PROJECT CLIMATE RISK ASSESSMENT AND MANAGEMENT REPORT

I. Basic Project Information

Project Title:
Sri Lanka: Jaffna and Kilinochchi Water Supply Project—Additional Financing
Project Budget: $120 million from ADB
Location: Jaffna Peninsula in Sri Lanka
Sector: Water and other urban infrastructure and services
Theme: Inclusive economic growth, environmental sustainability, and gender equity
Brief Description: The project will improve the drinking water supply in the urban areas of Jaffna Peninsula. The additional financing is required to fund the changes in project scope that involves a design–build–operate (DBO) scheme for a desalination plant with 24,000 cubic meters per day (m^3/day) capacity, and to meet the cost overruns of the current project. The overall project will provide drinking water to 300,000 people in Jaffna.

II. Summary of Climate Risk Screening and Assessment

A. Sensitivity of project component(s) to climate or weather conditions and sea level

Climatic patterns greatly influence both water supply and quality. Climate change can affect the availability of water supplies by increasing the severity of short- and long-term droughts, and the intensity of storms and associated precipitation. Water supply infrastructure needs to be responsive to this sensitivity for greater operational and maintenance efficiency.

Project components	Sensitivity to climate/weather conditions and sea level
1. Improvement of water supply infrastructure service including a desalination plant with a 24,000 m^3/day capacity; a contract for a certain period of operation and maintenance; water supply trunk mains to the water towers; and provision for household connections	1. Increased intensity and frequency of heavy rainfall events
2. Improvement of Iranamadu Tank facility	2. Increased severity of short- and long-term droughts
3. Strengthening of water resource protection and management in Jaffna Peninsula	

B. Climate Risk Screening

Risk topic	Description of the risk
1. Increased intensity and frequency of heavy rainfall events	1. Water infrastructure may be damaged due to flooding
2. Increased severity of short- and long-term droughts	2. Fresh water resources may get more scarce

C. Climate Risk Classification: Medium

D. Climate Risk Assessment

Climate risk category

Climate model projections suggest that the project components face medium risks due to increased temperature (and evaporation) and high risks due to rainfall variability, both from increased intensity leading to floods, and deficits leading to drought. Risk is higher for drought conditions than flooding in the project areas. While droughts and dryness are manifested in the current conditions, the project needs to evaluate how much more or how frequent (in terms of change in return period or recurrence interval) the short- and long-term droughts will be, due to a changed climate. Incremental effects of climate change to the current drought conditions in the peninsula have to be incorporated in the design and layout of the water supply infrastructure, to increase efficiency and reduce maintenance costs under changing climate conditions, including variability and extremes.

III. Climate Risk Management Response within the Project

1. While droughts and dryness are manifested in the current conditions, the project needs to evaluate how much more or how frequent (change in return period or recurrence interval) the short and long-term droughts due to a changed climate would be. Effects that lead to decreasing water supply and quality may have far-reaching influences on public health, economic growth, and other development goals. If not addressed, the long-term impact envisioned by the project will not materialize.
2. Incremental effects of climate change to the current drought conditions in the peninsula have to be incorporated in the design and layout of the water supply infrastructure to increase efficiency and reduce maintenance costs under varying climate conditions, including variability and extremes.
3. Evaluate all existing risks to integrated water resource management (both climate- and nonclimate-related), and include in public outreach, and institutional and capacity development.
4. While not within the risk assessment on the impacts of climate change on the structure, due diligence has to be done on the desalination plant. There are very few evidences that desalination will reduce stress on other water sources. This situation is ideal, but also unique. Evaluating costs and benefits (social, environmental, and economic) of desalination against the true costs and benefits of other water supply sources would be an advantage. It is to be noted that desalination plants also increase energy consumption.