

CLIMATE CHANGE ASSESSMENT

I. BASIC PROJECT INFORMATION

Project Title	SRI 55085-001: Responsive COVID-19 Vaccines for Recovery Project under the Asia Pacific Vaccine Access Facility
Project Cost (\$ million):	150.0
Location:	Entire country across all 26 health districts in all nine provinces of Central, North Central, Sabaragamuwa, Uva, Western, North Western, Northern, Eastern, and Southern
Sector / Subsector:	Health / Disease control of communicable diseases
Brief Description:	<p>The project will provide the Government of Sri Lanka with immediate and flexible financing to implement programs, projects, and activities from the Asia Pacific Vaccine Access Facility (APVAX) and the regular country allocation. The APVAX allocation comprises of a rapid response component to support the purchase of ADB eligible COVID-19 vaccines and related consumables, while the regular country allocation under the project investment component will support the purchase of additional vaccines, strengthen the vaccine related information management system, physical infrastructure for vaccine delivery including transportation; and investments in systems for vaccine related medical waste management.</p> <p>The project has four outputs: (i) COVID-19 vaccines delivered; (ii) vaccination information dissemination and monitoring systems strengthened; (iii) capacity of vaccine transport systems expanded; and (iv) vaccine-related medical waste management strengthened.</p> <p>While the main objectives of this project are to contain the spread and minimize the socioeconomic and health effects of the COVID-19 disease, there are opportunities to make the project components climate and disaster risk resilient to ensure continuity of service delivery.</p>

ADB = Asian Development Bank, APVAX = Asia Pacific Vaccine Access Facility, COVID-19 = coronavirus disease.
Source: Asian Development Bank.

II. SUMMARY OF CLIMATE CHANGE FINANCE

Project Financing		Climate Finance	
Source	Amount (\$ million)	Adaptation (\$ million)	Mitigation (\$ million)
Asian Development Bank	150.0	2.475	0.37
Sovereign Asia Pacific Vaccine Access Facility (concessional loan): ordinary capital resources	84.0	1.000	0.16
Sovereign project (regular loan): ordinary capital resources	66.0	1.475	0.21

Source: Asian Development Bank.

III. SUMMARY OF CLIMATE RISK SCREENING AND ASSESSMENT

A. Sensitivity of Project Components to Climate or Weather Conditions and Geological Hazards	
Project Components	Sensitivities
<p>1. Strengthening medical waste management – use of incinerators</p> <p>2. Upgrading the sewerage systems of COVID-19 treatment hospitals</p> <p>3. Procuring refrigerator-mounted vehicles for maintaining the cold chain. The cold chain begins when vaccine is manufactured, moves through to the distribution center, and ends with the local immunization provider at the time of administration. Vaccines should be maintained within the recommended temperature range.</p>	<p>1. Sensitivity to climate and disaster risk is low. The main concerns relate to public health impacts and gaseous emissions. Modern plants are required to comply with strict emission and operating standards.</p> <p>2. Extreme rainfall variability and storminess. (Medium)</p> <p>Increased rainfall: Increased overflows; Increased blockages and breakages.</p> <p>Reduced rainfall: Corrosion due to low flows resulting in increased concentration; Blockages or siltation when combined with increased temperatures and reduced water use.</p> <p>Increase in temperature: Increase in odors.</p> <p>Sea level rise (for locations near or in coastal areas): Pipes float due to increased groundwater level causing cracking; Corrosion; Groundwater ingress leading to loss of functionality and capacity; Erosion/inundation causing damage to infrastructure.</p> <p>3. Increase in ambient temperature (Low) may disturb the recommended temperature range of the refrigerator-mounted vehicles, particularly those travelling long distances. (Medium)</p>
B. Climate Risk Screening	
<p>Trends in average temperature: General increasing temperature trend by 0.16°C per decade for the period 1961–1990, with the highest increase of minimum (night-time) temperature around 2.0°C in Nuwara Eliya</p> <p>Around 1°C maximum increase in daily daytime temperature for the period 2020–2039</p>	Low
<p>Trends in average precipitation: Noticeable decreasing trend in rainfall pattern in most of the island except in the northeast. Mean annual precipitation decreased by 144 mm (7%) compared to the period 1931–1960.</p>	Low
<p>Extreme events (extreme rainfall episodes leading to floods or drought)</p>	Medium
C. Climate Risk and Adaptation Assessment	
<ul style="list-style-type: none"> • The projected climate around 2020–2039 is increasingly wet summers (monsoon season). • Precipitation: Winters are projected to be drier and monsoon summers wetter, with some estimating a three-fold increase in monsoon rainfall. This could result in more frequent summer floods and winter droughts. 	

<ul style="list-style-type: none"> • Climate change adaptation may involve additional investments on design and materials for the sewerage systems under Output 4. • Mitigation measures could include: <ul style="list-style-type: none"> - Energy efficient incinerators, which follow the standards for gaseous emissions under Output 4. - Energy efficient refrigerator-mounted vehicles for maintaining the cold chain under Output 3.
D. Climate Risk Classification: Medium
E. Climate Risk Screening Tool and/or Procedure Used
SARD climate risk screening framework and methodology

COVID-19 = coronavirus disease.

Source: Asian Development Bank.

IV. CLIMATE ADAPTATION PLANS WITHIN THE PROJECT

Adaptation Activity	Target Climate Risk	Estimated Adaptation Costs (\$ million)	Adaptation Finance Justification
Upgrading the sewerage systems of COVID-19 treatment hospitals (separation of storm drain from sewerage systems; use of appropriate materials, particularly those near the coastal areas should use corrosion resistant materials)	Extreme rainfall events that can lead to either flooding or drought	2.080	Incremental cost as percentage of cost for "business-as-usual" conditions.
Provision of backup power source and data/information storage.	Increased storminess that may cause power outages.	0.395	Incremental cost as percentage of cost for "business-as-usual" conditions.
	Total	2.475	ADB will shoulder 100% of the climate change adaptation cost.

Source: Asian Development Bank.

V. CLIMATE MITIGATION PLANS WITHIN THE PROJECT

Mitigation Activity	Estimated GHG Emissions Reduction (tCO₂e/year)^a	Estimated Mitigation Costs (\$ million)	Mitigation Finance Justification
Strengthening medical waste management – use of incinerators	263	0.12	Price difference of a regular incinerator and an energy efficient incinerator (incremental)
Procuring refrigerator-mounted vehicles for maintaining the cold chain.	1.2	0.25	Price difference of a regular refrigerator-mounted vehicle and an energy efficient one (incremental)
Total	264.2	0.37	ADB will shoulder 100% of the climate change adaptation cost.

ADB = Asian Development Bank, GHG = greenhouse gas, tCO₂e = tons of carbon dioxide equivalent.

^a Energy savings/year x emission factor = GHG emissions reduction.

Source: Asian Development Bank.