ADB ASIAN DEVELOPMENT BANK

India: Karnataka Integrated and Sustainable Water Resources Management Investment Program

Project Name	Karnataka Integrated and Sustainable Water Resources Management Investment Program
Project Number	43253-013
Country	India
Project Status	Active
Project Type / Modality of Assistance	Loan
Source of Funding / Amount	**MFF Facility Concept 0085-IND: Karnataka Integrated and Sustainable Water Resources Management Investment Program** Ordinary capital resources — US$ 150.00 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth
Drivers of Change	Governance and capacity development Knowledge solutions Partnerships
Sector / Subsector	**Agriculture and Natural Resources** - Agriculture, natural resources and rural development
Gender Equity and Mainstreaming	Effective gender mainstreaming
Description	The investment program will improve water availability to meet competing water demands in selected river basins in the state of Karnataka by implementing integrated water resources management (IWRM). It will improve water use efficiency in irrigated agriculture to provide economic opportunities to improve rural incomes.

Project Rationale and Linkage to Country/Regional Strategy	The state of Karnataka, in the south of India, has a population of 61.1 million and covers an area of 191,976 square kilometers (5.83% of the area of India). It is home to one-third of information technology of India and other service industries, and has a gross state domestic product (GSDP) at current prices of $97.1 billion (FY2012). The main contribution (about 53% in FY2012) to GSDP is from the service sector. The contribution of agriculture to GSDP is relatively small, at 16% in FY2012, and in a declining trend (from about 30% in FY2001). However, agriculture remains the main source of employment for 55% of the population and about 75% of the rural population. The state population is urbanizing; the urban population has increased from 34% to 39% from 2001 to 2011. The changing industrial structure and urbanization have had significant impact on the water balance in the state. Competing Demands for Water Resources. The state is water-stressed, with increasing water demands from urban and industrial sectors. This is exacerbated by uneven spatial and temporal distribution of water resources and the predicted impacts of climate change. Although Karnataka has two major river basins (the Krishna and Cauvery), its water resources are limited (about 1,072 cubic meters [m3]/person/year in eastward flowing rivers). Droughts are frequent and 70% of the annual rainfall occurs from June to September. The water demand (particularly for industry and household water) is projected to increase by 40% from 37,419 million m3 in 2000 to 52,366 million m3 in 2025. These demands will cause a decline in the agricultural proportion of total water from 84% in 2000 to 73% by 2025. Meeting the anticipated rise in demand is a major challenge which, if unmet, may constrain sustainable economic growth. Irrigated Agriculture. About 3.09 million hectares of land is under irrigation in Karnataka and over 84% of state water resources are used for agriculture. However, cropping intensities (110% to _125%) and water use efficiency (40%) are low, and the gross area irrigated in 2009_ to 2010 is about 59% of the potential area. The irrigation sector suffers from deficient infrastructure (resulting from insufficient maintenance and lack of water control structures), management constraints (low service quality of operators), and limited promotion of water-saving crops and practices. Efficient distribution is impeded by inadequate implementation of command area development works and low participation of water users cooperative societies (WUCSs) in irrigation management. Improving irrigation water productivity requires (i) increasing water use efficiency, (ii) reducing the gap between the actual and potential area that can be irrigated, and (iii) promoting water-efficient techniques and technologies like drip irrigation. Greater efficiency will be required in water used for agriculture to meet the demands of other users, such as industry. Vulnerability to Climate Change. The predicted impacts of climate change for Karnataka include increased temperatures and increased mean annual rainfall, and decreased and more variable monsoon rainfall. Overall, the investment program area is found to be vulnerable to increased incidence of seasonal droughts. This will heighten the requirement for a well-planned and methodical approach to water resources management. An integrated approach to water resources management is a means to reconcile varied and changing water uses and demands since it provides greater flexibility and adaptive capacity than conventional water resources management approaches. Road Map, Investment Program, and Lending Modality. An IWRM road map will guide the strengthening of institutional and policy frameworks, capacity building, and development of modernized infrastructure. The road map, developed in consultation with senior management of Karnataka''s Water Resources Department (WRD) during project preparation, combines the Karnataka state water policy, 2002; the state medium-term plan; and the National Water Mission, 2011 to guide water sector investments of the state government'. The road map, through physical and nonphysical investments, will support the state to meet its objective of improved water resources management with milestone performance targets. To achieve this, the state has proposed an ambitious budget allocation of about $8.5 billion during FY2014 to _FY2018 (in FY2014, the budgeted allocation is $2.06 billion). The government has requested the Asian Development Bank (ADB) to contribute to the investment program through an MFF, which is well suited for this investment as it is the most effective modality to (i) provide a longer-term lending instrument suited to IWRM process; (ii) afford flexibility in terms of project scope, timing, and size, which may be adjusted to meet emerging priorities of the road map; and (iii) provide sufficient time for institutional strengthening in IWRM for key agencies and water users. Strategic Context, Link to Government, and ADB Strategies. The medium-term plan of the state of Karnataka emphasizes greater visibility of agriculture and allied activities to increase rural incomes, and achieve a sustainable and orderly process of industrialization and urbanization for poverty reduction and sustained human development. The water policy of 2002 of the state aims for holistic water resources planning, development, and management to be undertaken for each hydrological unit. The National Water Mission, 2011; National Water Policy, 2012; and the Twelfth Five-Year Plan, 2012_ to 2017 all support the requirement for integrated planning of water resources across various users. The investment program is consistent with ADB's Midterm Review of Strategy 2020 and country partnership strategy, 2013 to _2017 for India by reinforcing core areas of operations, like infrastructure development for water resources management, investing in irrigation infrastructure to enhance value addition in agriculture, and developing measures to increase water use efficiency. The investment program is also in accordance with the ADB Water Operational Plan, 2011_ to 2020. It will improve water governance by embedding IWRM as an adaptive management process, including for climate change adaptation; and improve water use efficiency to increase availability for competing uses. The state has a number of enabling factors to adopt an IWRM approach, including (i) recognition of the scarcity of, and threats to, water resources; (ii) progressive policy statements; (iii) major investments in water resources infrastructure; (iv) technical capacity; and (v) a progressive outlook, as exemplified by semi-independent institutions of the state WRD like the irrigation corporations or nigams, command area development authorities (CADAs), and the Advanced Centre for Integrated Water Resources Management (AC-IWRM). Improvements in urban water management will be addressed under a separate ADB-financed investment program. The two investment programs will be closely coordinated through the AC-IWRM.
Impact	improved sustainable water security in selected river basins in Karnataka.

Project Outcome

Description of Outcome	integrated water resources management successfully implemented in selected river basins in Karnataka.
Progress Toward Outcome	Project 1 (Loan 3172-IND) was approved on 17 October 2014 and declared effective on 13 July 2015. As such, it is too early to assess progress toward outcome.
Implementation Progress	
Description of Project Outputs	State and basin institutions strengthened for IWRM Irrigation system infrastructure and management modernized Program management systems operational
Status of Implementation Progress (Outputs, Activities, and Issues)	Activities under the first tranche are ongoing.
Geographical Location	

Summary of Environmental and Social Aspects

Environmental Aspects	B
Involuntary Resettlement	C
Indigenous Peoples	C
Stakeholder Communication, Participation, and Consultation	
During Project Design	ADB initiated a consultation process as an opportunity to get information, as well as to learn about the local context in which a project will take place, to raise issues and concerns, ask questions, and potentially help shape the project by making suggestions for the ADB to consider and respond to. Further, participation and consultation (P&C) process was undertaken to help increase the level of support for the Project and related activities from a range of stakeholders, to speed up processing and reduce challenges during implementation. P&C is also expected to improve the effectiveness, relevance, and sustainability of development activities in the long run.
During Project Implementation	The participation and consultations (P&C) process is aimed at informing the stakeholders of the project plans and activities. Consultations and communication will be a continuous agenda and an integral part of the project. To ensure this, the Program Communication Plan will be an instrument to carry forward the P&C process. The Program Communication Plan covers a range of communication needs of the project. First, it delineates the stakeholder consultation process to be adopted by project management to facilitate awareness and participation for effective project implementation and safeguards. Second, it addresses the need to introduce and explain the project to a wide range of audiences who can influence and affect an enabling environment for the project. Finally, it also informs the general public in the State and outside about the IWRM-based water management actions being initiated by the government to elicit their support, knowledge and participation.

Business Opportunities

Consulting Services	Consulting services will provide technical support for program implementation. The three main consulting services packages will be for the (i) project support consultants (PSCs), (ii) integrated water resources management (IWRM), and (iii) services for monitoring and evaluation (including environmental and effects monitoring). The PSCs will be initially engaged for 4 years under project 1 and another 3 years under project 2. Firms will be recruited using the quality- and cost-based selection method.
Procurement	All procurement of works and equipment will be undertaken in accordance with ADB's Procurement Guidelines (2013, as amended from time to time), while recruitment of consultants and other services will be undertaken in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Civil works include modernization of irrigation infrastructures on the Gondi, Vijaynagara and Tungabhadra Left Bank Canal (TLBC) subprojects. Small community works are planned to be undertaken with water user cooperative societies associated with the minor canal and community area development works.

Responsible Staff

Responsible ADB Officer	Gore, Lance W.
Responsible ADB Department	South Asia Department
Responsible ADB Division	Environment, Natural Resources & Agriculture Division, SARD
Executing Agencies	*Karnataka Neeravari Nigam Limited* *4th Floor, Coffee Board Building, No. 1, Dr. B R. Ambedkar Beedhi, Bangalore, Karnataka, India*

Timetable

Concept Clearance	09 Dec 2011
Fact Finding	21 May 2013 to 30 May 2013
MRM	24 Jul 2013
Approval	25 Sep 2014
Last Review Mission	-
Last PDS Update	28 Jul 2016

MFF Facility Concept 0085-IND

Financing Plan		Loan Utilization			
	Total (Amount in US$ million)	Date	ADB	Others	Net Percentage
Project Cost	225.00	Cumulative Contract Awards			
ADB	150.00	-	0.00	0.00	%
Counterpart	75.00	Cumulative Disbursements			
Cofinancing	0.00	-	0.00	0.00	%

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