



Maldives Green Climate-Smart Hospitals

Policies and Strategies Report

Co-Produced by the World Health Organization and Health Care Without Harm



Maldives Green Climate-Smart Hospitals: Policies and Strategies Report

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Forward

Climate change is happening in real time and is occurring swifter than the current response. It threatens to overwhelm the world's health systems and health of the people. As a small island nation, the Maldives are on the front line of these impacts. The country is particularly vulnerable to sea level rise, storm intensity, flooding and outbreak of vector borne diseases. As a first responder, the country's national health system needs to cope with the onslaught, be able to provide health care and contribute to reduce the carbon print of the health sector.

Maldives Green Climate-Smart Hospital Policies and Strategies Report and Maldives Green Climate-Smart Hospital Vulnerability Analysis and Report is a collaborative project between Government of Maldives, Health Care Without Harm, and World Health Organization, Maldives. These documents provide frameworks for healthcare facilities in the Maldives to provide low-carbon, environmentally sustainable health care services on an ongoing basis that are resilient to the impacts of climate change and related emergencies. We want to also mention that the strategies are one of the first of its kind and can support green health development of Maldives and can be adopted in other small island states.

These reports encapsulate the work of and input from many people in the Maldives, and global knowledge. The collective wisdom attempts to provide solutions to a diversity of issues driven or exacerbated by climate change.

As the next steps, we encourage that the concept is discussed with relevant stakeholders, and used as reference to plan future expansion of the health sector or during renovation. It can guide hospitals in the Maldives to become champions in protecting people's health from climate change and reduce carbon foot print of the health sector.



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Executive Summary | Policies and Strategies

This report and the companion policy are jointly produced by the World Health Organization (WHO) and Health Care Without Harm (HCWH).

Maldives Green Climate-Smart Hospitals: Policies and Strategies Report describes ways in which healthcare facilities can mitigate their contribution to climate change, and provide environmentally sustainable healthcare services on an ongoing basis by being resilient to the impacts of and in the face of climate change and related emergencies. This report is a joint production of the World Health Organization (WHO) and Health Care Without Harm (HCWH).

Maldives Green Climate-Smart Hospitals: Hospital Vulnerability Analysis and Report describes ways in which the healthcare system and public health can contribute to climate change, and be affected by acute and chronic effects of climate change and become more resilient to the impacts of those changes. It includes site assessments of a range of facilities representing the tiers of the Maldivian health care system. The assessments focus on climate-smart and environmentally friendly health care.

Climate Change is a Health Issue

With increased frequency and severity of extreme weather events like drought, flood and storms, heat stress, increasing vector-borne diseases and sea level rise,¹ climate change is a health issue now and into the future. As the World Health Organization (WHO) summarized: “Climate change is much more than an environmental issue. It poses a serious threat to our health and survival. It impacts all of us, no matter where we live.”²

The Maldives is Vulnerable to Climate Change Impacts

Small island nations are particularly vulnerable to the sea level rise and extreme weather events.³ The Maldives is particularly vulnerable to flooding and rising sea levels driven by climate change. Even a one-meter rise in sea-level could threaten the ability to inhabit most of the country’s islands.⁴ Extreme weather coupled with sea level rise can generate storm surges with flooding that could quickly overwhelm island infrastructure and significantly impact health care service delivery in emergencies. Like other health facilities around the world, hospitals and health centers in the Maldives are particularly vulnerable to the impacts of climate change, as they protect the health of their communities during and after these natural disasters.

Green Climate-Smart Health Facilities Solutions

Hospitals and health systems can both build resilience (adaptation) while reducing their own climate impact (mitigation) by implementing a “climate-smart” approach that focuses on both resilience and mitigation.⁵ By also

¹ IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland,

² Bulletin of the World Health Organization 2018;96:78-78A. doi: <http://dx.doi.org/10.2471/BLT.17.206474>

³ Climate Change and Health in Small Island Developing States: WHO Special Initiative in collaboration with UNFCCC Secretariat and Fijian Presidency of COP-23 (<http://www.who.int/globalchange/sids-initiative/about/en/>)

⁴ MEE. (2017). State of the Environment 2016, Ministry of Environment and Energy (<http://www.environment.gov.mv/v2/wp-content/files/publications/20170202-pub-soe-2016.pdf>)

⁵ Bouley, Timothy; Roschnik, Sonia; Karliner, Josh; Wilburn, Susan; Slotterback, Scott; Guenther, Robin; Orris, Peter; Kasper, Toby; Platzer, Barbara Louise; Torgeson, Kris. 2017. Climate-smart healthcare: low-carbon and resilience strategies for the health sector (English). Investing in climate change and health series. Washington, D.C. : World Bank Group.

incorporating “green” environmental sustainability elements, such as the ten components of the Global Green and Healthy Hospitals Agenda⁶, Hospitals can be “Green climate-smart health facilities.”

Green, Climate-Smart Health Care

By adopting a green, climate-smart approach to providing health care, health care facilities can adapt to climate change, reduce carbon emissions, air and water pollution, promote sustainable use of resources, manage waste and reduce the use of toxic chemicals.

This report focuses on policy and strategy recommendations in three areas:

1. Implementing the **resilience** components of climate smart healthcare
2. Implementing the **low-carbon** (mitigation) component of climate smart health care
3. Implementing an overarching **green** health care framework that protects local health and the environment.

1. Climate Resilient Health Care Facilities are structurally and functionally able to withstand the impacts of all types of natural hazards and mitigate the impacts of climate change enabling them to operate without interruption to safely shelter patients in place; provide key ambulatory and community health services during and following extreme weather, or other natural disasters.

2. Low-Carbon Health Care Facilities reduce their carbon footprint through energy efficient building design, mechanical and electrical systems, building operations, clean renewable energy generation and implementation of low-carbon procurement, transportation, food, water and waste management activities.

3. Green and Healthy Hospitals protect the lives and health of patients, health workers and their communities by reducing their environmental footprint in each of the Global Green and Healthy Hospitals (GGHH) Agenda⁷ 10 sustainability goal areas:

- Leadership – prioritize environment health
- Chemicals – substitute harmful chemicals with safer alternative
- Waste – reduce, treat and safely dispose of health care waste
- Energy – implement energy efficiency and clean renewable energy generation
- Water – reduce health facility water consumption and supply potable water
- Transportation – improve transportation strategies for patients and staff
- Food – purchase and serve sustainably grown, health food
- Pharmaceuticals – safely manage and dispose of pharmaceuticals
- Buildings – support green and healthy hospital design and construction
- Purchasing – buy safer and more sustainable products, materials and services.

(<http://documents.worldbank.org/curated/en/322251495434571418/Climate-smart-healthcare-low-carbon-and-resilience-strategies-for-the-health-sector>)

⁶ Health Care Without Harm, Josh Karliner, Robin Guenther, Global Green and Healthy Hospitals Agenda, 2011 (<http://www.greenhospitals.net/sustainability-goals/>)

⁷ Health Care Without Harm, Josh Karliner, Robin Guenther, Global Green and Healthy Hospitals Agenda, 2011 (<http://www.greenhospitals.net/sustainability-goals/>)

Maldives Health Facilities Strategy and Policy Recommendations Summary

Like many policy documents in the Maldives, this report identifies key policy recommendations, followed by strategies that facilitate the implementation of the policy. Through implementation of a series of policy objectives and strategies, Maldives health care facilities can become green and climate-smart.

Area 1 - Resilience to the impacts of Climate Change Policy and Strategies

Climate change resilience policies and strategies highlight the need for broad range of solutions that strengthen health care facilities and health care facility operations, as well as the planning and infrastructure that supports them.

As a low-lying island nation, the Maldives is particularly vulnerable to the impacts of climate change, especially sea level rise, increased quantity and intensity of storms and drought⁸.

Planning and assessment policies focus on developing multi-hazard assessments and plans, plans to restore and improve ecosystems, and specific building codes for healthcare facilities. Implementation strategies include conducting multi-hazard assessments on health care buildings and infrastructure, disaster resilience planning, and plans for addressing key health care service delivery needs during and following extreme weather events and other emergency situations.

Building and site policies focus on confirming that health facilities will be able to remain operational during and after storms and floods. Key implementation strategies focus on modifying health care facilities to have the ground floor of the facility and critical equipment, mechanical, plumbing and electrical services above anticipated flood levels; or protecting the facility from flooding by other means.

Major storm events and flooding can disrupt community infrastructure providing electricity and water.

Infrastructure policies focus on confirming that Health facilities have plans for these situations, as well as backup systems, and supplies to provide electricity, water and other essential services. Infrastructure strategies identify that energy efficiency measures and on-site renewable energy generation can supplement or replace diesel generators. On-site rainwater harvesting and safe storage also contribute to resilience if community water is disrupted.

Area 2 - Low-Carbon Health Care Facilities

Health care facilities can reduce their carbon footprint through energy efficient: building design, mechanical and electrical systems, building operations; and clean renewable energy generation.

Low-carbon health care facility policies focus on energy management planning, tracking energy consumption and increasing energy efficiency of buildings, cooling technologies, lighting, equipment and controls.

Energy tracking policies focus on measuring annual energy consumption to track the outcomes of energy conservation and efficiency actions. Key Implementation strategies include measuring and tracking energy use before and after the implementation of conservation and efficiency measures, enabling a health care facility to measure the success of their actions.

Energy efficiency policy focuses on reducing energy demand by increasing energy efficiency of buildings, cooling technologies, lighting, equipment and controls. Key implementation strategies include passive cooling, cooling technologies, lighting, equipment and controls. For example, passive cooling strategies include: shading entrances and windows, light colored roofs, walls with high thermal mass, insulation in walls and roofs and maximizing the

⁸ UNDP (2006) Disaster risk profile of the Maldives, United Nations Development Programme

use of operable windows to enable breezes to provide natural ventilation. Cooling technology strategies such as supplementing natural ventilation with fans, and separating air-conditioning zones with closed doors and windows reduce air conditioning energy consumption. Several older health facilities in the assessments were using this approach and were maximizing the use of daylight and replacing incandescent and fluorescent lighting fixtures with LED bulbs to increase energy efficiency. Solar water heating, also reduces energy consumption and is being used in facilities in the assessments.

Area 3. Green Health Care Facilities Policy and Strategies

Policies and strategies eight through 15 focus on green health care facilities, including:

- Water conservation
- Sustainable Healthcare Waste Management
- Minimize Toxic Chemicals
- Transportation
- Pharmaceuticals
- Procurement
- Leadership

Water policy focuses on reducing drinkable water consumption. Implementation strategies include: using low-flow faucets and toilets, identifying and repairing leaks, reclaiming grey water and reusing it in appropriate situations, such as toilet flushing and site irrigation, along with reducing process water demands, such as switching to digital imaging. Since much of the Maldives uses desalinated water, saving water also saves energy, reduces air pollution and greenhouse gas emissions from fossil fuel powered desalination facilities.

With no infrastructure to support recycling in the Maldives and substantial distance to countries that have recycling infrastructure, **waste policies** focus on reduction of waste, as well as safe waste handling, treatment and disposal. Key strategies focus on staff training on the use of non-incineration treatment technologies for infectious wastes to reduce air pollution and greenhouse gas emissions, as well as composting or biodigesting of organic waste, including paper that cannot be recycled for any reason. By capturing methane from the degradation of biological waste for use as a fuel, the biodigestion strategy also reduces the carbon footprint of waste disposal.

The **chemical policy** focuses on the use of safer chemicals, materials, products and processes throughout health care facilities. Strategies include systematically reducing the use of and risks of exposure to hazardous chemicals by prioritising elimination, followed by substitution with less hazardous chemicals, then engineering and administrative controls to reduce exposure. The facility assessment revealed opportunities to redesign cleaning processes to disinfect only where necessary and avoid the use of toxic chemicals when cleaning floors. Examination of medical device disinfection, laboratory reagents, and integrated pest management, underpinned by green procurement strategies will yield other opportunities for chemicals avoidance.

The **transportation policy** focuses on minimizing climate impacts and air pollution. Key strategies focus on replacing the use of fossil fuel powered vehicles. With the small size of most islands, often patients and staff can walk or bicycle to health care facilities or take public ferries to travel between islands.

Selecting and prescribing pharmaceuticals with least environmental and public health impact is the key focus of the **pharmaceuticals policy**. Strategies include: encouraging physicians to prescribe medications proven to have lesser environmental impact, selecting anaesthetic drugs (gases) which have the least global warming potential and encouraging physicians to prescribe medications proven to have lesser environmental impacts.

The **procurement policy** focuses on developing national and institutional sustainable procurement plans. Key strategies include: implementing the green procurement policies that were envisaged in the Maldives national Healthcare Waste Management Policy and prioritizing products and services which are necessary and which minimize negative environmental impacts, conserve energy and natural resources, are safe for employees, communities, and consumers and are economically sound.

The **leadership policies** focus on providing information on climate change resilience, climate change mitigation and environmental sustainability to hospital and health center staff and communities, increasing climate change policy coordination between government agencies and mobilizing health facility staff and the community to implement green climate-smart initiatives. Key Implementation strategies include forming health facility green teams to focus on these issues, Educating staff and the community to support green climate-smart policies and engaging staff, key stakeholders and the community to advocate for environmental health policies.

Health care facilities can influence the health of their communities by demonstrating and promoting climate change mitigation and resilience, and environmental sustainability by demonstrating leadership and support for green and healthy hospitals. By forming hospital green teams, as were seen in some hospitals involved in the facility assessments, educating the community and supporting green climate-smart policies, health care facilities can influence the climate change mitigation and resilience, the sustainability of their communities. The rich engagement and participation in the stakeholder engagement workshop and the Maldives Health Ministry becoming the first national health ministry to join the Global Green and Health Hospitals network indicates that substantial leadership on these issues is taking place within the health sector and throughout the community.

Overview | Climate Change and Climate-Smart Health Care

Climate change impacts health around the world today and into the future. The Intergovernmental Panel on Climate Change (IPCC) identifies numerous climate change health risks associated with increased frequency and severity of extreme weather events like drought, flood and storms, heat stress and increasing vector-borne diseases⁹. As the World Health Organization (WHO) summarized: “Climate change is much more than an environmental issue. It poses a serious threat to our health and survival. It impacts all of us, no matter where we live. The health of humanity is directly related to the health of our environment. We depend on our environment for everything we are and everything we have – the air we breathe, the food we eat and the water we drink.”¹⁰ The Maldives in its unique context is increasingly faced with new challenges such as the growing menace of noncommunicable diseases and vulnerability to climate change, among others.¹¹

Being a low-lying island nation, the Maldives is particularly vulnerable to flooding and rising sea levels driven by climate change. Even a one-meter rise in sea-level could threaten the habitability of most of the country’s islands.¹² In addition, increasing extreme weather coupled with sea level rise can generate storm surges with flooding that could quickly overwhelm island infrastructure and significantly impact health care service delivery in emergencies.

As first responders, health systems are particularly vulnerable to the impacts of climate change, as they protect the health of their communities during and after these natural disasters. As major consumers of energy, water and products; hospitals and health centers also contribute to climate change as well. Hospitals and health systems can both build resilience (adaptation) while reducing their own climate impact (mitigation) through a “climate-smart” approach. Improving the resilience of health care facilities enables them to continue to provide essential health services during floods and increased storms and droughts brought on by climate change. Health facilities can also play a significant role in reducing pollution, promoting sustainable use of resources, managing waste and reducing the use of toxic chemicals. By adopting a green, climate-smart approach to providing health care, the health sector can build resilience, mitigate its own climate impacts and provide a model for improving community health and wellbeing.

Building on the Global Green and Healthy Hospitals (GGHH) Agenda, the WHO model for climate resilient health systems and other climate-smart health care programs; Health Care Without Harm is assisting WHO and the Maldives Health Protection Agency to develop the Maldives Green, Climate-Smart Hospital Policy and Strategy.

⁹ IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland

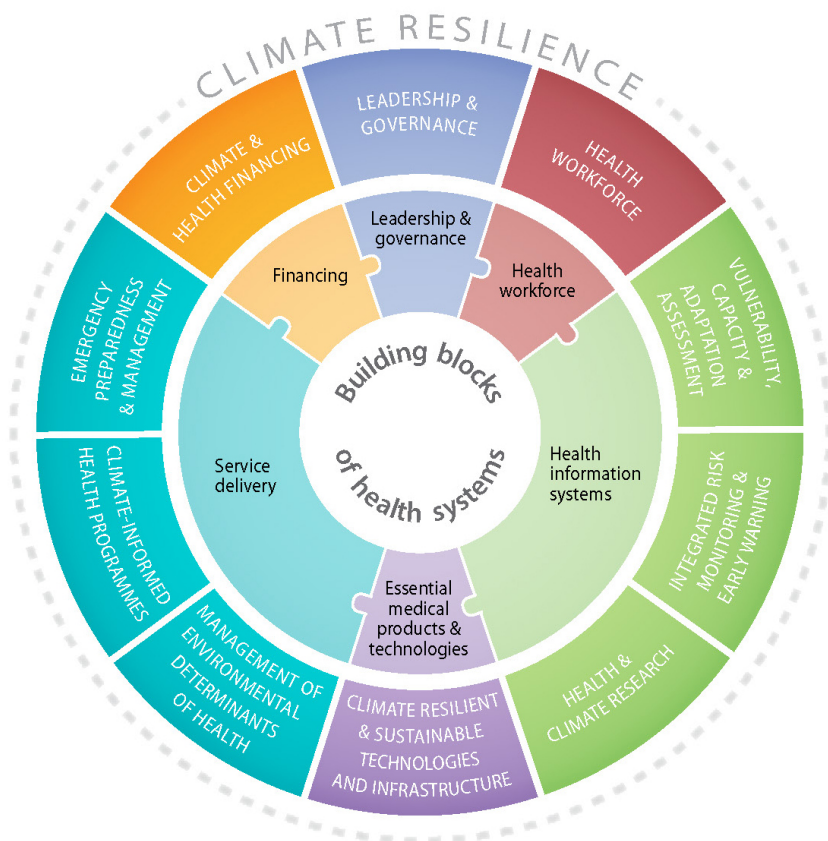
¹⁰ Bulletin of the World Health Organization 2018;96:78-78A. doi: <http://dx.doi.org/10.2471/BLT.17.206474>

¹¹ Maldives-WHO Country Cooperation Strategy 2018-2022, ISBN 3 670 9022 92 978, Forward, Dr. Arvind Mathur, WHO Representative to the Republic of Maldives

¹² MEE. (2017). State of the Environment 2016, Ministry of Environment and Energy (<http://www.environment.gov.mv/v2/wp-content/files/publications/20170202-pub-soe-2016.pdf>)

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As illustrated in the diagram below, WHO identifies ten components for building climate resilience in health systems. Starting from health sector building blocks, the operational framework elaborates on 10 components that together provide a comprehensive approach to integrating climate resilience into existing health systems.



Starting from health sector building blocks, the WHO operational framework elaborates on 10 components that together provide a comprehensive approach to integrating climate resilience into existing health systems.

Source: World Health Organization (WHO) Operational framework for building climate resilient health systems¹³

¹³ WHO, 2015, Operational framework for building climate resilient health systems, Geneva: World Health Organization. (<http://www.who.int/globalchange/publications/building-climate-resilient-health-systems/en/>)

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The Global Green and Health Hospitals (GGHH) Agenda framework consists of 10 interconnected goals to enable health facilities to achieve greater sustainability and contribute to improved public health.

The 10 Global Green and Healthy Hospitals Goal Areas¹⁴



Leadership

Prioritize environmental health



Transportation

Improve transportation strategies for patients and staff



Chemicals

Substitute harmful chemicals with safer alternatives



Food

Purchase and serve sustainably grown, healthy food



Waste

Reduce, treat and safely dispose of healthcare waste



Pharmaceuticals

Safely manage and dispose of pharmaceuticals



Energy

Implement energy efficiency and clean, renewable energy generation



Buildings

Support green and healthy hospital design and construction



Water

Reduce hospital water consumption and supply potable water



Purchasing

Buy safer and more sustainable products and materials

The 10 Global Green and Healthy Hospitals goal areas provide a comprehensive environmental framework for health care environmental sustainability.

Source: Global Green and Healthy Hospitals Agenda, A Comprehensive Environmental Health Agenda for Hospitals and Health Systems Around the World¹⁵

¹⁴ Health Care Without Harm, Josh Karliner, Robin Guenther, Global Green and Healthy Hospitals Agenda, 2011 (<http://www.greenhospitals.net/sustainability-goals/>)

¹⁵ Health Care Without Harm, Josh Karliner, Robin Guenther, Global Green and Healthy Hospitals Agenda, 2011 (<http://www.greenhospitals.net/sustainability-goals/>)

Green Climate-Smart Health Care Policy Framework

A green climate-smart health care policy framework focuses on both environmental sustainability (green) and low-carbon, climate change resilient (climate-smart) health care. It provides a set of activities and interventions to achieve natural disaster resilience, climate change adaptation, carbon footprint reduction and improved environmental sustainability. Specific policies and strategies to implement this framework are identified in Green, Climate-Smart Low-Carbon and Resilient Health Care Facilities Policies and Strategies Section 2.

A green, climate-smart low-carbon, resilient health care framework is a comprehensive approach to health systems infrastructure and operational management through disaster risk reduction and preparedness whether due to climate instability or other natural or human-caused events. It includes the following components:

Resilient Health Care Facilities are structurally and functionally able to withstand the impacts of all types of natural hazards and mitigate the impacts of climate change. Hospitals must be able to operate without interruption to safely shelter patients in place; provide key ambulatory and community health services and must be able to quickly recover and reopen following extreme weather, or other natural disasters. The Maldives Health Master Plan encourages the development of resilient health care facilities in Strategic Focus Area 3.6, Establish capacity for health and medical response in national disasters and emergencies.¹⁶

Low-Carbon Health Care Facilities reduce their carbon footprint through energy efficient: building design, mechanical and electrical systems, building operations and clean renewable energy generation. They also implement policies and procedures to reduce the carbon footprint of their procurement, transportation, food, water and waste management activities.

There is a strong connection between resilience to climate change and mitigation of Health Care's contribution to carbon emissions. As UNDP summarizes: "Adaptation to climate change remains the key priority for small island developing states (SIDS). At the same time, activities which reduce fossil fuel dependency and increase electricity services are vital for SIDS to meet their sustainable development objectives, especially on energy security."¹⁷

Green Health Care Facilities protect the lives and health of patients, health workers and their communities by reducing their environmental footprint in each of the Global Green and Health Hospitals (GGHH) 10 sustainability goal areas:

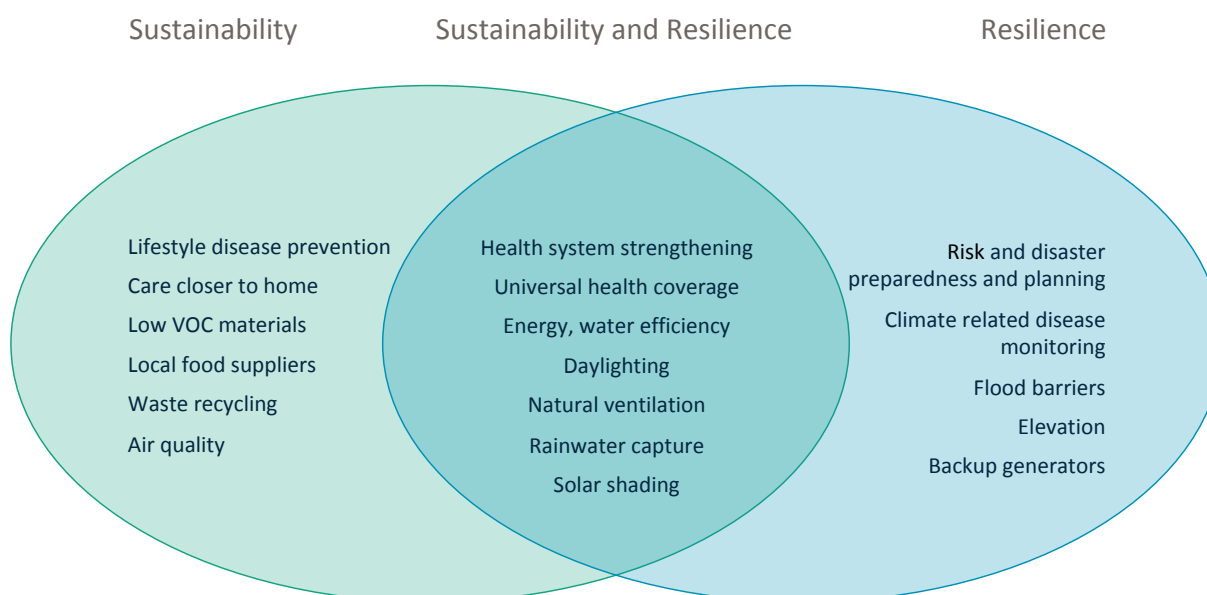
- Leadership – prioritize environment health
- Chemicals – substitute harmful chemicals with safer alternative
- Waste – reduce, treat and safely dispose of health care waste
- Energy – implement energy efficiency and clean renewable energy generation
- Water – reduce health facility water consumption and supply potable water
- Transportation – improve transportation strategies for patients and staff
- Food – purchase and serve sustainably grown, health food
- Pharmaceuticals – safely manage and dispose of pharmaceuticals
- Buildings – support green and healthy hospital design and construction
- Purchasing – buy safer and more sustainable products, materials and services

¹⁶ Health Master Plan 2016-2025, Ministry of Health, Republic of Maldives, ISBN: 978-99915-66-50-4, p40

¹⁷ UNDP Responding to Climate Change in Small Island Developing States, UNDP, 2010 by: United Nations Development Programme (UNDP) (<https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=960&menu=1515>)

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As illustrated in the diagram below, hospitals and health centers are finding that many environmental sustainability actions and climate change mitigation measures overlap with climate change adaptation and resilience actions, resulting in green, climate-smart low-carbon resilient health care.



There is an overlap with environmental sustainability actions and climate change mitigation and resilience measures, resulting in green, climate-smart low-carbon resilient health care.

Source: World Bank Climate-Smart Healthcare, Low-Carbon and Resilience Strategies for the Health Sector¹⁸

Sustainable Healthcare Facilities

As it delivers on its mission to prevent and cure disease, the healthcare sector often inadvertently adds to the problem. High energy and water consumption, the use of hazardous chemicals, generation of infectious waste, and procurement of complex pharmaceuticals contribute to the large environmental footprint of the health sector, and reflect a modern society whose patterns of production and consumption mean that globally, almost a quarter of deaths can be attributed to environmental factors¹⁹.

However, the health sector, in the Maldives and elsewhere is increasingly recognising these problems and acting to counter them. Through implementing sustainable operations, investing in healthier food and transport systems, and buying green; the medical sector can promote environmental health. Representing approximately 10% of the global economy, changes promoted by healthcare can be mainstreamed and leverage wider change to meet the

¹⁸ Bouley, Timothy; Roschnik, Sonia; Karliner, Josh; Wilburn, Susan; Slotterback, Scott; Guenther, Robin; Orris, Peter; Kasper, Toby; Platzer, Barbara Louise; Torgeson, Kris. 2017. Climate-smart healthcare: low-carbon and resilience strategies for the health sector (English). Investing in climate change and health series. Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/322251495434571418/Climate-smart-healthcare-low-carbon-and-resilience-strategies-for-the-health-sector>

¹⁹ WHO (2016) Preventing disease through healthy environments. A global assessment of the burden of disease from environmental risks. Publ: World Health Organization, Geneva, 176pp. http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf?ua=1

Sustainable Development Goals²⁰, the global call to action to change to protect the planet and create a just and equal society.



The seventeen Sustainable Development Goals²¹

In addition to the goals of protecting the climate (Goal 13) and producing affordable and clean energy (Goal 7), healthcare sustainability programs can help generate good health and wellbeing (Goal 3) by reducing environmental pollution and sources of infection that contribute to disease that harms and kills millions of people annually; deliver clean water and sanitation to patients and staff (Goal 6); and leverage responsible consumption and production (Goal 12) through greening purchasing.

The aim of this policy and strategy document is to provide a range of sustainability strategies and actions that will aid the health sector of the Maldives to minimize its contribution to societal impact on the planet, and foster community environmental health, resulting in a green economy and a thriving environment.

Among the ten GGHH goals, difficulties with disposing waste was most frequently identified as a pressing problem by healthcare practitioners during site visits. Reducing waste, segregating, disabling sharps, implementing safe and low carbon infectious waste treatment technologies rather than combustion should be a high priority for sustainability objectives.

Adoption of best available technologies for thermometers, blood pressure meters, treating dental caries, and medical imaging have eliminated significant toxic waste streams, including mercury and silver. Similar approaches²² need to be applied to reprocessing medical devices such as surgical instruments and endoscopes with the aim of avoiding non-essential use of disposable instruments and the consumption of the carcinogen ethylene oxide, irritant glutaraldehyde and other toxic disinfectants.

²⁰UNEP Sustainable Development Goals: <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

²¹ UNEP Sustainable Development Goals: <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

²² WHO and PAHO (2016) Decontamination and Reprocessing of Medical Devices for Health-care Facilities. Publ: World Health Organisation and Pan American Health Organization, 120pp., <http://apps.who.int/iris/bitstream/10665/250232/1/9789241549851-eng.pdf>

Best environmental practices such as integrated pest management and revision of cleaning practices in line with latest guidelines²³ will also serve to avoid the purchase and use of unnecessary toxic chemicals.

There is currently no suitable disposal for hazardous chemical wastes, and as a result, they are either disposed of via the drainage system, or the municipal waste system. Both methodologies will directly or indirectly contaminate the environment with potential health and ecosystem impacts. Modern non-incineration technologies, such as alkaline hydrolysis or ozone treatment need to be instituted at the national level to treat chemical wastes that cannot be avoided.

The need to obtain the best and most environmentally favorable products and services should be brought together in a national green procurement policy, in line with international efforts to save lives sustainably²⁴.

Health care can also protect public health by fostering more sustainable transportation systems. Efficient/low emission vehicles and boats should be purchased for patient and staff transportation and staff should be encouraged to work or cycle to work, to reduce fossil fuel use, reduce air pollution, and to increase health-promoting exercise.

Climate Change Vulnerabilities

The Lancet Commission characterized climate change as both the “biggest global health threat” and “the greatest global health opportunity” of the 21st century.²⁵ Climate change is already damaging human health and will have a greater impact in the future, disproportionately impacting vulnerable populations. Health care is at the frontline of climate change, bearing the costs of increased diseases and vulnerability to frequent extreme weather events.

As a low lying island nation, the Maldives are particularly vulnerable sea level rise caused by climate change and the increases in the frequency and intensity of storms. The gaps in preparedness to manage the health risks of climate change will need to be addressed incorporating the contextual social vulnerabilities of the respective communities²⁶. Healthcare facilities are critical infrastructure, with far-reaching consequences for public health should they be impacted.

Hospitals and health centers are vulnerable to risk of inundation and flooding because they are frequently located near the coast on low lying land. Flooding from sea level rise, tsunamis and cyclones generate multiple vulnerabilities for health care facilities that can be characterized as:

- Facility Structural Vulnerabilities
- Facility Non-Structural Vulnerabilities
- Infrastructure Vulnerabilities, such as damage to energy and clean water supplies
- Organizational Vulnerabilities.

Vulnerabilities of the Maldives healthcare system, including site assessments of facilities representing the different levels of service provision, are presented in the Hospital Vulnerability Analysis and Report.

²³ WHO (2016) Clean Care is Safe Care. Publ: World Health Organization, Geneva, 90pp. plus appendices. <http://www.who.int/gpsc/ipc-components-guidelines/en/>

²⁴ United Nations Informal Interagency Task Team on Sustainable Procurement in the Health Sector (SPHS) : <https://savinglivesustainably.org/>

²⁵ Watts, NaAdger, WN, Agnolucci, P. et al.
Health and climate change: policy responses to protect public health.
Lancet. 2015; (published online June 23.) (published online June 23.)
[http://dx.doi.org/10.1016/S0140-6736\(15\)60854-62](http://dx.doi.org/10.1016/S0140-6736(15)60854-62)

²⁶ Sen Banalata, Dhimal Meghnath, Latheef Aishath Thimna, Ghosh Upasona. Climate change: health effects and response in South Asia BMJ 2017; 359 :j5117

Green, Climate-Smart Low-Carbon and Resilient Health Care Facilities Policies and Strategies

Policy Vision

As a low-lying island nation, the Maldives is particularly vulnerable to the impacts of climate change, especially sea level rise, increased quantity and intensity of storms and drought. These climate change influenced natural disasters stress health facilities' abilities to protect and serve their communities. Modifying health facilities in the Maldives to become Green, Climate-Smart Low-Carbon and Resilient will reduce their contribution to climate change and adapt them to be more resilient to the impacts of climate change.

Policy Goal

Through implementation of a series of policy objectives and strategies, the Maldives health care facilities will become green, climate-smart, low-carbon and resilient.

POLICY OBJECTIVE 1 - CLIMATE CHANGE RESILIENCE ASSESSMENT AND PLANNING

- Develop multi-hazard assessments and plans to enable health facilities to remain operational during and after natural disasters to protect the health of their communities.
- Develop plans to restore and improve ecosystems to reduce the impacts of natural disasters
- Develop specific building codes for healthcare facilities

Strategies - Climate Change Resilience - Assessment and Planning

- Conduct Multi-Hazard Assessment Reports on health care buildings and infrastructure vulnerabilities, including healthcare waste management systems, to extreme weather events and ways of addressing them.
- Conduct community disaster resilience planning.
- Develop plans for addressing key health care service delivery needs during and following extreme events: floods, heat waves, hurricanes, droughts, etc.
- Engage with the local government to support the restoration, protection and sustainable management of ecosystems services that protect communities from the impacts of climate change. (Ecosystems services typically include: forests, coastal zones, wetlands, water resources, fisheries, etc.)
- Engage in long term activities that restore and improve functioning ecosystem services in order to foster more resilient communities

POLICY OBJECTIVE 2 - HEALTH CARE FACILITY SITE AND BUILDINGS CLIMATE CHANGE VULNERABILITY RESILIENCE

- Make modifications to the areas around health care facilities to enable health facilities to remain operational during and after natural disasters to protect the health of their communities.
- Confirm that the structure and non-structural components of health care facilities will enable health facilities to remain operational during and after natural disasters to protect the health of their communities.

Strategies - Health Care Facility Site Climate Change Vulnerability Resilience

- Build flood barriers to protect the entire community and expand drainage systems to accommodate anticipated flood conditions.
- Safely collect and store rainwater at the health care facility site.
- If the facility ground floor cannot be raised above predicted flood levels, build flood barriers surrounding the health care facility if ground hydrology is capable of excluding water intrusion from surrounding areas or on-site pumping can expel flood water.
- Evaluate site drainage capacity and soil stability to verify that foundations won't be undermined during flooding or high rainfall.

Strategies - Facility Structural Climate Change Vulnerability Resilience

- Confirm that the facility was designed to withstand the wind loads associated with the predicted storms rather than simply meeting the building code requirements.
- Fortify facility structure, as needed, and site drainage capacity to be able to withstand predicted storm conditions.

Strategies - Facility Non-Structural Climate Change Vulnerability Resilience

- Build or modify health care facilities so the ground floor is above anticipated flood levels
- Build or modify health care facilities so essential services/equipment are above anticipated flood levels
- Increase energy and water efficiency and renewable energy generation at the health facility to reduce the emergency systems demands.
- Locate (or relocate if needed) essential facility services and equipment above projected flood levels, so they can remain operational during and after major storm or flooding events. Essential facility services and equipment include, but are not limited to, water pumps, electrical equipment (and emergency power generators) connections and controls, waste storage and treatment facilities, telecommunications and internet equipment.
- In facilities with rooftop ventilation equipment, confirm that equipment and ductwork attachments to the building are strong enough to withstand the wind loads from predicted storm conditions, and are protected from damage from airborne debris.

POLICY OBJECTIVE 3 - INFRASTRUCTURE CLIMATE CHANGE VULNERABILITY RESILIENCE

- Confirm health facilities have infrastructure backup plans and systems to enable them to remain operational during and after natural disasters, to protect the health of their communities.

Strategies - Infrastructure Climate Change Vulnerability Resilience

- Ensure that critical services, such as electrical power and fresh water supply, healthcare waste management, sewerage disposal, electrical power, etc. can remain operational during and after a natural disaster, by strengthening island-wide systems and/or providing on-site backup systems at health care facilities
- Ensure that critical services such as healthcare waste management and sewage disposal can remain operational during and after a natural disaster, by strengthening island-wide systems or providing back-up systems at healthcare facilities

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- Evaluate the capability of community infrastructure to be able to withstand projected storms and flooding and the time period that emergency backup systems will need to be used when the community infrastructure is disrupted.
- Evaluate the impact storms and flooding will have on roads, ferries and other transportation systems needed by staff to get to work, and transport patients to higher acuity health care facilities.
- Provide on-site renewable energy generation or backup electricity generation that can power the facility's emergency power needs.
- Collect and maintain safe, clean emergency water supplies, such as rain water harvesting.
- Confirm that facility has onsite sewage disposal or back-up storage system for the projected period of infrastructure disruption.

POLICY OBJECTIVE 4 - ORGANIZATIONAL CLIMATE CHANGE VULNERABILITY RESILIENCE

- Confirm health facilities have organizational plans and systems to enable them to remain operational during and after natural disasters, to protect the health of their communities.

Strategies - Organizational Climate Change Vulnerability Resilience

- Develop facility disaster mitigation or emergency operation plans that address flooding and severe storm impacts anticipated from climate change.
- Provide training to staff on emergency preparedness with desk-top and on-site skills based training for disaster response.
- Identify emergency supplies, food and water that will be needed by staff for the duration of projected emergencies. Also, provide space for storage of emergency supplies that will be accessible during floods, storms and other emergencies.

POLICY OBJECTIVE 5 - PROMOTE ENERGY CONSERVATION AND EFFICIENCY

- Develop an energy management plan to engage and educate staff on ways to conserve energy.
- Reduce energy demand by increasing energy efficiency of buildings, cooling technologies, lighting, equipment and controls.

Strategies:

Tracking Energy Conservation and Efficiency Progress

- Measure annual energy consumption baseline and annual energy consumption at each health facility, over time to monitor and track the outcomes of energy conservation and efficiency actions. Track energy consumption, as well as conservation and efficiency progress using an energy tracking system, using an online database, such as the Global Green and Health Hospitals (GGHH) [Hippocrates Data Center](#).

Cooling technologies - Passive cooling opportunities

- Maximize passive cooling opportunities that reduce, reflect, or delay heat gain and support natural ventilation.

(See Appendix A - Activities for implementation activities related to this policy)

Cooling technologies - Cooling Equipment

- Maximize spaces with natural ventilation or fans to minimize air-conditioning
- Use high efficiency air-conditioners and monitor cooling settings to maintain the minimum comfortable cooling setting
- Separate air-conditioning zones with closed doors and windows to minimize air conditioning load

(See Appendix A - Activities for implementation activities related to this policy)

Lighting

- Maximize the use of daylight and provide convenient lighting switches so electrical lighting can be switched off when it is not needed
- Train staff on procedures that maximize use of daylight and minimize use of electrical lighting when adequate daylight is available
- Replace incandescent and fluorescent lighting fixtures with Light Emitting Diode (LED) lighting, to reduce energy consumption, maintenance time and costs and eliminate mercury containing fluorescent light bulbs
- Establish procedures for turning off lights at night, and when spaces are not being inhabited.

Elevators

- Provide convenient access to stairs to encourage their use and reduce elevator usage

Water heating

- Replace or supplement electric water heating with solar water heaters
- Use cold water for laundry equipment, if possible.

Equipment

- Purchase medical equipment that have low-energy settings, such as standby or sleep mode and train staff on how and when to use these features

POLICY OBJECTIVE 6 - WATER DEMAND REDUCTION AND WATER CONSERVATION

- Reduce drinkable water consumption in health care facilities by reducing water usage and substituting drinkable water with alternatives, when a lower quality of the water is appropriate.

Water Conservation Strategies:

- Develop a water management plan to engage and educate staff on ways to conserve water
- Conduct regularly scheduled leak inspections of all accessible fixtures and water consuming equipment
- Reduce water consumption by using low-flow faucets and toilets
- Plant drought tolerant trees and landscaping and local species to minimize the need for landscape irrigation
- Capture and store rainwater for regular and emergency use

(See Appendix A - Activities, for implementation activities related to this policy)

Note: water conservation saves energy by reducing the need for energy intensive desalinated water

POLICY OBJECTIVE 7 - SUSTAINABLE HEALTHCARE WASTE MANAGEMENT

- Minimise waste volumes and toxicity; handle, treat and dispose of safely and sustainably

Waste Minimization Strategies

- Implement green procurement policies envisaged in the National Healthcare Waste Management policy;²⁷ prioritize avoidance of products which generate excessive or toxic waste in procurement strategies.
- Phase out use of single use plastics in non-clinical areas and minimize in clinical practice.²⁸
- Develop policies and systems for safe processing and reuse of medical systems to reduce dependence on disposable products.

Waste Management Strategies

- Implement non-incineration waste management policy, in line with the Stockholm Convention on Persistent Organic Pollutants, the Basel Convention on Transboundary Movement of Hazardous Waste, and include guidance on safe disposal of chemical and pharmaceutical waste.
- Ensure full implementation of the 2016-2021 National Healthcare Waste Management Strategic Plan.²⁹
- Make waste management a priority for infection control and WASH (water/sanitation/hygiene) teams and designate senior staff to be responsible for implementation of waste management strategies.
- Incorporate specifications for waste storage/treatment spaces at least meeting those recommended by WHO³⁰ in the relevant building codes.
- Promote installation of recycling infrastructure at national level.

(See Appendix A - Activities, for implementation activities related to this policy)

POLICY OBJECTIVE 8 - MINIMIZE TOXIC CHEMICALS

- Use safer chemicals, materials, products and processes throughout health care facilities.

Safer Chemical Strategies:

- Systematically reduce use of and risks of exposure to hazardous chemicals according to the Hierarchy of Controls, prioritising elimination, followed by substitution with less hazardous chemicals, then engineering and administrative controls to reduce exposure. Where the risk of exposure remains, ensure suitable personal protective equipment (PPE) is provided and used.³¹
- Clean in line with latest guidelines to reduce unnecessary disinfectant use.³²
- Sign ratify and implement the Minamata Convention on Mercury (<http://www.mercuryconvention.org/>).

²⁷ [http://www.health.gov.mv/Uploads/Downloads//Informations/Informations\(68\).pdf](http://www.health.gov.mv/Uploads/Downloads//Informations/Informations(68).pdf)

²⁸ HCWH Asia 2018 Plastics in healthcare: Health professionals as advocates to reduce plastic pollution technical report, 37pp, <http://bit.ly/DownloadPlasticsReport>

²⁹ [http://www.health.gov.mv/Uploads/Downloads//Informations/Informations\(49\).pdf](http://www.health.gov.mv/Uploads/Downloads//Informations/Informations(49).pdf)

³⁰ WHO (2014) Safe management of wastes from health-care activities, second edition. Publ: World Health Organization, Geneva, 329pp., http://apps.who.int/iris/bitstream/10665/85349/1/9789241548564_eng.pdf

³¹ <https://www.cdc.gov/niosh/topics/hierarchy/default.html>

³² WHO (2016) Clean Care is Safe Care. Publ: World Health Organization, Geneva, 90pp. plus appendices. <http://www.who.int/gpsc/ipc-components-guidelines/en/>

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- Substitute high level sterilants ethylene oxide and glutaraldehyde with less toxic alternatives, replacing entirely with steam/heat disinfection wherever possible.³³
- Eliminate or substitute plastic products using PVC, diethylhexyl phthalate (DEHP) or bisphenol A (BPA).³⁴

(See Appendix A - Activities, for implementation activities related to this policy)

POLICY OBJECTIVE 9 - TRANSPORTATION

- Implement transportation strategies that minimize climate impacts and air pollution.

Transportation Strategies:

- Locate health care facilities where they can be accessed by staff and patients on foot, or near public transportation hubs, such as ferry docks.
- Encourage staff and patients to walk or use bicycles.
- Support and endorse initiatives such as Bike Maldives (<https://www.facebook.com/BikeMaldives/>).
- Select energy efficient/low energy vehicles for ambulances.

POLICY OBJECTIVE 10 - PHARMACEUTICALS

- Select and prescribe pharmaceuticals with least environmental and public health impact

Pharmaceuticals strategies

- Enforce National Action Plan for containment of antimicrobial resistance;³⁵ ensure continued alignment with WHO Global Action plan on antimicrobial resistance.
- Encourage physicians to prescribe medications proven to have lesser environmental impact (Stockholm County Council (SCC) Wise list³⁶).
- Reduce waste: purchase appropriate pack size; prescribe oral rather than injected medications wherever possible and dispense earliest expiry date first and implement FIFO (First in/first out).
- Select anaesthetic drugs (gases) which have the least global warming potential.
- Return unused/expired pharmaceuticals to supplier/manufacturer for disposal.

POLICY OBJECTIVE 11 - PROCUREMENT

- Develop national and institutional sustainable procurement plans in line with UN Environment Sustainable Public Procurement³⁷ and the UN informal Interagency Task Team on Sustainable Procurement in the Health Sector.³⁸

³³ WHO and PAHO (2016) Decontamination and Reprocessing of Medical Devices for Health-care Facilities. Publ: World Health Organisation and Pan American Health Organization, 120pp., <http://apps.who.int/iris/bitstream/10665/250232/1/9789241549851-eng.pdf>

³⁴ HCWH Asia 2018 Plastics in healthcare: Health professionals as advocates to reduce plastic pollution technical report, 37pp, <http://bit.ly/DownloadPlasticsReport>

³⁵ National Action Plan on Containment of Antimicrobial Resistance 2017-2022 http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=228020

³⁶ <http://www.janusinfo.se/In-English/The-Wise-List-2015-in-English/>

³⁷ UN Environment Sustainable Public Procurement <http://www.unenvironment.org/explore-topics/resource-efficiency/what-we-do/capacity-building-spp-developing-countries>

³⁸ UN informal Interagency Task Team on Sustainable Procurement in the Health Sector <http://savinglivesustainably.org/>

Procurement strategies

- Implement green procurement policies envisaged in the national Healthcare Waste Management policy.³⁹
- Prioritize products and services which are necessary and which minimize negative environmental impacts, conserve energy and natural resources, are safe for employees, communities, and consumers and are economically sound.
- Select pharmaceuticals with least environmental impact (Stockholm County Council (SCC) Wise list).
- Procure waste disposal equipment that meets Stockholm Convention guidelines.
- Avoid products which generate excessive or toxic waste, including single use products.
- End the importation of mercury containing medical devices and phase out importation of other mercury containing products such as batteries and fluorescent light fittings.

POLICY OBJECTIVE 12 - LEADERSHIP

- Implement green teams at health facilities.
- Establish and implement agreements between WHO, the Ministry of Health and other government departments, on their roles with respect to health protection from climate risks.⁴⁰

Leadership Strategies

- Demonstrate leadership by mobilizing health facility staff and the community to implement green climate-smart initiatives.
- Provide Information on climate resilience options, their benefits, costs and efficiency, to the health care system and the community.⁴¹
- Form green teams at your facility to guide and implement green climate-smart initiatives.
- Foster research on environmental health to identify the links between green climate-smart initiatives and health outcomes.
- Join and actively participate in national and international networks of hospitals and health centers, such as the [Global Green and Healthy Hospitals](#) network.

(See Appendix A - Activities, for implementation activities related to this policy).

³⁹ Maldives National Healthcare Waste Management Policy
[http://www.health.gov.mv/Uploads/Downloads//Informations/Informations\(68\).pdf](http://www.health.gov.mv/Uploads/Downloads//Informations/Informations(68).pdf)

⁴⁰ WHO, Strengthening Health Resilience to Climate Change Technical Briefing for the World Health Organization Conference on Health and Climate, by Nick Watts, Diarmid Campbell-Lendrum, Marina Maiero, Lucia Fernandez Montoya and Kelly Lao http://www.who.int/phe/climate/conference_briefing_1_healthresilience_27aug.pdf

⁴¹ WHO, Strengthening Health Resilience to Climate Change Technical Briefing for the World Health Organization Conference on Health and Climate, by Nick Watts, Diarmid Campbell-Lendrum, Marina Maiero, Lucia Fernandez Montoya and Kelly Lao http://www.who.int/phe/climate/conference_briefing_1_healthresilience_27aug.pdf

Appendix A | Policy Implementation Activities

POLICY OBJECTIVE 5 - PROMOTE ENERGY CONSERVATION AND EFFICIENCY

Cooling technologies - Passive cooling opportunities strategy activities:

- Shade entrances and windows that are exposed to direct sunlight.
- Use light colored, highly reflective roofing and insulate roof and attic areas.
- Reduce or delay solar heat radiating into the building, through thermal mass of walls and insulation in exterior walls.
- Reduce solar heat radiating into the building by using thermally insulated windows.
- Maximize use of breezes to provide natural ventilation and remove heat from the building.
- Use operable windows in areas that can be naturally ventilated.
- Separate air-conditioned spaces from naturally ventilated areas with walls and doors so the conditioned spaces are better able to maintain a stable temperature (using less cooling).
- Zone interior spaces that can be naturally ventilated separately from air-conditioned spaces.
- Plant trees and other vegetation to shade the building and reduce heat island effect.
- Maintain insect control, so naturally ventilated, and water storage areas do not harbor mosquitos and other insects.

Cooling technologies - Cooling equipment strategy activities:

- Use well insulated refrigeration equipment that uses HFC free refrigerants with low global warming potential (GWP).
- Locate refrigeration equipment so waste heat can be exhausted to the exterior of the building.
- Clean and replace filters and implement routine maintenance cycles to optimize the performance of air-conditioning equipment.
- Conduct regular energy audits and use the results to inform awareness programs.
- Conduct occupant education and awareness programs to engage staff train them on how to use air-conditioning and other equipment at optimal temperature and fan settings.

POLICY OBJECTIVE 6 - WATER DEMAND REDUCTION AND WATER CONSERVATION

Water conservation strategy activities:

- Develop procedures for rainwater capture to ensure the water collected is clean, stays clean and does not provide a breeding area for mosquitoes.
- Reclaim grey water (water from sinks) to use for irrigation or flushing toilets.
- Reuse reject water from reverse osmosis (RO) units in dialysis centres for non--critical purposes eg irrigation or toilet flushing.
- Use digital imaging, rather than film imaging (x-rays) to reduce process water needs.
- When possible maximize loads for laundry equipment, to optimize water use for cleaning.

POLICY OBJECTIVE 7 - SUSTAINABLE HEALTHCARE WASTE MANAGEMENT

Waste Management Activities

- Create, implement and regularly revise facility waste management strategies.
- Employ non-incineration treatment technologies for infectious wastes to reduce air pollution and carbon dioxide emissions.
- Ensure microbiological laboratories have dedicated waste treatment autoclaves.
- Regularly train/retrain all staff in safe healthcare waste management.
- Immunize all healthcare waste management workers against at least hepatitis A and B, polio and tetanus prior to the first exposure to waste handling.
- Provide healthcare waste management workers with personal protective equipment and ensure it is used.
- Require waste management contractors who handle healthcare waste to provide the same level of training and protection as healthcare facility staff.
- Avoid PVC and BPA where possible without compromising medical performance.
- Employ safety syringes and needle/hub cutters to make prevent needle stick injuries during the waste disposal chain.
- Segregate waste at source and maintain segregation through storage, transport and treatment.
- Recycle materials wherever possible; if necessary, create small-scale recycling industries within the country.
- End disposal of chemical and pharmaceutical wastes down the drain.
- Implement modern non-incineration technologies, such as neutralisation, alkaline hydrolysis or ozone treatment for chemical wastes.
- Compost or biodigest organic wastes and use methane as a renewable fuel, to reduce climate impacts from methane emissions.
- Enforce best practices in monitoring of healthcare waste management, including regular testing of waste treatment technologies and publication of data.
- Adequately fund waste management.

POLICY OBJECTIVE 8 - MINIMIZE TOXIC CHEMICALS

Safer Chemical Activities

- Reduce pesticide use through Integrated Pest Management (IPM) measures, including best practices in preventing environments suitable for pests and vectors. Remove pools of water where vectors can breed and employ bed nets in naturally ventilated wards.
- Substitute medical devices made from PVC and polycarbonate to reduce patient exposure to the PVC additive DEHP and polycarbonate monomer BPA.
- End disposal of chemical and pharmaceutical wastes down the drain.
- Implement modern non-incineration technologies, such as neutralisation, alkaline hydrolysis or ozone treatment for chemical wastes.

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- Substitute carcinogen ethylene oxide, irritant glutaraldehyde and other highly toxic disinfectants in device reprocessing.⁴²
- Redesign cleaning processes to disinfect only where necessary and avoid the use of toxic chemicals (e.g. glutaraldehyde, sodium hypochlorite).
- In non-clinical areas, provide soap and water, rather than hand hygiene products containing antibacterials chemicals such as triclosan or triclocarban..
- Complete phase-out of mercury-containing medical devices (thermometers and sphygmomanometers) and substitute mercury containing dental fillers (amalgam) and mercury containing light fittings and batteries.
- Switch to digital imaging.

POLICY OBJECTIVE 9 - LEADERSHIP

Leadership Activities

- Educate health facility staff about the health facility green climate-smart initiatives and ways similar actions can be taken within the community.
- Educate the community to support and implement green climate-smart policies.
- Engage stakeholders in identifying and implementing green climate-smart policies.
- Advocate for environmental health policy.
- Build or participate in networks of hospitals and/or health services groups committed to advocate for environmental health policies.

⁴² WHO and PAHO (2016) Decontamination and Reprocessing of Medical Devices for Health-care Facilities. Publ: World Health Organisation and Pan American Health Organization, 120pp., <http://apps.who.int/iris/bitstream/10665/250232/1/9789241549851-eng.pdf>