

CLIMATE CHANGE RISK SCREENING
Climate Change: Project Adaptation Action Report

Part 1: Climate Change Adaptation

BASIC PROJECT INFORMATION			
Project Title: P42267: Rajasthan Urban Sector Development Program		Sector: Water and other urban infrastructure and services (WUS)	
Location: Rajasthan is a state in North West India. It is bordered by Pakistan to the West, Delhi to the North East, Punjab to the North, Uttar Pradesh to the East, Madhya Pradesh to the South East, and Gujarat to the South. It is the largest Indian state with an area of 342,239 sq. km, or 10.41 per cent of the total geographical area of India. It has a population of 68.6 million inhabitants at the 2011 census.		Estimated ADB Financing: US\$500 million	
Brief Description:		Implementation Period: March 2015 – December 2019	
<p>The proposed Rajasthan Urban Sector Development Program (SDP) will complement the past and ongoing efforts of the government of Rajasthan (GOR) to improve water supply and wastewater services to the residents of the state of Rajasthan. The SDP comprises (i) a program, financed by a policy-based loan, to support policy reforms, including institutional development and governance improvement in the urban sector in the state, and (ii) a project, financed by a project loan, to invest in water distribution network and sewerage systems in the six project cities in the state (Pali, Jhunjhunu, Sri Ganganagar, Hanumangarh, Tonk, and Bhilwara). The reform program will focus on strengthening institutions and implementing reforms that entail large scale adjustments in policy, institutional, legal, financial, and regulatory framework. The project loan will support catalytic investments that enhance productivity and leverage finances from various other sources in the project cities. The project will also introduce innovations in water supply and wastewater management, such as 24x7 water supply, long-term operation and maintenance (O&M) embedded performance-based contracts for nonrevenue water (NRW) reduction and operational sustainability. The SDP will also support Asian Development Bank's (ADB's) climate change strategic priorities by promoting climate-resilient development and capacity development for conductive adaptation.</p>			
Climate Change Classification: Adaptation – medium; Mitigation - low			
SUMMARY OF CLIMATE RISK SCREENING¹			
A. Projected changes under A2 scenario			
<i>Temperature (°C)</i> Annual mean temperature at 2050 is projected to rise between 1.8 to 2.4 degrees Celsius.	<i>Precipitation (mm)</i> 2071-2100 projections show an increase of 20mm for maximum 1-day rainfall and 30 mm for maximum 5-day rainfall. Mean annual rainfall projected to decrease slightly, but the extreme rainfall is expected to increase in frequency and intensity.	<i>Sea Level Rise (masl):</i> Not Applicable	<i>Others:</i>
B. Climate Risks			
1. Landslide triggered by Precipitation	N	Description of the risk: Climate change projections indicate an increase of 2.40 degrees centigrade for the 2071-2100 period in Rajasthan. Mean annual rainfall is predicted to decrease slightly, whereas the extreme rainfall is expected to increase in frequency and intensity. The key risk factors in the state are: (a) frequency of droughts; (b) extremely low and erratic rainfall; and (c) very limited surface water sources, like perennial river basins, resulting in greater dependence on groundwater resources. Accordingly, more emphasis is needed on reducing water losses and improved wastewater collection and treatment. In water supply sector, distribution network improvements (with a district metering area approach) for NRW reduction is the important	
2. Fire	Y		
3. Flood	N		
4. Drought	Y		

¹ Rajasthan State Action Plan on Climate Change. The Energy and Resources Institute. TERI. New Delhi. 2010.

	requirement.
Recommendations	
Activities: <ol style="list-style-type: none"> 1. The results of the screening exercise suggest that the activities outlined in the concept paper constitute important and necessary actions of adaptation for sustainable urban development within the state of Rajasthan. 2. Improving water and sanitation services in urban areas of Rajasthan State is absolutely necessary to adapt the state to the changing climate. 	Requirements for TOR: Water supply experts to incorporate adaptation measures in the detailed engineering designs; NRW experts; Wastewater experts; experts in energy-efficient treatment and energy generation from sludge.
Risk Classification: Low	
DUE DILIGENCE	
Activities: <ol style="list-style-type: none"> 1. The project team reviewed and screened climate risks for the project, looking into both the vulnerability of project components and sites, and the possibility of occurrence of identified climate related hazards. Related literature on climate studies was used. The findings were considered in the design of the project, especially in focusing efforts on efficiency gains in existing water supply systems without source augmentation. 2. The Program has been designed to incorporate RUSDP in accordance with the principles of environmental sustainability – which now includes adaptation (or resilience) to a changing climate. Water resources will be managed taking into account the projected shift in the water regime caused by increasing temperature and changing precipitation patterns. 	
PROJECT DESIGN CHANGE OR ADAPTATION RESPONSE	
The project will address the identified issues by (i) focusing on NRW reduction and increasing water use efficiency, and (ii) introducing improved sewerage collection, treatment and energy generation, wherever feasible, in project cities.	