



China, People's Republic of: Hunan Dongjiang Lake Integrated Environmental Protection and Management Project

Project Name	Hunan Dongjiang Lake Integrated Environmental Protection and Management Project
Project Number	47070-002
Country	China, People's Republic of
Project Status	Active
Project Type / Modality of Assistance	Loan
Source of Funding / Amount	Loan 3336-PRC: Hunan Dongjiang Lake Integrated Environmental Protection and Management Project Ordinary capital resources US\$ 130.00 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth
Drivers of Change	Knowledge solutions
Sector / Subsector	Agriculture, natural resources and rural development - Forestry - Land-based natural resources management - Rural flood protection - Rural solid waste management - Rural water supply services - Water-based natural resources management Water and other urban infrastructure and services - Urban sewerage - Urban water supply
Gender Equity and Mainstreaming	Effective gender mainstreaming

Description

The proposed project will be implemented in the Dongjiang Lake basin in Zixing City, Chenzhou Municipality, Hunan Province. The project will introduce an integrated approach to address the current constraints in lake environmental protection and livelihood development.

The impact will be the achievement of sustainable economic development of the Xiang River basin in Hunan Province. The outcome will be the achievement of integrated environmental protection in Dongjiang Lake basin. The project will include five outputs: (i) improved pollution control, (ii) establishment of urban-rural water supply system, (iii) rehabilitated river course, (iv) establishment of integrated ecosystem rehabilitation and management established, and (v) strengthened environmental and project management capacity.

Output 1 will include (i) construction of six township wastewater treatment plants with a total capacity of 2,000 cubic meters/day, and associated sewage collection pipes of 38.1 kilometers (km); (ii) construction of 2,856 small-scale wastewater treatment facilities for rural villages in 10 townships, and associated sewer pipes of about 330 km; (iii) procurement of solid waste collection and compaction equipment, and seven transfer facilities; and (iv) development of nonpoint source pollution management, including soil test and green fertilizer application; and green pest control measures application in 5,690 hectares (ha) of farmland. Output 2 will include (i) construction of Yangdongxia water supply plant with total water treatment capacity of 20,000 cubic meters/day for water supply of 128,688 residents in five townships, associated water delivery and supply pipelines with total length of about 700 km, and pressure regulating stations; (ii) construction of Chukou water supply plant with capacity of 620 cubic meters/day for supply of 3,200 residents and associated water delivery and supply pipelines of about 35 km; and (iii) procurement of operation and maintenance equipment. Output 3 will improve the flood protection standard and reduce soil erosion of five major rivers of Guangqiao, Lianping, Qingyao, Tian'eshan, and Xingning that flow into the lake, including block clearance and dredging of 653,692 cubic meters (14.7 km), green embankment of 13.7 km, and landscaping along the river banks. Output 4 will include (i) establishment of aquatic facilities and management; (ii) construction of three wetlands for about 167 ha, and management facilities; (iii) conduct of soil erosion control, including 1,000 ha of reforestation and revegetation, natural enhancement and management of 13,666-ha public forest, construction of 590-km fire breaks and procurement of fire-fighting facilities; (iv) improvement of 2,595 ha of bamboo forest; (v) conduct of alternative livelihood training for 30,000 rural residents; and (vi) carrying out of an eco-compensation pilot scheme. Output 5 will support (i) establishment of environmental, fishery, and forest fire-fighting monitoring centers; (ii) establishment of the Dongjiang Lake ecological and environmental protection research center; (iii) development of the Dongjiang Lake environmental monitoring and management information system; (iv) provision of project implementation consulting services, training, workshops, and study tours; and (v) establishment of a project monitoring and evaluation system.

The Zixing City Government (ZCG) will be the executing agency of the project. A project management office (PMO) has been established to be responsible for project coordination, guidance, and consolidated planning and reporting of the project implementation. The implementing agency will be the Zixing City Urban and Rural Environmental Protection Investment and Financing Center (ZIFC).

Project Rationale and Linkage to Country/Regional Strategy

One of the greatest challenges facing water management in the PRC relates to freshwater lakes as many of them are severely polluted. Since the mid-1990s, the Government of the People's Republic of China (PRC) has taken substantial efforts to address the problem, with emphasis on three lakes--Chao, Dianchi, and Tai lakes; but these lakes are still without significant improvement. The national government realized the importance of pollution prevention in lakes by drawing lessons learned from the rehabilitation of polluted lakes, including the Chao, Dianchi, and Tai lakes, rehabilitation of which had been proven to be at very high cost. Experience has shown that it will be very difficult and ineffective in large lakes to restore water quality once they are polluted

Located in south Hunan Province, Dongjiang Lake is a reservoir formed after the construction of Dongjiang Dam in 1986 on the Leishui River, a tributary of Xiang River. Dongjiang is a multipurpose reservoir for hydropower, flood control, water supply, and irrigation. Dongjiang Lake has a surface area of 160 square kilometers and a total storage capacity of about 8.12 billion cubic meters. The catchment area of the Dongjiang Lake is 4,719 square kilometers.

It is the national government's priority to protect the water resources of Dongjiang Lake from pollution. Dongjiang Lake has been selected as one of the five river basins for nationwide pilot-testing of the national government's eco-compensation policy framework to which the Asian Development Bank (ADB) has provided continuous support in recent years. Dongjiang Lake has been included as priority of support in the national plan for relatively good-quality lake ecological and environmental protection (2013- 2020) jointly released by the Ministry of Environmental Protection, the Ministry of Finance, and the National Development and Reform Commission.

Dongjiang Lake is a strategic water source to support resource-saving and environment-friendly social development of Hunan Province. Maintaining healthy environmental services of the Dongjiang Lake is vital to achieve sustainable development of the Xiang River basin, one of major regions of the national government's Yangtze River Economic Belt initiative. Xiang River basin is a home for about 40 million population and accounts for over 70% of Hunan Province's total gross domestic production. In addition to supplying water to Chenzhou Municipality and Zixing City, Dongjiang Lake serves as a back-up water source for Hunan Province's major cities of Changsha, Xiangtan, and Zhuzhou in Xiang River basin to improve the water security of 13 million people in these cities. The lake's large storage capacity greatly improves flood and drought management for the downstream cities and navigation of the downstream Xiang River. It also helps dilute water pollution in the downstream of Xiang River by releasing water.

Dongjiang Lake's environmental protection has been given priority by the Hunan Provincial Government (HPG) and local governments. Protection zones have been established in the Dongjiang Lake basin in accordance with the provincial-approved Dongjiang Lake Basin Water Environmental Protection Regulation. The regulation imposes control on the development of the basin and restricts various activities in different protection zones which may cause adverse impact on the water environment. Since 2002, HPG and the local governments have invested nearly CNY1 billion in the lake protection, including closure of mines, removal of cage fishing, ship renovation and improvement, and job training for non-farming opportunities. The continued efforts by HPG, the local governments, and local people in implementing the regulation helped in maintaining the good water quality of Dongjiang Lake to meet the national standards for drinking water source.

The project is consistent with the national government's goal of building a harmonious and prosperous society through regionally balanced and environmentally sustainable growth. The project supports the national government's recently released Yangtze River Economic Belt Initiative to construct ecological ecosystem corridor along the river by improving watershed management, water pollution control and prevention, and ecological rehabilitation. It conforms to ADB's strategic priorities of the Midterm Review of Strategy 2020, and the Water Operational Plan 2011_2020 to increase coverage and improved services for water supply and sanitation, and promote integrated water resources management (IWRM).

The project design has incorporated lessons from the previous ADB-financed projects and policy-oriented studies on IWRM, environmental and ecosystem improvement, wetland and lake management, and urban_rural integration in the PRC. Major lessons include (i) an integrated approach of structural and nonstructural measures to water resources management; (ii) wide community participation and increased public awareness for environmental improvement; (iii) linking environmental protection with livelihood opportunities; (iv) coordinated management of urban_rural planning, and management of resources and services to facilitate integration and linkage to infrastructure; (v) institutional and cost recovery mechanism for effective operation and maintenance of the facilities; and (vi) eco-compensation as effective tool for maintaining environmental services.

The project is expected to scale up and/or demonstrate the following good practices in the PRC: (i) IWRM and comprehensive monitoring, (ii) environmental protection linked with livelihood improvement, and (iii) eco-compensation. In addition, during project preparation, policy dialogue was conducted and recommendations provided for revising the Dongjiang Lake Basin Water Environmental Protection Regulation and the environmental protection plan. Under the IWRM framework, the project attempts to coordinate and integrate the structural and nonstructural measures in a manner that assures their consistency and resulting in synergies where the total impact is greater than the sum of the individual actions. To meet the water quality targets as requested in the national good water quality lake program, pollutants discharged into the lake have to be reduced. The project will take a holistic approach to tackle these challenges by preventing different types of pollution sources, and land degradation and soil erosion with a comprehensive environmental monitoring system to support integrated lake management. The project will not only maintain environmental and ecological services to the local residents and the downstream Changsha- Zhuzhou- Xiangtan city cluster, but also improve local farmers' income by directly supporting livelihood opportunities, such as bamboo forest development, fish stocking, and technical and vocational education and training in alternative livelihood activities for 30,000 rural residents around the lake. Without such benefits, the willingness of local farmers to comply with environmental regulations around the lake would not be fully effective. Dongjiang Lake plays crucial watershed functions to Hunan Province. An eco-compensation pilot scheme will be tested under the project to compensate those who are responsible for collection and treatment of solid waste and sewage, and engagement of greener agricultural production by setting up an eco-compensation fund to be raised from tourist entry fees. HPG and the Zixing City Government also agreed to explore more eco-compensation schemes for better protection of Dongjiang Lake during project implementation.

Impact	Sustainable economic development of the Xiang River basin in Hunan Province achieved (Xiang River Basin Scientific Development Master Plan, 2011-2020)
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Project Outcome

Description of Outcome	Integrated environmental protection in Dongjiang Lake basin achieved
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Progress Toward Outcome

Implementation Progress

Description of Project Outputs	<ol style="list-style-type: none"> 1. Pollution control improved 2. Urban-rural water supply system established 3. River course rehabilitated 4. Integrated ecosystem rehabilitation and management established 5. Environmental and project management capacity strengthened
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Status of Implementation Progress (Outputs, Activities, and Issues)

Geographical Location

Safeguard Categories

Environment	A
Involuntary Resettlement	A
Indigenous Peoples	B

Summary of Environmental and Social Aspects

Environmental Aspects	Environment (category A). The environmental impact assessment (EIA) report, including an environmental management plan (EMP) follows ADB's Safeguard Policy Statement (SPS, 2009). The EIA is consistent with the domestic EIAs. The draft EIA report was publicly disclosed on the ADB's website on 27 April 2015. The project is expected to achieve environmental benefits, including improved long-term security of the high water quality in Dongjiang Lake; improved wetland habitats; soil erosion control; and improved institutional and community management of water, wetland, and forestry resources. Anticipated construction impacts are from dredging and embankment; construction-related air, dust, noise, vibration, and erosion impacts; and occupational and community health and safety. Potential operational risks include cumulative nutrient loading in Dongjiang Lake and the project rivers due to discharge of treated effluent; inadequate maintenance of the treatment plants, pipelines, and constructed wetlands; and/or air and noise emissions from the treatment plants. The risk of cumulative and/or induced impacts has been assessed. Mitigation measures are described in the EMP. These include the timing of dredging, on-site sediment sampling, control of sediment dispersion, and maintenance of project facilities. The EIA concludes that effective implementation of the EMP, together with the prescribed training, will result in residual impacts within the limits of the PRC standards defined in the EMP. Initial climate risk during project concept stage was medium, but the climate risk vulnerability assessment found the risk to be low. Adaptation measures were included in the project design.
Involuntary Resettlement	Involuntary resettlement (category A). A total of 189.06 hectares (ha) of land will be occupied permanently, including 12.28 ha of collective land and 176.77 ha of state-owned land. Some 65.29 ha of land will be occupied temporarily. The project will demolish 1,539.1 square meters of housing. Land acquisition and resettlement will affect 573 people, of which 284 will lose more than 10% of their productive assets and/or be physically displaced. Seven households need to be relocated. Livelihood measures and training will be provided to households with significant land losses. The Zixing City Government (ZCG), with the assistance of consultants, prepared a resettlement plan in line with ADB's SPS and the government's related laws and regulations. The project management office (PMO) and relevant implementing agency have good experience and capacity to manage resettlement impacts. The draft resettlement plan was disclosed on the ADB website on 2 July 2015.
Indigenous Peoples	Ethnic minorities (category B). Yao people in four villages will benefit from several project activities, including bamboo upgrading, wastewater treatment, solid waste management, river rehabilitation, wetland development, livelihood training, and environmental awareness programs. A draft ethnic minority development plan has been prepared in line with ADB's SPS and related laws and regulations of the PRC and Hunan Province. Actions to be taken include community consultation and mobilization to ensure Yao people can participate in project design, construction, and benefits in a manner that supports culturally appropriate village development. The draft ethnic minority development plan was disclosed on the ADB website on 2 July 2015.

Stakeholder Communication, Participation, and Consultation

During Project Design	The main stakeholders of the project are the provincial and local governments, design institutes, rural households including rural households in reservoir protection zone. The stakeholders will be consulted during project preparation. The project will develop ways to engage (i) with farmers and stakeholders to improve environmental and ecological farming in the reservoir protection area, and (ii) with households to assess their needs for and provide them with nonfarm capacities and skills to cope with rapidly changing and urbanizing social and economic environments.
During Project Implementation	Stakeholder communication, participation, and consultation will continue during the project implementation.

Business Opportunities

Consulting Services	All consulting services will be engaged in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).
Procurement	All ADB-financed procurement for the project will be conducted in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). A procurement agent will be engaged by the Zixing City Government, the executing agency; and the Zixing City Urban and Rural Environmental Protection Investment and Financing Center (ZIFC), the implementing agency, to assist in procurement.

Responsible Staff

Responsible ADB Officer	Kobayashi, Yoshiaki
Responsible ADB Department	East Asia Department
Responsible ADB Division	Environment, Natural Resources & Agriculture Division, EARD
Executing Agencies	<i>Zixing City Government No. 219 Jinning Road, Zixing City, Chenzhou Municipality, Hunan Province 423400 PRC</i>

Timetable

Concept Clearance	04 Apr 2014
Fact Finding	11 Mar 2015 to 18 Mar 2015
MRM	03 Jul 2015
Approval	25 Nov 2015
Last Review Mission	-
Last PDS Update	20 Mar 2017

Loan 3336-PRC

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
25 Nov 2015	16 Mar 2016	14 Jun 2016	30 Jun 2021	-	-

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	262.03	Cumulative Contract Awards			
ADB	130.00	25 Nov 2015	23.85	0.00	18%
Counterpart	132.03	Cumulative Disbursements			
Cofinancing	0.00	25 Nov 2015	10.23	0.00	8%

Project Page	https://www.adb.org/projects/47070-002/main
Request for Information	http://www.adb.org/forms/request-information-form?subject=47070-002
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