

RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Risk Description	Rating	Mitigation Measures	Responsibility
Technical			
Existing old infrastructure could not withstand increased rainfall intensity in project area resulting from climate change impacts	M	DBO contractors will revise the design foundation and extended 5-year O&M contracts will be used. Both the bulk water supply system and the distribution system will be monitored by SCADA, MIS, and GIS. These measures increase climate resilience by ensuring the system has the capacity to adapt to a changing climate.	JSV, PMU
Raw water sources for existing infrastructure that are to be rehabilitated may be depleted and no longer sustainable because of climate changes	L	Rehabilitation designs by DBO contractors will consider the long-term sustainability of water resources and propose alternative sources if needed.	JSV, PMU
Unforeseen circumstances—such as earthquakes, landslides, or flashfloods—in hilly, natural disaster-prone areas may hamper implementation of water infrastructure rehabilitation work	M	Through the climate risk and vulnerability assessment, the project incorporates adequate long-term climate and natural disaster resilience measures. In the short term, during the construction phase, due consideration will be given to the temporarily increased vulnerability of unfinished civil (e.g., by avoiding construction work during the monsoon season).	JSV, PMU
Project Implementation			
Approval delay in implementing the tariff-setting policy could hamper O&M cost recovery	M	The Water Policy 2013 acknowledges that tariff charges must be restructured. ¹ Tariff setting is prioritized through (i) benchmarking of household water consumption and expenditure patterns as a basis for structuring tariffs; and (ii) endorsement of state water tariff policy, which is explicitly included in output 2.	GOHP and <i>gram panchayats</i> (local administration)

¹ Government of Himachal Pradesh, Department of Irrigation and Public Health. 2013. [Himachal Pradesh State Water Policy 2013](#), Notification No. IPH-B(F)1-3/2013 (November 18). Shimla.

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Competing priorities of the government and <i>gram panchayats</i> may affect timely project completion and capacity building	M	Intensive capacity building has been included in the project. The PMU established by JSV will include a representative of RDD as the key focal point for the inclusive sanitation component. The PIU project implementation units will include <i>gram panchayat</i> representatives for project implementation support and on-the-job training.	GOHP and <i>gram panchayats</i>
Varying performances of different <i>gram panchayats</i> and districts may hamper overall project progress	L	Digital project progress dashboards will be implemented for monitoring purposes. Training and capacity building packages will be developed and implemented when individual <i>gram panchayats</i> are ready, in a manner that does not slow overall progress.	PMU and PIUs
Project Operation			
The <i>gram panchayats</i> will not have sufficient capacity to take over rural water supply responsibility and to sustain operational efficiency of a continuous supply of water that is of drinking water quality, to provide adequate customer services, and proper maintenance of assets	S	The project incorporates SWM to support <i>gram panchayats</i> in performing their functions. The 5-year operation period under the DBO contract will support training and capacity building of <i>gram panchayats</i> . Volumetric metering will be introduced to recover a minimum of 50% of the O&M costs through tariff. The state is committed to providing the budgetary support to fill funding gaps.	PMU and PIUs
Lack of proper implementation of water user charges (tariff billing, collecting)	L	The project implements flow meters at every household to move towards volumetric charging. Extensive training and capacity building of <i>gram panchayats</i> is included in the project scope of work, including O&M interactions with JSV.	PMU, PIUs, and <i>gram panchayats</i>

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		An extended 5-year O&M period is included in the DBO contracts.	
Procurement and Project Management			
Impact of COVID-19 on supply of goods and services delays project completion	M	Lessons from similar ADB projects during the COVID-19 pandemic are combined with experiences by JSV and GOHP to minimize impacts e.g., by integrating COVID-19 infection prevention through strengthened water, sanitation, and hygiene awareness, and behavioral change.	PMU
Land acquisition in densely populated areas for the construction of new water infrastructure (e.g., pipelines and tanks) is time-consuming and cumbersome due to limited land availability	L	Because the project scope is rehabilitation of existing water infrastructure, land already in use for the existing water infrastructure will be used, without the need for further land acquisition.	PIU
Time-consuming procurement processes within JSV, and practices that are not aligned with ADB procedures	L	<p>JSV has established a dedicated PMU and PIUs for the project.</p> <p>A project management and design supervisory consultant has been appointed to support, facilitate and build capacity for an expeditious and efficient procurement process.</p>	JSV, PMU
Sustainability			
The financial sustainability of the investments could be adversely affected by insufficient tariff revenue for O&M.	S	The project will support JSV to adjust tariffs as needed for cost recovery, including by increasing collection efficiency from 71.8% to 90.0% by FY 2028.	JSV
Financial Management			
Financial management risk: (i) JSV and its staff have limited experience implementing ADB-financed projects, (ii) the accounts staff positions in the PIUs are vacant, and (iii) there is no internal audit function.	S	The mitigation measures include: (i) filling the vacant accounts staff positions, (ii) engaging a financial management expert to support the PMU, (iii) providing training on ADB's financial management and	JSV, PMU

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		disbursement requirements, and (iv) including financial information in the quarterly progress reports submitted to ADB.	
Potential delays in submission of audited project financial statements to ADB.	S	The project will ensure the auditor is sensitized on ADB's audit requirements and timelines, and will include comprehensive financial information in the quarterly progress reports submitted to ADB.	PMU

ADB = Asian Development Bank, COVID-19 = coronavirus disease, DBO = design, build, and operate, FY = fiscal year, GIS = geographical information system, GOHP = Government of Himachal Pradesh, JSV = Jal Shakti Vibhag, L = low, M = moderate, MIS = management information system, O&M = operation and maintenance, PIU = project implementation unit, PMU = project management unit, RDD = Rural Development Department, SCADA = supervisory control and data acquisition, S = substantial, SWM = smart water management.

Source: Asian Development Bank.