India: Ara Canal Water Productivity Improvement Project

Project Name	Ara Canal Water Productivity Improvement Project
Project Number	52153-001
Country	India
Project Status	Proposed
Project Type / Modality of Assistance	Loan
Source of Funding / Amount	**Loan: Ara Canal Water Productivity Improvement Project** Ordinary capital resources — US$ 352.00 million
Strategic Agendas	Inclusive economic growth
Drivers of Change	Governance and capacity development Knowledge solutions
Sector / Subsector	**Agriculture, natural resources and rural development** - Agricultural production - Irrigation
Gender Equity and Mainstreaming	Some gender elements
Description	The project will provide solutions to two key constraints of the Ara main canal system performance including (i) irrigation and drainage infrastructure cannot support current needs, and (ii) management and operation of the main system do not respond to farmers' needs. The project will also provide agriculture and marketing support services to help farmers maximizing project benefits. Targeted interventions will ensure that women engaged in agriculture equally benefits from the project. The project will introduce both technical and institutional innovations. Technical innovations will include: (i) provision of supervisory control and data acquisition system and decision support system for accurate water distribution and canal operations; and (ii) development of highly efficient conjunctive surface and groundwater distribution systems which may be equipped with a pre-paid SIM card meter system for water fee collection. The conjunctive surface and groundwater systems will allow farmers to either pump from surface canal water or groundwater depending on availability. It will help adapt to future reduction of surface water availability due to climate change. On the institutional side, the project will introduce the design build operate (DBO) contracting modality for the design, construction and operation of the conjunctive surface and groundwater distribution systems. The DBO approach brings answers to critical lessons learned from past irrigation projects. It aims to address recurrent public-sector inefficiencies in irrigation MOM. Value added by ADB assistance consist of providing state-of-the-art technical support for designing the Ara canal modernization plan and providing hand holding for efficient procurement and management of the contracts. The limited expertise of BWRD with modern irrigation design and performance-based irrigation management will be substantially enhanced through the project.
Project Rationale and Linkage to Country/Regional Strategy	1.India requires irrigation water use efficiency and productivity improvement. Water plays a critical role in India's food security and welfare of the rural poor as 84% of all water withdrawals are dedicated to agriculture and 42% of all agricultural land is irrigated. India benefits from only 4% of the world's renewable fresh water but has 16% of the world's population. With intense urbanization and industrialization, the need for water from the non-agricultural sector is fast increasing and water shortage is becoming a major concern for industries that are required to fuel the country's economic growth. At the same time, population growth and change in dietary habits require agricultural production to continue to grow. By 2050, annual water availability per capita in India is expected to drop from 1,530 cubic meters to 1,140 cubic meters, indicating severe water stress. The current average irrigation water use efficiency of 38% points towards the need for serious performance improvement in this sector. The productivity of irrigation water is further hampered by low crop yields and cultivation of low-value crops. Therefore, most of India's utilized water not only supports activities with low economic value but is also inefficiently used. These problems will worsen in the future with the projected impacts of population and economic growth and with climate change, which will increase both irrigation water demand and uncertainty around the reliability of water resources.
Impact	Indian farmers' income doubled by 2022 Bihar State objective to have at least one food item produced in Bihar in every Indian food plate by 2022 achieved Resilience of farmers in the project area to ongoing and uncertain future climate change increased
Outcome	Higher irrigation water use efficiency, agricultural productivity and climate resilience in the Ara canal system achieved

Outputs	Ara canal system irrigation infrastructure modernized More efficient and sustainable management, operation and maintenance for the Ara canal established Farmers' capacity for on-farm water productivity improvement enhanced
Geographical Location	Bihar

Safeguard Categories	
Environment	B
Involuntary Resettlement	A
Indigenous Peoples	C

Summary of Environmental and Social Aspects
Environmental Aspects
Involuntary Resettlement
Indigenous Peoples
Stakeholder Communication, Participation, and Consultation
During Project Design
During Project Implementation

Responsible ADB Officer	Cauchois, Arnaud M.
Responsible ADB Department	South Asia Department
Responsible ADB Division	Environment, Natural Resources & Agriculture Division, SARD
Executing Agencies	*Bihar Department of Agriculture* *Department of Agriculture, Barrack no. 13, Main Secretariat, Patna, India 800015* *Bihar Water Resources Department* *Sinchai Bhawan, Patna*

Timetable	
Concept Clearance	26 Jun 2018
Fact Finding	18 Mar 2019 to 18 Mar 2019
MRM	18 Jul 2019
Approval	-
Last Review Mission	-
Last PDS Update	25 Sep 2018

Project Page	https://www.adb.org/projects/52153-001/main
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