

## South-South Cooperation Assistance Fund

### Project Proposal Template

(Translated by UNDP China)

**Project Proposal ID (Filled by SSCAF) :** automatically read by system

Project Name: <b>Cambodia –SSCAF COVID-19 Regional Project</b>
Project Origin Concept Note ID: <i>automatically read by system</i>
Application Agency: United Nations Development Programme, China Contact: Devanand Ramiah Title: Deputy Resident Representative, China Address: No. 2, Liangmahe Nan Lu, Beijing, P.R. China Tel: (86-10) 85320701 Tel: 8610-85320700 Email: <a href="mailto:devanand.ramiah@undp.org">devanand.ramiah@undp.org</a>
Partner Agency: United Nations Development Programme, Cambodia Contact: Nick Beresford Title: Resident Representative Address: #53, Pasteur Street, Boeung Keng Kang I P.O. Box 877, Phnom Penh, Cambodia Tel: +855 23 216 167 / 214 371 Email: <a href="mailto:nick.beresford@undp.org">nick.beresford@undp.org</a>  Other project collaborative partner(s): World Health Organization Ministry of Health (MoH)
Country/Region of the Project Implementation: Cambodia Thematic Area: Healthcare Systems
Area of Assistance: Recovery
Relevant 2030 Sustainable Development Goals: <ul style="list-style-type: none"><li>• SDG 1 “No poverty particularly targeting the resistance to shocks and disasters”</li><li>• SDG 3 “Good healthy well-being”</li><li>• SDG 6 “Clean water and sanitation”,</li><li>• SDG 11 “Make cities and human settlements inclusive, safe, resilient, and sustainable,”</li><li>• SDG 12 “Ensure sustainable consumption and production patterns” including environmentally sound management of chemicals and all wastes throughout their life cycle</li><li>• SDG 17 “Partnerships for The Goal including South-South cooperation on technology”</li></ul>
Project Implementation Duration: 9 months from June 2020 to March 2021
Project Estimated Investment (USD): <b>Amount of Applied Fund (USD):</b>

## 1. Project Overview

### 1.1 Overview of Recipient Countries

*Highlight the background of the recipient countries that is related to the project assistance areas and the implementation content. Other public information (if any) may be attached.*

Since 27 January 2020 when Cambodia confirmed the first case of COVID-19, the Royal Government of Cambodia (RGC) has implemented numerous measures to prevent its possible spread with technical support from the World Health Organization (WHO). As of 28 April, 2020, Cambodia has a total of 122 confirmed cases of COVID-19. No new cases have been reported since 13 April.

The Cambodian Ministry of Health (MoH) has played a central role in overseeing and containing the response to COVID-19 and providing medical advice and training to hospitals and health workers. The MoH has authorized three hospitals in Phnom Penh and 25 Provincial Referral Hospitals to order tests for and treat cases of COVID-19.

Governmental efforts with extensive aid support from China and other countries have significantly improved the country's overall capacity to handle the COVID 19 pandemic. However, **proper and safe treatment of medical waste infected by COVID-19**, areas in which Cambodia has limited resources, expertise, and experience **is one of the remaining, critical challenges**. Particular challenges which the COVID response designated hospitals experience include:

- Lack of a full set of equipment and of operational guidelines for full treatment of infectious waste (solid waste)
- Lack of equipment and guidelines for treating wastewater
- Lack of guidelines to ensure proper operation of incinerators to minimize health and environmental hazards
- An insufficient amount of Personal Protective Equipment (PPEs).
- Prevalent mix of waste types, which heighten the risk of infections among waste collectors

This proposal aims to overcome these challenges and to support the RGC in order to strengthen its ongoing efforts to manage infectious medical waste and protect Phnom Penh's population and urban environment against the threat of COVID-19. Within the 9 month timeline, the project aims to achieve the following three outputs.

- 1) The increasing volume of medical waste and wastewater in the three hospitals in Phnom Penh working with COVID-19 patients, as well as in the city's communities properly managed
- 2) The technical capacities of health care workers and service providers to treat solid waste and wastewater developed and strengthened
- 3) Project results and best practices on medical waste management timely and widely disseminated

UNDP will work closely with the WHO and MoH as well as the target three hospitals for the successful implementation of the project.

### 1.2 Project Background

*Elaborate on the reasons for the project (i.e., the origins of the project, including the compliance of the project with China's external development strategy and its related planning policies), and on the work already completed (including feasibility study, pre-feasibility study, past projects, etc.) by the recipient country and the project reporting agency (including partners).*

Located in the southwest of the Indochinese peninsular, Cambodia has a land area of 181,035 square kilometres and population of 16 million people (2018). The country's economy has grown remarkably with an average GDP growth of 8.2% between 2000-2010 and 7.4% from 2011-2013. The GDP per capita is US\$1,215 [2016, MEF]; a significant increase compared with US\$200 in 1992. In 2015, Cambodia's economic status was upgraded to the status of lower middle-income country.

### **COVID-19 situation in Cambodia**

On 27 January 2020, Cambodia confirmed the first case of the pandemic of coronavirus disease 2019 (COVID-19). Since then, the Royal Government of Cambodia (RGC) has implemented numerous measures to prevent the possible spread of COVID-19 pandemic with technical support from the World Health Organization (WHO). These include the closure of schools, museums, cinemas, concert halls, and bars, and the prohibition of large religious gatherings. Some government ministries, and organizations including the United Nations (UN) agencies, have implemented work-from-home policies.

As of 28 April, 2020, Cambodia has a total of 122 confirmed cases of COVID-19. No new cases have been reported since 13 April.

The Cambodian Ministry of Health (MoH) has played a central role in overseeing and containing the response to COVID-19 and providing medical advice and training to hospitals and health workers. This has been done with technical support from the WHO and the US Centre for Disease Control and Prevention (CDC) as well as the Institute Pasteur of Cambodia (IPC).

As of March 2019, there are a total of 1,474 public health facilities with 1,221 health centers, 127 health posts, 9 national hospitals, 25 provincial hospitals and 92 district hospitals, according to the National Health Congress. The total number of private health facilities is 14,432.

COVID-19 testing is conducted by the Institute Pasteur of Cambodia (IPC) and the National Institute of Public Health. The Ministry of Health has authorized three hospitals in Phnom Penh (Khmer-Soviet Friendship Hospital, National Pediatric Hospital and Chak Angre Krom Hospital), and 25 Provincial Referral Hospitals to order tests for and treat cases of COVID-19.

At least 110 beds have been reserved for COVID responses in Phnom Penh. Other provinces have reserved some hospitals and prepared hotels to serve the same function. However, most medical facilities and services in Cambodia are below international standards due to shortage of resources and of the technical capacities required to provide care during the COVID-19 pandemic.

At an average of US\$2,000-2,500 for treating a patient for 10 days (including testing fees of between US\$100 and US\$120), the high cost of treating COVID patients poses yet another challenge for Cambodia. Funds raised by the government to handle the crisis, have been used to purchase more than 10 million surgical masks, 30,000 protective suits [PPE], 13,000 N95 masks and other medical supplies.

### **China's aid to Cambodia COVID responses**

To strengthen Cambodia's capacities and resources to deal with the COVID-19 pandemic, the government of China has provided crucial technical and financial assistance.

During the two weeks of 23 March to 8 April, seven Chinese doctors from Guang Xi province stayed in the Phnom Penh and Sihanoukville provinces in Cambodia to share their expertise and train Cambodian health personnel. In late March, China further provided four military doctors, specialized in anti-virus measures, sterilization, diagnosis and protection. Upon request from the Defense Ministry, these doctors have trained around 70 Cambodian military medics to prevent the spread of COVID-19.

Additional material support has also been provided by China. The Ministry of Health, the National Defense Ministry, Phnom Penh City Hall, and Civil society organizations have received more than 23 tons of materials to assist in effective prevention and control of Covid-19. They include surgical masks, pharmaceutical drugs, disposable face masks, protective gowns, protective goggles, nucleic acid test reagents, extractors, forehead thermometers and viral DNA/RNA extraction kits.

**1.3 Did the project applicant agency conduct any similar projects in the region before? Did any other countries or institutions conduct similar projects in the region before? If so, please analyze their experiences and lessons separately. (Additional rows may be added.)**

Start Date	End Date	Region/Country	Project Name	Thematic Area	Cost (USD)	Partner
January 2019	Dec 2020	Cambodia	Building an enabling environment for sustainable development	Environment	2,037,337	Ministry of Environment

#### **Project accomplishments**

The overall objective of this project is to strategically position Cambodia's path towards achieving the Sustainable Development Goals related to 1) natural resources management (NRM); 2) circular economy; and 2) clean, affordable and sustainable energy.

One of the key foci of this proposal is to support transition to waste management based on Circular Economy principles. Thus, the project tests and implements numerous enabling measures and approaches for sustainable management of waste. They include drafting a national Circular Economy policy and roadmap to enable integration of waste management in a circular economy as well as a pilot initiative in the Kep province to promote sustainable waste management at the sub-national level.

#### **1.4 Conditions of Project Implementation**

*Are the implementation conditions of the project related to nature, transportation, site, personnel, construction (if any) already fulfilled, reliable, and stable? Is it necessary for the recipient government or relevant agencies to cooperate? Are the relevant supporting conditions fulfilled or clearly planned? Explain the access conditions of the country and industry.*

The Cambodian Ministry of Health (MoH) has played a central role in overseeing and containing the spread of COVID-19, and in providing medical advice and training to hospitals and health workers (as noted, with technical support provided from the WHO and US Centre for Disease Control and Prevention (CDC) and the Institute Pasteur of Cambodia (IPC)).

UNDP has held a series of meetings with the WHO and the Ministry of Health to discuss how to support the treatment of medical waste. Given the country's limited experience and the scarce expertise available on medical waste management, this support has been welcomed by both parties. WHO has agreed to collaborate with UNDP to liaise with the Ministry of Health about providing necessary equipment for the hospitals of Phnom Penh as well as technical materials and training to ensure proper handling of medical waste.

## 2. How the project is accordance with the recipient countries' (region's or industry's) development strategy, policies and planning

Managing the COVID 19 pandemic is Cambodia's highest immediate priority, as the pandemic severely impacts the country's public health and economy.

The current project responses to areas 4 (clinical management and health care services) and 5 (infection prevention and control) of the Cambodian government's response plan for Covid-19<sup>1</sup>.

It directly addresses one of the four priorities set out in the Rectangular Strategy IV (2019-2023), the achievement of a poverty reduction target below 10%, the prevention of returning poverty via a focus on enhanced market participation, the implementation of social protection policy, the minimization of the burden of daily living through the provision of quality public services, and reduction of social inequality. The project also aligns with the 2019-2023 National Strategic Development Plan (NSDP), which promotes inclusive growth and works toward achieving the 2016-2030 Sustainable Development Goals.

The UNDP Country Programme Document for the Cambodia 2019-2023 (CPD) aligns with the Rectangular Strategy IV and NSDP (2019-2023), the UNDP Strategic Plan (2018-21). It includes priorities for sustainable waste management and leaving no one behind.

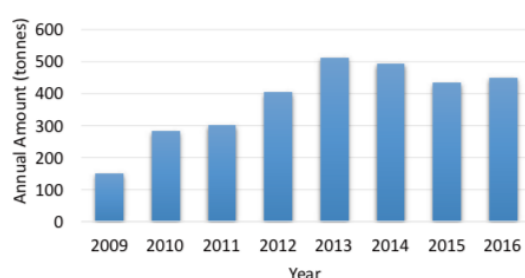
## 3. Necessity of Conducting the Project

### 3.1 Description of the current situation.

*Describe the situation and major issues of local economy and social development with data and charts, please also attach baseline survey material (if any)*

The amount of medical waste has grown substantially from around 150 tons in 2009 to about 450 tons in 2016 (See Figure 1). Medical waste is composed of infectious waste, pathological waste, sharps and pharmaceutical waste with infectious waste sharing the highest amount. For Phnom Penh, it is estimated that around 40 tons of medical waste is generated per month. As shown in Table 1, national hospitals in Phnom Penh produced the four most common categories of medical waste including infectious waste, pathological waste, sharps and pharmaceuticals waste (Department of Hospital Services, 2006).

Figure 1 Amount of collected annual medical waste (Choeu, 2016)



<sup>1</sup> Cambodian government set out Covid-19 response plan covering 9 areas: (1) Incident management and planning, (2) Surveillance and risk assessment, (3) Laboratory, (4) Clinical management and health care services, (5) Infection prevention and control, (6) Non-pharmaceutical public health measures, (7) Risk communication, (8) Points of entry and (9) Operational logistics

Table 1: Average amount of health care waste separated from National Hospitals in Phnom Penh

Health Care Facilities	Infectious Waste		Pathological Waste		Sharps	Pharmaceutical Waste	
	Kg/day	L/day	Kg/day	L/day	Box/day	Kg/day	L/day
National Hospitals	33.22	1.85	14.83	1.46	12.43	20	0.1

(Source: Department of Hospital Services, 2006)

Source: the State of Waste Management in Phnom Penh Cambodia (2018)

In Phnom Penh, medical waste is collected and managed by the Medical Waste Management Unit (MWMU), which was established under the Cambodia Red Cross (CRC) in 2009. The CRC also provides medical waste collection and burning services in other provinces including Siem Reap, Battambang, and Preah Sihanouk.

Many state hospitals sort and store their medical waste in isolation rooms and use incinerators for burning. The remaining medical waste is collected by MWMU and treated at a disposal site of about one hectare of land area, located next to the municipal landfill (Choeu, 2016). At MWMU, medical waste is incinerated at temperatures up to 1200 degree Celsius using a range of incinerators as shown in the figure below (data on their operational capacity unavailable).



Source: The State of waste management in Phnom Penh Cambodia (2018)

Legislation relevant to medical waste available include the following:

- Environmental Guidelines on Solid Waste Management in Kingdom of Cambodia (2006)
- Prakas (Ministerial Order) on Health Care Waste Management (2008)
- Decision on creation of Municipal Waste Management Unit (MWMU), No. 96 of Red Cross Cambodia (2009)
- National Guideline on Health Care Waste Management (2012): this guideline is currently under review and revision
- National Guideline on Infection Prevention and Control for Healthcare Facilities (2017)

Additionally, the sub-decree on Environmental Impact Assessment (EIA) processes requires an Initial Environmental Impact Assessment (IEIA) or Environmental Impact Assessment (EIA) to be carried out prior to waste processing and burning (<https://bit.ly/2wWUA3h>). Another sub-decree on water pollution control includes a standard for the discharge of wastewater into public water areas or sewers (<https://bit.ly/2Kp9SRA>). Finally, the Ministry of Health is developing minimum standards for health facility, including waste management standards.

While managerial, operational and regulatory frameworks for medical waste management are in place, several challenges remain in ensuring proper treatment of medical waste in Cambodia:

- **Growing volume of medical waste**, likely to exceed the operational capacity of waste management service providers
- **Mixed waste**: while medical waste needs to be separated from general waste, in practices, medical waste is often disposed in mixture of general waste. This increases the cost of waste collection and treatment.
- **Lack of proper equipment to treat medical waste in a safe and environmentally friendly manner**: For example, not many hospitals in Cambodia have a full set of equipment to properly treat medical waste and wastewater besides incinerators.
- **Lack of technical capacity and knowledge to implement existing guidelines to ensure public health safety and avoidance of negative environmental impacts**: Limited knowledge and technical capacity are available to ensure proper treatment of medical waste and wastewater. For instance, many hospitals incinerate medical waste on site, without sufficient knowledge of possible adverse impacts on public health as well as air and soil quality as well as of operational measures to avoid these impacts.

### 3.2 Project requirements and analysis (Please be specific, provide both qualitative and quantitative analysis)

*Analyze the development characteristics and main problems of recipient countries and industries, highlight key requirements; clarify specific parameters, such as functional parameters of products, number of beneficiaries of trainings, benefit industries and regions.*

Governmental efforts with extensive aid support from China and other countries have significantly improved the country's overall capacity to handle the COVID 19 pandemic (see 1.2).

However, **proper and safe treatment of medical waste infected by COVID-19**, areas in which Cambodia has limited resources, expertise, and experience **is one of the remaining, critical challenges**.

Since 2016, the Asian Development Bank (ADB) has implemented the Greater Mekong Subregion (GMS) Health Security Project funded by a total of US\$117 million. Under the GMS, the Governments of Cambodia, Lao People's Democratic Republic (Lao PDR), Viet Nam, Myanmar, and the Asian Development Bank (ADB) aim to develop core capacities for the control of emerging infectious diseases (EIDs) and other major public health threats. Based on WHO's international standards, the aim of the project is to strengthen regional, cross-border, and inter-sectoral communication about disease control, to improve national disease surveillance and outbreak response and to improve laboratory services and hospital infection prevention and control.

To facilitate proper treatment of medical waste and minimize health and environmental risks from COVID infected waste, GMS is currently procuring equipment including Sterilwave, microwaves, autoclave, washing machines and PPEs for 53 hospitals located in 13 Cambodian provinces.

However, the three hospitals in Phnom Penh designated for COVID responses are not among the hospitals targeted by the ADB project. According to the Ministry of Health, these three hospitals face the following sets of challenges:

- Lack of a full set of equipment and of operational guidelines for full treatment of infectious waste (solid waste)
- Lack of equipment and guidelines for treating wastewater

- Lack of guidelines to ensure proper operation of incinerators to minimize health and environmental hazards
- An insufficient amount of Personal Protective Equipment (PPEs).
- Prevalent mix of waste types, which heighten the risk of infections among waste collectors

These challenges seriously threaten the capacity to contain the COVID outbreak, especially in areas with dense populations, such as the capital city of Phnom Penh. As noted, further challenges relate to the generally limited knowledge and experience among waste management service providers and informal waste pickers about the risks of transporting, disposing and recycling infected waste, and possible mitigation measures.

#### 4. Project Implementation Strategy and Content

##### 4.1 Project Goals

*Clarify the 2030 sustainable development goals and sub-goals related to the project, as well as the specific objectives of the project (including but not limited to social, economic, environmental, and technological advancement, sustainable impact, etc.).*

This proposal aims to support the RGC in order to strengthen its ongoing efforts to manage infectious medical waste and protect Phnom Penh's population and urban environment against the threat of COVID-19.

**Output 1:** The increasing volume of medical waste and wastewater in hospitals working with COVID-19 patients, as well as in the city's communities properly managed (to prevent and minimize public health and environmental hazards). This includes:

- Provision of appropriate equipment for on-site treatment of solid waste and wastewater using non-incineration and non-chemical technologies (e.g. microwaves, washing machines, sterilizer and shredder (e.g. sterilwave (440)), wastewater treatment equipment) in accordance with WHO standards
- Provision of equipment for the collection and segregation of waste and storage facilities (e.g. trolleys, color-coded plastic bags/disposal bins)
- Provision of appropriate personal protective equipment (PPEs) to ensure safe waste handling

**Output 2:** The technical capacities of health care workers and service providers to treat solid waste and wastewater developed and strengthened (to minimize public health and environmental hazards). This includes:

- Develop guidelines and communication materials for health care facilities, service providers about the collection, storage, treatment, and disposal of waste
- Provide training for health facility workers based on the WHO guidelines
- Develop guidelines and training materials for proper management of equipment to treat infectious solid waste and wastewater ((e.g. microwaves, washing machines, sterilizer and shredder (e.g. sterilwave (440)), wastewater treatment equipment, PPEs in accordance) and proper operation of existing incinerators to minimize environmental hazards
- Provide technical training materials and courses for health care professionals about the abovementioned types of technology and equipment
- Provide PPEs to sanitation and waste collection workers to protect against the risk of infection to ensure safe waste handling, disposal, transport and off-site incineration
- Provide technical training materials and courses on health precautionary measures to waste collection workers and other exposed populations

**Output 3:** Project results and best practices on medical waste management timely and widely disseminated

- Launch and hand-over events by UNDP and Embassy of China and media coverage
- Production of project reports as well as communication materials ensuring "China Aid" logo on all visibility materials, in accordance to the "China Aid" logo usage conditions



#### Alignment with Sustainable Development Goals (SDGs)

This project aligns with achievement of the following SDGs:

- SDG 1 “No poverty particularly targeting the resistance to shocks and disasters”
- SDG 3 “Good healthy well-being”
- SDG 6 “Clean water and sanitation”,
- SDG 11 “Make cities and human settlements inclusive, safe, resilient, and sustainable,”
- SDG 12 “Ensure sustainable consumption and production patterns” including environmentally sound management of chemicals and all wastes throughout their life cycle
- SDG 17 “Partnerships for The Goal including South-South cooperation on technology”

#### 4.2 Adopted Technologies and Standards (if any)

Microwaves, washing machines, sterilizer and shredder (e.g. sterilwave 440), wastewater treatment equipment, PPEs and in accordance with WHO standards.

#### 4.3 Content of Implementation

*The content of implementation should include specific inputs, outputs (or activities), and evaluation indicators, please briefly describe the implementation content and compile the logical framework of the project (Attachment 1), and the evaluation indicators should correspond with the Sustainable Development Goals and all the goal targets related to the project.*

Please see details on outputs and activities in section 4.1 above and Attachment 1.

#### 4.4 Implementation Plan

The project will be implemented under the UNDP Direct Implementation (DIM) Modality.

**UNDP** will lead the coordination, procurement of equipment, and quality assurance for technical assistance towards the expected outputs. UNDP will work closely with WHO experts to ensure provision of technical supervision and effective implementation of the project.

As the leading technical organization **WHO** will be in charge of implementation of the activities, which will be coordinated with the MoH and other stakeholders. WHO will liaison with the Ministry of Health about the provision of equipment and technical guidance of for target hospitals.

**The Ministry of Health** will support coordination with local government and health care facilities to ensure effective implementation of the project.

UNDP will provide the Government of China with the following reports:

- Quarterly briefing reports, including budget adjustments, to be submitted to the Government of China (CICETE)
- A final narrative report including description of the use of funds within nine (9) months of the completion of the Project

UNDP will be responsible for overall fund administration, disbursement, procurement, project management and monitoring in accordance with standard policy and practices. To speed up the procurement turnaround and project delivery, UNDP will seek the support of other partners. UNDP will also be responsible for reporting on donor funds in accordance with standard practice and as agreed with the donor.

#### 4.5 Project Implementation Progress

*Refer to the implementation cycle of similar projects in and out of the country, the project implementation cycle shall be estimated combining with the characteristics of the project. Clarify the implementation schedule of each output or activity and prepare the project Gantt chart (Attachment 2).*

Please see details in Attachment 2.

#### 4.6 Project Institutions

##### 4.6.1 Institutions' implementation capability and division of work

*Describe the technical capabilities of the reporting agency and partners to implement the project and its division of work in detail (cooperation agreements can be provided).*

**UNDP:** As the application agency, UNDP China will ensure appropriate reporting, communication and coordination between the Government of China and UNDP Cambodia to ensure timely implementation of the project. UNDP Cambodia is a partner and executing agent of the project and will manage day-to-day implementation as well monitoring and oversight for the achievement of development results.

**WHO and MoH:** UNDP Cambodia will implement the project in close coordination with the WHO and the Ministry of Health, as the primary health authority for medical waste management.

**Other implementing partners:** UNDP through WHO and MoH will work with the five COVID 19 hospitals to provide equipment and build technical capacity to manage and prevent exposure to COVID 19 and to contain COVID 19 related infections.

##### 4.6.2 Project Implementation Management Team Leader and Core Personnel (can add additional forms)

Background			
Role in the team	Team Leader		
Name	Amara BOU	Nationality	Cambodia
Working Language(s)	English	Date of Birth	
Telephone Number	+855-12613940	Email Address	<a href="mailto:amara.bou@undp.org">amara.bou@undp.org</a>
Address	53 Pasteur Street, BKK1 Phnom Penh, Cambodia	Area of Work	Supervision/Quality Assurance
Name of organization	UNDP	Job Title	Programme Analyst
Area of Expertise and Specialty	Health and Development, Youth participation, Governance and Inclusive Growth		
Professional Background	Over 10 years of working experience in the health sector. She has been a Programme Specialist providing technical support to the government and local NGOs to ensure conformity to international/national guidelines, frameworks and policies. She has also contributed to the development of relevant Standard Operating Procedures, curricula, strategies and guidelines.		
Educational Background	Master's degree of Arts in Health Social Science, Mahidol University, Thailand, Bachelor's degree of Public Health from the University of Cambodia and a secondary nurse diploma from the Technical School for Medical Care in Cambodia.		

Experience in Project Implementation	Over more than 7 years with UNDP Cambodia, she has provided oversight and quality assurance to the CO programme/projects across thematic areas including youth employment, local governance, HIV/AIDS and Disabilities, cassava development, gender equality, youth employment/Civic Engagement and CSOs engagement.
Working Experience in Project Fields	Over 10 years of working experience in the health sector. She has been a Programme Specialist providing technical support to the government and local NGOs to ensure conformity to international/national guidelines, frameworks and policies. She has also contributed to the development of relevant Standard Operating Procedures, curricula, strategies and guidelines.

A programme analyst, Amara Bou, will be in charge of overall project management and quality assurance. She will be supported by a national coordinator (hired for 120 days over 6 month period) who will undertake day-to-day management and coordination with relevant agencies such as WHO and MoH for timely procurement of equipment, and provision of technical assistance and capacity building support.

The WHO will engage international and national consultants on medical waste management for designing and delivering training required for proper management of medical waste.

UNDP will engage international and national consultants will hire international and national environmental experts related to wastewater management as well as minimisation of environmental hazards from operation of incinerators currently used by the target hospitals. UNDP will also engage communication experts/firm to develop training and communication materials for proper handling of medical waste and wastewater as well as safe operation of incinerators.

## 5. Project Investment Estimation

### 5.1 Investment/Budget Estimation Basis

*Briefly describe the basis for the calculation of investment estimates (corresponding standards, etc.), please provide attachment if there are any relevant documents (Attachment 4 and 5).*

Budget planning will be informed by UNDP's guidelines as outlined in the [Programme and Operations Policies and Procedures](#) (POPP) and implemented through UNDP's financial and planning tool, ATLAS. The standard corporate and local pro-forma costs will apply. In all its financial investments, UNDP applies value for money principles and aligns with international best practice on procurement, human resources management and risk assessment [annual financial and performance audits].

Attachment 3 presents the quantities, specifications and costs for each items and activities. Technical specifications will be determined in tight coordination with MOH and WHO, and hospitals. This guarantees that equipment purchased meets the needs and expectations of project beneficiarie.

### 5.2 Investment estimation

*Estimate the financial input of each output or activity and outline the structure of the total estimated investment. Please attach the relevant estimation schedule (Attachment 5).*

*In addition, providing composition and basis of the management fee shall also be considered.*

Government of China Contribution: **\$930,234**

Management Fee (8%) **\$68,224** + UN levey (1%) : **\$9,210**

Project Budget: **\$852,800** (see below)

Main outputs		US\$
1	The increasing volume of medical waste and wastewater in the three hospitals in Phnom Penh working with COVID-19 patients, as well as in the city's communities properly managed	521,500
2	The technical capacities of health care workers and service providers to treat solid waste and wastewater developed and strengthened	308,800
3	Project results and best practices on medical waste management timely and widely disseminated	22,500
		852,800

Please see Attachment 4 for details.

### 5.3 Project Fundraising and Usage Plan

*Briefly describe the project financing plan and annual fund use plan and prepare the project fundraising and usage plan (Attachment 3).*

The project will be fully funded through CIDCA. Please see Attachment 3 for details.

### 6. Project Financial Analysis (if required)

For PPP projects, financial analysis is required for the project, which generally includes profitability analysis, solvency analysis, financial viability analysis and sensitivity analysis. Financial cash flow statement, profit and loss statement, capital cash flow statement, and loan repayment are required to be prepared. Other financial analysis forms may be added as the case may be.

Not Applicable

### 7. Project Comprehensive Benefit Analysis

**7.1 Provide an analysis of the beneficiaries and benefit effects of the project; if possible, please provide specific quantitative indicators for benefit effects. Describe how the local institutions' ability of implantation and participation is advanced. Describe the impact on policies, standards and specific target groups.**

The project aims to ensure safe treatment of medical waste related to COVID-19 for target hospitals and waste management service providers, thus contributing to public health and environmental risk mitigation in the context of the pandemic.

The project also supports the development of guidelines and provision of training based on experiences and expertise from China. They will be implemented at health facilities to ensure safe treatment of medical waste as well as for proper operation of equipment.

The beneficiaries of the intervention include the health facilities, health workers, waste management service providers including informal waste pickers, patients and visitors of the selected health care facilities.

**7.2 Analysis of the beneficial effects of special groups (including the assistance of women, children, people in poverty and other groups to obtain development capacity, there should be quantitative indicators)**

All health care workers, women included, will benefit from safer and more environmentally friendly treatment of medical waste and from mitigation of the risks of COVID-19. Waste service providers and informal waste pickers, most of which are women, will also benefit from learning how to safely handle medical waste and from limiting exposure to the risk of COVID-19.

**7.3 Please describe how the project will enhance project implement and management capacity of cooperative partners in the recipient country?**

This project will work closely with the Ministry of Health to provide guidelines and capacity building training to the five target hospitals. The core aim of this activity is to improve the capacity of these health facilities to meet adequate standards of medical waste management in order to prevent the spread or exposure of COVID 19.

**7.4 Please describe the demonstration, replication, and promotion value of this project for the development of recipient countries, regions, and similar countries and regions around the world.**

Through provision of needed equipment and technical support for the target hospitals, the project will provided a best management example and a role model for safe and environmentally sustainable treatment of medical waste in Cambodia. Beyond the target hospitals, guidelines for the safe management of medical waste and wastewater will be widely disseminated through the Ministry of Health with a view to improving the overall performance and capacities of hospitals across the country.

**7.5 Sustainability analysis of the project (e.g. whether it can produce mutually beneficial and win-win cooperation mechanisms and models; whether there is the possibility of commercial and market-oriented operation; whether it have effects on policies, systems, standards, etc.; whether cooperation formed in the project can continue to function; whether the project will continue to receive funding to maintain the project's effectiveness after the project is over, etc.)**

The project will strengthen the current scope of China-Cambodia cooperation to contain the COVID 19 pandemic.

Project sustainability will be ensured by the Ministry of Health and WHO, which will continue to work to ensure proper handling of medical waste with the target hospitals, and others, beyond the project duration.

The project will ensure compliance with national guidelines, regulations and standards as well as international WHO standards on health care waste management by closely working with the MoH and WHO. WHO will provide regular monitoring.

**8. Project Administration and Supervision Arrangements**

All project supervision and evaluation components will comply with UNDP rules and regulations as outlined in the POPP in the section on programme and project management. This includes submission of project progress reports (Quarterly Project Reports and End of Project reports).

As part of the regional projects, the project team will be accountable under coordination mechanisms of the Bangkok Regional Hub. For daily operations, the project will be integrated within the work of the programme

unit of the UNDP Country Office.

All UNDP programming activities are required to adhere to monitoring standards and policies, for which managers of regional and country programmes and projects are accountable in line with the UNDP policy on monitoring.

## 9. Environmental Impact and Risk Analysis

In coordination with the Ministry of Health and World Health Organization, UNDP will ensure that the project is aligned with efforts on health care waste management and environmental sustainability programmes in the country.

In 2014, UNDP adopted its [Social and Environmental Standards](#) (SES) which aims to:

- Strengthen the social and environmental outcomes of Programmes and Projects
- Avoid adverse impacts to people and the environment
- Minimize, mitigate, and manage adverse impacts where avoidance is not possible
- Strengthen UNDP and partner capacities for managing social and environmental risks
- Ensure full and effective stakeholder engagement, including through a mechanism to respond to complaints from project-affected people

The SES are an integral component of UNDP's quality assurance and risk management approach to programming. Most development projects have to undertake the [Social and Environmental Screening Procedure](#) before commencement. The findings from this desk review are included in the final project risk log that is tracked on periodically and more formally on annual basis through the Results Oriented Annual Reporting [ROAR].

### Risk Analysis and Countermeasures

Type of Risk	Risk Statement	Level of Risk (1 – High Risk; 3- Low Risk)	Countermeasures
Technical	Due to introduction of new technology, acceptability among the local stakeholders might be a challenge. -Implementation of new technologies may lack expertise	3	UNDP will work with WHO experts as well as Chinese experts in medical waste management to provide the most appropriate technology and equipment and provide capacity building support for all concerned stakeholders to learn about the proper operation of equipment as well as medical waste.
Social	Waste service providers and informal waste workers working in hospital might be exposed for the COVID risk	3	UNDP will ensure that the waste service providers and informal waste sector workers dependent on particular hospital waste are incorporated in the system

## 10. Project Intellectual Achievements and Administration Plan

The reports, publications and research achievements will indicate that the project is funded by the SSCAF and underline that the positions and views in those reports and publications do not represent the position and views of the Government of China. UNDP will provide CIDCA and recipient countries with project reports, research achievements, videos, pictures, and other visual materials. The Government of China and recipient countries may (for non-commercial purposes) use, copy, cite and disseminate without restrictions as long as proper citation is ensured. Relevant reports, publications and research achievements will be submitted to

CICETE in a timely manner.