**Ministry of Health and Medical Services**

# GUIDELINES FOR CLIMATE-RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HEALTH CARE FACILITIES IN FIJI

*It is not how green you make it that counts, but how you make it green.*

*—Judith Heerwagen*

# GUIDELINES FOR CLIMATE-RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HEALTH CARE FACILITIES IN FIJI



This guide is an output of the Climate Change and Health Strategic Action Plan (CCHSAP) 2016 - 2020. It was developed through collaboration with the World Health Organization, Western Pacific Region, Division of Pacific Technical Support. The content was compiled by the Health Emergency and Climate Change Team comprising Shivika Sheetal, Dr Jun Seok Cha, Vimal Deo, Jese Vatukela and Kelera Oli. The guide uses as its base the WHO Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities. Support was provided by Terrence Thompson, Consultant.

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# FOREWORD

## THE MINISTER FOR HEALTH AND MEDICAL SERVICES

*"The health impacts of climate change and the health benefits of climate action are becoming increasingly clear. Health care, with its hospitals on the front lines, must be part of the solution."*
*World Health Organization Director-General, Tedros Adhanom Ghebreyesus*

Fiji is among the vulnerable island nations that are facing the severe effects of climate change and while we resolve to adapt to these impacts, the health sector is also aware of its contribution to Fiji's carbon footprints and strives to be a responsible actor in the fight against climate change. The health co-benefits of reducing greenhouse gas emission overshadow the investment costs; for instance, the use of natural ventilation is both an effective energy-saving and infection-control measure.

The Ministry of Health and Medical Services developed its Climate Change and Health Strategic Action Plan 2016 – 2020 (CCHSAP 2016 – 2020) to ensure Fiji's health system including our health facilities are protected so that we can continue to serve our people and move towards our vision of a healthy population. CCHSAP embodies the ministry's efforts to build climate resilience within Fiji's health system and almost 4 years since its implementation, this guide comes as an output under Component 6 of the Plan which aims to 'explore medical technologies and products with lower environment footprint'.

The 'Guidelines for Climate Resilient and Environmentally Sustainable Health Care Facilities' underline our commitment to reducing the environmental footprint of the health sector towards protecting public health. The Guidelines have been developed after extensive consultation. It is completely critical that these guidelines are implemented where operable and stakeholder collaboration is essential to ensure that our health care facilities are able to reduce their greenhouse emissions through the initiatives in this guide.

Therefore, it is imperative that all healthcare workers and stakeholders support the implementation of these guidelines to ensure the safety of our environment and population's health as we strive for sustainable planetary health in the challenging period of climate change. I also acknowledge all partners who have contributed towards the development of this guide particularly to the Ministry of Economy's Climate Change Division, the Ministry of Infrastructure Transport and Meteorological Services and the World Health Organization for resourcing the development process.

Hon. Ifereimi Waqainabete
**Minister for Health and Medical Services**

# REMARKS FROM THE PERMANENT SECRETARY FOR HEALTH AND MEDICAL SERVICES

Building climate resilience and practising environmentally sustainable health care services in Fiji underscores the Ministry's resolve to strengthen population-wide resilience to the climate crisis which is possible through achieving and maintaining a healthy and environmentally adaptive population. Whilst functions of the Ministry of Health and Medical Services (MoHMS) is generally associated with hospitals or health care facilities, there are novel ways of reaching all populations to achieve universal health coverage (UHC) ensuring *no one is left behind*.

The impacts of climate change on health impedes on health developments and UHC. The destructions are visible and tangible in our nation, affecting human health through climate sensitive diseases, destroying health infrastructure through sea level rise, inundation and tropical cyclones and increasing mortalities and injuries sustained during and after extreme weather related events; and these require an extra resilient health care infrastructure that is capable of delivering essential utilities as well as health care services.

The World Health Organization's 'Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities' which was launched in November 2020 was timely and enabled the completion of our own 'Guidelines for Climate Resilient and Environmentally Sustainable Health Care Facilities in Fiji' becoming a first in the region. Nevertheless, the guidelines require wide spectrum input; from government sectors, academic and research institutions, civil society, international partners and our local communities to support the monitoring and advocacy process of the implementation of the guidelines.

The Ministry of Health acknowledges the immense support of partners in the development of this Guidelines particularly the World Health Organization for the technical and operational support. The Ministry of Health is also grateful to the Ministry of Economy; the Ministry of Rural, Maritime Development and Disaster Management and Defence, National Security and Policing; the Ministry of Lands and Mineral Resources, Infrastructure and Meteorological Service; the Ministry of Employment, Productivity and Industrial Relations; the Ministry of Environment and Waterways; University of the South Pacific (Pace-SD); Fiji National University (CMNHS), Water Authority of Fiji; Energy Fiji Limited; Pacific Community, World Bank Regional Office, Asian Development Bank Regional Office, Japan International Cooperation Agency, Korean International Cooperation Agency, DFAT's Facility Health Program, and the GIZ.

This initiative is part of the Ministry's support under the Fijian government's National Adaptation Plan and the Ministry's pursuit for a *climate resilient health system* in Fiji. The Ministry is looking to our partners and all stakeholders for the support in the implementation of the guidelines.

**James Fong (Dr)**
**Permanent Secretary**
**Ministry of Health and Medical Services**

# EXECUTIVE SUMMARY

The 'GUIDELINES FOR CLIMATE-RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HEALTH CARE FACILITIES IN FIJI' (CRESHCF Guidelines) was developed to assist Fiji's Ministry of Health and Medical Services (MoHMS) and all health sector stakeholders to include sustainable, environment-friendly and climate-resilient healthcare facilities (HCFs) into the full life cycle of health care capital works. This is in support of the country's proven leadership in the area of Climate Change. Although the health sector is not identified as a mitigation performance monitoring indicator in Fiji's Nationally Determined Contributions (NDCs) nor is it part of the Intergovernmental Panel on Climate Change (IPCC) mitigation assessment, the health co-benefits of climate change mitigation strategies is an opportunity that the MoHMS chooses to prioritise.

The CRESHCF Guidelines respond to *Component 6 – 'Climate resilient and sustainable technologies and infrastructure' of the Climate Change and Health Strategic Plan 2016 – 2020* and WHO's *Operational Framework for Building Climate-Resilient Health Systems*. It also responds to Fiji's *Green Growth Framework* (2014) which aims at reducing carbon footprints at all levels of the country, and the *Pacific Islands' Action Plan on Climate Change and Health* (2018) by promoting a culture of disease prevention, building the climate resilience of health systems, and maximizing the health co-benefits of climate change mitigation policies through the adoption of a climate-resilient and environmentally sustainable concept for health services and facilities.

At the core of the CRESHCF Guidelines is the CRESHCF Checklist (Annex 1) which encompasses the four (4) fundamental prerequisites identified by WHO for ensuring climate resiliency and environmental sustainability in health care centres, namely, the health workforce, WASH and waste, energy, and infrastructure, technology and products. The guidelines provide basic structural and functional design requirements under each key area that can be adopted at the design, construction, and operation phases of HCFs. It is meant to be applied with the consideration of the Building Code and other relevant building and development control regulations to ensure the safety, wellness and health of the users and healthcare workers. This document also provides a table for possible mitigation strategies applicable to HCFs (Annex 5) which was adopted from WHO - Health in the Green Economy. A Standard Operating Procedure for Implementation (SOP-I) is included as Annex 2.

This guide is a living document that should be reviewed and updated based on the lessons learned from implementation. These guidelines were developed in partnership with the WHO and was reviewed internally through consultations with the National Advisers and the National Health Executive Committee, Divisional Hospital Medical Superintendents and Divisional and Subdivisonal officers. External reviewers include the Ministry of Infrastructure and Transport (Water and Sewerage, Energy, and Government Buildings and Architect); Ministry of Productivity, Employment and Industrial Relations; Ministry of Economy's Climate Change Division; Ministry of Rural, Maritime Development and Disaster Management and Defence; Department of Environment; Suva City Council; Water Authority of Fiji; Energy Fiji Limited; and the Fiji National University.

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
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| CRESHCF | Climate-resilient and environmentally sustainable health care facility |
| GHG | Greenhouse gas |
| HCF | Health care facility |
| MoHMS | Ministry of Health and Medical Services |
| PV | Photovoltaic |
| PVC | Polyvinyl chloride |
| WASH | Water, sanitation and hygiene |
| WELS | Water Efficiency Labelling and Standards |
| WHO | World Health Organization |

# 1. INTRODUCTION

Health care facilities (HCFs) in Fiji range in size from small community or village level dispensaries to large divisional referral hospitals and even the national referral centre. Depending on each facilities' capacity, they provide health care services ranging from basic first aid up to complex specialized clinical care. Regardless of their size or level of services provided, all HCFs in Fiji are vulnerable to the effects of climate change and all have potential to impact the environment in varying degrees.

Essential health services must remain available to populations during and after extreme weather events, even during extended utility failures and transportation infrastructure disturbances. National and local health organizations interested in building climate-resilient HCFs must anticipate extreme weather risks and outdo limitations of public policy, local development vulnerabilities, and community infrastructure challenges as they site, construct, and retrofit HCFs. Health facilities design transformation requires looking for new ways to improve healthcare quality and recognizing the relationship between medical services, environment, and diseases. Visionary thinking, connecting sustainability to health, and pollution prevention are important items for green healthcare system.

The adoption of safe and sustainable building measures by HCFs offer health co-benefits. HCFs have a large demand for reliable energy, clean water and temperature/air flow control in treatment and infection prevention. Significant health gains also can be expected from specific interventions; for instance, the use of natural ventilation is both an effective energy-saving and infection-control measure. Interventions that protect the health workforce and the communities that they serve from environmental risks inherent in the operation of HCFs can also be expected to produce significant health gains. The healthcare sector is well-positioned to "lead by example" in terms of reducing climate change pollutants and by demonstrating how climate resiliency and environmental sustainability can yield tangible, immediate health benefits.

The World Health Organization (WHO) defines climate-resilient and environmentally sustainable HCFs as follows:

> *"Climate-resilient and environmentally sustainable health care facilities are those capable to anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, so as to bring ongoing and sustained health care to their target population and protect the health and well-being of future generations.* (WHO, 2020)

An environmentally sustainable HCF is one that has the ability to mitigate its impact on the environment and reduce pollution. There are several 'win-win' ways to accomplish this, which, in the process, also save costs, reduce greenhouse gas (GHG) emissions, and achieve adaptation, risk reduction and development benefits (PAHO, 2017). Climate-resilient HCFs have the ability to survive and recover from the effects of climate change including the 'ability to understand potential impacts and to take appropriate action before, during, and after a particular consequence to minimize negative effects and maintain the ability to respond to changing conditions' (US Department of Health and Human Services, 2014).

## 1.1. FUNDAMENTAL REQUIREMENTS OF CLIMATE RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HCF

There is no one model climate-resilient and environmentally sustainable HCF but many hospitals and health systems around the world are taking steps to strengthen climate resiliency, reduce their environmental footprint and contribute to public health. A key reference material that identifies and consolidates measures which can be taken up by the government and individual HCFs was developed by the WHO entitled *Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities* published in 2020. In it, as illustrated in Figure 1, WHO proposes four fundamental prerequisites for ensuring climate-resilient and environmentally sustainable HCFs, namely (WHO, 2020):

- **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 (WASH)**: Sustainable and safe management of water, sanitation and health care waste services;
- **Energy**: Sustainable energy services;
- **Infrastructure, technology and products**: Appropriate infrastructure and technologies, including all the operations that allow for the efficient functioning of the health care facility.

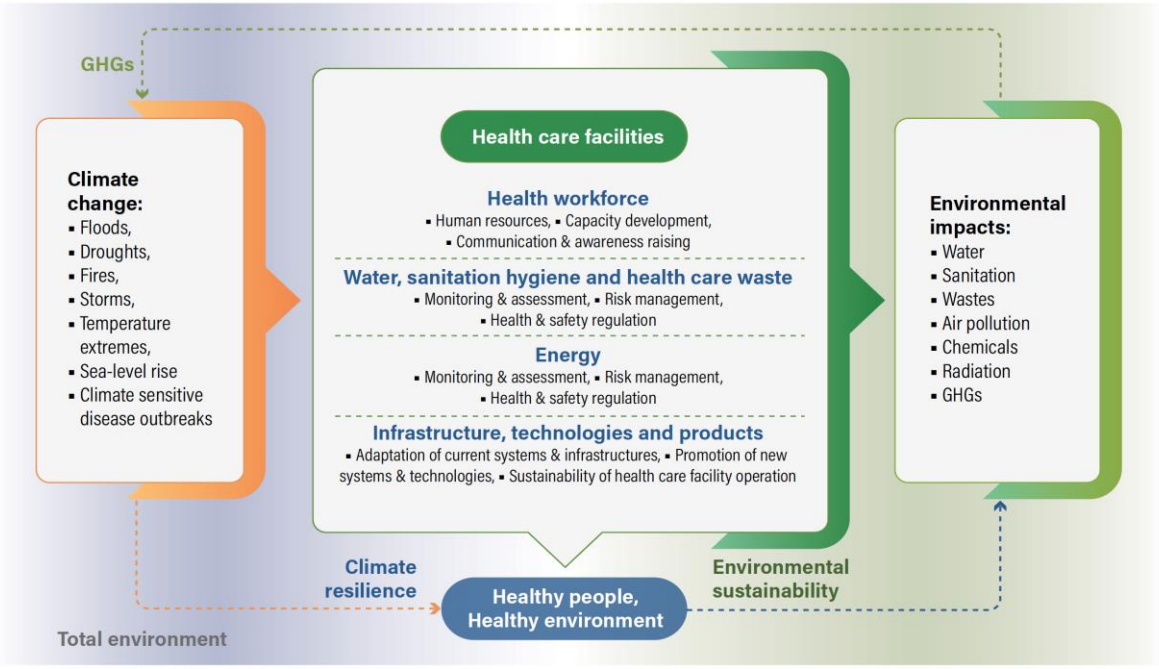


*Figure 1: Framework for building climate-resilient and environmentally sustainable health care facilities (WHO, 2020)*

## 1.2. ABOUT THE GUIDELINES

Fiji's Ministry of Health and Medical Services (MoHMS) is committed to sustainable development in light of building resilience of its health system to the impacts of climate change. The Guidelines *for Climate-Resilient and Environmentally Sustainable Health Care Facilities in Fiji* (CRESHCF) document provides a compilation of information on opportunities to building CRESHCFs to support our country's efforts in reducing GHG emission while strengthening climate resiliency and environmental sustainability. Several documents guided the inception of the CRESHCFs initiative for Fiji, with the

Climate Change and Health Strategic Action Plan 2016 – 2020, the 2018 Pacific Islands' Action Plan on Climate Change and Health and the Republic of Fiji's National Adaptation Plan (2018) serving as the principal documents. Other relevant documents include WHO's Operational Framework for Building Climate-Resilient Health Systems (2015); WHO's Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities (2020); the 2015 Yanuca Island Declaration; Green Growth Framework (2014) and the National Climate Change Policy (2018). The Paris Agreement that was adopted at the 21st Conference of the Parties (or "COP") to the United Nations Framework Convention on Climate Change (UNFCCC) is an additional inspiration to the development of these guidelines.

## 1.3. PURPOSE OF THE GUIDELINES

The *Guidelines for CRESHCF in Fiji* was developed to assist MoHMS and all health sector stakeholders to include climate-resilient and environmentally sustainable health care facilities into the full life cycle of health care capital works.

The purpose of the guidelines and associated checklists is to:

i. Provide a guide for the development of climate-resilient and environmentally sustainable health care facilities;
ii. Explain green & environmentally sustainable options that meet Fiji design/construction laws;
iii. Provide health workers a tool to be environmentally conscious and climate resilient in the execution of health services;
iv. Provide a performance based, bench marking document identifying design standards that contribute to achieving recognition in greening efforts; and
v. Provide a self-certifying toolkit to steer facilities through greening efforts; it includes indicators to help measure improvements in climate resiliency and environmental sustainability.

## 1.4. SCOPE OF THE GUIDELINES

Implementation of the *Guidelines for CRESHCF in Fiji* is applicable to both the construction and the operation of HCFs, to assist facilities at various stages of development; construction and operations for new facilities, building renovation/upgrade, and operational activity. This document serves as a guide for the MoHMS, Fiji, at all levels of the Ministry's health care services, and may also be of interest to other health care services in the country.

These guidelines are not to be interpreted as exhaustive or exclusive. It is recommended that the guidelines be used in conjunction with the requirements of the Building Code and other relevant building and development control regulations. Consideration of other legislations governing town planning, subdivision of lands, occupational health and safety, fire, tsunami and other emergencies in Fiji is paramount. The implementation of these guidelines should not compromise the safety, wellness and health of the users and workers of a CRESHCF. It is recommended that the guidelines should be revised according to the lessons learnt from completed and current projects.

This *Guidelines for CRESHCF in Fiji* is considered a living document to be revised based on lessons learned along the way.

## 2. GENERAL GUIDELINES FOR CRESHCF

Health care's response to climate change should be practical and multi-faceted. An ideal guide would provide various kinds of resources to facilitate the process of developing and sustaining CRESHCFs. It is noteworthy that in climate change mitigation, what is good for the environment and public health also often supports the end result (emission reduction). Climate change work can reinforce a facility's broader environmental stewardship goals and programs.

In addition to the WHO guidance document, the *Guidelines for CRESHCF* takes its cue from several global green initiatives such as the Pan American Health Organisation (PAHO), WHO's 'Smart Hospitals Toolkit' and Health Care without Harm's *Global Green and Healthy Hospitals*. It adopts the ten domains of environmentally sustainable HCF, which are: sustainable sites and buildings, water conservation, energy efficiency, natural light, materials & resources, solar photovoltaic, chemical management, waste management, healthy food & wellness and transport.

### *Ten domains of environmentally sustainable health care facilities*

Maintaining the ten domains in this guideline provides health workers with exploratory pathways to realizing environmentally sustainable practices. Content of Box 1 are descriptive actions complementary to the CRESHCF checklist provided in Appendix 1 and should not be considered otherwise. An illustration of how the ten domains cut across the four pre-requisites of CRESHCF is presented in Figure 2.

The actions under the ten domains are basically practical at all levels of HCF in Fiji, conditional of actual resources and equipment on site. The list is also not exhaustive as health workers are motivated to explore workable solutions at their operation levels with support from management. Climate change is a phenomenon of global, regional and national interest, hence health workers need to be well informed in the practical decisions at local levels.

*Box 1. Ten domains of environmentally sustainable HCFs*

### 1) Sustainable sites and buildings

- Avoid development of inappropriate sites.
- Reduce the environmental impact from the location of a building on a site.
- Conserve, preserve, and enhance existing natural areas.
- Restore damaged areas to provide habitat for native flora and fauna and to promote biodiversity.
- Reduce the development footprint to reserve site area for future development.
- Environment Impact Assessment & Environment Health Impact assessments of proposed sites should include climate vulnerability and carbon footprint.
- Ensure that buildings on the site can withstand extreme weather events now and, in the future.

### 2) Water conservation

- Do not use potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.
- Use only captured rainwater, recycled wastewater, recycled grey water, or water treated and conveyed by a public agency specifically for non-potable uses for irrigation or Install landscaping that does not require permanent irrigation systems.
- Install rainwater harvest system in health facilities with adequate filtration - assist in providing water for toilets and watering gardens, washing clothes and can also be used in emergencies if combined with adequate safeguards to prevent bacterial and chemical contamination.
- Install tap-ware with maximum flow rate of 4.5 litres (6-star Water Efficiency Labelling and Standards (WELS) rating) in all en-suites and general amenity areas.
- Install dual flush toilets with capacity of 3/4.5 litres (4-star WELS rating).
- Install waterless or non-potable water flushed 6-star WELS-rated urinals for staff and visitors.
- Design landscaping to be water efficient, including use of mulching, plant selection and water-efficient irrigation system, comprising subsoil drip systems and automatic timers with rainwater or soil moisture sensor over-ride.

### 3) Energy efficiency

(Health care is the second most energy-intensive building sector in most countries).

- Insulation to meet levels specified in the Building Code.
- Maximise shading from existing trees and neighbouring buildings.
- All three-phase heating, ventilation, and air conditioning (HVAC) system motors above 5kW to have variable speed drives
- Provision of solar hot water for domestic hot water (primary systems 60 per cent or pre-heater systems 20 per cent).
- The use of low-voltage halogen down lights is not permitted in any areas of the facility, including lifts, foyers/reception areas, toilets, meeting rooms, concessions and executive suites.
- Include occupancy and light sensors in rooms intermittently used, including dining rooms, activity rooms, meeting rooms, staff rooms, storerooms and staff toilets.
- Install time controls on all boiling water units in kitchens and activity rooms.
- Maximise natural ventilation through windows and doors.

### 4) Natural lights

- Use light-coloured window frames to reduce heat absorption into the building.
- Use skylights for day-lighting in single-storey buildings and the top floor of multi-storey buildings within travel areas.
- Ensure access to views and natural light in HCFs - important stress-reducing effects, and can contribute to the reduction of pain and the length of stay at the hospital.

### 5) Materials and resources

- Reduce the environmental impacts of the materials acquired for use in the construction of buildings and in the upgrading of building services.
- Reduce the environmental impacts from the manufacture, use and disposal of furniture and medical furnishings products.
- Establish minimum indoor air quality performance to enhance indoor air quality in buildings, thus contributing to the comfort and wellbeing of the occupants.
- Chose safer, less toxic building materials for new construction and renovation projects.
- Be compliant with Fiji's environment laws on phasing out chlorofluorocarbons (CFC).
- Ensure equipment are serviced by professionals annually to reduce leakage or release of hazardous products.

### 6) Solar Photovoltaic

The demand for energy is rising and so is the cost. Hence opting to solar energy will benefit the health facility in a number of ways. It reduces long-term costs, provides an efficient way to power health facilities, and enables the use the building's rooftop space in an efficient way.

- The Solar Photovoltaic (PV) system can be used as a backup for critical equipment. Solar panels can be used to support basic equipment like air conditioner, printer, and photocopier.
- The building roof space can be considered for solar installation based on the load requirements.
- Also consider ground mount options or carport installation when encountered with space issues. Consider a battery backup for solar installations to enable continuous power supply.
- Backup generators remain important to help ensure functionality. For future development, if space, location, wind speed, prevailing wind direction and building codes allow, consider installing wind turbines in addition to or along with a PV system. All systems must be properly secured to withstand the natural hazards that affect Fiji and the Pacific.

### 7) Chemical management (hazardous materials)

- Eliminate mercury-containing medical devices in favour of safer non-mercury alternatives.
- Phasing out phthalate-containing polyvinyl chloride (PVC) medical devices and switching to safer plastics.
- Reduce pesticides by using integrated pest management techniques (pesticide companies selected should comply with MoHMS requirements).
- Establish procedures for procuring, storing, dispensing and proper disposal of all pharmaceuticals.
- Be sure to emphasize that pharmaceuticals are not to be disposed of down drains or into septic or sewer systems.
- Ensure that expired/unused pharmaceuticals are properly disposed.
- Ensure that no chemical disposal is done in landfills. Disposal in landfills is not appropriate, as chemicals can contaminate soil and groundwater.
- Incineration also releases chemicals into the atmosphere and the residue from burning may be considered hazardous waste.

Chemicals listed hereafter are highly toxic and disposal of such chemicals should comply with the health care facility's waste management protocol or as legislated: mercury, PVC and phthalates, brominated flame retardants, glutaraldehyde and ethylene oxide, pesticides, volatile organic compounds in building materials, hazardous ingredients in cleaning products.

### 8) Waste management

- Ensure that your purchases are in line with the overarching goal to reduce solid waste generation and disposal.
- Encourage recovery and recycling.
- Minimizing waste using 3 waste minimization techniques: segregation, source reduction, and resource recovery and recycling.
- Before going to the disposal site, infectious wastes must undergo treatment processes: autoclaving, thermal disinfection, microwave sanitation or incineration.
- Restrict the amount of wastes undergoing incineration for environmental sustainability.

- Improved recapture and reuse of waste anaesthetic gases can provide significant climate and health co-benefits. Waste anaesthetic gases are not only powerful global warming pollutants; they are associated with reproductive risks (spontaneous abortion and congenital abnormalities), headache, nausea, fatigue and cognitive impairment for exposed health workers. *Engineer/consultant to discuss safe standards.*
- Encourage use of biodegradable products like paper, cardboard and plant-based products instead of plastics and Styrofoam.
- Reduce food wastage. Use organic refuse from food services to create a compost pile and reuse material in the garden. If there is no space for a garden, a simple compost pile may be possible. Donate compost to the community or the food gardens of other facilities or sold to fund green initiatives.

### 9) Healthy food and wellness

As leaders in health-promoting activities and behaviour, health workers are expected to lead initiatives that address wellness – or the state of being in good health in the context of a 'green facility'.

- Emphasis should be taken to support sustainable food production and improved environmental health through purchase of organic, drug free foods and improve access to locally produced food products.
- Join with the community and staff to start an organic garden onsite, if space permits.
- Procure food from local sources.
- Health from increased physical activity, social interaction and mental health – open space for recreation activities is provided, ease of access for use of public transport is ensured.
- Health from sustainable food production – organic gardening space is provided on site for health workers activities.
- Health workers depend on healthy foods and use of disposable food wrappers is discouraged.
- Health workers involved with the communities are implementing community-based activities that increase sustainable development and health promotion.
- Ensure that the facility is smoke free with sufficient signage displayed.
- Provide healthy working environment both inside and outside the buildings.

### 10) Transport

The health sector has one of the highest numbers of transportation fleets. In this guide, focus is on vehicle mode of transportation which encompasses hospital ambulance fleets, health care facility vehicles, public health services vehicles, delivery vehicles, staff transportation and patient travel.

- Ensure health care facilities develop and implement transportation and procurement strategies that minimize air pollution and the associated GHG emissions.
- Develop strategies for telemedicine, communication by e-mail and other alternatives to face-to-face encounters between health care workers and patients; between administration/ procurement staff and suppliers/customers.
- Encourage video and tele-conference where feasible to reduce travel.

Figure 2 illustrates how the 10 domains cut across the four pre-requisites of CRESHCFs as defined by WHO.

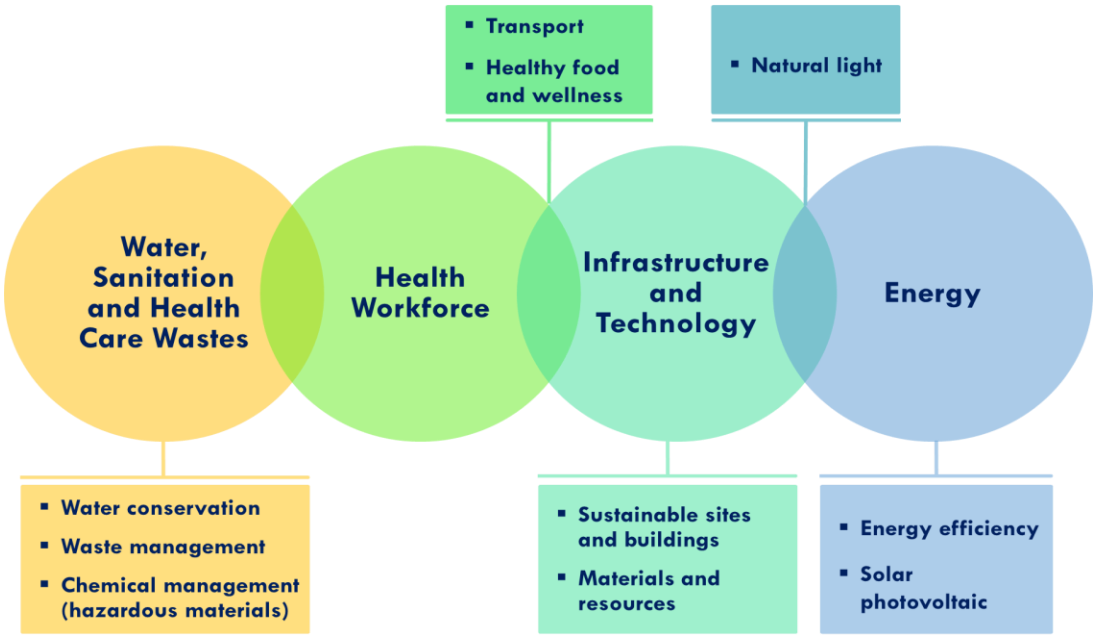


*Figure 2. The ten domains within the four fundamental pre-requisites of CRESHCFs defined by the WHO*

## 2.1 OPPORTUNITIES FOR ACTION

The Guidelines for CRESHCF are an initial phase in MoHMS's efforts to build climate-resilient and environmentally sustainable HCFs and contribute to reduction of GHGs. Introduction of innovative options such as renewable energy, enhancing natural lighting and ventilation, rainwater harvesting and promoting healthy local foods has the potential to reduce disruption, incapacitation or loss of use of essential clinical care services during and immediately following extreme weather events.

Increasing the climate resiliency and environmental sustainability of HCFs, therefore, requires strategic actions relating to the four fundamental requirements. Meanwhile, the WHO guidance document identifies three main objectives for implementing such actions under each of the four requirements. These objectives are translated into areas of work or indicators in the assessment process.

The challenges HCFs experience are increasing and becoming more complex particularly, in addition to climate change risks, the trend of communicable and noncommunicable diseases in Fiji has been raising alarm. This has called for the introduction of advanced technology, knowledge, skills and protocols as experienced from the COVID-19 pandemic, thus indicating that the guide should be used with flexibility, and more as a model on how to improve operations, than as prescribed actions.

### *HEALTH WORKFORCE*

The WHO places strong emphasis on the role of health care workers in strengthening climate-resiliency and environmental sustainability of health care facilities. Having in place a sufficient number of skilled and informed health workers is one key requirement. Another key requirement is ensuring their health and safety in their workplaces. Interventions in this area have three main objectives:

i. ***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.

ii. ***Capacity development***: Training, information and knowledge management targeted at health care workers to respond to climate risks and minimize environmental threats resulting from the operation of the health care facility.

iii. ***Communication and awareness raising***: Communicate, coordinate and increase awareness related to climate resilience and environmental sustainability among health workers, patients, visitors, target communities, and with other sectors.

*"Health care workers are the main actors in ensuring interventions are effective on their own roles and activities, as well as other components of the framework…. Building awareness, training and empowering health workers are key requirements for the successful implementation of interventions".* (WHO, 2020)

### WASH AND WASTE MANAGEMENT

*"Achieving optimal use of water resources means that some health care facilities may need to conserve water, while others need to increase their use. This needs careful consideration to ensure actions in one area do not impact on others".* (WHO, 2020)

Lack of water of good quality, or lack of regular access, is a major problem in many health care facilities especially in areas of natural water scarcity. This presents a problem not only in relation to drinking-water. It also has implications for sanitation and hygiene practices within health care facilities. Climate variability and change increasingly aggravate the situation, contributing to drought in some areas or to flooding in others. Safe management of health care waste is another key requirement. Health care facilities generate both liquid and solid wastes which may include sharps and other infectious materials, chemicals and radioactive materials. The WHO guidance identifies key measures that include substitution of harmful chemicals to improve the health and safety of patients, staff, communities and the environment by using safer chemicals, materials, products and processes throughout health care facilities. WASH and waste management interventions have these objectives:

i. ***Monitoring and assessment***: Information regarding water, sanitation, chemical use and health care waste management considers climate resilience and environmental sustainability for promoting action.

ii. ***Risk management*****:** Strengthened capacity of health care facilities to manage water, sanitation, chemicals and health care waste risks to workers, patients and served communities, by including assessments of climate resilience and environmental sustainability in responding to hazards and identifying and reducing exposures and vulnerabilities.

iii. ***Health and safety regulation*:** Water, sanitation, chemical safety and health care waste regulations are implemented taking into consideration climate variability and change, and environmental sustainability.

### *ENERGY*

Many health care facilities, especially in rural locations, lack regular access to electricity whether it be supplied from a central source (i.e., grid system) or generated locally. Extreme weather events may further limit this access as storms and floods damage or destroy sources of power and transmission lines. Health care facilities can become more resilient to power disruptions through the use of onsite sources of renewable energy such as solar panels and photovoltaic cells which also, as a co-benefit, reduces greenhouse gas emissions. Health care facilities can reduce their dependence on power sources by promoting energy conservation and efficiency within their own facilities. CRESHCF interventions for energy have the following objectives:

i. ***Monitoring and assessment***: Information regarding energy services should consider climate resilience and environmental sustainability for promoting action.

ii. ***Risk management*:** Strengthened capacity of health care facilities to manage energy related risks to workers, patients and served communities, by including assessments of climate resilience and environmental sustainability in responding to hazards and identifying and reducing exposures and vulnerabilities.

iii. ***Health and safety regulation*:** Regulations on energy use and access are implemented taking into consideration climate variability and change, and environmental sustainability.

Key areas of action to enhance environmental sustainability from energy interventions (WHO, 2020):

- Building characteristics: the quality of the building and its features affect the energy demand through e.g. the quality of insulation of walls and windows, the use of passive cooling and shading options, and its location and exposure to climate and weather.
- Energy efficiency: Electric lighting fixtures can consume a large proportion electrical energy, and, depending upon the source, can contribute to internal heat loads. Efficient appliances and thermal insulation also contribute to energy efficiency.
- Transportation: A major source of both air pollution and greenhouse gas emissions. The health sector – with its fleets of ambulances, hospital vehicles and delivery vehicles, as well as staff and patient travel – is a transportation-intensive industry.
- Food: Purchase, prepared and provided in a variety of health care settings contributes to the greenhouse gas emissions of the health care sector.
- Pharmaceuticals: When selecting and prescribing pharmaceuticals, it may be possible to consider those with least environmental impact (i.e. reducing greenhouse gas emissions from pharmaceuticals used in the provision of health care.

### *INFRASTRUCTURE, TECHNOLOGY AND PRODUCTS*

This component includes both structural and non-structural elements of health care facilities. Both elements, when fully functional, would help health care facilities to remain operational during or after shocks or stress. Health care facilities' structural components should be constructed, or retrofitted, to be able to withstand projected structural vulnerabilities that may occur due to extreme weather events. Low environmental impact technologies, processes and products also should be adopted to promote environmental sustainability. The procurement of environment friendly goods and services is a key component in this regard. CRESHCF interventions in this area will contibute to the following objectives:

> *"A sustainable procurement program aims to reduce carbon emissions, chemical pollution, and conserve natural resources by identifying environmentally sustainable goods and services, which have fewer harmful effects on human health and the environment."* (WHO, 2020)

i. ***Adaptation of current systems and infrastructures***: Building regulations implemented in the construction and retrofitting of health care facilities to ensure climate resilience and environmental sustainability.

ii. ***Promotion of new systems and technologies*****:** Adopt new technologies and processes that can provide climate resilience, environmental sustainability and enhanced health service delivery.

iii. ***Sustainability of health care facility operations*****:** Adopt and procure low environmental impact technologies, processes and products to enhance climate resilience and environmental sustainability

# 3. MONITORING, EVALUATION AND REPORTING

To aid in the assessment process and enhance the utilisation of this guide, a tool is provided in the form of checklists. The checklists provide special requirements for HCFs to be climate resilient and environmentally sustainable and opportunity for certification as a CRESHCF can be considered in the future with enhanced global and regional insight to grading practises. Such a rating system is new to the Pacific and will be challenging to implement in Fiji, due to the strict requirements and regulations, the absence of environmental policies and lack of monitoring of existing policies, as well as the cost and technical capacity available in country.

## 3.1 CRESCHF CHECKLIST TOOL

The CRESCHCF Checklist tool is provided in Annex 1 and is recommended to be used from the planning to construction phase ensuring that climate resilience and environmentally sustainable measures are injected for compliance with the guidelines. It is also beneficial for operational activities. The lists provided are not exhaustive and should be adapted according to needs and initial assessments. The Checklist is composed of four sections that corresponds to the four fundamental pre-requisites for CRESHCF as defined by WHO: ***(Intervention I) Health workforce***, ***(Intervention II) Water, sanitation, hygiene and health care waste management***, ***(Intervention III) Energy***, and ***(Intervention IV) Infrastructure, technology and products***.

The CRESHCF Checklists will also help MoHMS identify and implement low-cost mitigation and adaptation measures. Planned renovation projects are ideal opportunities to introduce climate-resilient and environmentally sustainable measures and are also suitable for application to new health facility construction to help guide planning and development.

## 3.2 ASSESSMENT PROCEDURE

The SOP-I in Annex 2 expands on the process outlined here and guides the Ministry in operationalising the *Guidelines*.

### *Forming an assessment team*

The assessment exercise will be conducted by a team of technical officers in the areas of:

- Climate Change and Health, Health Emergency and Disaster Risk Reduction;
- Asset Management Unit comprising of - architect, structural engineer, quantity surveyor and officers with electrical and plumbing background where available;
- Health Information Unit;
- Environmental Health;
- Clinical (nurse/medical officer/technician).

The technical officers should be skilled to undertake this assessment and necessary trainings are to be in place for this purpose. A schedule of assessment should be prioritised by the responsible unit. The frequency of assessment will depend on the outcomes of the initial assessments conducted on the HCF. The team predetermines the checklists required for the selected or identified HCF to be

assessed. After every assessment the report will be prepared and shared with the relevant authorities. The assessment team where the capacity exists may adjust the checklist to suit the HCF level, location, existing infrastructures, and the objectives of assessment.

### *Guidance for prioritizing of HCF for assessment*

All MoHMS health care facilities should be assessed for their climate resiliency and environmental sustainability. Each Division of the Ministry's health services should develop a schedule of assessment activities to ensure that all assessments are completed within a reasonable time frame. It is recommended that Division heads exercise judgement based on local knowledge to prioritize HCFs for assessment. Some factors which may be considered in setting priorities may include, but not necessarily be limited to:

- Location of each HCF vis-à-vis hazardous zones, for example, coastal zones that may be at risk for tsunamis or sea level rise, flood prone areas or areas prone to landslides, and earthquake zones.
- HCFs known to be without reliable electrical supply or without a reliable supply or safe water and safe means of waste disposal.
- HCFs that serve large populations.
- HCFs that serve remote or vulnerable populations.
- HCFs that house sensitive equipment.

A tool for climate hazard and vulnerability assessment is provided in Annex 3, to assist with the prioritizing of HCF for assessment.

### *Guidance for prioritizing interventions*

Assessment teams are expected to recommend specific interventions that would strengthen the climate-resiliency and/or environmental sustainability of specific HCF's. Interventions that are recommended for implementation will be documented in the assessment reports that are produced as outputs of each assessment exercise. In many instances, multiple interventions may be recommended for implementation. Resources available for implementation may be limited and therefore consideration should be given to prioritizing the recommended interventions.

1) **Identification of appropriate interventions.** The assessment team will prepare a report as part of the assessment exercise. The assessment report should include recommendations on interventions to strengthen the climate-resiliency and environmental sustainability of the identified HCF.

2) **Shortlisting of interventions for implementation.** Once a list of recommended interventions is prepared, the list should then be prioritized for realistic planning purposes. Assessment teams may utilize a worksheet in order to prioritize their recommended interventions (Table 1).

*Table 1. Worksheet on prioritized interventions*

| No. | Brief description of recommended intervention. *(Assessment teams may list below their recommended interventions and may add as many additional rows as may be needed.)* | High benefit/High feasibility | High benefit/Moderate feasibility | Moderate benefit/Moderate feasibility | High benefit/Low feasibility | Moderate benefit/Moderate feasibility | Low benefit/High feasibility | Moderate benefit/Low feasibility | Low benefit/Moderate feasibility | Low benefit/Low feasibility |
|---|---|---|---|---|---|---|---|---|---|---|
| *HEALTH WORKFORCE INTERVENTIONS* | | | | | | | | | | |
| 1 | Intervention A | | | | | | | | | |
| 2 | Intervention B | | | | | | | | | |
| 3 | Intervention C | | | | | | | | | |
| *WASH AND HCWM INTERVENTIONS* | | | | | | | | | | |
| 1 | Intervention A | | | | | | | | | |
| 2 | Intervention B | | | | | | | | | |
| 3 | Intervention C | | | | | | | | | |
| *ENERGY INTERVENTIONS* | | | | | | | | | | |
| 1 | Intervention A | | | | | | | | | |
| 2 | Intervention B | | | | | | | | | |
| 3 | Intervention C | | | | | | | | | |
| *INFRASTRUCTURE, TECHNOLOGY & PRODUCTS INTERVENTIONS* | | | | | | | | | | |
| 1 | Intervention A | | | | | | | | | |
| 2 | Intervention B | | | | | | | | | |
| 3 | Intervention C | | | | | | | | | |

A matrix approach to priority setting may be taken that would consider in broad terms, for each recommended intervention, the benefit that is expected from the intervention versus the feasibility of implementing it. This approach depends on the assessment teams exercising professional judgment on the benefits and feasibility of implementation of the recommended interventions. The approach can be visualized with the aid of a matrix, as shown below. To aid in the priority setting, a matrix should be used to compare and analyze which intervention is of higher importance on the basis of feasibility of implementation and benefits (Table 2). This prioritization strategy depends on the assessment teams' professional judgment on the perceived benefits and level of feasibility.

> ***Feasibility*** – this is defined as the likelihood of implementation and maintenance of the intervention based on the assessment team's judgement on its financial cost versus availability of funds, political and public acceptance, as well as economic and environmental impacts.
>
> *Example*:
> An intervention may be considered highly feasible for implementation if the financial cost, economic and environmental risks are low and there is political and public support behind the intervention. If from any perspective the impact or cost of the intervention is moderate or high, the assessment team may judge the feasibility of implementing that intervention to be moderate or low.

***Benefit*** – this considers the expected positive impact on the HCF's climate-resiliency and environmental sustainability as well as any co-benefits that may be achieved from implementing the intervention.

*Table 2. Matrix on Feasibility of implementation vs Benefit*

| | | FEASIBILITY OF IMPLEMENTATION | | |
|---|---|---|---|---|
| | | High | Moderate | Low |
| **BENEFIT** | High | | | |
| | Moderate | | | |
| | Low | | | |

*Legend:*

High priority for implementation
Medium priority for implementation
Low priority for implementation

According to this matrix, recommended interventions that are judged to be highly or moderately beneficial with high feasibility of implementation, together with those seen as highly beneficial with moderate feasibility of implementation (shown in green) may be considered to have high priority for implementation. Measures judged to be of low or moderate benefit with low feasibility of implementation, together with those expected to be of low benefit with moderate feasibility of implementation, may be considered to have low priority for implementation (shown in red).

3) **Deliberation on the implementation strategies for medium priority interventions.** Discussions may be needed on recommended interventions that are judged to fall between those two extremes, as shown in yellow in the matrix.

*Examples*:
An intervention of high benefit but low feasibility of implementation could perhaps be modified to reduce costs/impacts or to spread its costs/impacts over time through a phased approach.

Similarly, interventions judged to be of low benefit but also highly feasible for implementation might be adapted to increase its benefits. Otherwise, they may be earmarked for future consideration.

"Health leaders have evolved the Hippocratic Oath of "First Do No Harm" beyond the immediacy of the doctor-patient relationship to incorporate a more global vision of environmental health."
*Global Green and Healthy Hospitals*

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# ANNEX 1 Climate Resilient and Environmentally Sustainable Health Care Facility Checklist

## Interventions 1 – Health Workforce

| 1.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| **1.1 - A. Human Resources** | | | | |
| 1. Assessment made of potential workplace hazards that may arise in emergencies and planning to address measures to reduce those hazards. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 2. A disaster risk reduction (DRR) plan is available for the health workforce to manage measures of prevention, preparation response and recovery from extreme weather events (e.g. storms, sea level rise, heat stress, floods, droughts, hurricanes). It includes a contingency plan for personnel transportation and for evacuation during or following an extreme event. The plan identifies minimum health workforce needed to ensure operational sufficiency of every department in emergency events. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 3. An early warning system is in place to respond to climate related emergencies. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 4. Established mutual aid and assistance agreements (e.g. transfer of patients, sharing of resources and supplies) with other sectors or institutions to have health support (including of health workforce) during response and recovery from an extreme weather event or disaster. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 5. *Security measures required for safe and efficient hospital evacuation are clearly defined. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 6. Availability of multidisciplinary psychosocial support teams for staff, families of staff and patients. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 7. Health workforce able to assess potential health impacts and facility loss associated with climate-related hazards. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 8. Updated emergency plans as new knowledge on climate risks become available (and such new information is included in the DRR plan for HW awareness). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **1.1 - B. Capacity Development** | | | | |
| 9. The health care workforce participates in community disaster planning committees and educational programs to assist the local community in reducing climate and health risks. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 10. *Improved staff capacity to provide essential services, when a disaster or emergency crisis occurs and this | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 1.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| includes IPC, Psychological First Aid (PFA), Reproductive Health (RH) and Nutritional Assessment (NA). | | | | |
| 11. Training and simulation exercises provided in areas of potential increased clinical demand following a climate related event or outbreak to ensure adequate staff capacity and competency (including Fiji Emergency Medical Assistance Team). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 12. The health workforce is trained to address climate change risks to health through WASH and energy related hazards. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 13. The health workforce is trained (including exercises, simulations) for early warning system, contingency plan, and disaster preparedness, response and recovery management to address climate change risks and to cope with any emergency from climate-related disasters and outbreaks (includes infrastructural and logistical concerns). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 14. The health workforce is trained to detect post-traumatic stress disorder (PTSD) among staff to take prompt action. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 15. The health workforce is trained to assist staff and family members with special needs (disability, elderly and children)) during disaster situations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 16. Staff are trained to identify health threats made worse by climate change and climate related events, to reduce associated morbidities, (e.g. respiratory and cardiovascular diseases, nutrient-deficiency, mental health issues). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 17. Health workforce trained to an appropriate standard to maintain the correct level of safety of the electrical power supply and alternate source (e.g. generators) of the health care facility in both routine and emergency/disaster situations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 18. Health workforce trained to an appropriate standard to maintain the correct level of safety of water quality controls, supplies and alternative sources to the health care facility in both routine and emergency/disaster situations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 19. Health workforce trained to an appropriate standard to maintain the correct level of safety of waste management systems of the health care facility in both routine and emergency/disaster situations (and this training component should be reflected in the HCWMP). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 20. A system is in place for monitoring injuries and diseases from climate-related hazards including monitoring health outcomes to health care workers and vulnerable patients (e.g. the elderly, immobile, infants, critical care patients) in the event of a climate-related emergency or disaster. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 1.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| 21. The health workforce trained to maintain safe water system supplies (e.g. chlorine, filters or other water treatment technology, rapid water testing kit), during an emergency and disaster response. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 22. An established Emergency Operational Committee (EOC) or hospital Incident Command Group (ICG) includes climate related emergencies. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 23. Capacity building activities for disaster and climate related issues consider gender inclusivity. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **1.1 - C. Communications and awareness raising** | | | | |
| 24. Health care workers are aware of approaches to childhood development and social outcomes related to nutrition and avoidance of stunting and impaired neurological development due to climate change impacts on water supply, food production, infectious diseases. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 25. Ongoing awareness raising of health care facility staff, patients, visitors and the community of climate change, its impacts on health, effective health protection measures, and co-benefits of sustainable practices. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 26. Health care workers are engaged in community health programs to improve community health in the face of particular climate risks (for example, home care for asthma to reduce health vulnerabilities during episodes of high air pollution or high temperatures). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 27. Key messages for target audiences (e.g. patients, staff, public) are prepared and/or disseminated/delivered to the target audience for the most likely extreme weather disaster scenarios. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 28. Health care workers are aware of approaches to manage health care facility staff, patients, visitors and the community who have special needs (disability, elderly and children) during disaster situations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 1.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| **1.2 - A. Human Resources** | | | | |
| 29. Health workers are actively Identifying opportunities to improve in environmental sustainability of water and waste management systems, transportation facilities, procurement practices, food and laundry services, grounds maintenance, etc. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 1.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| 30. Health workforce trained to implement environmentally sustainable interventions for infection prevention and combating antimicrobial resistance (particularly in, but not limited to, HCWM). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 31. The health workforce is trained and implements the plan on the management of health care wastes. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 32. Staff trained and practicing monitoring and assessment of water use including drips, leaks and unnecessary flows in bathrooms, laundry, kitchen, etc. for prompt repairs and for implementing potential savings measures. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 33. Staff have developed a culture of energy saving by e.g. turning off office lights, computers, and other equipment, and unplugging electronic devices when not in use. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **1.2 - B. Capacity Development** | | | | |
| 34. Education and training provided to staff and community on environmental factors that contribute to the burden of disease, and preventive measures, including ability to evaluate and select environmentally sustainable products and services. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 35. Health workforce is trained, aware of, and practicing procurement of environmentally sustainable products such as CFC-free lamps, mercury-free medical devices, etc. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 36. Improved training and support to health workforce on how and when to deliver water messaging. | ☐ | ☐ | ☐ | |
| 37. Improved training and capacity of health workforce on energy access and performance. | ☐ | ☐ | ☐ | |
| 38. Training provided to staff on effective procurement practices. | ☐ | ☐ | ☐ | |
| **1.2 - C. Communications and awareness raising** | | | | |
| 39. Increased awareness about water management and conservation plans. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 40. Health care facility has waste management plans that include recycling of all different types of non-hazardous wastes (i.e., uncontaminated paper, plastic, glass, metal) and health workers are implementing it. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 41. An energy conservation plan is in place, health care workers are aware of it and implement it. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 42. Health care workers use stairs and ramps, whenever possible, to reduce elevator usage and promote physical activity. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

## Interventions 2 – Water, Sanitation, Hygiene and Health Care Waste Management

| 2.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| **2.1 - A. Monitoring and assessment** | | | | |
| 1. The facility's water safety plan ensures that safe condition and proper functioning of all elements of the water distribution system, including storage tanks, valves, pipes and connections. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 2. The facility's water safety plan ensures that water quality is monitored regularly. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 3. The facility's water safety plan ensures that water supplies are monitored during emergencies to ensure adequate access throughout the duration of the event ensuring protocols are in place to guide the rationing if required. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 4. The facility's water safety plan ensures that the facility has a monitoring mechanism to verify compliance with national standards, including the operation and maintenance of water and sanitation facilities. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 5. *Identified current or historical climate-related hazardous events that are known to pose significant health risks to the collection, treatment, reuse and/or disposal of sanitation wastes (e.g. overflowing of pit latrines contaminating drinking water sources). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 6. Monitoring sewer overflows to fix pumps in advance of flood seasons. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **2.1 - B. Risk management** | | | | |
| 7. A long-term drought management plan developed, including the identification of available alternative safe water sources. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 8. The health care facility conserves and manages water safely in response to climate-related disasters. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 9. Water services are not affected by seasonality or climate change related weather extremes. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 10. *A WASH climate risk management plan is being implemented. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 11. Safe water storage is available and avoiding mosquito breeding risk. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 12. Water storage in the health care facility is sufficient to meet the needs of the facility in case of an extreme weather event. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 2.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| 13. Water storage is sufficient to meet the daily needs of essential health care services. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 14. Storm water is safely managed (avoiding standing water near the facility or affecting nearby households) include safe reuse where feasible. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 15. Kitchens have adequate supplies of clean potable water. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 16. Health care facility drinking-water is treated with a residual disinfectant to ensure microbial safety up to the point of consumption or use, especially after a flood-related disaster. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 17. Water storage tanks are not located in areas susceptible to flooding, reducing risk of contamination. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 18. Water storage tanks have appropriate covers to prevent access or contamination. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 19. Plastic water storage tanks are supported and anchored to resist strong winds. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 20. Natural floodwater infiltration in place to reduce risk of facility flooding where applicable. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 21. Assessments and mapping of climate change risks to the sanitation infrastructure of HCF are in place in order to identify where services could be disrupted from floods, water scarcity, landslides, sea-level rise. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 22. Risk of sewage backflow is eliminated or reduced (e.g. installation of sealed covers for septic tanks and non-return valves on pipes to prevent back flows). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 23. Cross-sectoral coordination to ensure the entire sanitation service chain is addressed, aligning sanitation interventions with climate change national adaptation plans and disaster risk management. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 24. Vents on sewers are above expected flood lines. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **2.1 - C. Health and safety regulation** | | | | |
| 25. The health care facility is able to provide clean water for patients and health workers in case of climate-related disasters. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 26. The facility's Disaster Response Plan includes provision for maintaining the water system with | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 2.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| adequate supplies (e.g. chlorine, filters or other water treatment technology, rapid water testing kit). | | | | |
| 27. The facility's water safety plan ensures that emergency procedures are in place for maintaining water supply systems in emergency or disaster situations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 28. The facility's water safety plan ensures that long term water collection system in place to ensure water access in case of extreme climate events (e.g. capturing rain during the cyclone/rainy season and storing water in tanks for use during the dry season). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 29. A hand hygiene safety plan is implemented, and reduced water access does not compromise hand hygiene. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 30. The facility's water safety plan ensures that water of appropriate quality is supplied for medical activities as well as for vulnerable patients (e.g. water used for haemodialysis should meet strict criteria concerning microbial contamination and chemical contaminants, including chlorine and aluminum, which are commonly used in drinking-water treatment) and accessible to those with special needs (disability, elderly and children). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 31. The facility's water safety plan ensures effective and timely delivery of safe water during emergencies over the short- and long-term. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 32. A rainwater harvesting management mechanism is in place. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 33. Improved storage areas for safely storing extra waste generated as a result of higher demands on health care facilities (e.g. in outbreaks or impacts from climate related events). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 34. Waste pits designed to withstand climate-events and emergencies are built where feasible. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 35. Health care facility waste disposal is safe during climate-related emergencies or disasters. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 36. Storage areas are prepared to cope with extra waste generated as a result of higher demands on health care facilities (e.g. in outbreaks or impacts from climate events). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 37. Plans for the location of emergency WASH facilities considers gender and social inclusivity (women and girls; elderly and children and people with disability). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 2.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| 38. Collaborate with public health management or other responsible sector to reduce vector breeding sites (e.g. pools of water) on facility property and surrounding areas. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 2.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| **2.2 - A. Monitoring and assessment** | | | | |
| 39. Measure where and how water is used and examine areas of potential savings. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 40. Measures implemented to conserve and save water in staff training especially during the induction of new staff. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 41. Classify and assess types of waste issues and hazards to establish segregation collection. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 42. Implement and monitor waste reduction programme including waste management training for all staff. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 43. Surveillance of diseases related to insufficient quality water, sanitation. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **2.2 - B. Risk Management** | | | | |
| 44. Reinforced messaging about water use through signs and notices to promote saving. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 45. Increased patient and visitor's awareness about water conservation including signs and notices in patient's rooms and visitors' restrooms. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 46. Plastic bottled water eliminated where drinking tap water is available. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 47. Flush mechanisms on toilets repaired or adjusted so that they work as designed. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 48. Potable water is not used where non-potable water may suffice (e.g. irrigation). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 49. Wastewater is safely managed through use of on-site treatment (e.g. septic tank followed by drainage pit) or sent to a functioning sewer system. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 50. Established recycling programme for all different types of non-hazardous waste (e.g. paper, glass, tin, PET). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 51. Established segregation collection of different types of waste according to hazards. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 52. Where feasible, phase out of incineration of medical waste in favor of non-burn technologies (e.g. autoclaving). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 2.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| 53. Implemented safe disposal management of health care facility waste. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 54. Safe local treatment of waste and disposal to minimize waste transport. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 55. Improved packaging, identification and storage of radioactive waste in containers that prevent dispersion of radiation (storage behind lead shielding). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 56. Waste disposal system includes waste segregation (e.g. separate bins for potentially infectious waste, sharps, chemicals, pharmaceuticals, non-hazardous wastes), source reduction, resource recovery and recycling. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 57. Eliminate or reduce use of cleaning products that contain hazardous chemicals such as those found in some soaps, disinfectants, and pesticides. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **2.2 - C. Health and safety measures** | | | | |
| 58. Establish and inform on the water conservation policy. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 59. Harvested rainwater or grey water is safely used, for example, to flush toilets, clean outdoor pavement areas, water plants when possible. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 60. Hazardous wastewater does not drain into the public sewage system and does not contaminate drinking water. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 61. The health care facility safety disposes of hazardous wastewater and liquid waste into the sanitation system through pre-treatment (e.g. oils and fats, corrosive waste and other wastes, depending on the level of concentration). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 62. The health care facility safely disposes of hazardous wastewater and liquid waste that may be infectious. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 63. Sanitation and hygiene measures are used for infection control. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

## Interventions 3 – Energy

| 3.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| **3.1 - A. Monitoring and assessment** | | | | |
| 1. Power source including emergency power supply is available, adequate to power essential services (e.g. lighting, communications, refrigeration and sterilization) and checked periodically, even if rarely used. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 2. Renewable and/or hybrid energy sources (e.g. solar) are sufficient to power equipment such as refrigerators. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 3. *Assessed all heating, ventilation and air-conditioning (HVAC) ductwork pipes, ensuring they are in good condition and are supported adequately by the facility building structure. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 4. Procurement of energy efficient electrical equipment. | | | | [For all levels of HCFs] |
| **3.1 - B. Risk management** | | | | |
| 5. Risk management plan implemented, including plan for managing intermittent energy supplies or system failure, and preventive maintenance plan (e.g. automatic transfer switch to run standby generator). | ☐ | ☐ | ☐ | [Sub divisional to National Referral] |
| 6. Energy systems can cope with most extreme weather events, including fire and corrosion. | ☐ | ☐ | ☐ | [Sub divisional to National Referral] |
| 7. Backup energy equipment is sufficiently elevated in areas prone to floods and anchored in areas prone to strong winds. | ☐ | ☐ | ☐ | |
| **3.1 - C. Health and safety measures** | | | | |
| 8. Periodic checks of plant and equipment and electric components for safety (Asset management unit or expert). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 3.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| ***Indicator***<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | ***Action level*** | | | ***Observations*** |
| | *Low* | *Medium* | *High* | |
| **3.2 - A. Monitoring and assessment** | | | | |
| 9. Assessed energy needs, availability and alternative cost-effective sources of renewable energy. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 10. Established an energy conservation and use plan (i.e. Building Energy Management System) to assess energy needs, usage patterns, and efficiency practices, focusing especially on high energy demands (e.g. air conditioning). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 3.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| ***Indicator***<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | ***Action level*** | | | ***Observations*** |
| | *Low* | *Medium* | *High* | |
| **3.2 - B. Risk Management** | | | | |
| 11. Prioritize the energy saving measures which are the least costly to introduce and/or those which would bring the biggest saving (e.g. procure and install energy efficient equipment). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 12. Installed energy-efficient lighting. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 13. *Upgrade air conditioners, refrigerators and other appliances and medical equipment with energy efficient models. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 14. Natural air flow and light is used wherever possible (e.g. opening of windows). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 15. Improved the energy efficiency of the health facilities' vehicles fleet, and encouraging staff, patients and visitors to walk or use carpools, public transport, or bicycles whenever possible. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 16. Added occupancy sensor switches for lighting in spaces that are frequently unoccupied. | ☐ | ☐ | ☐ | [For Health Centers A, B, C] |
| 17. *Plugged leaks in air conditioning devices. | ☐ | ☐ | ☐ | [For Health Centers A up to Referral Hospitals] |
| 18. The HCF's fossil fuel consumption is reduced by use of alternative cost-effective energy sources (i.e., photovoltaic (solar) power, wind power, hydro power and biofuels) as primary or backup electricity source. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 19. Freezers and refrigerators are defrosted regularly as part of maintenance practice. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **3.2 - C. Health and safety regulation** | | | | |
| 20. Established an energy saving program (e.g. education and awareness campaign, incentives scheme) to reduce energy use with the participation of all staff. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 21. *Provided proper maintenance and repair for off-grid photovoltaic (solar) power systems. | ☐ | ☐ | ☐ | |
| 22. Installed bicycle storage facilities to support its use by staff, patients and visitors. | ☐ | ☐ | ☐ | Rural facilities |

## Interventions 4

| 4.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| **4.1 - A. Adaptation of current systems and infrastructures** | | | | |
| 1. *Siting and/or retrofitting of new health care facilities follows assessments to avoid high-risk areas and to cope with a range of climate-related risks (e.g. drought, flood, prolonged rainfall, storms, strong winds, waves, and sea-level rise). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 2. *Health care facility exposure to all type of hazards and risk of the events (e.g. biological, geological, hydrometeorological, technological, societal) is mapped, considering both structural and non-structural elements. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 3. The catchment area of the health care facility is mapped in terms of the geographical area and population for whom the health care facility would be expected to provide health care for extreme climate event emergencies and disasters. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 4. Established partnerships between the health care facility, community and local authorities to reduce climate vulnerability in the surrounding communities. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 5. Accounts of historical damage to the health care facility assessed to determine whether structural and non-structural elements reports indicate that the level of safety has been compromised. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 6. The condition of the building is regularly inspected, both internally and externally, for signs of deterioration such as broken plaster, cracks or sinking structural elements, and determine the causes | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 7. The health care facility has sufficient natural ventilation (e.g. screens) with protection against diseases vectors. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 8. Health care facility access and evacuation routes are clearly marked and free of obstacles to enable evacuation during climate-related emergencies. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 9. Green roofs or reflective white roofs on buildings installed to reduce heat island impacts. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 10. Roofing materials are completely and securely fastened, welded, riveted or cemented (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 11. Roof drainage system has adequate capacity and is properly maintained (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 12. Roof is leak-proof and insulated (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 4.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| 13. Improved safety roofing designed to withstand wind velocity of 175-250 kph in high intensity tropical storm prone areas (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 14. Glass walls, doors and windows resist basic wind speeds of 200-250 kph (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 15. Building structures are built with fire-resistant and nontoxic materials (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 16. Power-operated doors can be opened manually to permit exit in the event of power failure (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For Divisional up to Referral Hospitals] |
| 17. Windows have wind and sun protection devices and are leakproof (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **4.1 - B. Promotion of new systems and technologies** | | | | |
| 18. Sanitation technologies are designed to be more resistant to climate hazards, able to operate under a range of climate conditions, ensuring that failures in one part of the service chain do not cause the entire service to fail (certified by engineer for new construction or retrofit projects). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 19. *Early warning system developed and actively informs health care facilities to enable prompt responses to extreme weather events. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 20. Strengthening health information systems with climate information to provide information for early health interventions. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 21. *A reliable and sustainable primary and back-up communication systems (e.g. satellite phones, mobile devices, landlines, Internet connections, pagers, two-way radios, unlisted numbers) is available including as access to an updated contact list for emergency operation. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 22. Plans are in place for operating and maintaining critical systems in emergencies and disasters. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 23. Ensured that a mechanism exists for the prompt maintenance and on-site repair of equipment required for essential services. Postpone all non-essential services when necessary. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 24. Identified the capacities and resources available within the health care facility to cope any climate-related emergency and disaster. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 4.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | ***Low*** | ***Medium*** | ***High*** | |
| 25. There is marked resources and supplies for delivery of babies during disaster situations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **4.1 - C. Sustainability of health care facilities' operations** | | | | |
| 26. Established protocols for the health care facility's food service to respond and recover from an extreme weather event (e.g. emergency menus, protocol for monitoring and rationing) and food-borne outbreaks (sanitation, disinfection, isolation). | ☐ | ☐ | ☐ | [For Subdivisional up to Referral Hospitals] |
| 27. There is secure access to essential backup food sources via multiple agreements with different vendors and through cooperative agreements with other health care facilities. | ☐ | ☐ | ☐ | [For Subdivisional up to Referral Hospitals] |
| 28. Climate related hazards (current and potential) are classified as high (indicating a high probability of hazards taking place or high-magnitude hazards, or both), medium (a high probability of moderate hazards) and low (a low probability or hazards of low magnitude). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 29. HCFs' health emergency plan is available for preparedness and response during extreme weather events (with evacuation protocols and disaster recovery steps) and with a clear budget line. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 30. There is a centralized emergency transportation system for shifting critically ill patients following a climate related event. | ☐ | ☐ | ☐ | [For Divisional up to Referral Hospitals] |
| 31. Climate related disaster plans are regularly updated, and workforce regularly trained on how to implement it. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 32. Safe access to critical back-up supplies and resources are available (for medical equipment, treatment supplies, technical experts, alternative energy supplies). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 33. Sufficient emergency room surge capacity is available to manage climate-related emergencies and disasters (e.g. extreme heat events). | ☐ | ☐ | ☐ | [For Health Center B up to Referral Hospital] |
| 34. Identified physical space within the health care facility for the storage and stockpiling of additional supplies, taking ease of access, security, temperature, ventilation, light exposure, and humidity level into consideration. | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 35. Ensured an uninterrupted cold chain for essential items requiring refrigeration. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 36. Stockpiled essential supplies and pharmaceuticals in accordance with national guidelines ensuring the timely use to avoid loss due to expiration. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 4.1 Interventions on climate resilience | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| 37. Estimated the consumption of essential supplies and pharmaceuticals, (e.g. amount used per week) using the most likely extreme weather event scenarios. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 38. *Appropriate back-up arrangements for essential lifelines, including water, power and oxygen are available. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 39. An updated inventory of all equipment is developed and maintained, including a shortage-alert and delivery mechanism. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 40. Established contingency agreements (e.g. memoranda of understanding, mutual aid agreements) with vendors to ensure the procurement and prompt delivery of equipment, supplies and other resources in times of shortage. | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 41. Patient medical records are safely stored particularly in flood-prone areas. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 42. Generator's housing or powerhouse is protected from extreme weather events and movable if required. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 4.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| **4.2 - A. Adaptation of current infrastructures** | | | | |
| 43. New health care facilities are designed and constructed based on low carbon approaches. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 44. Environmental sustainability criteria included in the plans of new health care facilities construction or renovations. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 45. Retrofitting of buildings implemented to cut energy waste. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 46. Construction or retrofitting considers having corridors with exterior walls to maximize use of daylight and natural ventilation. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 47. Installed solar water heaters. | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 48. Installed hybrid systems (which include renewable energy, batteries, and back-up generators). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 49. The health care facility has measures to improve indoor air quality (e.g. air filters, mechanical or natural ventilation). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 4.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| 50. Medical gases are stored securely and/or recycled in well ventilated areas (e.g. Improved recapture and reuse of waste gases such as anaesthetic gases). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 51. Updated building insulation and windows comply with energy codes. | ☐ | ☐ | ☐ | |
| **4.2 - B. Promotion of new technologies** | | | | |
| 52. Replaced dishwashers and laundry machines with water-saving functions, whenever possible or when replacements are needed. | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 53. Replace medical devices with more water-efficient or energy-efficient models. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 54. Phase out mercury-containing thermometers and blood pressure measuring devices. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 55. Evaluated renewable energy technologies available to power the facility. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 56. Selected an energy system according to factors relevant to the facility (e.g. facility size, level of care, budget, operational cost, resource availability, and geographic location). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| **4.2 - C. Sustainability of health care facilities' operation** | | | | |
| 57. Implemented a clear Environmentally sustainable procurement policy statement or protocol for all types of products used in HCF giving priority to producers that are environmentally friendly (e.g. locally sourced, organic produce, minimal packaging, reusable and recyclable products, avoiding hazardous chemicals and non-degradable plastics). | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 58. The HCF purchases energy-efficient products (i.e. vehicles, computers and medical devices). | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 59. The HCF promotes support for local and sustainable food production, including where feasible an onsite garden to contribute fresh fruits and vegetables to the food service. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 60. Changes made in HCF service menus and practices, including limiting the amount of meat and dairy products in meals when appropriate | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 61. The HCF composts food waste when possible. | ☐ | ☐ | ☐ | [For Sub divisional up to Referral Hospitals] |
| 62. Training provided to staff on effective procurement practices. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 63. The HCF planted trees, grass and gardens to obtain health co-benefits such as the provision of natural shade for patients, staff and visitors during extreme heat events. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 64. Floor-care products are free of zinc, heavy metals, phthalates, glycol ethers and ammonia. | ☐ | ☐ | ☐ | [For all levels of HCFs] |

| 4.2 Interventions on environmental sustainability | | | | |
|---|---|---|---|---|
| **Indicator**<br>*Level of achievement:*<br>*Low, unavailable, unable*<br>*Medium, in progress, incomplete*<br>*High, completed, achieved* | **Action level** | | | **Observations** |
| | *Low* | *Medium* | *High* | |
| 65. HCF staff encouraged to use bicycles, public transportation and carpools to minimize transportation emission. | ☐ | ☐ | ☐ | [For all levels of HCFs] |
| 66. The HCF surrounding have drought-resistant plants (in drought prone areas). | ☐ | ☐ | ☐ | [For all levels of HCFs] |

* Requires external expertise

# ANNEX 2 Standard Operating Procedure for the 'Guidelines for Climate Resilient and Environmentally Sustainable Health Care Facilities in Fiji'

This Standard Operating Procedure for Implementation (SOP-I) guides the Ministry particularly the Health Emergency and Climate Change Unit (HECCU) in its collaboration with the assessment team, staff of health care facilities and health workers at different levels of the institution to implement the 'Guidelines for Climate Resilient and Environmentally Sustainable Health Care Facilities in Fiji' (CRESHCF *Guide*). It inspires health workers to be responsible users of resources provided to accomplish their work. Health care settings are principally providers of health services; with climate resilient and environmentally sustainable options that save the environment and reduce carbon emission. The health co-benefits can be immense. Reduction in economic wastage is added value to this approach.

Implementation of this guide can be separated into two sections, the operation and the retrofitting section. The *Guide* is aligned to WHO's global guidance which **proposes** four fundamental prerequisites for ensuring climate-resilient and environmentally sustainable health care facilities, namely (WHO, 2020):

- **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 (WASH)**: Sustainable and safe management of water, sanitation and health care waste services;
- **Energy**: Sustainable energy services;
- **Infrastructure, technology and products**: Appropriate infrastructure and technologies, including all the operations that allow for the efficient functioning of the health care facility.

The achievement of a *climate resilient and environmentally sustainable health care facility (CRESHCF)* is measured through the response to the *Guide's* checklist which is aligned to WHO's 4 fundamental prerequisites.

The implementation of the *Guide* shall be considered in three (3) distinct phases which are labelled as the *Pre-phase; In-phase* and *Post-phase. Pre-phase* entails the selection of HCF for the assessment under the CRESHCF checklist, the formation and training of the assessment team and the assessment process. *In-phase* includes intervention measures that are implemented to build a *climate resilient and environmentally sustainable health care facility. Post-phase* comprises the monitoring and evaluation of the HCF for sustainability of the CRESHCF achievement.

Outcome: Transformed work culture that is environmentally friendly, actively promoting choices that maximize health co-benefits and economic co-benefits of climate change mitigation in practice and builds the resilience of the facility to the adverse impacts of climate change.

## *Procedure*

### *Pre-phase*

#### *Step 1 – Selection of HCF for Climate Resilient and Environmentally Sustainable Health Care Facilities*

To facilitate the process of building CRESHCF, the Ministry identifies the most suitable facility to undertake complete process. Several considerations will guide the selection process:

i. Location of the facility:
    a. Easily accessed for all phases of the *procedure*;
    b. Located in area considered vulnerable to climate change impacts (Use hazard and vulnerabilities assessment tool – Annex 3)
ii. Level of the facility:
    a. Likelihood to complete the full *procedure*;
    b. Impact of available resources;
iii. Community:
    a. Type of communities within the HCF catchment (include vulnerabilities and capacities);

#### *Step 2 - Conduct training for Climate Resilient and Environmentally Sustainable Health Care Facilities Assessment Team*

The training of the assessment team is a crucial component of implementing CRESHCF since this is a new initiative to Fiji and the Pacific. Expert guidance in the implementation of the guide is essential. The training and consultation prior to assessment should be sufficiently comprehensive involving all stakeholders who will participate in the assessment. The training component while considered essential is the prerogative of the Ministry. The assessment team to be trained comprise officers from the technical areas of:

i. Climate Change and Health, Health Emergency and Disaster Risk Reduction;
ii. Asset Management Unit comprising of - architect, structural engineer, quantity surveyor and officers with electrical and plumbing background where available (within and out of Ministry);
iii. Health Information Unit;
iv. Environmental Health;
v. Clinical (nurse, medical officer, technicians: laboratory/pharmaceuticals, dietician).

The above listed with selected hospital/HCF administrators would be trained to be competent in the conduct of the assessment and supervision of the interventions.

The primary objective of the CRESHCF Guide training is to ensure that the assessors are equipped with the competency to assess the climate resiliency and environmental sustainability capacity of the HCF using the CRESHCF checklist.

The specific objectives are as follows:

i. To finalize the assessment tool for the team, consider type of HCF (checklists and templates);
ii. To identify specific criteria for prioritizing HCF for the assessment;
iii. To produce a schedule and frequency of assessment for the selected facilities;
iv. To finalize the team composition and delegation of responsibilities (data entry and analysis; logistician etc.);
v. To develop a prioritizing tool for the intervention needs (refer to Tables 1 & 2);

vi. To identify a panel of external advisers (with ToR) that can analyze the assessment team's report and recommendations;
vii. To finalize a reporting format and schedule (refer to Annex 4).

**Training strategy**

The team leaders (focal points) for each of the 4 prerequisites will be selected before training commences. The training will use different tools as follows:

i. Power point Presentations: each of the 4 prerequisites will have their specific presentations;
ii. Working-group sessions: working groups will address each of the 4 prerequisites;
iii. General group discussions: the assessment teams will use this forum to check each other's issues, processes ensuring there is a complementing component present in the processes;
iv. Simulation exercises: the groups are expected to run through their activities using the checklists and templates that have been developed.

**Expected output**

i. Final templates and checklists for the assessment;
ii. A schedule of activities with timelines;
iii. A prioritizing tool (and analysis) for the selection process and the interventions (Tables 1 & 2);
iv. A reporting template (Annex 4).

**Sessions**

i. Checklists and templates
ii. Assessment process and utilization of the checklist
iii. Criteria for Prioritizing HCF for intervention
iv. Reporting and follow up assessments

### *Step 3 - Conduct initial assessment to identify Health Care Facilities for CRES intervention*

A well mentored and appropriately equipped assessment team defines the success of the CRESHCF initiative in Fiji's health sector. The primary objective of the assessment is to obtain baseline information on identified HCF's in order to assist the team in making informed decisions for strengthening climate resilience and environmental sustainability in selected facilities. The specific objectives are as follows:

i. To identify HCF that have existing infrastructure, technologies and processes that are climate resilient and environmentally sustainable;
ii. To identify specific areas that can be explored to upgrade HCFs' operations and/or structures to be more climate resilient and environmentally sustainable;
iii. To identify current and future climate risks (to health).

**Assessment strategy**

The assessment process will use the tool developed in Step 2. The tool will contain a checklist and templates for the 4 CRES prerequisites and will be used as directed by the team. The steps below provide a temporary guide that the assessment team can use; it is not prescriptive and gives different team leaders space for modification.

i. Final schedule of assessment from the training is utilised;
ii. Assessment is conducted by the team and the ratings follow the recommendation in the predetermined checklists;
iii. After every assessment the report is prepared and shared with the relevant authorities;
iv. A period for intervention and improvement measures is negotiated;
v. Follow-up assessment may be conducted.

**Expected output**

i. One consolidated report (with recommendations) of the assessed HCFs' level of climate resilience and environmental sustainability;
ii. Checklists filled by all the team members;
iii. Technical reports accompany the checklists where required.

### *Step 4 – Analysis of the report and recommendations from the assessment team*

The report and recommendations of the assessment team shall be analysed by external advisers as identified in Step 2. The primary objective of the analysis is to ensure that the recommendations put forward by the assessment team is justified. The recommendations will be made under the 4 prerequisites of a CRESHCF and prioritization of activities will be prepared at this step. The specific objectives are as follows:

i. To develop a benefit, costs and risks situation analysis of the report and the recommendations from the assessment team;
ii. To identify gaps and prioritize activities accordingly from the assessment and rectify early;
iii. To ensure the assessment recommendations are relevant, sustainable, cost-effective and replicable.

**Analysis strategy**

The process will follow the Terms of Reference and other protocols set by the Ministry. The experts may have their own analysis tool or that recommended by the Ministry.

i. Experts agree to a standard analysis tool to be used;
ii. Analysis is conducted, and the outcome is discussed with the assessment team;
iii. The priority areas are identified, and works are carried out according to the prioritized list of activities;
iv. The Ministry makes the decision based on the recommendations and decision of the experts;
v. The Ministry recommends the next plan of action;
vi. Follow-up or re-assessment is conducted if recommended by the Ministry.

**Expected output**

i. Justification report with the recommended HCF's prioritized for intervention;
ii. Recommended works to be undertaken – Plan of Action and Logical Framework;
iii. Proposals for the implementation of intervention plan (with a budget);
iv. Approval by MoHMS for intervention measures to be implemented.

## *In-phase - Activating the Plan of Action*

Activities may be concurrent or consecutive and should follow the developed Plan of Action and Logical Framework prepared by the Ministry. The following steps 5 – 9 are not restrictive as the recommended Plan of Action and Logical Framework will determine the execution of works.

### *Step 5 – Scope of Work and designing; Town Planning/Local Authority Approval*

At this phase, more details of the works to be conducted will be required and engagement of structural and civil engineers, architects, mechanical, or electrical engineers and water system engineers is necessary. The specific objectives are as follows:

i. To develop the scope of work that ensures mitigation of climate change through informed design and construction;
ii. To ensure that the scope of work will strengthen climate resiliency and environmental sustainability within the facility;
iii. To ensure design plans are prepared if/when required;
iv. To secure the relevant development control approvals for the planned work – if required.

**Analysis strategy**

The process will follow the Ministry's procurement and services protocol. Relevant authorities' approval will be secured by the Asset Management Unit (AMU) of the Ministry following government's processes.

**Expected output**

i. Scope of Work and design for Green HCF for the prioritized facility.
ii. The total budget for the proposed work.
iii. Approved development/retrofitting plans.

### *Step 6 – Contractual and tender process,*

This phase of the project will be completely overseen by the AMU following government's processes.

### *Step 7 – Retrofitting and construction works to completion*

Constructional (includes retrofitting) works will be carried out according to the scope of work and design approved in Step 4. Representative of the AMU will be on site to oversee the construction work.

### *Step 8 – Capacity Development*

Under this step, various capacity building strategies are undertaken to ensure the facility staffs and users (catchment community) access the relevant education and training, plans and strategies, programs and projects that constitutes a *CRESHCF* under the *Guide* and the *SOP*. These capacity building strategies are recommended from Step 4 and incorporated in the Plan of Action.

### *Step 9 – Communications and awareness raising*

Like Step 8, this one can be implemented in different forms as practised by the Ministry. Suitable advocacy messages for CRES and CRESHCF shall be developed for communications and awareness raising.

## *Post-phase*

### *Step 10 – Monitoring and evaluation*

The activities under this step will be the coordinated effort of the HECC unit and AMU with the project facilities. Continuous monitoring is essential to assure that necessary plans and programs are complied with and selected indicators show the effectiveness of the intervention particularly in the achievement of the objectives of the *Guide*.

Outputs

i. Developed climate-resilient and environmentally sustainable health care facilities;
ii. Practising green & environmentally sustainable options that meet Fiji design/construction laws;
iii. Health workers are practising environmentally conscious and climate resilience in the execution of health services;
iv. Implementing a performance based, bench marking document identifying design standards that contribute to achieving recognition in greening efforts; and
v. Implementing a self-certifying toolkit to steer facilities through greening efforts; it includes indicators to help measure improvements in climate resiliency and environmental sustainability.

Outcome

i. The health sector has reduced its carbon and environmental footprint;
ii. The health workers are advocates and champions of the nation's climate change mitigation and adaptation efforts.

External evaluation is the prerogative of the financial institutions and donor agencies supporting the development of a CRESHCF.

# Ministry of Health and Medical Services

***PART 1 GENERAL INFORMATION / PROFILE***

| | |
|---|---|
| **Name of health care facility** | |
| **Division/Sub-division** | |
| **Level or Type of HCF** | |
| **Address** | |
| **Contact information** | |
| **Name of Administrator/OIC** | |
| **No. of personnel per unit/dept:** | |
| **Number of hospital beds** | |
| **Services offered (refer role delineation checklist)** | |
| **Specify catchment area** | Include a site map |
| **History of HCF (year, built, Disaster experienced)** | |

| | | |
|---|---|---|
| **Date of assessment visit:** | | |
| **Assessment team:** *(name, designation, contact info)* | | |
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

## *1.0 Frame and scope of the assessment – HAZARDS*

### 1.1 Health outcomes of interest in the area

#### 1.1.1 What are the health outcomes of interest? (tick the box)

□ Heat stress
□ Air pollution
□ Waterborne diseases
□ Foodborne diseases
□ Vector borne diseases
□ Malnutrition
□ Extreme weather events – injuries, deaths
□ Mental health
□ Health Care Facility Safety

### 1.2 Climate change and health exposure

#### 1.2.1 What is the specific climate change exposure?

Extreme weather event
□ Cyclone
□ Drought
□ Flooding
□ Heat – high temperature
□ Sea level rise
□ High rainfall
□ Low – no rainfall

#### 1.2.2 What is the possible consequence of the above exposure?

□ Flooding
□ Sea water intrusion into freshwater sources
□ Infrastructure damage
□Water shortage
□ Coastal erosion
□ Landslide
□ Changing ecosystems
□ Lack of arable land for farming,
□ Lack of space for proper housing (sanitation, waste disposal etc.)
□ Damage to infrastructure

***Exposure to risk factors – (R = H x E x V/ Capacity) (Facility is included)***

## *2.0 Risks & Vulnerability*

### 2.1 Environmental

#### 2.1.1. What are the environmental risks experienced by the HCF?

(Refer to 1.2.1 – 1.2.2: proximity of HCF to hazard)

□ Close to river
□ Close to hill/slope

□ Coastal

**2.1.2. What is the population affected by the risks identified above (%)?**

(Refers to the HCF in relation to the communities it serves; e.g. if the HCF is close to the river and it gets flooded, what % of the users will not access health services)

*Close to river*

□ 0 – 25%
□ 26 – 50%
□ 51 – 74%
□ 75 – 100%

*Close to hill*

□ 0 – 25%
□ 26 – 50%
□ 51 – 74%
□ 75 – 100%

*Coastal*

□ 0 – 25%
□ 26 – 50%
□ 51 – 74%
□ 75 – 100%

**2.2 <u>Social</u>**

**2.2.1. What are the social risks experienced by the community?**

**2.2.1.1 Age groups in years (#) or (%):**

□ 0 – 5: _____
□ 6 – 14: _____
□ 15 – 19: _____
□ 20 – 29: _____
□ 30 – 39: _____
□ 40 – 49: _____
□ 50 – 59: _____
□ 60 – 69: _____
□ 70 +: _____

**2.2.1.2 Employment status (20 – 55yrs) (#) or (%):**

□ Employed: _____
□ Unemployed: _____

**2.2.1.3 Students status (4 – 20yrs) (#) or (%):**

□ Pre-school: _____
□ Primary: _____
□ Secondary: _____
□ Tertiary: _____
□ School dropout: _____

**2.2.1.3 Persons with disability (#):**

□ Partially disabled: _____
□ Completely Disabled: _____
□ Mentally challenged: _____

**2.1.2. What is the population affected by the risks identified above (%)?**

□ Vulnerable age group - _____
□ Unemployed in productive age group - _____
□ Not in school for school aged group - _____

□ Vulnerable category due to disability - _____

**2.3 Infrastructure**

**2.4.1. What are the infrastructure risk factors experienced by the community in accessing the HCF?**

□ Lack/distance of Health facility: _____
□ Lack of proper road: _____
□ Potential damage to road/bridge: _____
□ Potential damage to buildings: _____

**2.4.2. What is the population affected by the risks identified above (%)?**

**2.5 Health**

**2.5.1. What are the health risks experienced by the HCF (and community)?**

2.5.1.1 Lack of safe water for:
□ Drinking
□ Cooking
□ Hygiene practices (bath, wash hands)

2.5.1.2 High disease vector population
□ Mosquito
□ Rodents

2.5.1.3 □ Drowning

2.5.1.4 □ Injury and fatality

2.5.1.5 □ Lack of nutritious food

2.5.1.6 Air pollution
□ Indoor
□ Outdoor

2.5.1.6 Exposure to heat
□ Outdoor activities
□ Lack of shade
□ Lack of indoor cooling facility

2.5.1.7 □ Lack of proper sanitation

2.5.1.8 □ Lack of proper waste management

**2.5.2 What is the possible health consequence of exposure to the above risks?**

□ Heat stress
□ Respiratory illness including allergens
□ Waterborne diseases
□ Vector borne diseases
□ Malnutrition
□ Extreme weather events – injuries, deaths
□ Mental health

**2.5.3 What is the population affected by the risks identified above (%)?**

### 2.6 Structural and non-structural safety of the HCF

| | Low | Average | High | Don't know |
|---|---|---|---|---|
| **Structural safety** | | | | |
| Facility built in safe place | ☐ Low = Built in highly vulnerable and risk place (such as vulnerable to rising sea level or flooding or landslide) | ☐ Average = Built in moderately safe place | ☐ High = Built in very safe place | ☐ |
| Condition of the building | ☐ Low = Cracks on the ground and first floors; Major deterioration caused by weathering or normal ageing | ☐ Average = Some deterioration caused only by weathering or normal ageing | ☐ High = No deterioration or cracks observed | ☐ |
| Structural resilience to hazards other than earthquakes and strong winds | ☐ Low = Low structural resilience to hazards present at the site of the building | ☐ Average = Satisfactory structural resilience (taking account of structural risk reduction measures in place) | ☐ High = Good structural resilience (taking account of risk reduction measures in place) | ☐ |
| **Non-structural safety (this part is assessed by the appearance of the building, not by interview)** | | | | |
| Condition and safety of doors, exits and entrances | ☐ Low = Doors, exits and entrances in poor condition, subject to damage which would impede the function of this and other elements, systems or operations; entrance width is less than 115cm | ☐ Average = In fair condition, subject to damage but damage would not impede the function of this and other elements, systems or operations; or entrance width is less than 115cm | ☐ High = In good condition, no or minor potential for damage that would impede the function of this and other elements, systems or operations; and entrance width is equal to or larger than 115cm | ☐ |
| Condition and safety of windows and shutters | ☐ Low = Windows and shutters in poor condition, subject to damage which would impede the function of this and other elements, systems or operations (e.g. weak protective glazing) | ☐ Average = In fair condition, subject to damage but damage would not impede the function of this and other elements, systems or operations | ☐ High = In good condition, no or minor potential for damage that would impede the function of this and other elements, systems or operations; protective glass (e.g. polycarbonate glazing, blast film) has been added in critical wards. | ☐ |
| Condition and safety of roofing | ☐ Low = Roofing in poor condition, subject to damage which would impede the function of this and other elements, systems or operations | ☐ Average = In fair condition, subject to damage but damage to element(s) would not impede the function of this and other elements, systems or operations | ☐ High = In good condition, no or minor potential for damage that would impede the function of this and other elements, systems or operations. | ☐ |
| Condition and safety of internal walls and partitions | ☐ Low = Internal walls and partitions in poor condition, subject to damage which would impede the | ☐ Average = In fair condition, element(s) are subject to damage, but damage would not impede the | ☐ High = In good condition, no or minor potential for damage that would impede the function of this and other elements, systems or operations. | ☐ |

| | | | | |
|---|---|---|---|---|
| | function of this and other elements, systems or operations | function of this and other elements, systems or operations | | |
| Evacuation routes | ☐ Low = Evacuation routes are not clearly marked and many are blocked | ☐ Average = Some evacuation routes are marked and most are clear of obstacles | ☐ High = All evacuation routes are clearly marked and free of obstacles | ☐ |
| Security of building, equipment, staff and patients | ☐ Low = No measures are in place | ☐ Average = Some physical security protection is in place (e.g. locked storage for supplies and equipment, asset tracking and inventory control) | ☐ High = Wide range of security measures in place (e.g. design and layout, physical barriers, access control and door security systems, locked storage for supplies and equipment) | ☐ |

### *3.0 Analysis of Findings*

**Vulnerability Assessment - Qualitative**

Vulnerability is the function of exposure, sensitivity and adaptive capacity.

Example

| Potential Impact | Exposure | Sensitivity | Adaptive Capacity | Vulnerability |
|---|---|---|---|---|
| **Damage in HCF infrastructures due to more extreme events** | **Medium** | **S2 - Unlikely. Functionality will likely stay the same** | **AC3 - Maybe. Will require some costs ($$$) and staff intervention** | |
| **Water shortages** | **Medium - High** | **S4 - Yes. Functionality will get worse** | **AC2 - No. Will require significant costs ($$$$) and staff intervention** | |
| | | | | |

| Sensitivity and Adaptive Capacity Matrix | | | | | |
|---|---|---|---|---|---|
| | **S1** | **S2** | **S3** | **S4** | **S5** |
| **AC1** | | | | | |
| **AC2** | | | | | |
| **AC3** | | | | | |
| **AC4** | | | | | |
| **AC5** | | | | | |

**V1: Low Vulnerability**
**V2: Medium - Low Vulnerability**
**V3: Medium Vulnerability**
**V4: Medium - High Vulnerability**
**V5: High Vulnerability**

# ANNEX 4 Assessment Report for Climate Resilient and Environmentally Sustainable Health Care Facilities in Fiji

## GENERAL INFORMATION

| | |
|---|---|
| **Name of health care facility:** | |
| **Division/Sub-division:** | |
| **Level/Type of facility:** | |
| **Address:** | |
| **Contact information:** | |
| **Name of Administrator/OIC:** | |
| **No. of personnel per unit/dept:** | |
| **Number of hospital beds:** | |
| **Services offered (refer role delineation checklist):** | |
| **Specify catchment area:** | |

## ASSESSMENT PROCESS

| | | |
|---|---|---|
| **Data of assessment visit:** | | |
| **Assessment team:** *(name, designation, email/contact info)* | | |
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

*Describe the activity steps carried out as part of the assessment.*

| |
|---|
| |

## PART 1 – PROFILE

*Provide a brief description of the health care facility's history and other details on its operation. Include a site map of the facility in the space provided below or the annex section. Cite reference/source of information.*

| |
|---|
| |

## PART 2 – CLIMATE HAZARDS AND VULNERABILITIES

*Identify the climate hazards encountered within the area and the risks/impacts experienced by the HCF in recent years.*

**Climate change hazards:** (*Check which items are applicable*)

| | | | | | |
|---|---|---|---|---|---|
| ☐ | Cyclone | ☐ | Sea level rise | ☐ | Others: *(specify)* |
| ☐ | Drought | ☐ | High rainfall | | |
| ☐ | Heat – high temperature | ☐ | Low – no rainfall | | |

**Related Risks:** (*Check which items are applicable*)

| | | | | | |
|---|---|---|---|---|---|
| ☐ | Flooding | ☐ | Coastal erosion | ☐ | Lack of space for proper housing (sanitation, waste disposal etc.) |
| ☐ | Sea water intrusion into freshwater sources | ☐ | Landslide | ☐ | Others: *(specify)* |
| ☐ | Infrastructure damage | ☐ | Changing ecosystems | | |
| ☐ | Water shortage | ☐ | Lack of arable land for farming | | |

**Health outcomes of interest in the area:** (*Check which items are applicable*)

| | | | | | |
|---|---|---|---|---|---|
| ☐ | Heat stress | ☐ | Vector borne diseases | ☐ | Health Care Facility Safety |
| ☐ | Air pollution-related diseases | ☐ | Malnutrition | ☐ | Others: *(specify)* |
| ☐ | Waterborne diseases | ☐ | Extreme weather event-related injuries and deaths | | |
| ☐ | Foodborne diseases | ☐ | Mental health | | |

## PART 3 – ASSESSMENT FINDINGS

*Discuss the findings from the completed checklists, i.e., strengths and weaknesses of the HCF with respect to (a) climate resiliency and (b) environmental sustainability. Include the completed checklists in annex section.*

| | |
|---|---|
| | **Health workforce** |
| **a.** | **Human resources** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |
| **b.** | **Capacity development** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |
| **c.** | **Communications and awareness raising** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |

| | |
|---|---|
| | **WASH and Waste Management** |
| **a.** | **Monitoring and assessment** |
| | ***Climate resiliency*** |
| | |
| | ***Environmental sustainability*** |
| | |
| **b.** | **Risk management** |
| | ***Climate resiliency*** |
| | |
| | ***Environmental sustainability*** |
| | |
| **c.** | **Health and safety regulation** |
| | ***Climate resiliency*** |
| | |
| | ***Environmental sustainability*** |
| | |

| | |
|---|---|
| | **Energy** |
| **a.** | **Monitoring and assessment** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |
| **b.** | **Risk management** |

| | |
|---|---|
| | **Energy** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |
| **c.** | **Health and safety regulation** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |

| | |
|---|---|
| | **Infrastructure, Technology and Products** |
| **a.** | **Adaptation of current systems and infrastructures** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |
| **b.** | **Promotion of new systems and technologies** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |
| **c.** | **Sustainability of health care facility operations** |
| | ○ ***Climate resiliency*** |
| | |
| | ○ ***Environmental sustainability*** |
| | |

## PART 4 – RECOMMENDATIONS

*Based on the findings, provide recommendations to strengthen the climate resiliency and environmental sustainability of the HCF.*

| ***Short description of recommendations*** *(insert additional rows if needed)* | ***Target date for completion*** | ***Responsible unit(s)*** | ***Priority level*** *(High, Medium, or Low)* |
|---|---|---|---|
| **Health Workforce** | | | |
| *a. Human resources* | | | |
| 1. | | | |
| 2. | | | |
| *b. Capacity development* | | | |
| 1. | | | |
| 2. | | | |
| *c. Communications and awareness raising* | | | |

| ***Short description of recommendations*** *(insert additional rows if needed)* | ***Target date for completion*** | ***Responsible unit(s)*** | ***Priority level*** *(High, Medium, or Low)* |
|---|---|---|---|
| **Health Workforce** | | | |
| 1. | | | |
| 2. | | | |

| ***Short description of recommendations*** *(insert additional rows if needed)* | ***Target date for completion*** | ***Responsible unit(s)*** | ***Priority level*** *(High, Medium, or Low)* |
|---|---|---|---|
| **WASH and Waste Management** | | | |
| *a. Monitoring and assessment* | | | |
| 1. | | | |
| 2. | | | |
| *b. Risk management* | | | |
| 1. | | | |
| 2. | | | |
| *c. Health and safety regulation* | | | |
| 1. | | | |
| 2. | | | |

| ***Short description of recommendations*** *(insert additional rows if needed)* | ***Target date for completion*** | ***Responsible unit(s)*** | ***Priority level*** *(High, Medium, or Low)* |
|---|---|---|---|
| **Energy** | | | |
| *a. Monitoring and assessment* | | | |
| 1. | | | |
| 2. | | | |
| *b. Risk management* | | | |
| 1. | | | |
| 2. | | | |
| *c. Health and safety regulation* | | | |
| 1. | | | |
| 2. | | | |

| ***Short description of recommendations*** *(insert additional rows if needed)* | ***Target date for completion*** | ***Responsible unit(s)*** | ***Priority level*** *(High, Medium, or Low)* |
|---|---|---|---|
| **Infrastructure, Technology and Products** | | | |
| *a. Adaptation of current systems and infrastructures* | | | |
| 1. | | | |
| 2. | | | |
| *b. Promotion of new systems and technologies* | | | |
| 1. | | | |
| 2. | | | |
| *c. Sustainability of health care facility operations* | | | |
| 1. | | | |
| 2. | | | |

## PART 5 – POST ASSESSMENT ACTIVITIES

*Propose follow-up activities to monitor progress towards implementation of the interventions including schedule, ex. follow up visit, self-monitoring and reporting, virtual/in-person meetings or teleconferences, etc.*

| ***Activity*** | ***Responsible unit/person*** | ***Schedule*** |
|---|---|---|
| *Ex:*<br>1. Follow-up visit to HCF | Assessment Team member 1, 2, 3,… | Specify date or timeframe |
| | | |
| | | |
| | | |

| *All assessment reports should be signed by the assessment team lead and countersigned by the authorized representative of the health care facility upon submission to the Ministry of Health and Medical Services.* | | |
|---|---|---|
| Prepared and submitted by: | | |
| | **Assessment Team Leader** | **Date** |
| Verified by: | | |
| | **Health Care Facility Administrator/Officer in Charge** | **Date** |

## PART 6 – ANNEX

1. List of references and documents reviewed
2. List of key informants interviewed
3. Completed CRESHCF Checklists
4. Completed Prioritization Matrix (Table 1 of CRESHCF Guidelines document)
5. Site map of health care facility

# ANNEX 5 Mitigation Strategies Applicable to the Health Care Facilities

*(Adopted from WHO - Health in the green economy)*

| Mitigation strategy | Actions | GHG impact | Health co-benefits | Limitations and needs |
|---|---|---|---|---|
| **Improve energy supply and distribution efficiency (IPCC chapters 4 & 6)** | Fuel switching; energy recovery; distributed generation; combined heat and power | Reduced transmission losses; reduced emissions from energy use, fuel production and transport | Health systems: immediate energy savings; operational resilience/ reliability<br>Environmental risks: reduced air pollution exposures<br>Health equity: improved access to reliable health care | Infrastructure retrofit and financing |
| **On-site renewable energy sources (IPCC chapters 4 & 6)** | Solar photovoltaic (electricity)<br>Thermal solar energy (e.g. space/hot water heating)<br>Wind; concentrating solar; advanced biomass; fuel cells; geothermal energy | Reduced emissions from energy use, fuel production and transport | Health systems: Improved operational resilience/reliability; long-term energy savings<br>Environmental risks: Reduced ambient air emissions from on-site fuel oil and wood-burning furnaces, particularly in developing countries, and from the transport of fuel<br>Health equity: Anecdotal evidence of improved access to reliable health care | Financing<br>Systematic review of impacts of energy poverty in health facilities and of health outcomes related to sustainable energy interventions in health clinics |
| **Passive cooling, heating and ventilation strategies (IPCC chapter 6)** | Natural ventilation in health care settings<br>Evaporative cooling<br>Desiccant dehumidification<br>Underground earth-pipe cooling | Reduced direct emissions from on-site energy production; reduced emissions from energy use, fuel production and transport | Health systems: Energy and operations savings, energy security<br>Environmental risks: Reduced emissions from energy usage, improved indoor air quality<br>Disease risk: Decreased transmission of airborne infections, including tuberculosis<br>Equity impact: Energy security, improved social welfare, productivity and patient health | Infrastructure retrofit and financing<br>Installation and maintenance of window screening in facilities vulnerable to vector-borne disease |
| **Facility wastewater and solid waste management (IPCC chapter 10)** | Advanced autoclaving of infectious health care waste to reduce volume and make it suitable for municipal disposal<br>On-site wastewater pre- | Reduced energy expenditure for waste and water treatment<br>Reduced greenhouse gas (GHG) footprint from waste treatment processes (e.g. more efficient | Health systems: Savings in waste/ water disposal fees, reduced waste volumes, improved compliance with local air quality regulations/ guidelines<br>Environmental risks: Improved hygiene around facility, reduced methane and other emissions | Infrastructure retrofit and financing<br>Inadequate or absent community waste treatment and wastewater treatment systems downstream |

| Mitigation strategy | Actions | GHG impact | Health co-benefits | Limitations and needs |
|---|---|---|---|---|
| | treatment and sanitation improvements<br>High-heat incineration of pharmaceuticals with pollution scrubbers53 | incineration) in some settings<br>Reduced aquifer and ecosystem damage from sewage/waste disposal | Disease risks and health equity: Reduced risks of exposure to infectious agents, and to diarrhoea and other water-borne diseases (cholera, etc.) for those living downstream of health facilities | |
| **Reduced GHG emissions from anaesthesia gas use and disposal** | Waste anaesthetic gas recapture and scavenging | Reduced direct emissions from anaesthesia gas waste | Health systems: Anaesthesia cost savings with reuse<br>Environmental risks: Reduced anaesthesia emissions<br>Disease risk: Reduced health risks (reproductive, nervous system, cognitive disorders) for health workers exposed to gas<br>Health equity: Improved health worker productivity | Infrastructure limitations, technology availability, limited expertise, ability to procure and secure financing |
| **Reduced procurement carbon footprint** | Better-managed procurement of pharmaceuticals, medical devices, business products and services, food/catering and other facility inputs | Reduced energy footprint in production and transport of unused/expired pharmaceuticals and products | Health systems: resource savings on unused/wasted products, estimated 10% reduction in pharmaceuticals procurement determined feasible by England's National Health Service<br>Disease risks: reduced risks from use of outdated/expired products, but increased risks if supply lines for refills of essential products are unreliable | Infrastructure and supply line reliability, administrative/IT capacity for precise inventories |
| **Health facilities in proximity to public transport and safe walking/cycling (IPCC Chapter 4)** | Public transport options mapped during planning of buildings to locate new facilities nearby<br>Employee incentives for public active transport use and facilities | Reduced transport-related emissions from health worker and hospital visitor travel | Environmental risks: reduced transport-related emissions<br>Health risks: reduced traffic injury risk for health workers and hospital/clinic visitors travelling to health facilities,<br>Potential for active transport by health care workers to reduce risks of hypertension, cardiac disease and diabetes<br>Health equity: Improved facility access for health workers and visitors who do not have cars | Infrastructure, land availability and use limitations |

| Mitigation strategy | Actions | GHG impact | Health co-benefits | Limitations and needs |
|---|---|---|---|---|
| **Conserve and maintain water resources** | Water-efficient fixtures, leakage management, water safety<br>Onsite water treatment and safe water storage in health facilities8<br>Rainwater harvesting, greywater recapture/ recycling | Reduced energy use for water extraction from surface/aquifer sources<br>Reduced truck transit of water resources<br>Reduced aquifer and ecosystem damage from water extraction | Health systems: Improved performance due to better access to safe water, savings in water fees<br>Environmental risks: Reduced water contamination from health facility activities<br>Disease risk: Reduced disease transmission from unsafe water and drinking water<br>Health equity: Improved access to safe, potable water in poorly resourced health facilities | Infrastructure and financing in poorly resourced settings<br>Building codes in developed countries may require use of piped water only |

## ANNEX 6 Categorizing the different levels of HCFs

It is essential that the checklist indicators are pre-categorized to complement the target facility eliminating wastage risk with resources. The HCF in Fiji are categorized into eight (8) different levels of services provided and criteria of establishment. Hence, these should be considered while preparing or aligning the checklists before the assessment:

1. Size of the facility
2. Number of staff and the different cadres
3. Types and sizes of equipment available
4. Type of the users of the facility
5. Vulnerability to the impacts of climate change

| ***Role*** | ***Services Provided*** | ***Criteria to establish or maintain*** |
|---|---|---|
| Nursing Stations | - Population health monitoring<br>- Health promotion<br>- General outpatient service<br>- NCD screening, monitoring<br>- MCH incl. antenatal care, IMCI, reproductive health<br>- Outreach/shift clinics, school and home visiting<br>- Basic outpatient management of mild mental illness<br>- Emergency treatment, stabilisation and referral<br>- Emergency deliveries or**, in remote areas, low risk and emergency deliveries** - Health statistics & medical records<br>- General administration, stock management, facility management & maintenance - Support & Supervision of Health Workers | - Population 200-5,000, depending on density and isolation.<br>- Travel time to nearest health facility by most common local transport<br>– For populations >1000, >1.5 hr<br>– For populations <1000, >3hrs<br>- Security of land tenure<br>- Reliable water and electricity supply, telecommunications. |
| Health Centres C | Primary health care provided by at least 2 nursing staff including nurse practitioner. May have doctor. May share some services/resources with a level 2 Sub-Divisional Hospital, particularly if located on the same site. Operates 8am-4pm Mon-Fri + (rural areas only) a/h on call.<br>***Services***<br>- Population health monitoring<br>- Health promotion<br>- General outpatient service<br>- NCD screening, monitoring<br>- MCH incl. antenatal care, IMCI, reproductive health<br>- Emergency deliveries or**, in remote areas, low risk and emergency deliveries** Outreach/shift clinics, school and home visiting - Emergency treatment, stabilisation and referral<br>- Short term holding/observation of patients (up to 24 hrs) depending on isolation<br>- Basic counselling and outpatient management of mild-moderate mental illness - Dental therapist/hygienist – visiting<br>- Zone nursing base<br>- Pharmacy dispensing<br>- Access to pathology and x-ray (via referral to another facility)<br>- Environmental health routine visiting services<br>- Health statistics & medical records<br>- General administration, stock management, facility management & maintenance | - Generally in rural areas<br>- Population catchment 4,000- 9,900 depending on density<br>- Travel time to nearest hospital >1 hr by bus (or most common local transport)<br>- For remote areas with population<br><4,000: travel time = >2 hours<br>- Security of land tenure<br>- Reliable water and electricity supply, telecommunications. |

| | | |
|---|---|---|
| | *May also have*<br><br>- Community rehabilitation<br>- Visiting dietetics services<br>Transport for outreach clinics, home visiting, patient transfers and supplies (including boats in the maritime regions | |
| Health Centres B | Primary health care provided by at least 2 nursing staff including nurse practitioner. May have doctor. Operates 8am-4pm Mon-Fri + a/h on call.<br><br>Services provided:<br><br>- Population health monitoring<br>- Health promotion<br>- General outpatient service<br>- NCD screening, monitoring<br>- MCH incl. antenatal care, IMCI, reproductive health<br>- Outreach/shift clinics, school and home visiting<br>- Basic counselling and outpatient management of mild-moderate mental illness - Dental therapist/hygienist<br>- Community rehabilitation<br>- Dietetics services – resident or visiting<br>- Zone nursing base<br>- Pharmacy dispensing<br>- Access to pathology and x-ray (via referral to another facility)<br>- Environmental health routine visiting services<br>- Health statistics & medical records<br>General administration, stock management, facility management & maintenance<br>Transport for outreach clinics, home visiting, patient transfers<br><br>For centres in rural areas where travel time to nearest hospital is at least one hour by bus (or most common local transport), additional services include:<br><br>- Emergency deliveries<br>- Emergency treatment, stabilisation and referral<br>Short term holding/observation of patients (up to 24 hrs) depending on isolation | - Population catchment 10,000-20,000 depending on density<br><br>- Security of land tenure<br><br>- Reliable water and electricity supply, telecommunications. |
| Health Centres A | Linked with referral hospital and staffed by team of medic al, nursing and allied health staff, including some visiting specialist services. Generally operates 8am-4.30pm Monday-Friday, although in areas of high demand, operating hours may be extended (e.g. open until 8 or 10pm or for Saturday sessions).<br><br>Provides a range of primary health care services including:<br><br>- Population health monitoring<br>- Health promotion<br>- General outpatient service<br>- NCD screening, monitoring, management<br>- Visiting specialist clinics<br>- Basic counselling and outpatient management of mild-moderate mental illness<br>- MCH incl. antenatal care, IMCI, reproductive health<br>- Primary dental service<br>- Zone nursing base<br>- Nutrition/dietetics service – on site or visiting<br>- Home visiting<br>- Environmental health services - on site or visiting<br>- Ready access to pharmacy service and diagnostic services (X-ray & pathology)<br>- Access to transport for movement of visiting staff, patients, supplies, specimens. | - Generally in urban areas<br><br>- Population catchment >30,000 or designated urban area<br><br>- Easily accessible from large catchment area<br><br>- Travelling time to referral hosp: < 1 hr<br><br>- Possible need to decentralise outpatient activity from referral hospital<br><br>- Supported by specialist clinical and diagnostic services from referral hospital |

| | | |
|---|---|---|
| | - Health statistics & medical records<br>- General administration, stock management, facility management & maintenance<br>- No physio? / community rehabilitation | |
| Sub-divisional Hospitals level 2 | Staffed by general medical practitioners, midwives, RNs and assistants who work across inpatient, outpatient and community settings. May share some services/resources with a level C/or B Health Centre, particularly if located on the same site. Operates 24/7.<br>*Provides primary health and acute care services* ***including:***<br>- Accident and emergency service<br>- Inpatient care (<25 flexible use beds)<br>- Low risk deliveries<br>- Outpatient and short term (24-48 hrs) inpatient management of acute mental illness.<br>- Integrated management of NCDs<br>- Visiting specialist services<br>- Primary dental service<br>- Physiotherapy services – on site or visiting<br>- Nutrition & dietetics service – on site or visiting<br>- Population health monitoring<br>- Health promotion<br>- Zone nursing base<br>- MCH incl. antenatal care, IMCI, reproductive health<br>- Community rehabilitation<br>- Pharmacy technician on site<br>- On site X-ray + access to routine pathology<br>- Access to environmental health services<br>- Health statistics & medical records<br>- General administration, stock management, facility management & maintenance - Mortuary<br>- Transport/courier service between sites<br>- Disaster response capacity if located near commercial airport. (as per Disaster Plan) | - Population 15,000-35000 (with some flexibility to allow for remote areas)<br>- Travel time to sub-divisional hospital / divisional hospital >1 hour or isolation factor (e.g. island)<br>- Supported by specialist services at divisional referral hospital |
| Sub-divisional Hospitals level 1 | Staffed by general medical practitioners, midwives, RNs and allied health staff. Operates 24/7.<br>*Provides inpatient and outpatient services as listed below:*<br>- Accident and emergency service<br>- General and specialist outpatient clinics<br>- Inpatient care – medical, surgical, maternity, paediatric, high dependency with capacity to provide isolation for infectious diseases<br>- Surgical services - visiting or resident – generally limited to minor procedures - Low risk deliveries<br>- Outpatient and short term (24-48 hrs) inpatient management of acute mental illness. - Integrated management of NCDs<br>- Dental service<br>- Physiotherapy services – on site or visiting<br>- Foot care/podiatry<br>- Nutrition & dietetics service – on site or visiting<br>- Pharmacy service with on-site pharmacy technician(s)<br>- On site X-ray and basic ultrasound<br>- Access to pathology service<br>- Access to environmental health services<br>- Health statistics & medical records<br>- General administration, stock management, facility management & maintenance - Mortuary<br>- Transport for outreach clinics, home visiting, patient transfers.<br>- Disaster response capacity if located near commercial airport. (as per Disaster Plan)***:*** | - Population of >35,000<br>- Provides main inpatient and maternity service for a sub-divisional population<br>- Supported by specialist services at divisional referral hospital |

| | | |
|---|---|---|
| Divisional Referral Hospitals | Staffed by specialist medical and nursing staff with full range of diagnostic and allied health support services. Operates 24/7 and provides outreach, referral and emergency retrieval service to sub-divisional hospitals and health centres.<br>*Provides inpatient and outpatient services as listed below:*<br>- Accident and emergency service<br>- General and specialist outpatient clinics<br>- Expanded outpatient network through linked health centres.<br>- Visiting sub-specialist services<br>- Inpatient care – medical, surgical, maternity, paediatric, high dependency with capacity to provide isolation for infectious diseases<br>- Resident specialist medical, anaesthetic, surgical, orthopaedic, ophthalmology, obstetrics, gynaecology and paediatric services. May have some sub-specialty interest in high volume specialties e.g. cardiology, respiratory, infectious disease.<br>- Critical care services including intensive care/high dependency and coronary care plus ability to safely manage burns<br>- Surgical and Endoscopy services<br>- Chemotherapy service<br>- Specialised inpatient and outpatient management of moderate-severe mental illness.<br>- Integrated management of NCDs<br>- Divisional dental service<br>- Physiotherapy and rehabilitation services<br>- Foot care/podiatry<br>- Nutrition & dietetics service<br>- Comprehensive pharmacy service<br>- Divisional laboratory service<br>- Divisional radiology service<br>- Clinical measurement including ECG, EST, echocardiography etc.<br>- Health statistics & medical records<br>- General administration, stock management, facility management & maintenance - Mortuary<br>- Transport for outreach services, patient transfers. | Referral service within division |
| National Referral Hospitals | ***As for Divisional referral hospitals plus*** highly specialised services and national referral functions (resident or visiting) including:<br>- Surgical sub-specialty services – ENT, paediatric, urology, vascular + visiting cardiac and neurosurgical services<br>- Level 2 Intensive care<br>- Visiting paediatric sub-specialty services<br>- Sub-specialised inpatient management of severe and complicated psychiatric illness. - Oncology admissions unit<br>- Prosthetic service<br>- Hyperbaric medicine<br>- CT scanning<br>- National reference laboratory<br>- Communicable disease response network coordination | Level of demand justifies only one service for the whole of Fiji<br><br>Requires specialised clinical support services<br><br>Involves high cost, complex services. |