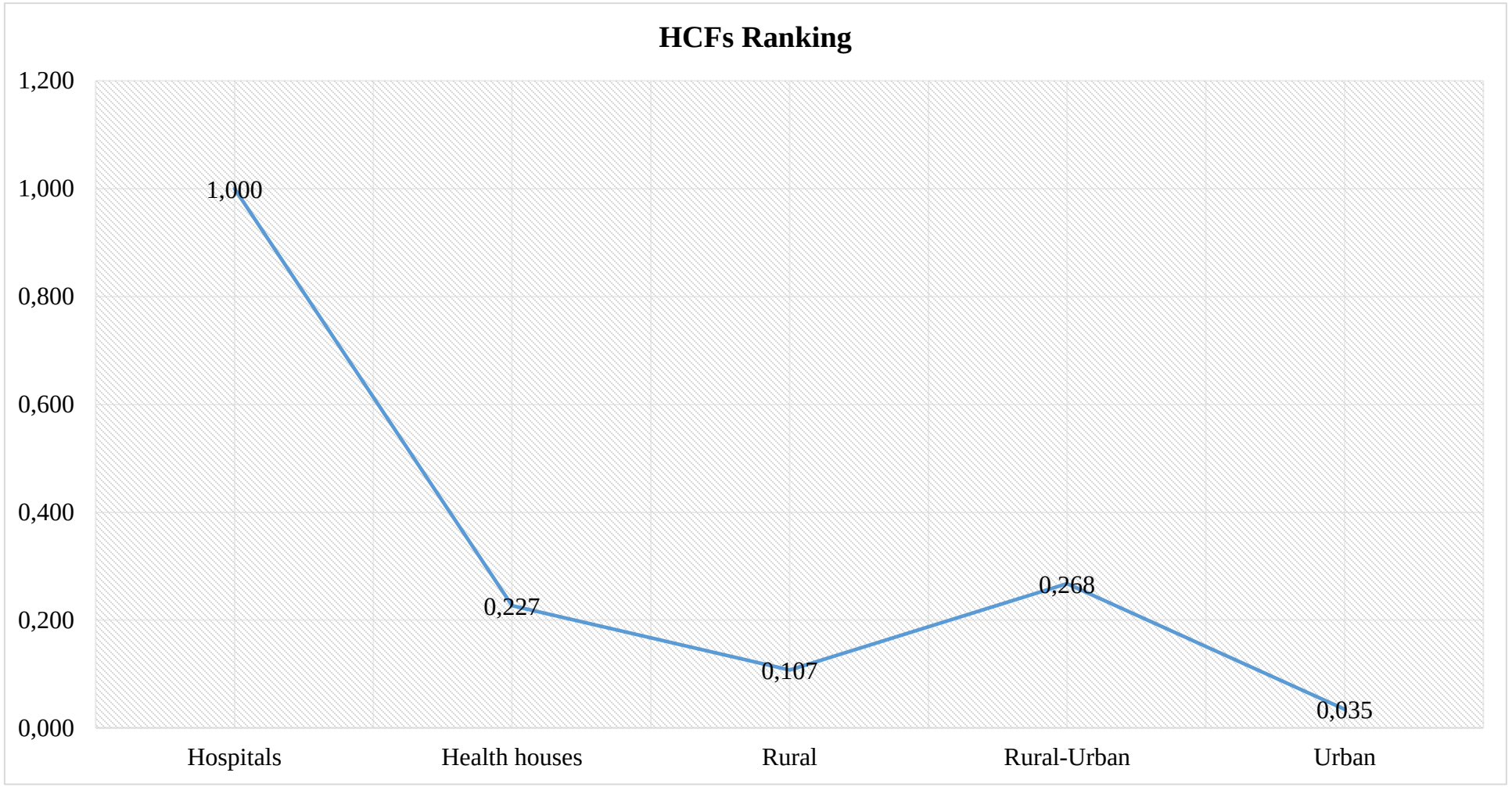

INFRASTRUCTURE, TECHNOLOGY AND PRODUCTS SUBCATEGORY
Adaptation of current systems and infrastructures
Promotion of new systems and technologies
Sustainability of healthcare facility operations
60%
50%
40%
30%
20%
10%
0%
25%
37%
38%
49%
17%
34%
50%
24%
26%
36%
18%
46%
54%
20%
26%
Hospital
Health house
Rural
Rural-Urban
Urban


ACTION LEVEL
Low performance %
Medium performance %
High performance %
80%
70%
60%
50%
40%
30%
20%
10%
0%
48%
32%
20%
51%
22%
29%
70%
18%
12%
57%
22%
21%
Health workforce
Water, Sanitation…
Energy
Infrastructure, technology and products

Main results of the assessment:

- Low performance areas in all types of healthcare facilities in the 267 HCFs assessed are shown here:




HCFs Ranking
1,200
1,000
0,800
0,600
0,400
0,200
0,000
1,000
0,227
0,107
0,268
0,035
Hospitals
Health houses
Rural
Rural-Urban
Urban

Conclusion

- The results of comprehensive analysis of the main indicators (first phase) in the HCFs shown that the status of energy; infrastructure, technology and products; and water, sanitation and healthcare waste management areas was in the low performance, while the health workforce area was in the medium performance.
- The results of second phase led to the formulation of 10 key strategies and 43 practical interventions for improving the level of CRES in HCFs.

Thanks for your attention

Country experience: Implementing CRESHCFs

AM Session

Dr Do Manh Cuong
Deputy Head of Environmental and Community Health, Vietnam Health Environmental Management Agency (VIHEMA), MoH Vietnam

World Health Organization

BỘ Y TẾ
CỤC QUẢN LÝ MÔI TRƯỜNG Y TẾ
HEALTH ENVIRONMENT MANAGEMENT AGENCY

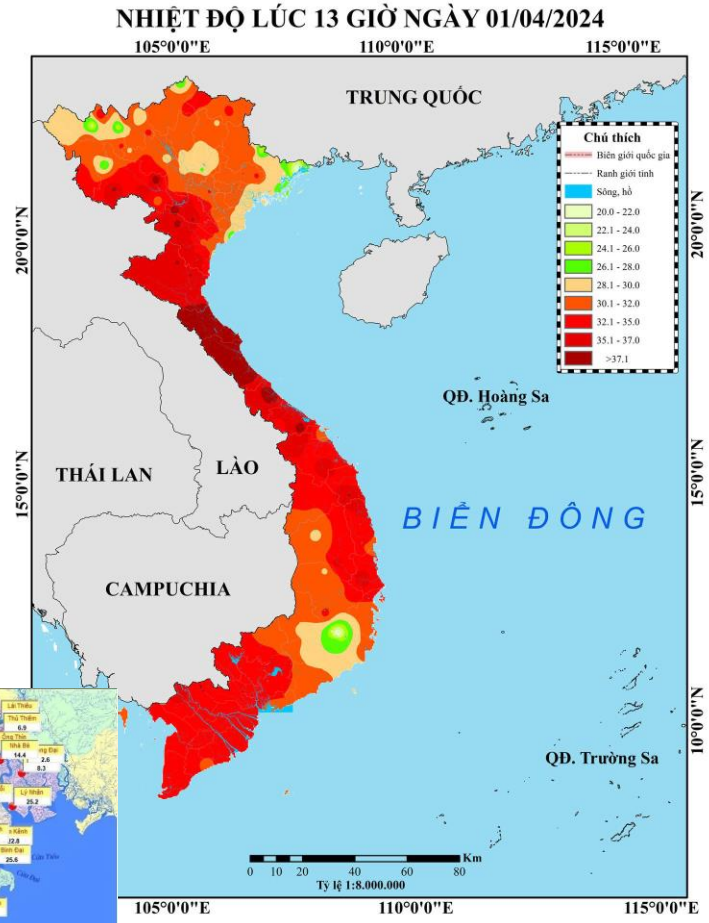
Vietnam Experience in Building Climate Resilient and Environmentally Sustainable Healthcare Facilities

Le Thai Ha, PhD.
Deputy Director General,
Tel: 0903203979; Email: halt.mt@moh.gov.vn;
lethaiha.nioeh@gmail.com

Do Manh Cuong, PhD.
Deputy Head, Division of Environmental Health Management,
Tel: 0912151352; Email: cuongdm.mt@moh.gov.vn

CLIMATE CHANGE HAZARDS IN VIETNAM

- ***Heat:***
  - Temperature increases in all regions of Vietnam (projected by 2050: ↑ 1,7 – 2,3°C).
  - Number of days with extreme heat increases in almost regions, especially in North, Central and Mekong regions.
- ***Drought:*** Highland, Central, Mekong regions
- ***Saline intrusion:*** Mekong region (heavy impact), some coastal areas
- ***Storm:*** North, Central regions
- ***Heavy rains and flooding:*** All regions
- ***Landslide:*** All regions
- ***Air pollution:*** Big cities



POTENTIAL CLIMATE CHANGE IMPACTS

- Vector-born diseases (typically dengue)
- Water-born diseases (typically diarrhoea, hand-foot-mouth diseases).
- Food poisoning.
- Heat-related diseases (NCDs: heart attack, stroke, hypertension, respiratory diseases).
- Injuries/deaths by storms, floods and other extreme weathers.
- Infrastructure/ equipment damaged.
- Health service interrupted.

ELSEVIER
The Lancet Regional Health - Western Pacific
Available online 15 November 2023, 100943
In Press, Corrected Proof What's this?

Series

Climate change and human health in Vietnam: a systematic review and additional analyses on current impacts, future risk, and adaptation

Nu Quy Linh Tran [a], Huynh Thi Cam Hong Le [b], Cong Tuan Pham [c u], Xuan Huong Nguyen [d u], Ngoc Dang Tran [e u], Tuyet-Hanh Thi Tran [f u], Son Nghiem [g u], Thi Mai Ly Luong [h u], Vinh Bui [i u], Thong Nguyen-Huy [j], Van Quang Doan [k], Kim Anh Dang [l], Thi Hoai Thuong Do [e], Hieu Kim Thi Ngo [e], Truong Vien Nguyen [m], Ngoc Huy Nguyen [n], Manh Cuong Do [o], Tuan Nghia Ton [p], Thi Anh Thu Dang [q], Kien Nguyen [r]...Dung Phung [t]

Rationale

WHO/VIHEMA initiative: building up models for CC resilient and environmentally sustainable HCFs based on the followings:

- Vietnam is one of 20 countries most vulnerable to climate change impacts. Health system is vulnerable too.
- Climate change impacts the delivery of health care services in HCFs, core units of health systems, affecting individuals and communities
- If not well designed, equipped and managed, HCFs are not able to cope with CC impacts and also produce adverse environmental impacts, affecting their health workforce and community
- Commitment of PM on zero carbon emission in COP 26 and contribution of health sector (4.6% GHG emission) → Strategy and action plan for health sector to contribute to achievement of PM commitment needed.
- Good models for CC resilient HCFs – a starting point for building a CC resilient health system and a supporting point for CC resilient communities

Framework for piloting models

WHO framework: four fundamental requirements for providing safe and quality care in HCF models or criteria for a CC resilient HCF:

1) **HEALTH WORKFORCE**: adequate numbers of skilled human resources with decent working conditions, empowered and informed to respond to these environmental challenges.
2) **WATER, SANITATION, HYGIENE AND HEALTH CARE WASTE MANAGEMENT**: sustainable and safe management of water, sanitation and health care waste services.
3) **ENERGY**: sustainable energy services, more efficient energy usage, applying green energy and low carbon emission
4) **INFRASTRUCTURE, TECHNOLOGIES AND PRODUCTS**: improved and advanced infrastructure, technologies, products and processes

Objectives of building models

- **To draw lessons learnt and prepare for a campaign of scaling up** models for CC resilient HCFs
- **To develop guidelines** on building CC resilient and environmentally sustainable HCFs based on the findings from piloting process
- **To develop a circular** for MoH's approval on scaling up the models throughout the health sector
- **To scale up successful models at a higher national coverage** through a communication program

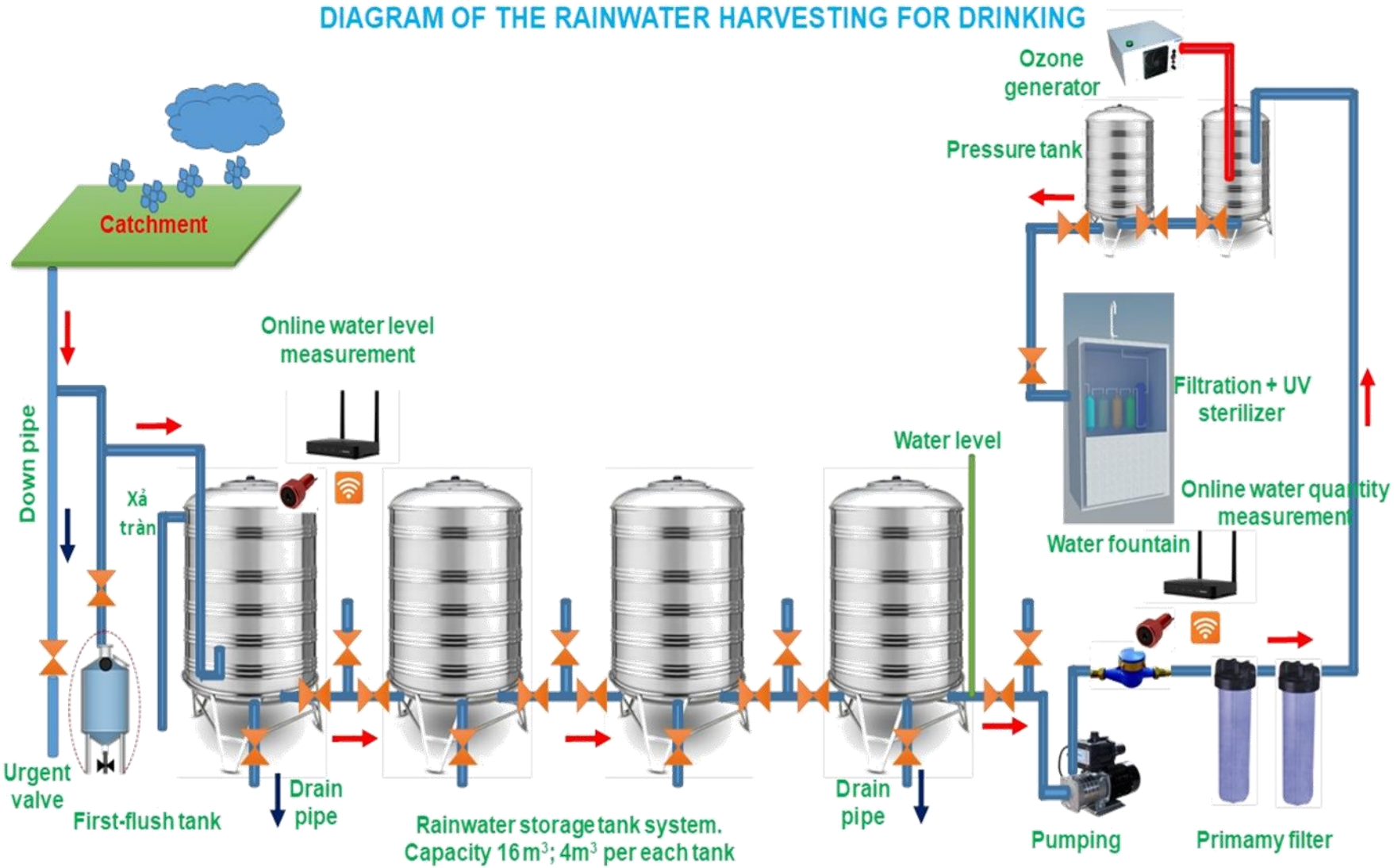
Project Implementation

- **In 2021,** 3 district HCFs were selected in 3 typical climatic regions: Mekong delta (sea level rise, salt intrusion), Central (drought, heat waves) and North of Vietnam (storms, flood)
- **In 2022-2023**, a series of activities were conducted to implement 4 components:
- Training on WASH-FIT, V&A assessment, energy efficiency and green energy as well as communication were conducted to strengthen capacity of HCFs' staff.
- Different water treatment systems and hand washing facilities were provided
- Water quality was tested and monitored frequently
- Supporting HCFs to develop action plans for improving WASH services and energy efficiency and communication
- Implementing action plans: V&A assessment, WASH practice, energy efficiency
- Holding a final workshop to share lessons learnt (Dec. 2023)
- **2024**: Additional support to Yen Thanh HCF, monitoring progress and support, applying tool for carbon emission assessment

Surface Water Treatment system in Yen Thanh HCF, Nghe An

Desalination system in Cu Lao Minh hospital, Ben Tre

Rain water treatment system in Bao Nhai hospital, Lao Cai



Initial results

1. **Awareness** of management board, staff and patients of model HCFs on climate change and health impacts has substantially increased
2. **Capacity of healthcare workers** in model HCFs has been strengthened during implementing the models
3. **Good WASH** (water supply, sanitation, hand hygiene and HCWM) service has been put in place to ensure medical services even in severe climate conditions
4. **Water treatment systems** have been maintained with a regular monitoring and surveillance of water quality, leading to improvement of wastewater treatment and hand hygiene practices
5. All 3 model HCFs developed **plans for climate change adaptation** (based on V&A assessment), energy efficiency and green energy as well as communication
6. **Lessons learnt and stories** were drawn to share.

Challenges:

- Achieving net zero carbon emission from HCFs is very challenging. Need to have a tool for measuring carbon emission from HCFs.
- Energy efficiency can be improved, but green energy (e.g. solar energy) requires a huge investment for HCFs → More support from donors is needed.
- Scaling up successful models is challenging due to a big number of 12,000 HCFs throughout Vietnam.

Next steps:

- Completion of those models for evaluation and maintaining good operation to ensure sustainable models.
- Developing a national guideline on building CC resilient HCFs
- Lessons learnt to be shared among 3 model HCFs and other HCFs through a communication program.
- Developing a circular on rolling out building CC resilient HCFs
- Mobilizing fund for supporting the process of scaling up good models

THANK YOU!

World Health Organization

Agenda

PM Session

Time	Agenda item	Speaker
15:00 – 15:05 (5 minutes)	Welcome and Housekeeping	Dr Yiqi Pan, Technical Officer, Climate Change and Health Unit, WHO
15:05 – 15:10 (5 minutes)	Opening remarks	Dr Amy Savage, Technical Officer, Climate Change and Health Unit, WHO
15:10 – 15:40 (30 minutes)	Technical presentation: Introduction to Climate Resilient and Environmentally Sustainable Health Care Facilities	Mr Saleh Rababa, Consultant Health and Climate Change, WHO EMRO
15:40 – 16:00 (20 minutes)	Country experiences: CRESHCFs	Dr Américo José, Coordinator of the Climate, Environment and Health Platform, National Institute of Health Mozambique Mr Maoro Beavogui, COP26 National Director, WHO Guinea
16:00 – 16:20 (20 minutes)	Interactive activity	
16:20 – 16:28 (8 minutes)	Group feedback	Breakout group volunteer Moderated by Mr Saleh Rababa
16:28– 16:30 (2 minutes)	Close webinar	Dr Yiqi Pan, Climate Change and Health Unit, WHO

World Health Organization

Country experience: Implementing CRESHCFs

PM Session

Dr Américo José

Coordinator of the Climate, Environment and Health Platform, National Institute of Health Mozambique

World Health Organization

National Institute of Health of Mozambique

Climate Resilient and Environmental Sustainable Health Care Facilities: Country Experience

Presenter: Américo José

On Behalf of CRESHCF Mozambique team

July, 10th of 2024

Presentation's Outline

- Introduction
- CRESHCF process in Mozambique
- Selection of Health Care Facilities
- Relevant Climate Hazards Identified
- Barriers encountered in the implementation of CRESHCF
- Lessons learned from implementing the WHO CRESHCF guidelines
- Step forward of CRESHCF in Mozambique

INTRODUCTION

- The statistics from the Global Climate Risk Index, 2021 classify Mozambique as the fifth country most affected worldwide by extreme climate events between 2000 to 2019.

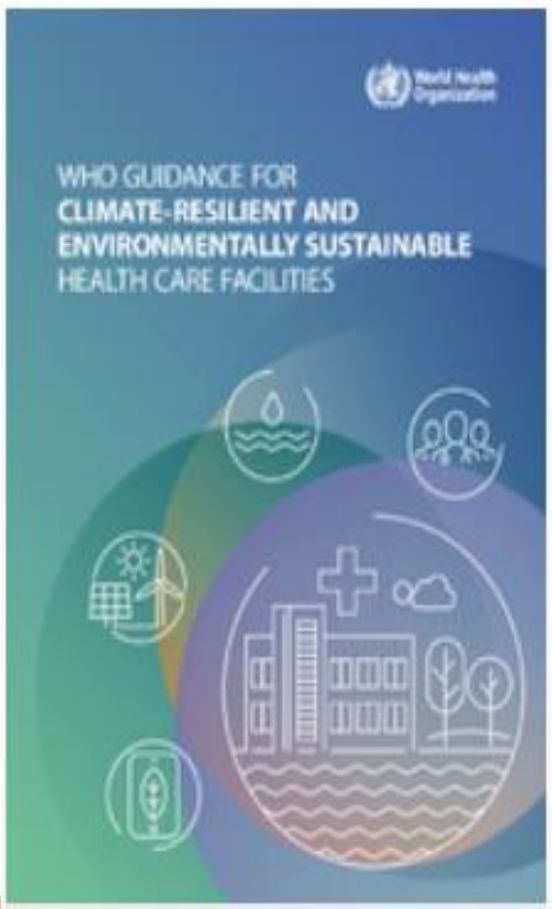
- In this context, it is essential to respond to the impacts of Climate Change in the country, through mitigation, which can be achieved from preparing, adapting and strengthening health systems.

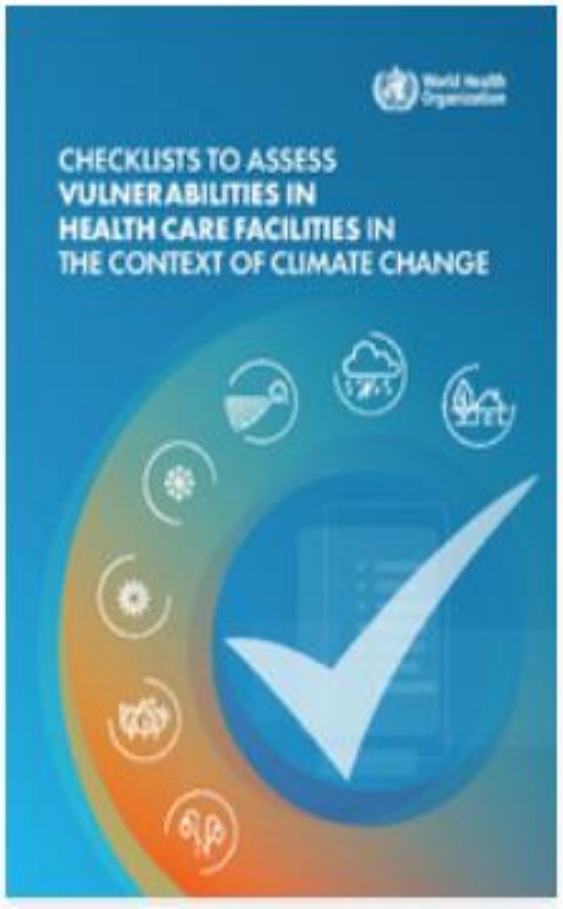
- The generation of scientific knowledge about the vulnerability and adaptation of Health Care Facilities to climate change is crucial for advance preparation for response to the magnitude of extreme climate events.

- The Country experience about Climate resilient and environmentally sustainable health care facilities was obtained from 15 HCF classified as vulnerable to extreme weather events in Mozambique;

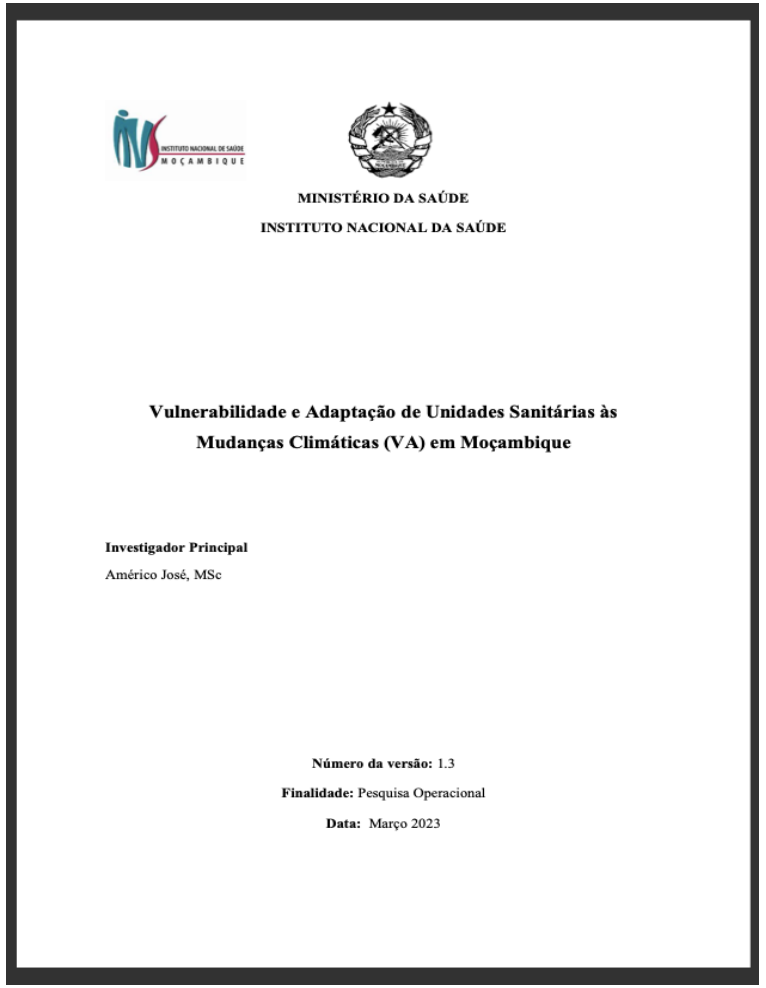
CRESHCF PROCESS IN MOZAMBIQUE

PHASE I: Interinstitutional harmonization of the Guidelines and checklist of CRESHCF





PHASE II: Development of the Scientific Protocol - CRESHCF



MINISTÉRIO DA SAÚDE

INSTITUTO NACIONAL DA SAÚDE

Vulnerabilidade e Adaptação de Unidades Sanitárias às Mudanças Climáticas (VA) em Moçambique

Investigador Principal

Américo José, MSc

Número da versão: 1.3

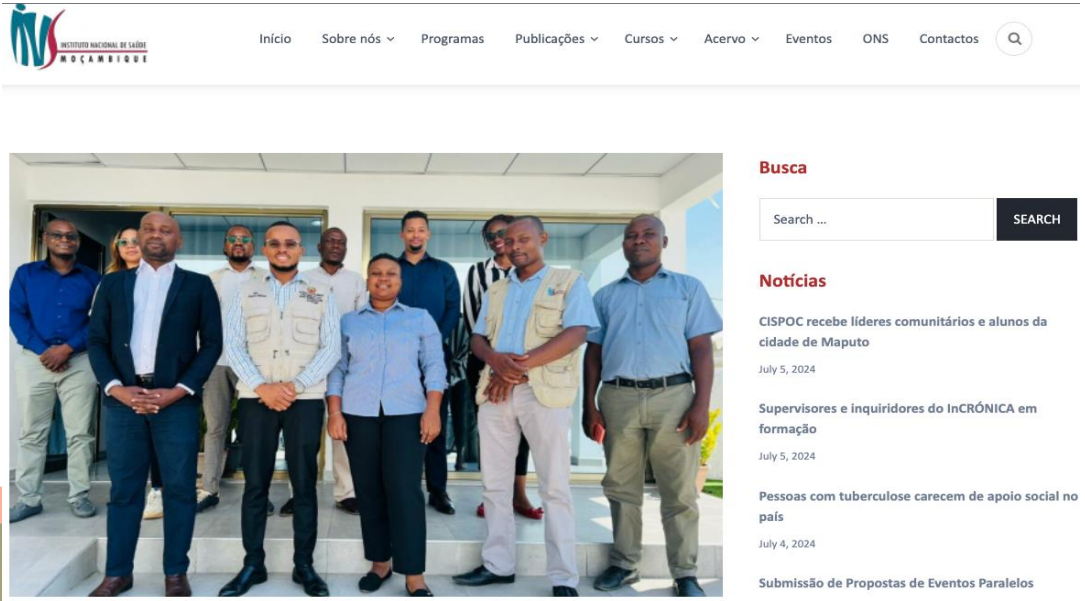
Finalidade: Pesquisa Operacional

Data: Março 2023

Ethical Approval: "Ref.:024/CIE-INS/2023"

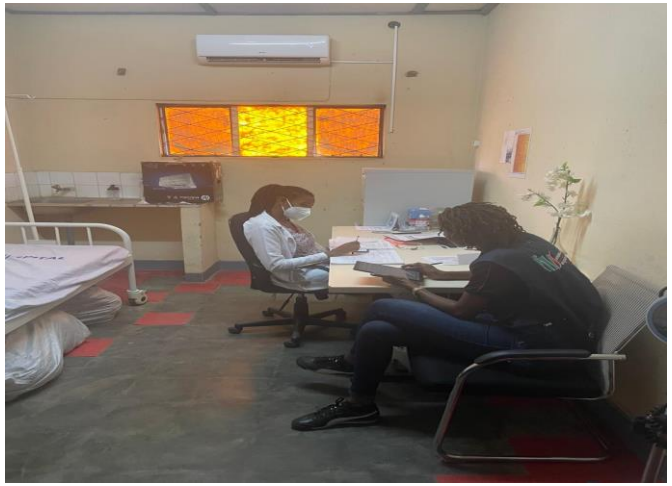
CRESHCF PROCESS IN MOZAMBIQUE

PHASE III: Training of the multisectoral team - CRESHCF



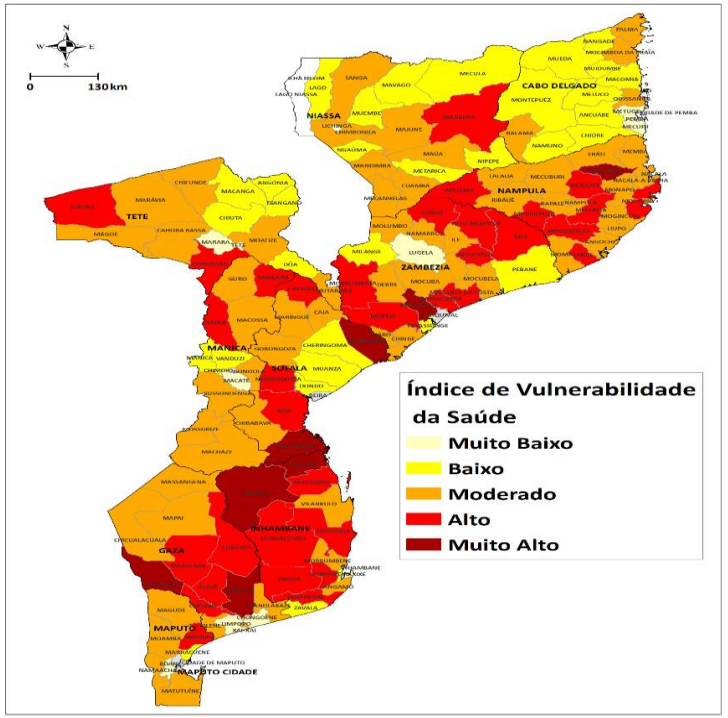
Profissionais de Saúde capacitados sobre vulnerabilidade às mudanças climáticas

PHASE IV: Pilot and implementation of the CRESHCF Scientific activities



PROCEDURES FOR SELECTION OF HCF IN MOZAMBIQUE

I: Assessing the Vulnerability and Adaptation Needs of Mozambique's Health Sector to Climate Change: A Comprehensive Study

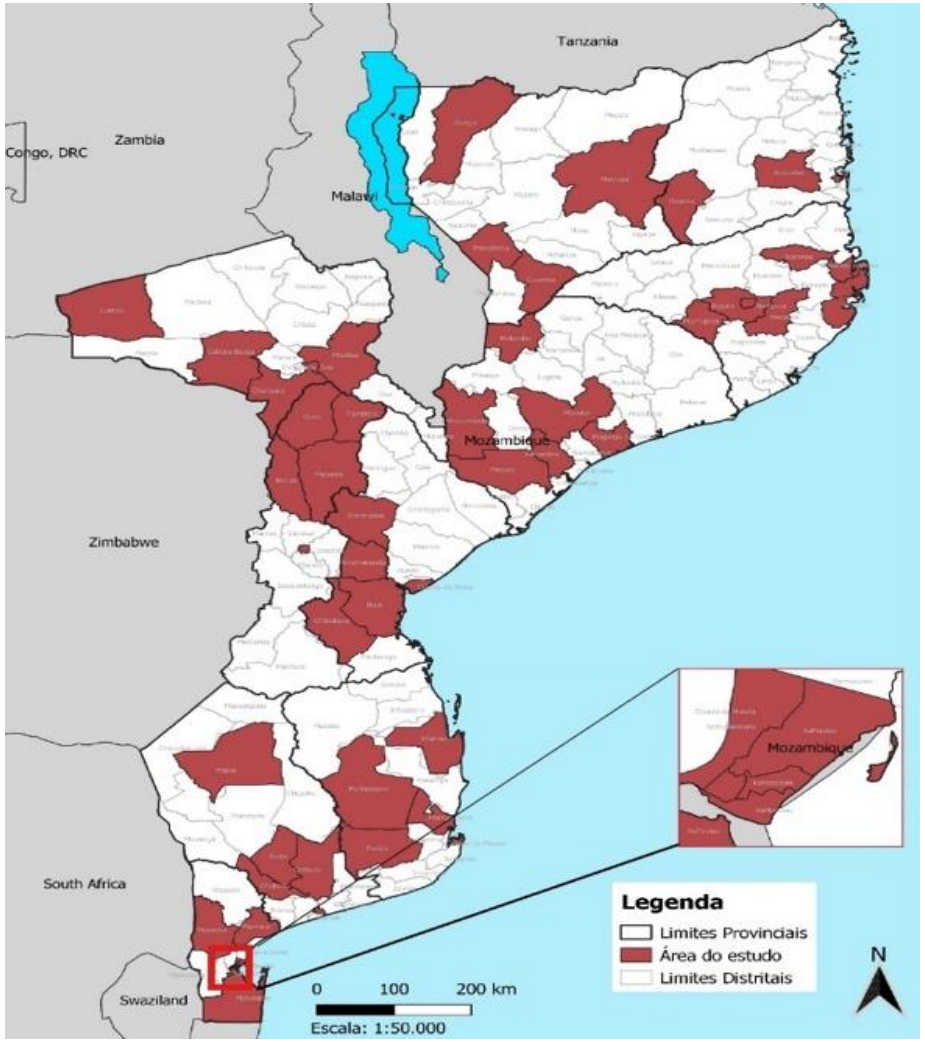


42 districts (27.6% of the territory and 25.6% of the population) have a high or very high exposure rate.

Article already published: https://www.mdpi.com/1660-4601/21/5/532

April 25, 2024

II: Identification of districts for phase 1, in order to Implement CRESHCF activities



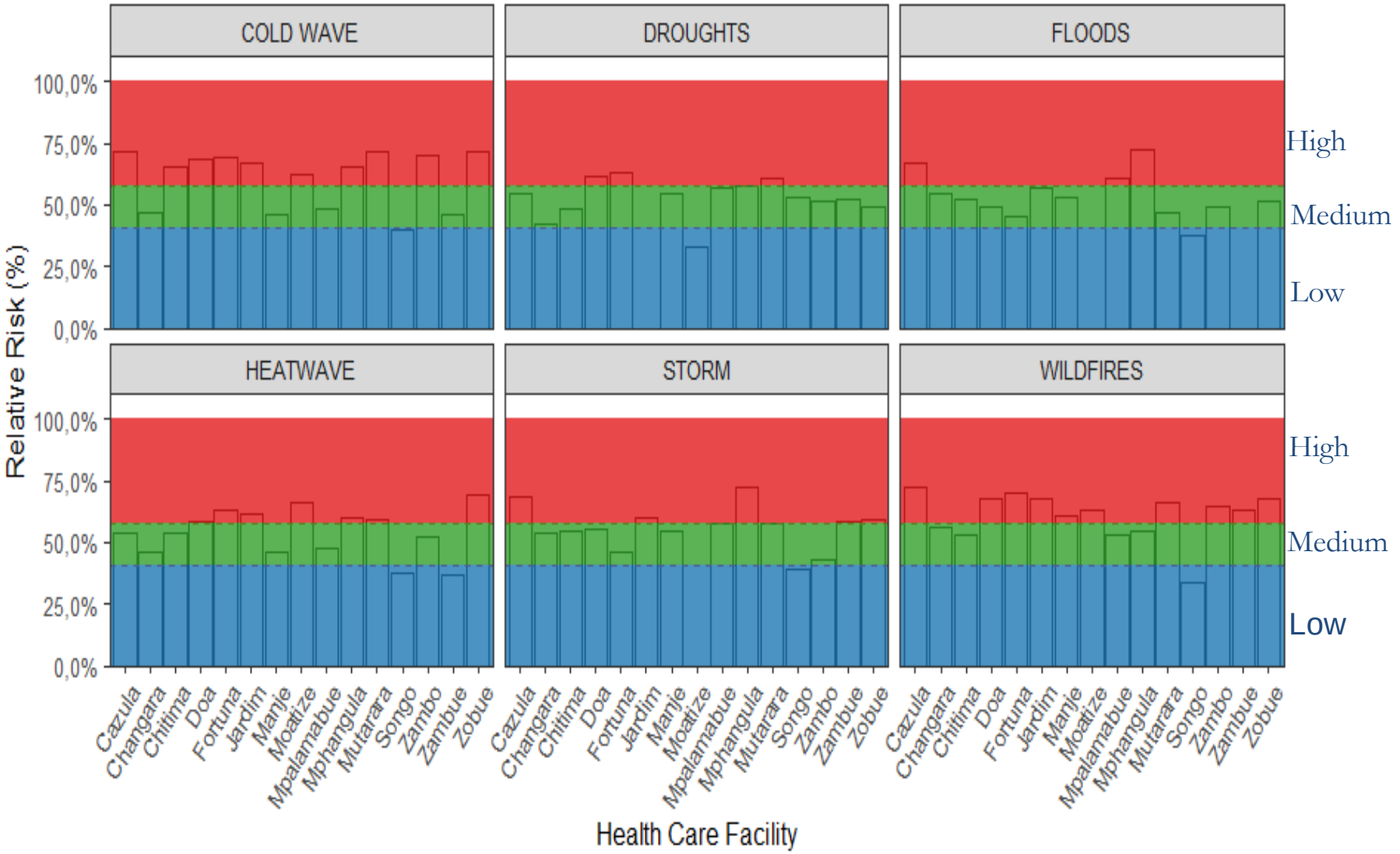
PROCEDURES FOR SELECTION OF HCF IN MOZAMBIQUE

III: Selection of the HCF per Province

Sample size distribution by province and levels of care				
Province	Level of Care of HCF			Total
	Tertiary	Secondary	Primary	
Niassa	-	2	6	8
Cabo Delgado	1	-	6	7
Nampula	-	1	5	6
Zambézia	-	1	6	7
Tete	-	3	12	15
Sofala	-	1	7	8
Manica	1	-	5	6
Gaza	1	1	5	7
Inhambane	1	1	5	7
Maputo Província	-	-	4	4
Maputo Cidade	-	1	1	2
Total	5	10	55	**78**

- *Stratified sampling (effect size of 0.8, significance of 5% and a test power of 80%)*

RELEVANT CLIMATE HAZARDS IDENTIFIED



Wildfires and cold waves increase the risk of HCF (67%). 10/15 HCF are at risk at Tete Province - Mozambique

BARRIERS ENCOUNTERED IN THE IMPLEMENTATION OF CRESHCF ACTIVITIES

WHO CHECKLIST

- Questionnaires are very complex and take a lot of time to finish the interview.
- **Solution:** Digital Data collection tool developed by NIH - Mozambique contributed to reduce the time of the interview.

IMPLEMENTATION IN THE HCF

- Unavailability (40%) of heads of HCF to attend the interview.
- **Solution:** Identification of other Health Profissional with at least 5 years working in the HCF in order to attend the interview

IMPLEMENTATION IN THE HCF

- Lack of funding to implement the study in all provinces of the country
- **Solution:** At least one province (Tete) was sellected to implement CRESHCF activities (*funded by Global Fund*)

LESSONS LEARNED FROM IMPLEMENTING THE WHO CRESHCF GUIDELINES

- CRESHCF guidelines allows to collect relevant and detailed data regarding the impacts of Extreme weather events for HCF of the country;

STEP FORWARD OF CRESHCF IN MOZAMBIQUE

- Dissemination of the results for decision-makers and other stakeholders (private sectors, etc.) in September 5, 2024;

- Progressive implementation of **CRESHCF** activities in the remaining provinces according to the funding availability;

- Writing and publication of 1 manuscript, using the results obtained from Tete Province.

THANK YOU

Américo Feriano José

americo.jose@ins.gov.mz

Country experience: Implementing CRESHCFs

PM Session

Mr Maoro Beavogui

COP26 National Director, WHO Guinea

World Health Organization

Organisation mondiale de la Santé

Renforcer la résilience et la Durabilité environnementale des établissements de santé : Cas de la Guinée : Evaluation de l'empreinte carbone des établissements de santé

Par :
Maoro BEAVOGUI, NPO/COP26
Bureau Pays de l'OMS-Guinée
Email: beavoguim@who.int // maobeavogui@gmail.com
Tel : 00224 621 83 96 69 // 00224 610 10 16 68

10 Juillet 2024

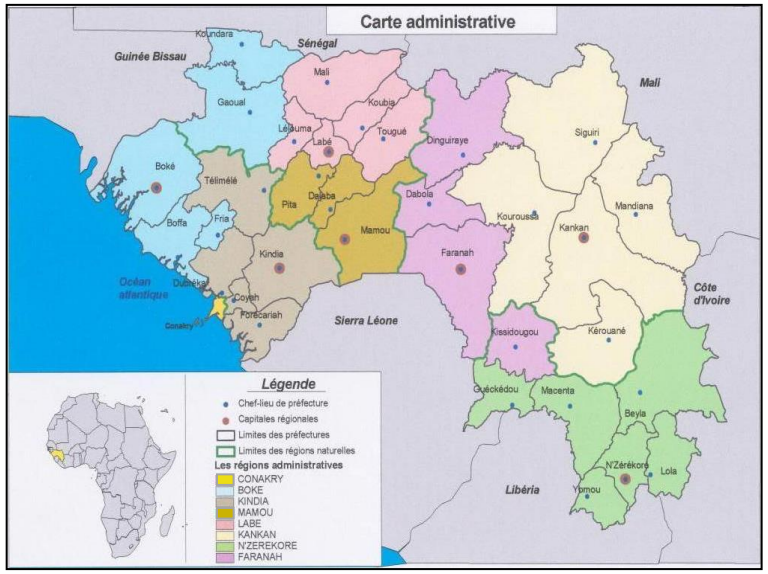
PLAN

1. Contexte général de l'étude
2. Méthodologie
3. Résultats
4. Contraintes
5. Opportunités
6. Leçons apprises
7. Perspectives

Contexte général de l'étude

Présentation de la République de Guinée

Superficie : 245 857 km²;
Population *(2021) : 12 907 396 hbts ;*
Taux *de croissance : 2,7% ;*
Indice *de pauvreté : 43,7% ;*
Taux *alphabétisation* : 39,6% ;



Hôpitaux nationaux : **3;**

Hôpitaux régionaux : **8;**

Hôpitaux préfectoraux : **26;**

Centres médicaux de commune : **9;**

Centres de Santé améliorés : **10;**

Centres de Santé : **426;**

Postes de santé : **2 051;**

Cliniques privées (*hôpital*) : 200

Les acquis

- ✓ **Déclaration de Libreville** sur la santé et l'environnement en Afrique (2008)
- ✓ Engagement de Luanda sur la mise en œuvre de la Déclaration de Libreville sur la santé et l'environnement en Afrique (2010)
- ✓ Mise en place du Groupe National de Travail (GNT) par arrêté conjoint (2012)
- ✓ Analyse de Situation et Estimation des Besoins (ASEB) sur la mise en œuvre de la Déclaration de Libreville (2013)
- ✓ Evaluation de la Vulnérabilité et de l'Adaptation (EVA) aux changements climatiques dans le secteur de la Santé (2017)
- ✓ Engagement à la **COP26** (2021)
- ✓ Désignation du point focal changement climatique et santé au sein du Ministère de la Santé (2022);
- ✓ Désignation de la Direction Nationale de l'Hygiène Publique pour la mise en œuvre des engagement de la COP26 (2022)
- ✓ Analyse des parties prenantes de mise en œuvre Engagement COP26 (2022)
- ✓ Feuille de Route pour la mise en œuvre Engagement COP26 (2022)

Contexte général de l'étude

Les engagements du Programme Santé de la COP 26 sur des systèmes de santé résilients au climat et à faibles émissions de carbone

DOMAINE D'ENGAGEMENT 1

Des systèmes de santé résilients au changement climatique

- mener des évaluations de la vulnérabilité et de l'adaptation au changement climatique et à la santé (V&A)
- élaborer un Plan National d'Adaptation de la Santé (H-NAP)
- faciliter l'accès au financement du changement climatique pour la santé

DOMAINE D'ENGAGEMENT 2

Systèmes de santé durables à faibles émissions de carbone

- fixer une date cible pour atteindre zéro émission nette du système de santé (ambition élevée/grands émetteurs)
- fournir une évaluation de référence des émissions de GES du secteur de la santé
- élaborer un plan d'action pour développer des systèmes de santé durables à faible émission de carbone

World Health Organization

METHODOLOGIE

APPROCHE METHODOLOGIQUE

✓ **Cadrage/porté de l'étude :**

- Choix des hôpitaux: 3 CHU, 8 HR, 26 HP, 9 CMC, 2 hôpitaux d'entreprises et 12 Cliniques Privées
- Equipe restreinte: 2 MEDD, 3 MSHP, 2 PTFs

✓ **Renforcement des capacités sur outil AKDN :**

- Outil développé par AKDN et OMS
- Outil Excel structure en fonction des données à collecter
- Formation de 4 experts formateurs
- 5 ateliers de formation pour 60 les agents des FOSA

✓ **Collecte des données dans les formations sanitaires**

- Collecte des données dans établissements par les agents formés :
- Données: Energie, Transports, Infrastructures, équipements médicaux, les déchets, la logistique etc..
- Supervision des collectes par les 4 experts formateurs

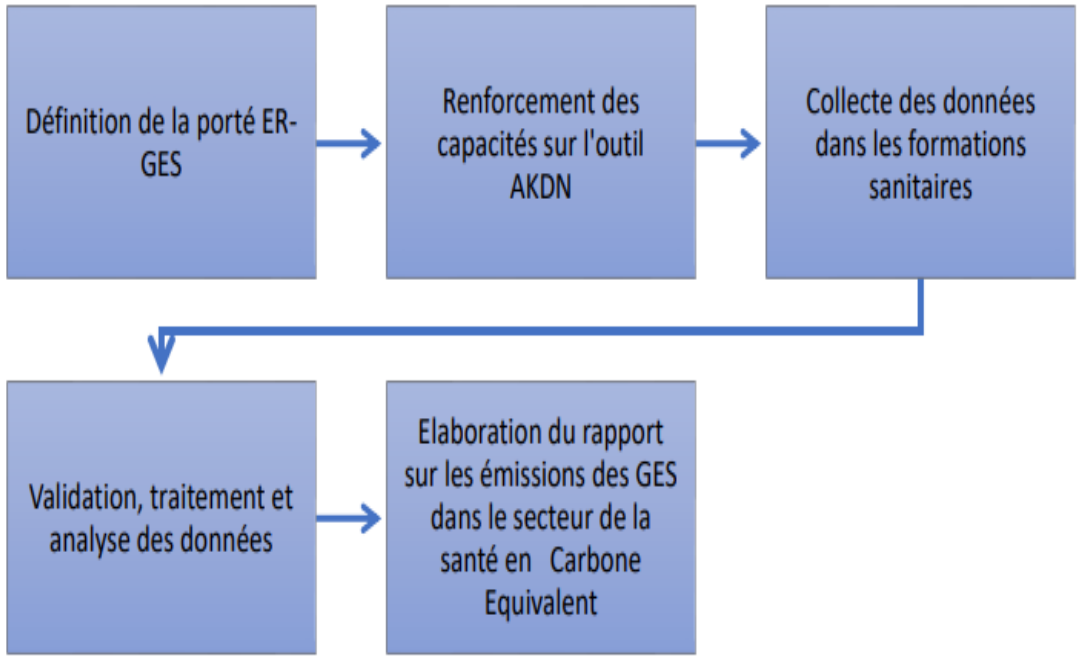
✓ **Validation, traitement et analyse des données:**

- Remontée & compilation des donnée à la Direction Nationale de l'Hygiène Publique, traitement & épuration des données
- Atelier de validation technique des données avec participation des représentants des formations sanitaires

✓ **Elaboration du rapport final:**

- Validation technique du rapport par le GNT groupe
- Intégration des recommandations de la validation technique,
- Soumission du rapport au cabinet du MSHP pour les avis;
- Atelier de validation nationale

SCHEMA DE L'APPROCHE MEDTHODOLOGIQUE



RESULTATS OBTENUS

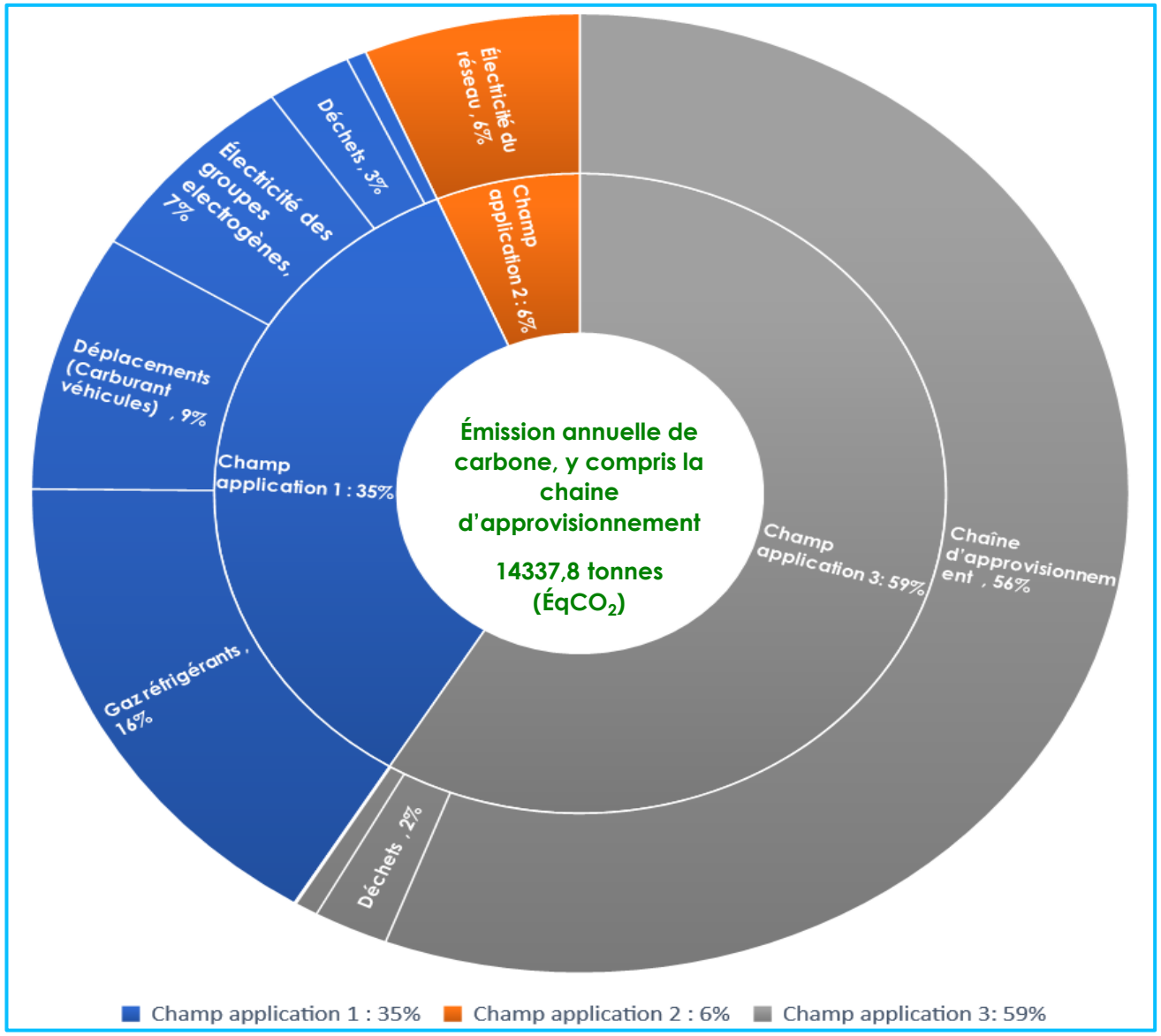
Empreinte Globale

- ✓ Émissions annuelles des GES des établissements sanitaire y compris les chaines d'approvisionnements: **14337,8** tonnes équivalent carbone (eqCO_2).
- ✓ Émissions annuelles des GES par Champ d'application (SCOPE):
  - ➢ **Champ d'application 1(scope1) :** 5002,2 tonnes eqCO2
  - ➢ **Champ d'application2(Scope2) :** 917,1 tonnes eqCO2
  - ➢ **Champ d'application3 (Scope3):** 8418,4 tonnes eqCO2

Sources d'émissions de GES

✓**Chaine d'approvisionnement des établissements sanitaires:** 7996,0 tonnes eqCO2

- ✓ **Gaz réfrigérants** (climatiseurs, les frigos et congélateurs, chambre froide, climatisation des véhicules): 2355,5 tonnes eqCO_2 ;
- ✓ **Carburant véhicules :** 1242,5 tonnes eqCO_2 ;
- ✓ **Groupes électrogènes :** 958,9 tonnes éqCO_2 ;
- ✓ **Procuration d'électricité auprès de l'EDG** : 917,1 tonnes eqCO_2;
- ✓ **Gestion des déchets hospitaliers:** 361,4 tonnes éqCO_2 ;
- ✓ **Gaz anesthésiques :** 83,9 tonnes eqCO_2 ;



POURQUOI CETTE REUNION ?

Contraintes

- ✓ Disponibilité des financements (fonds limité), pour les honoraires et pour les coûts locaux ;
- ✓ Disponibilités des données : manque de données ou difficultés d'accès au données dans les structures ;
- ✓ Difficulté de compréhension de l'outil dans sa version en Anglais ;
- ✓ Disponibilité et motivation des agents chargés de la collecte des données et du remplissage de outil AKDN dans les structures sanitaires.

Leçons Apprises

- ✓ La bonne collaboration entre les acteurs d'appui (Aga Khan, OMS/AFRO et OMS Guinée) ;
- ✓ L'engagement des autorités sanitaires au niveau central et la mobilisation des parties prenantes dans la mise en œuvre des interventions ;
- ✓ Un bonne implication des responsables des structures sanitaires dans le processus de collecte des données.

Perspectives

- ✓ Elaboration du Plan National d'Atténuation de l'empreinte carbone du secteur de la Santé (PNACS)
- ✓ Mobilisation des ressources pour la mise en œuvre du PNACS et des activités d'atténuations des GES ;
- ✓ Plaidoyer pour la prise en compte de la santé dans les documents nationaux de la Convention cadres des nations Unies sur les changements climatiques : CDN, PNA, Communication Nationale etc.

Organisation mondiale de la Santé

MERCI

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Interpretation

AM session: English, French and Arabic
PM session: English, French and Spanish

To activate interpretations (in English):

1. Click on the interpretation icon.
2. Select ”English”
3. **Optional :** mute original audio

Pour activer les interprétations (en français):

1. Cliquez sur l'icône d'interpretation
2. Sélectionnez ”Français”
3. **Facultatif :** couper le son d'origine

Para activar interpretación (en español)

1. Haga clic en el icono de interpretación.
2. Seleccionar ”Español”
3. **Opcional:** silenciar el audio original

لتفعيل التفاسير باللغة العربية

1. اضغط على أيقونة التفسير.
2. اختر "العربية"
3. اختياري: كتم الصوت الأصلي

WHO Technical Webinar Series

https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/country-support/webinars

World Health Organization

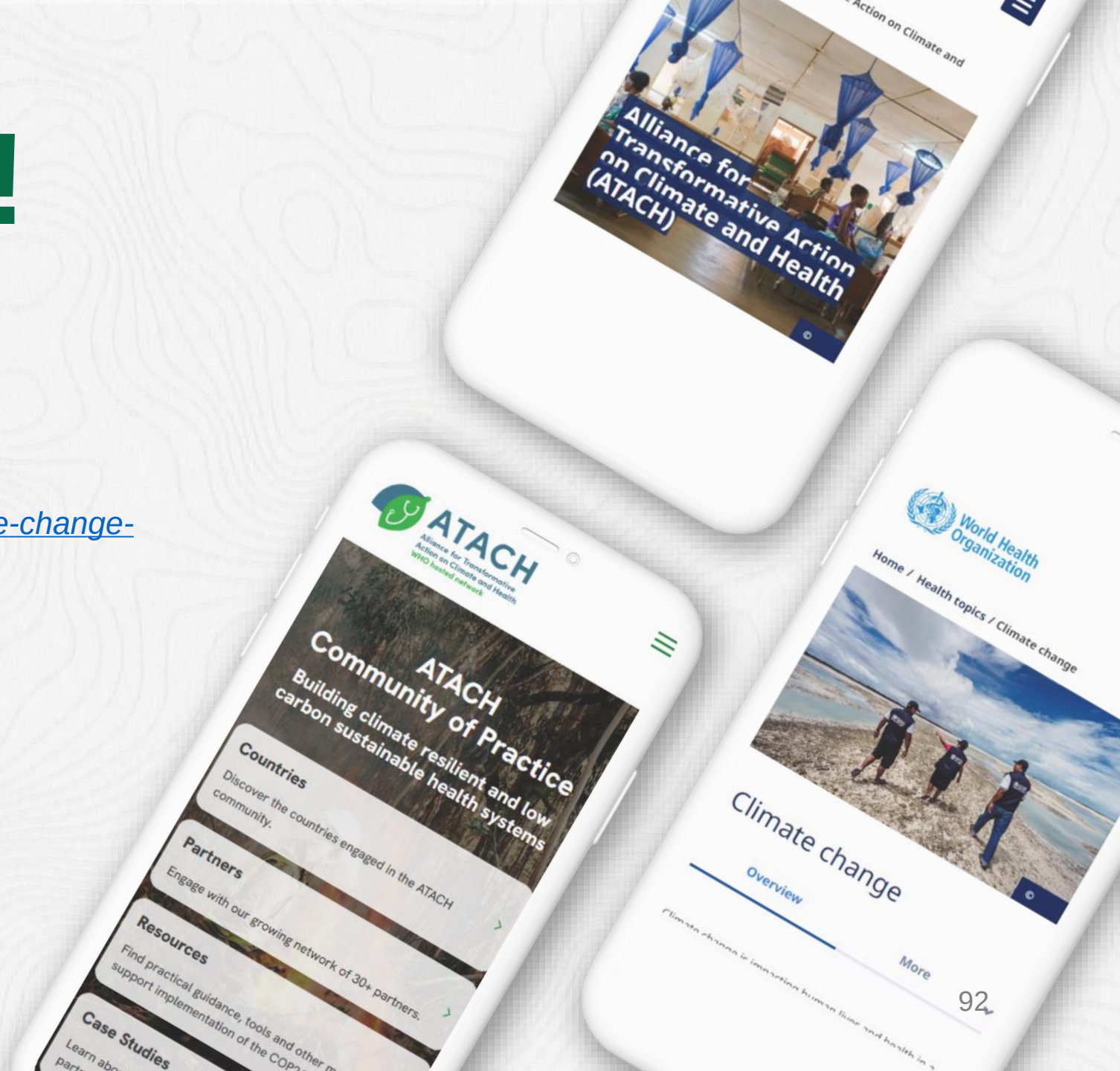
Date & time (CEST)	Topic*
24th April 2024	Getting started: climate change and health vulnerability & adaptation assessments
30th April 2024	WHO as an Accredited Implementing Entity of the Adaptation Fund; Accessing AF funding for Climate Change and Health
15th May 2024	WHO Operational Framework for building climate resilient and low carbon health systems
12th June 2024	Developing a Health National Adaptation Plan: Introduction
19th June 2024	GIS and risk mapping in climate change and health vulnerability & adaptation assessments
10th July 2024	Climate resilient and environmentally sustainable health care facilities
17th July 2024	Quantitative approaches for Vulnerability & Adaptation assessments: sensitivity analyses and projecting future health risks of climate change
18th Sept 2024	Integrating health in NDCs and LT-LEDS
25th Sept 2024	Developing a Health National Adaptation Plan: Quality criteria for HNAPs
16th Oct 2024	Conducting a gender analysis for climate change and health vulnerability & adaptation assessments

Thank You!

ATACH Community of Practice
https://www.atachcommunity.com/

Climate Change
https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health

Email: healthclimate@who.int



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