

# Project Administration Manual

Project Number: 53053-001  
Loan Number:  
May 2021

Proposed Loan People's Republic of China: Henan  
Xichuan Integrated Ecological Protection and  
Environmental Improvement Project

## CURRENCY EQUIVALENTS

(As of 6 April 2021)

Currency Unit	=	Yuan (CNY)
€ 1.00	=	CNY 7.7002
CNY 1.00	=	€ 0.1299
€ 1.00	=	\$ 0.8535
\$ 1.00	=	€ 1.1717

## ABBREVIATIONS

ADB	–	Asian Development Bank
DMF	–	design and monitoring framework
EIA	–	environment impact assessment
EMP	–	environment management plan
EPB	–	environment protection bureau
FCUR	–	Foreign Capital Utilization Report
FSR	–	feasibility study report
FMA	–	financial management assessment
GAP	–	gender action plan
GRM	–	grievance redress mechanism
HPDRC	–	Henan Provincial Development and Reform Commission
HPFD	–	Henan Provincial Finance Department
HPG	–	Henan Provincial Government
ICB	–	international competitive bidding
ICS	–	individual consultant selection
LAR	–	land acquisition and resettlement
LIBOR	–	London interbank offered rate
M&E	–	monitoring and evaluation
MOF	–	Ministry of Finance
MOFA	–	Ministry of Foreign Affairs
NCB	–	national competitive bidding
NDRC	–	National Development and Reform Commission
O&M	–	operation and maintenance
PAM	–	project administration manual
PCA	–	procurement capacity assessment
PCC	–	project completion certificate
PMC	–	project management consultants
PMO	–	project management office
PPMS	–	project performance management system
PRC	–	People's Republic of China
RRP	–	report and recommendation of the President
SCS	–	start-up consulting service
SOE	–	statement of expenditures
SPS	–	Safeguard Policy Statement
WTP	–	water treatment plant
WWTP	–	wastewater treatment plant
XCFB	–	Xichuan County Finance Bureau
XCG	–	Xichuan County Government
YREB	–	Yangtze River Economic Belt

## **Table of Contents**

I.	PROJECT DESCRIPTION	1
II.	IMPLEMENTATION PLANS	6
	A. Project Readiness Activities	6
	B. Overall Project Implementation Plan (5-year implementation period)	7
III.	PROJECT MANAGEMENT ARRANGEMENTS	10
	A. Project Implementation Organizations: Roles and Responsibilities	10
	B. Key Persons Involved in Implementation	12
	C. Project Organization Structure	13
IV.	COSTS AND FINANCING	14
	A. Cost Estimate Preparation and Revisions	15
	B. Key Assumptions	15
	C. Summary Cost Estimates and Financing Plans	15
	D. Detailed Cost Estimates by Expenditure Category	17
	E. Allocation and Withdrawal of Loan Proceeds	18
	F. Detailed Cost Estimates by Financier	19
	G. Detailed Cost Estimates by Output	20
	H. Detailed Cost Estimates by Year	21
	I. Contract Awards and Disbursement (€ million)	22
	J. Contract and Disbursement S-curve	22
	K. Fund Flow Mechanism	23
V.	FINANCIAL MANAGEMENT	24
	A. Financial Management Assessment	24
	B. Payment Methods	25
	C. Accounting	26
	D. Auditing and Public Disclosure	27
VI.	PROCUREMENT AND CONSULTING SERVICES	28
	A. Advance Contracting and Retroactive Financing	28
	B. Procurement of Goods, Works and Consulting Services	28
	C. Procurement Plan	30
	D. Open Competitive Bidding (National Advertising)	40
VII.	SAFEGUARDS	42
	A. Environment	42
	B. Involuntary Resettlement	43
	C. Indigenous Peoples/Ethnic Minorities	44
	D. Grievance Redress Mechanism	44
VIII.	GENDER AND SOCIAL DIMENSIONS	45
IX.	PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION	52
	A. Project Design and Monitoring Framework	52
	B. Monitoring	56
	C. Evaluation	57
	D. Reporting	57
	E. Stakeholder Communication Strategy	57
X.	ANTICORRUPTION POLICY	58
XI.	ACCOUNTABILITY MECHANISM	58
XII.	RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL	59

## APPENDIXES

1. Detail Implementation Arrangement	87
2. Indicative Terms of Reference for Project Start-up Consultants	98
3. Indicative Terms of Reference for Capacity Building and Project Management	103
4. Indicative Terms of Reference for External Resettlement and Social Monitoring and Evaluation	114
5. Indicative terms of reference for external environmental monitoring and evaluation	122

### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Xichuan County Government (XCG), the executing agency, and the five implementing agencies: (a) Water Affairs Bureau, (b) Housing and Urban-Rural Construction Bureau, (c) Agriculture Bureau, (d) Ecology and Environmental Protection Bureau, and (e) Tourism Service Center are wholly responsible for the implementation of the ADB financed project, as agreed jointly between the borrower and ADB, and in accordance with government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by the Henan Provincial Government, the Nanyang City Government (NCG), and XCG of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan agreement, the provisions of the loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the project administration instructions) and upon such approval they will be subsequently incorporated in the PAM.



## I. PROJECT DESCRIPTION

1. This project will be implemented in Xichuan County, Henan Province of the People's Republic of China (PRC). The county is one of the national poverty counties in the PRC, located in the ecological red-line zone in the Yangtze River Basin, and undergoing severe soil erosion and rocky desertification process.

2. Lying at the headstream/source of the middle route of the national South-to-North Water Diversion Project (SNWDP) that transfers water from Han River in Yangtze River Basin to the northern PRC including Beijing and Tianjin cities, the project is planned in a controlled development zone to avoid the risk of water pollution and quantity reduction in the Danjiangkou Reservoir, a source of SNWDP.

3. **Impact and Outcome.** The impact of the proposed project will be rural vitalization with environmental improvement and green development along the Yangtze River Economic Belt (YREB) realized (YREB Development Plan, 2016–2030). The outcome will be water resources management and sustainability of agricultural production systems in Xichuan County improved.

4. The project will have the following three outputs:

**1. Output 1: Institutional Capacity of Xichuan County Government on environmental management and knowledge services developed.**

This output includes (i) institutional support to integrate environmental solutions and ecosystem services in local development, including (a) drafting of ecological conservation plans, and (b) facilitating the institutional coordination mechanism; (ii) pilot integrated soil erosion mitigation measures at watershed scale, including (a) implementation of integrated soil and water conservation measures with different trials to maximize outcomes, (b) installation of real-time water quality and sediment sampling stations, and (c) establishment of a research and development unit; (iii) community-based environmental management, including (a) mobilization of selected communities,<sup>1</sup> (b) pilot solid waste management at household level, and (c) promotion of ecotourism in selected communities; (iv) flood risk management, including (a) enhancement of river monitoring with improved water level observation and a surveillance system, (b) improvement of a localized early warning system, and (c) development of disaster response capacity; (v) capacity building programs for sustainable and eco-friendly agricultural practices including (a) raising knowledge and skills of farmers on sustainable farming, and (b) establishment of farmers cooperatives with access to digital market platforms for selling products, including construction of pilot cold storage facility with the ultimate goal of reducing agricultural waste; and (vi) knowledge support including (a) engagement of local universities in development research, (b) compilation of best practices, and (c) dissemination of knowhow through knowledge platforms, including the Regional Knowledge Sharing Initiative launched by ADB and the PRC government, and the Natural Capital Lab, currently under development.<sup>2,3</sup>

5. **Output 2: Soil and water conservation practices improved.** This output includes (i) fruit plantation area development, including (a) installation of smart drip irrigation with automated soil moisture detection and digital irrigation demand management provisions with mobile phone applications, (b) construction of a pilot peripheral rainfall harvest system, (c) automatization of a

---

<sup>1</sup> Community mobilization includes the development of community organizations; women's empowerment; and development of managerial and technical skills, including income generation and use of technologies.

<sup>2</sup> ADB. [ADB-PRC Regional Knowledge Sharing Initiative](#).

<sup>3</sup> ADB. 2020. Building Partnerships Sharing Knowledge and Leveraging Finance for Natural Capital Lab in Asia Pacific Region –Ahmed Saeed. Speech. 6 November.

fertilizer mixture in drip irrigation systems to reduce fertilizer use, (d) utilization of remote sensing technologies, including drones to monitor plant health and soil degradation to ensure improved operation and maintenance (O&M) of the fruit plantation area, and (e) improvement of existing digital asset management in big data center; and (ii) surface drainage and flood mitigation, including: (a) river rehabilitation with eco-friendly measures along the Danjiang (Henan-Hubei section) and Xi rivers, and Dongfeng canal, (b) introduction of measures against waterlogging, including improvement of road and village drainage, and desilting basins, and (c) restoration of natural creeks in low-lying flood prone areas.

6. **Output 3: Rural water services improved.** This output includes (i) rural wastewater management systems, including (a) construction of centralized and distributed wastewater treatment facilities, and (b) installation of sewage collection networks; (ii) rural solid waste management, including construction of a food waste and municipal sludge integrated treatment center that will treat biodegradable wastes, and produce biogas to run the center and compost for use as fertilizer; and (iii) integrated urban-rural water supply, including (a) construction of water intakes at the Danjiangkou Reservoir, (b) construction of water treatment plants, and (c) installation of a transmission line from the reservoir to the treatment centers and distribution network.

7. Detailed output information is given in the following tables.

**Table I-1: Detailed Output Information**

No.	Output/Component	Major Contents
<b>Output 1: Institutional capacity of XCG on environmental management and knowledge services developed</b>		
<b>1.1</b>	<b>Institutional support</b>	
1.1.1	Institutional support for agricultural marketing reform	Application of e-commerce, establishment of farmers' cooperative centers, and improvement of fruit marketing logistics.
1.1.2	Provision of fruit cold storage facilities	Provision of a new cold storage facility with a capacity of 140,000 m <sup>3</sup> , which will increase the fruit storage capacity by 20,300 tons. This subproject involves the construction of 19 no. 35 no. 200-tons fruit cold storage facilities, 17 no. 500-tons fruit cold storage facilities, and one 5,000-tons fruit cold storage facility, including supportive electricity, refrigeration, and other ancillary facilities.
<b>1.2</b>	<b>Community-based environment management</b>	
1.2.1	Awareness improvement	Providing the public with environmental protection education to raise their awareness of environmental protection. In addition, skills training for farmers to adopt environmentally friendly planting methods and use of advanced technologies to raise their awareness of environmental protection and increase their earning capability.
1.2.2	Pilot of rural non-degradable waste including plastic separation tool	In the demonstration watershed of Xipingtou Village near Shibao River, garbage sorting collection barrels are set up for every four households, and the village will assign special personnel to be responsible for regular recycling and transportation to the town treatment station for centralized treatment.
<b>1.3</b>	<b>Institutional capacity building for flood mitigation</b>	
1.3.1	Installation of hydrometeorological and water quality monitor devices	Provision of automatic control water gates for Danjiang River, Xi River, and some river sections to regulate the flow of water for the river sections which do not have sufficient embankment protection.



No.	Output/Component	Major Contents
1.3.2	Strengthening local early warning system	Establishment of a routine supervision and inspection system for river courses, and improvement of management efficiency and emergency response capability.
1.3.3	Enhancement of emergency response capacity	Utilizing the River Chief System to conduct information campaign on flood preparation and emergency responses tailored to the needs of the community. The target audience include general public, government officials, and residents living in flood prone area. One of the key activities is the development and publication of flood warning, evacuation, and emergency response procedures for the community.
1.4	<b>Rural ecotourism</b>	Provision of rural infrastructure for four villages, including Guandi Village, Xiawan Village, Mogou Village, and Qinglong Village. The infrastructure includes rural reception service facilities, internal transportation facilities, rural sanitation facilities, guide, and recreation facilities, rainwater management facilities, and greening landscape.
1.5	<b>Soil erosion mitigation measures - small watershed and soil erosion protection demonstration project of Shibao River in Xipingtou Village</b>	
	Ecological restoration zone	The proposed works include installation of 13 rehabilitation publicity boards for protected area and 1.34 km chain-link fence; planting of 33,500 giant cedar/ <i>sequoiadendron giganteum</i> and 26,800 acer mono/ <i>acer spp</i> ; and hiring of 7 protection management workers.
	Ecological management zone	Construction of 97 m earth check dam, 240 m loose stone check dam, 150 m plant check dam, 115.56 ha slope-to-terrace, 6.1 km field operation road, 39.8 km earth drainage ditch, and 18.9 km concrete drainage ditch.  Building of 13 water cellars for rainwater harvesting, 13 sediment pools and 6 water storage pools, and 15 km river bank protection. Planting of 39,300 apricot plum, 314,300 rosemary/ <i>Rosmarinus officinalis</i> , and 29,800 <i>Acer pictum</i> .  Provision of ecological bag slope protection of 6.67 ha, grass seed slope protection of 4.00 ha, and turf slope protection of 2.67 ha.
	Ecological agriculture zone	Construction of 161.94 ha conservation farming, and 2 picking gardens for tourism.
	Livable environment zone	Construction of 868 m brick drainage ditch, 2 new leisure squares, and 1 soil, and water conservation popular science publicity board for public awareness rising.  Purchase of 50 garbage bins.
<b>Output 2: Soil and water conservation practices improved</b>		
2.1	<b>Forestry and fruit farming development project</b>	
2.1.1	Smart irrigation system	
	(i) Irrigation program and provision of ancillary facilities	The irrigation program covers 38,500 <i>mu</i> (25.6 km <sup>2</sup> ) of land. The program includes: (i) water source protection, water transmission and distribution; (ii) water fertilizer integration and field irrigation; (iii) intelligent irrigation information; (iv) agricultural non-point source pollution control; and (v) electric power management.
	(ii) Construction of peripheral rainfall harvest system for hilly terrains	

No.	Output/Component	Major Contents
	(iii) Automated fertilizer mixture in drip irrigation system	
<b>2.2</b>	<b>River training and flood risk management</b>	
2.2.1	Integrated river management project in Danjiang Henan-Hubei section	<ul style="list-style-type: none"> <li>(i) <b>Embankment:</b> Construction of embankment of 18.765 km, in which newly built retaining wall embankment 6.347 km, newly built sloping wall embankment 6.971 km, and reinforced embankment 5.447 km.</li> <li>(ii) <b>Culvert and sluice:</b> Construction of 12 new culverts and sluices, rebuilding 1 culvert, and sluice.</li> <li>(iii) <b>River flood control information program:</b> Purchase and installation of water level acquisition equipment and remote online surveillance device.</li> </ul>
2.2.2	Integrated river management project in Xi River	<ul style="list-style-type: none"> <li>(i) <b>River training:</b> Restoration of Xi River and Shibao River, with a total length 10.39 km, including dredging, bank slope restoration, dike, and flood control road construction. Construction of 1 new ecological weir and 3 culverts. Demolition and rebuilding of 1 ecological water storage weir and 2 submersible bridges. Demolition of 2 abandoned submersible bridges. Reconstruction of 2 connecting gates.</li> <li>(ii) <b>Wastewater intercepting pipe network:</b> Construction of 28.41 km length of new wastewater interceptors along Shibao River and Xi River.</li> <li>(iii) <b>Ecological construction:</b> The total construction area is 138.1 ha. Construction of protective green space and ecological interception zone on both sides of the river section under control, and part of landscape node along the river to enhance the riverside landscape.</li> </ul>
2.2.3	Dongfeng Canal reconstruction	<ul style="list-style-type: none"> <li>(i) <b>Water inlet section:</b> The total length of reconstruction is 1.86 km, including desilting, and dredging, removal of dangerous rock, demolition and rebuilding of an aqueduct, and provision of concrete lining.</li> <li>(ii) <b>Old county town section:</b> The total length of the reconstruction is 11.34 km, including desilting, and dredging, addition of railings, building of new masonry retaining wall, demolition and rebuilding of 1 bridge, and provision of concrete lining. <b>Downstream section:</b> The total length of the renovation is 8.7 km, including desilting, and dredging, provision of new masonry gravity retaining wall, concrete lining, and 1 sluice gate.</li> </ul>
<b>2.3</b>	<b>Drainage improvement and waterlogging alleviation in Xichuan County center area</b>	
	Improvement of drainage system and provision of waterlogging alleviation measures in Xichuan urban center	<ul style="list-style-type: none"> <li>(i) <b>Municipal drainage and flood mitigation project:</b> Reconstruction of drainage and sewage system under 3 existing roads: 4.816 km Guanhe Road, 0.715 km Jiankang Road, and 0.671 km Jinchu Road.</li> <li>(ii) <b>Reconstruction of drainage system in waterlogging areas:</b> drainage improvement for 6 roads to mitigate the flooding problems of 9 water logging points in the town center</li> <li>(iii) <b>Integrated river management for Nei River:</b> Renovation of 4.4 km Nei River, reinforcing the embankments and revetments, provision of landscape, and planting along the</li> </ul>

No.	Output/Component	Major Contents
		river, construction of sewage interception pipelines, reconstruction of 8 bridges, and provision of ecological water storage facilities.
Output 3: Rural water services improved		
3.1	Rural wastewater management	
3.1.1	Construction of centralized and distributed wastewater treatment facilities and distribution system in urban and rural areas of Xichuan	
	(i) Pipeline construction	<b>Rural Area</b> A total of 14 sub-items are planned in rural areas, involving 25 villages in 5 towns including Jinhe Town, Shangji Town, Xianghua Town, Jiuzhong Town, and Houpo Town. Among the 14 sub-items, 3 items are included in the sewage pipe network of surrounding towns, 9 items are centralized treatment, and 2 items are decentralized treatment. The design scale of sewage treatment is 3, 109 m <sup>3</sup> /d, with DN150 ~ DN600 sewage pipe of 247.20 km.  <b>Commercial Area</b> Improvement of pipe network of the second wastewater treatment plant located in Xiangjiuhou Commercial Area, expansion of service area of the wastewater treatment plant to include surrounding villages, and improvement of the sewage collection rate of the wastewater treatment plant. 31.5 km of DN 300 ~ DN 400 sewage pipeline is newly built
	(ii) Centralized wastewater treatment plants	
	(iii) Decentralized wastewater treatment plants	
3.2	Rural solid waste management	
3.2.1	Xichuan County food waste and municipal sludge treatment center	Treatment of municipal organic waste involving kitchen waste and municipal sludge.  The total treatment capacity is 100 t/d, which includes 30 t/d kitchen waste and 70 t/d municipal sludge.
3.3	Water supply for urban and rural areas	
3.3.1	Water intake	Construction of an intake and a pumping house with design capacity of 181,500 m <sup>3</sup> /day and installation of equipment with capacity of 137,500 m <sup>3</sup> /day.  Construction of a raw water conveyance pipeline (22 km main and 4.8 km branch).
3.3.2	Water treatment plant	Construction of a new water treatment plant (WTP) with capacity of 120,000 m <sup>3</sup> /day in the urban area, and another new WTP with capacity of 5,000 m <sup>3</sup> /day in Madeng town.
3.3.3	Water distribution pipe network	(i) Construction of a transmission pipeline (3.5 km, DN1200 DIP). (ii) Construction of approximately 25 km water main in urban network. (iii) Construction of approximately 200 km water main and branch pipes in the rural network. (iv) Construction of 8 pressurizing pumping stations (1 in urban area and 7 in rural area).

Ha = hectare, km = kilometer, km<sup>2</sup> = square kilometer, m = meter, m<sup>3</sup> = cubic meter, m<sup>3</sup>/d = cubic meter per day, t/d = tons per day

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

**Table II-1: Project Readiness Activities**

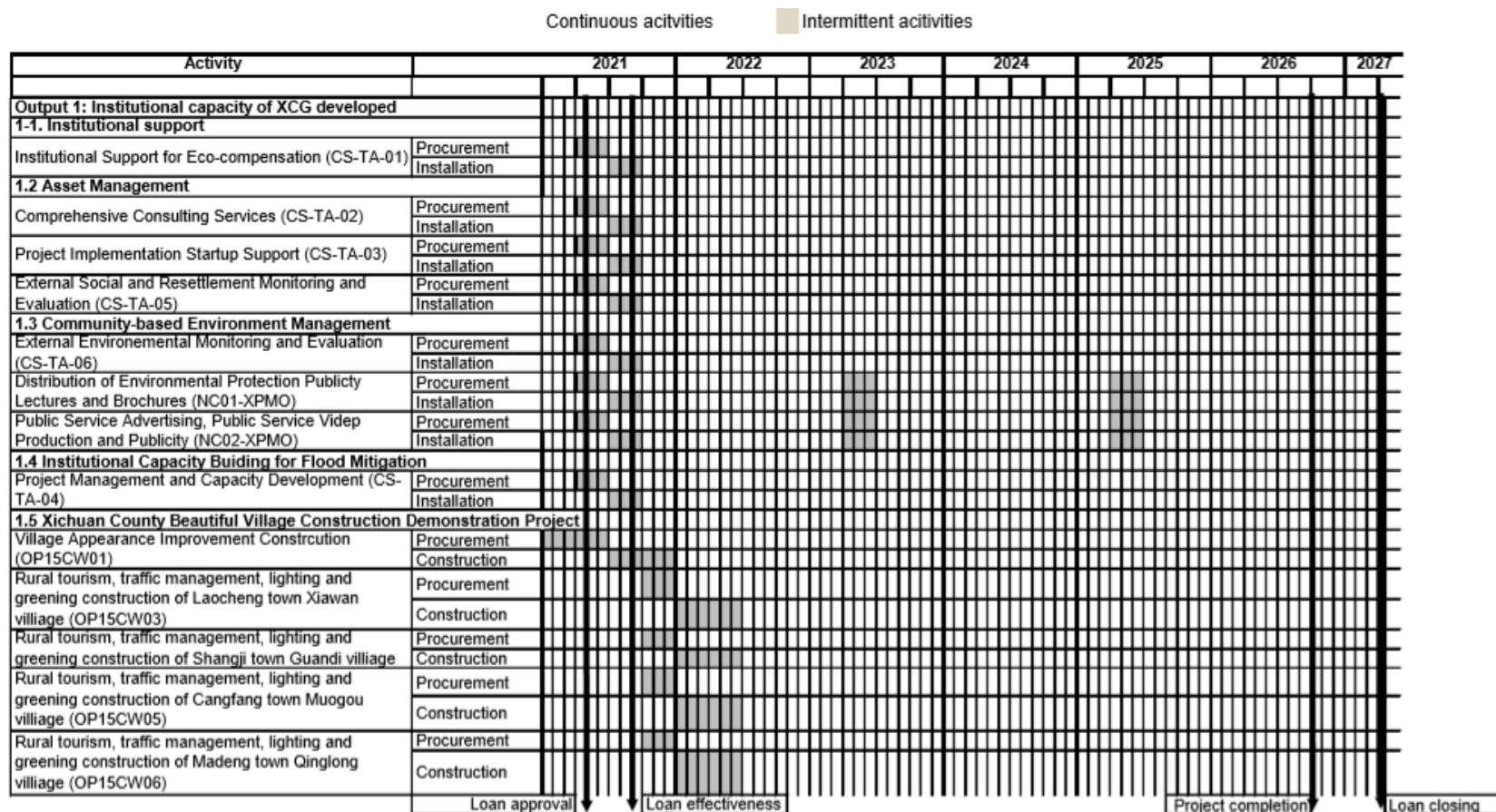
Indicative Activities	2020						2021											Responsibilities
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	
ADB staff review meeting																		ADB
Procurement agent recruited																		PMO
Advance contracting actions																		PMO
Retroactive financing actions																		ADB, HPG, NCG, PMO
Domestic FSR approved																		HPDRC
FCUP approved																		NDRC
Loan negotiations																		ADB, MOF, HPG, NCG, XCG
ADB Board consideration																		ADB
ADB Board approval																		ADB
Loan and project agreements signed																		ADB, MOF, HPG, NCG, XCG
Government legal opinion provided																		MOF, HPG
Loan effectiveness																		ADB, MOF

ADB = Asian Development Bank, FCUP = foreign capital utilization plan, FSR = feasibility study report, HPDRC = Henan Provincial and Finance Department, HPG = Henan Provincial Government, MOF = Ministry of Finance, NCG = Nanyang City Government, NDRC = National Development and Reform Commission, PMO = project management office, XCG = Xichuan County Government.

Source: Asian Development Bank.

## B. Overall Project Implementation Plan (5-year Implementation Period)

Table II-2: Overall Project Implementation Plan



Activity		2021	2022	2023	2024	2025	2026	2027
<b>Output 2: Soil &amp; Water Conservation Practices Improved</b>								
<b>2.1 Forestry and Fruit Farming Development Project</b>								
Water source and water conveyance construction (OP24CW01)	Procurement							
	Construction							
Purchasing and installation of field intelligent irrigation and integrated water and fertilizer system (OP24GS02)	Procurement							
	Construction							
Supply and Install of Power Facilities (OP24GS03)	Procurement							
	Installation							
Roads and Housing Construction (OP24CW04)	Procurement							
	Construction							
Civil works for prevention and control of non-point source pollution (OP24CW05)	Procurement							
	Construction							
Purchase and installation of non-point source pollution control equipment (OP24GS06)	Procurement							
	Installation							
<b>2.2 Xichuan County Fruit Preservation Project</b>								
The first batch of fruit preservation storehouse construction project (OP25CW01)	Procurement							
	Construction							
The second batch of fruit preservation warehouse constructions (OP25CW02)	Procurement							
	Construction							
<b>2.3 Soil Erosion Mitigation</b>								
Small watershed and soil erosion protection demonstration project of Shibao River in Xipingtou	Procurement							
	Construction							
<b>2.4 River Training and Flood Risk Management</b>								
<b>2.4.1 Integrated river management project in Danjiang Henan-Hubei</b>								
Flood Control Engineering of Danjiang E-Yu Section - Siwan segment (OP21CW01)	Procurement							
	Construction							
Flood Control Engineering of Danjiang E-Yu Section-Jingziguan segment (OP21CW02)	Procurement							
	Construction							
<b>2.4.2 Integrated river management project in Xi River</b>								
Main River Regulation Works (OP22CW01)	Procurement							
	Construction							
Landscape Constructions and Building Works (OP22CW02)	Procurement							
	Construction							
<b>2.4.3 Xichuan County Dongfeng Canal reconstruction project</b>								
Enhancing and reconstructing project on Dongfeng Canal (OP26CW01)	Procurement							
	Construction							
Loan approval								
Loan effectiveness								
Project completion								
Loan closing								

Activity		2021	2022	2023	2024	2025	2026	2027
<b>Output 3: Rural Water Services Improved</b>								
<b>3.1 Rural wastewater management</b>								
<b>3.1.1 Xichuan County Rural Sewage System Construction and</b>								
Shangji Town Rural Sewage Treatment Construction (OP31CW01)	Procurement							
	Construction							
Jinhe Town Sewage Treatment Construction (OP31CW02)	Procurement							
	Construction							
Xianghua Town Sewage Treatment Construction (OP31CW03)	Procurement							
	Construction							
Houpo Town Rural Sewage Treatment Construction (OP31CW04)	Procurement							
	Construction							
Jiuchong Town Rural Sewage Treatment Construction (OP31CW05)	Procurement							
	Construction							
Pipe Network Improvement Construction of the Second Sewage Treatment Plant in Xichuan County	Procurement							
	Construction							
<b>3.2 Rural Solid Waste Management</b>								
<b>3.2.1 Xichuan County Rural Domestic Sewage Treatment and Kitchen</b>								
Xichuan Kitchen Waste and Municipal Sludge Collaborative Treatment Center Construction	Procurement							
	Construction							
Purchase of Kitchen Waste Collection and Transportation Facilities (OP32GS02)	Procurement							
	Installation							
<b>3.3 Xichuan County Urban and Rural Water Supply Project</b>								
Water intake and raw water transmission pipeline construction (OP33CW01)	Procurement							
	Construction							
Xichuan County water treatment plant (OP33CW02)	Procurement							
	Construction							
Construction of clear water transmission pipeline in the county (OP33CW03)	Procurement							
	Construction							
Madeng town water treatment plant (OP33CW04)	Procurement							
	Construction							
Water supply pipe network and booster pump station construction of Madeng town and surrounding villages and towns (OP33CW05)	Procurement							
	Construction							
<b>3.4 Xichuan County Drainage and Waterlogging Prevention</b>								
Drainage and waterlogging prevention of Guanhie Road, Jiankang road and Jingchu road and comprehensive treatment works of inland river (OP34CW01)	Procurement							
	Construction							
Drainage and waterlogging prevention works for the eastern section of Hongqi Road, Xinjian Road, east section of Danjiang Avenue, Yong'an Road, Jinbang road and the sections under xibinhe road (OP34CW02)	Procurement							
	Construction							
<b>Others</b>								
Engineering survey and design (NBF01-XPMO)								
Construction supervision (NBF02-XPMO)								
Bidding agency (NBF03-XPMO)								
Environmental impact assessment (NBF04-XPMO)								
Social impact assessment (NBF05-XPMO)								
	Loan approval							
	Loan effectiveness							
	Project completion							
	Loan closing							

Source: Asian Development Bank estimates.

### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organization: Roles and Responsibilities

**Table III-1: Key Parties Involved in Implementation**

<b>Project implementation organizations</b>	<b>Management Roles and Responsibilities</b>
XCG (Executing Agency)	<ul style="list-style-type: none"> <li>• Supervise and coordinate overall project planning, management, and implementation</li> <li>• Facilitate disbursement through XCFD</li> <li>• Facilitate project auditing</li> <li>• Supervise the implementing agencies</li> <li>• Execute loan agreement and sign project agreement</li> <li>• Secure funds for repayment of ADB loan and prepare a repayment plan for the loan and interest in accordance with the loan agreement</li> </ul>
NCG	<ul style="list-style-type: none"> <li>• Provide project guidance and coordination as needed and requested by HPFD</li> <li>• Forward the withdrawal applications by XCFB to HPFD</li> <li>• Supervise counterpart funding requirements as needed and requested by HPFD</li> <li>• Support HPFD to manage and supervise the loan repayment</li> </ul>
HPFD	<ul style="list-style-type: none"> <li>• Provide overall project guidance and coordination</li> <li>• Establish and manage the project advance account</li> <li>• Submit withdrawal applications to ADB</li> <li>• Supervise counterpart funding requirements</li> <li>• Submit withdrawal applications to the Asian Development Bank (ADB)</li> <li>• Manage and supervise the loan repayment</li> </ul>
XCFD	<ul style="list-style-type: none"> <li>• Provide counterpart funding</li> <li>• Repay the loan proceeds</li> <li>• Review annual financing plan and procurement plan</li> <li>• Review and submit withdrawal applications</li> </ul>
Implementing Agencies include: <ul style="list-style-type: none"> <li>• WAB</li> <li>• HURCB</li> <li>• ARB</li> <li>• TSC</li> <li>• EEB</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for providing counterpart funds</li> <li>• Responsible for day-to-day project implementation activities for all infrastructure subcomponents in the respective city</li> <li>• Design and procure works and goods under all infrastructure components, and administer, and monitor the contractors and suppliers, with the support of design institutes, procurement agent, and supervision companies</li> <li>• Undertake contract management, construction supervision, and quality control, with the support of supervision companies</li> <li>• Develop project management procedures, implementation plan, and financial management</li> <li>• Prepare withdrawal applications</li> <li>• Maintain separate project accounts for the project</li> <li>• Prepare and update environmental management plan and other project documents</li> <li>• Participate in training</li> <li>• Organize project acceptance verification</li> </ul>
PMO	<ul style="list-style-type: none"> <li>• Support the implementing agencies to manage all implementation works during preparation and implementation</li> <li>• Coordinate with all involved agencies, departments, and institutes for project implementation</li> <li>• Coordinate implementation of land acquisition and resettlement activities with land resources bureau and housing management</li> </ul>



Project implementation organizations	Management Roles and Responsibilities
	bureau <ul style="list-style-type: none"> <li>• Implement capacity development components of the project</li> <li>• Engage (i) an external monitoring agency for resettlement and environment, and (ii) consultants for project management and implementation of capacity building components</li> <li>• Prepare and update procurement plan and other project documents</li> <li>• Provide ADB with (i) quarterly project progress reports, (ii) semiannual environmental monitoring and social monitoring reports, (iii) a project completion report, and (iv) annual audit reports</li> <li>• Forward external resettlement M&amp;E reports to ADB</li> <li>• Review withdrawal applications prepared by the implementing agencies through NCFB, submit to HPFD for external request and internal appropriations procedures</li> <li>• Carry out project performance and compliance monitoring</li> <li>• Disclose project-related information and documents in accordance with ADB guidelines</li> </ul>
ADB	<ul style="list-style-type: none"> <li>• Support project administration including executing agency and implementing agencies compliance of obligations and responsibilities in accordance with ADB policies and procedures</li> <li>• Monitor and review the project progress and impact</li> <li>• Review and approve procurement, contract awards, and other reports</li> <li>• Approve withdrawal applications and disburse loan proceeds</li> </ul>

ADB = Asian Development Bank, ARB = Agriculture and Rural Bureau, EEB = Ecology and Environment Bureau, HDRC = Henan Development and Reform Commission, HPFD = Henan Provincial Finance Department, HURCB = Housing and Urban-Rural Construction Bureau, M&E = monitoring and evaluation, NCG = Nanyang City Government, PMO = project management office, TSC = Tourism Service Center, WAB = Water Affairs Bureau, XCFD = Xichuan County Finance Department, XCG = Xichuan County Government.

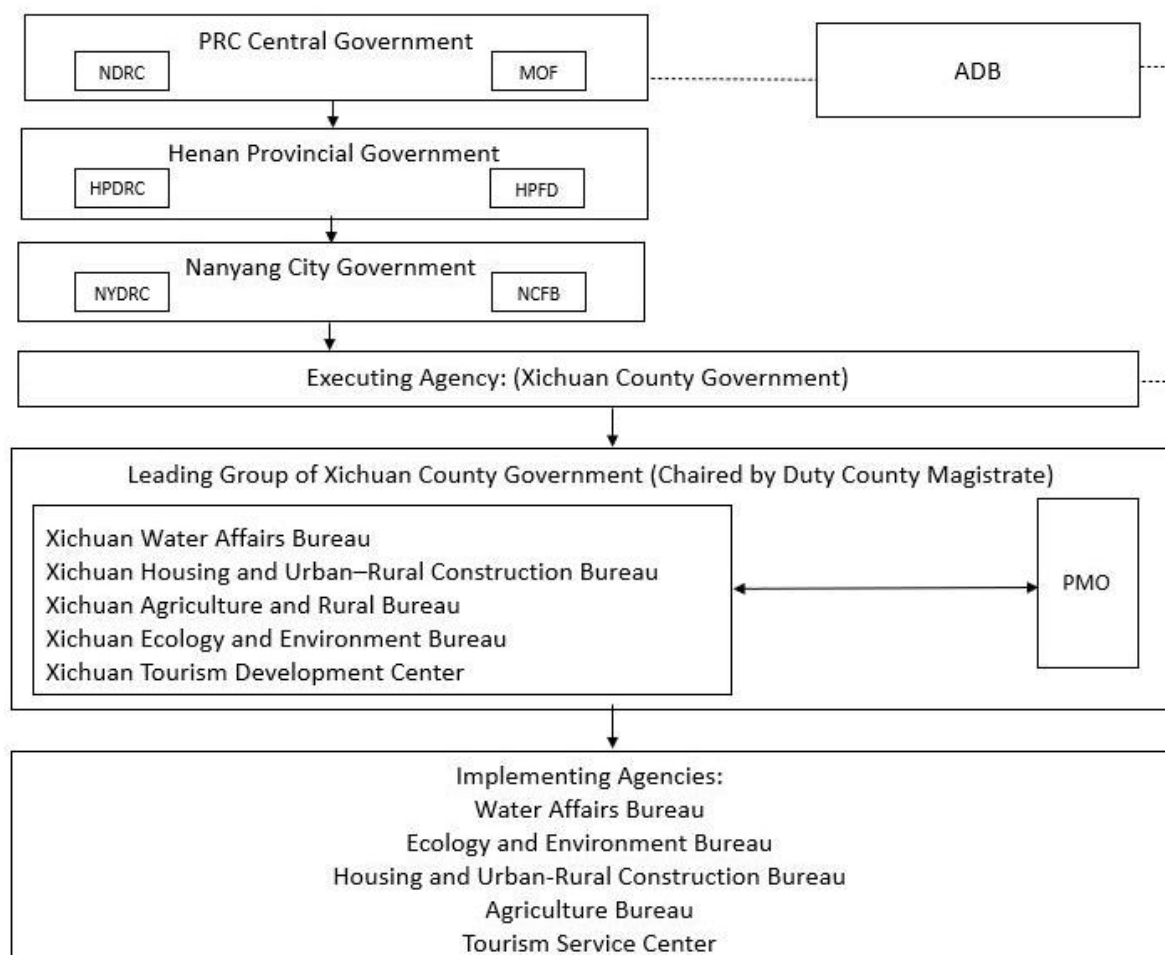
Source: Asian Development Bank.

**B. Key Persons Involved in Implementation****Table III-2: Contact List**

<b>Executing Agency</b>	
Xichuan County Government (XCG)	<p>Officer's Name: Qian Xun</p> <p>Position: Member of the Standing Committee of the County, Duty County Magistrate</p> <p>Telephone No.: +86 69595666</p> <p>E-mail: xcxyhxmb@126.com</p> <p>Office Address: Xichuan County, Nanyang City, Henan Province, People's Republic of China</p>
<b>Implementing Agencies</b>	
Xichuan Water Affairs Bureau	<p>Officer's Name: Liu Jiannong</p> <p>Position: Director of Xichuan Water Affairs Bureau</p> <p>Telephone No.: +86 69212979</p> <p>E-mail: xcxslyj@163.com</p> <p>Office Address: Xichuan County, Nanyang City, Henan Province, People's Republic of China</p>
Xichuan Housing and Urban-Rural Construction Bureau	<p>Officer's Name: Liu Jianli</p> <p>Position: Director of Xichuan Housing and Urban-Rural Construction Bureau</p> <p>Telephone No.: +86 60202216</p> <p>E-mail: 2034723903@qq.com</p> <p>Office Address: Xichuan County, Nanyang City, Henan Province, People's Republic of China</p>
Xichuan Agriculture and Rural Bureau	<p>Officer's Name: Yang Mingyu</p> <p>Position: Director of Xichuan Agriculture and Rural Bureau</p> <p>Telephone No.: +86 69212954</p> <p>E-mail: xcagri2008@163.com</p> <p>Office Address: Xichuan County, Nanyang City, Henan Province, People's Republic of China</p>
Xichuan Ecology and Environment Bureau	<p>Officer's Name: Zhang Xiao</p> <p>Position: Director of Xichuan Ecology and Environment Bureau</p> <p>Telephone No.: +86 69212103</p> <p>E-mail: xchbbgs@163.com</p> <p>Office Address: Xichuan County, Nanyang City, Henan Province, People's Republic of China</p>
Xichuan Tourism Service Center	<p>Officer's Name: Zhao Cheng</p> <p>Position: Director of Xichuan Tourism Service Center</p> <p>Telephone No.: +86 69229233</p> <p>E-mail: nysxcxlyj@126.com</p> <p>Office Address: Xichuan County, Nanyang City, Henan Province, People's Republic of China</p>

<b>ADB</b>	
East Asia Department (EARD)	Staff Name: Thomas Panella Position: Director of Environment, Natural Resources and Agriculture Division (EAER) Telephone No.: +63 2 8632 4444 Fax No.: +63 2 636 82534/2444 E-mail address: <a href="mailto:tpanella@adb.org">tpanella@adb.org</a>
Mission Leader	Staff Name: Rabindra Osti Position: Senior Water Resources Specialist, EAER, EARD Telephone No.: +63 2 8632 4444 E-mail address: <a href="mailto:rosti@adb.org">rosti@adb.org</a>

### C. Project Organization Structure



ADB = Asian Development Bank, HPFD = Henan Provincial Finance Department, HPDRC = Henan Provincial Development and Reform Commission, MOF = Ministry of Finance, NCFB = Nanyang City Finance Bureau, NDRC = National Development and Reform Commission, NYDRC = Nanyang City Development and Reform Commission, PMO = project management office, PRC = People's Republic of China.

Source: Asian Development Bank.

#### IV. COSTS AND FINANCING

8. The project is estimated to cost €410.40 million. The government has requested a regular loan of €170.69 million from ADB's ordinary capital resources to help finance the project. The loan will have a 26-year term, including a grace period of 5 years; an annual interest rate determined in accordance with ADB's EURO-interbank offered rate (EURIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the draft loan and project agreements. Based on the straight-line method, the average maturity is 15.75 years; and the maturity premium payable to ADB is 0.30% per year.

9. ADB will finance expenditures relating to works, goods, consulting services, capacity development, and project management. The government will finance expenditures relating to works, project preparation, project management, procurement, audit, environmental management, land acquisition, and resettlement, social development, and others including financial charges during implementation. The government will ensure that the counterpart funds for the project are provided in a timely manner.

10. **Climate change adaptation and mitigation costs:** The total estimated cost for climate adaptation is about €12.42 million out of which ADB will finance 69%. The estimated cost for climate mitigation is €12.43 million out of which ADB will finance 56.73%.

11. This section also describes in detail the project costs, categories, and components to be financed by ADB and the XCG.

12. Costs are itemized below using the following categories:

- Civil works – includes service contracts for construction and installation of project works and may include provision of related equipment, materials, and supplies. Financed jointly from the ADB loan and XCG counterpart funds.
- Equipment and goods – includes procurement contracts for equipment, materials, and supplies. Financed by the ADB loan.
- Land acquisition and resettlement – includes expenditures for temporary or permanent occupancy of land and associated resettlement activities. Financed by XCG counterpart funds.
- Survey, design, supervision, and monitoring – includes expenditures for engineering and related services to design, implement, and monitor project components. Financed by XCG counterpart funds.
- Capacity development – includes service contracts to provide training and related services required to increase the professional capacity of staff involved in implementation and subsequent operation of project components. Financed by the ADB loan.
- Project management, consulting – includes service contracts to provide training and related services required to assure effective implementation of the loan project. Financed by the ADB loan.
- Project management, monitoring – includes service contracts to monitor the implementation and effectiveness of impact mitigation measures, for instance for resettlement, and environmental impacts. Financed by the ADB loan.
- Physical contingencies – budgetary provision to cover unexpected costs and cost overruns. Financed by XCG counterpart funds.
- Price Contingencies – budgetary provision to cover inflationary increases in costs. Financed by XCG counterpart funds.

13. The above cost categories include taxes, duties, transport, and insurance costs.

#### A. Cost Estimate Preparation and Revisions

14. Capital costs and project O&M costs were provided in the feasibility study report (FSR) prepared on behalf of the PMOs by project design institutes (DI), in consultation with the implementing agencies and TA consultants, and under the guidance of ADB project officer. Costing was completed using government costing standards, and costing information from site investigations, DI project files, and queries with suppliers.

15. Cost revisions during implementation will be prepared by the implementing agencies and their contractors.

#### B. Key Assumptions

16. The following key assumptions underpin the cost estimates and financing plan:
- (i) Exchange rate: CNY 7.7002= €1.00 (as of 7 April 2021).
  - (ii) Price contingencies based on expected cumulative inflation over the implementation period as follows:

**Table IV-1: Escalation Rates for Price Contingency Calculation**

Item	2020	2021	2022	2023	2024	2025	2026
Foreign rate of price inflation	-0.5%	1.6%	1.7%	1.7%	1.8%	1.8%	1.8%
Domestic rate of price inflation	3.6%	1.9%	2.2%	2.2%	2.2%	2.2%	2.2%

Source: 2020–2021 figures are based on *Asian Development Outlook (ADO) 2020*; 2022–2024 figures are ADB staff estimates.

#### C. Summary Cost Estimates and Financing Plans

17. The project is estimated to cost €410.40 million. The project investment plan is in Table IV-2.

**Table IV-2: Summary Cost Estimates**  
(€ million)

Items	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Institutional capacity of XCG developed	36.13
2. Soil and water conservation practices improved	208.82
3. Rural water services improved	122.17
<b>Subtotal (A)</b>	<b>367.12</b>
<b>B. Contingency<sup>c</sup></b>	37.90
<b>C. Financial Charges during Implementation<sup>d</sup></b>	5.39
<b>Total Cost (A+B+C)</b>	<b>410.40</b>

Note: Numbers may not sum precisely because of rounding.

<sup>a</sup> Includes taxes and duties of €12.33 million. Such amount does not represent an excessive share of the project cost. The government will finance taxes and duties of €6.12 million through cash contribution. The balance of €6.21 million will be paid from the Asian Development Bank loan.

<sup>b</sup> In mid-2020 prices as of 5 September 2020.

<sup>c</sup> Physical and price contingencies, and a provision for exchange rate fluctuation are included.

<sup>d</sup> Including a grace period of 5 years, based on the straight-line method, the average maturity is 15.75 years, and the maturity premium payable to ADB is 0.3% per year.

Source: Asian Development Bank estimates.

18. The proposed financing plan for the Project is shown in Table IV-3. The ADB loan will also finance taxes and duties for eligible ADB financed expenditures. The ADB loan will finance €170.69 million or 41.59% of the total project cost, including civil works, equipment, engineering installation, and consulting services. The local government will finance €239.71 million, accounting for 58.41% of the total project cost.

**Table IV-3: Summary Financing Plan (€ million)**

<b>Source</b>	<b>Amount</b>	<b>Percentage of Total (%)</b>
Asian Development Bank	170.69	41.59
Xichuan County Government	239.71	58.41
<b>Total</b>	<b>410.40</b>	<b>100.00</b>

Source: Asian Development Bank estimates.

## D. Detailed Cost Estimates by Expenditure Category

Table IV-4: Detailed Cost Estimates by Expenditure Cat

Item	(CNY million)			(€ million)			% of Base Cost
	Foreign	Local	Total	Foreign	Local	Total	
<b>A. Investment Costs</b>							
<b>1. Civil works and Installation</b>	<b>443.79</b>	<b>1,775.16</b>	<b>2,218.95</b>	<b>57.63</b>	<b>230.54</b>	<b>288.17</b>	<b>78.49</b>
Institutional Support	13.16	52.66	65.82	1.71	6.84	8.55	2.33
Rural ecotourism	18.74	74.95	93.69	2.43	9.73	12.17	3.31
Small watershed and soil erosion protection demonstration project of Shibao River	4.56	18.24	22.80	0.59	2.37	2.96	0.81
Forestry and fruit farming development project-Smart irrigation system	40.45	161.80	202.25	5.25	21.01	26.27	7.15
Integrated river management project in Danjiang Henan-Hubei section	58.93	235.72	294.64	7.65	30.61	38.26	10.42
Integrated river management project in Xi River	64.12	256.46	320.58	8.33	33.31	41.63	11.34
Xichuan County Dongfeng Canal Reconstruction Project	9.91	39.65	49.56	1.29	5.15	6.44	1.75
Drainage Improvement and Waterlogging Alleviation in Xichuan County Center Area	70.15	280.60	350.76	9.11	36.44	45.55	12.41
Construction of centralized and distributed wastewater treatment facilities and distribution system in urban and rural areas	35.60	142.42	178.02	4.62	18.50	23.12	6.30
Xichuan County food waste and municipal sludge treatment center	12.08	48.34	60.42	1.57	6.28	7.85	2.14
Xichuan county water supply for urban and rural areas	116.08	464.33	580.41	15.08	60.30	75.38	20.53
<b>2. Equipment and Installation</b>	<b>31.46</b>	<b>20.97</b>	<b>52.43</b>	<b>4.09</b>	<b>2.72</b>	<b>6.81</b>	<b>1.85</b>
Construction of integrated information system and institutional capacity building for flood mitigation	26.88	17.92	44.80	3.49	2.33	5.82	1.58
Forestry and fruit farming development project-Smart irrigation system	2.85	1.90	4.75	0.37	0.25	0.62	0.17
Xichuan County food waste and municipal sludge treatment center	1.73	1.15	2.88	0.22	0.15	0.37	0.10
<b>3. Land Acquisition and Resettlement</b>	-	277.85	277.85	-	36.08	36.08	9.83
<b>4. Project Preparation and Management</b>	26.02	234.17	260.18	3.38	30.41	33.79	9.20
5. Capacity Building	8.74	98.74	17.48	1.13	1.13	2.27	0.62
<b>Subtotal A</b>	<b>510.00</b>	<b>2,316.89</b>	<b>2,826.89</b>	<b>66.23</b>	<b>300.89</b>	<b>367.12</b>	<b>100.00</b>
<b>Total Base Cost</b>	<b>510.00</b>	<b>2,316.89</b>	<b>2,826.89</b>	<b>66.23</b>	<b>300.89</b>	<b>367.12</b>	<b>100.00</b>
<b>B. Contingencies</b>							-
Physical Contingency	25.50	115.84	141.38	3.31	15.04	18.36	5.00
Price Contingency	27.15	123.32	150.50	3.53	16.02	19.54	5.32
<b>Subtotal (B)</b>	<b>52.65</b>	<b>239.17</b>	<b>291.88</b>	<b>6.84</b>	<b>31.06</b>	<b>37.90</b>	<b>10.32</b>
<b>C. Financing Charges During Implementation</b>							-
Interest During Implementation	-	36.33	36.33	-	4.72	4.72	1.29
Commitment Charges	-	5.15	5.15	-	0.67	0.67	0.18
<b>Subtotal (C)</b>	-	<b>41.48</b>	<b>41.47</b>	-	<b>5.39</b>	<b>5.39</b>	<b>1.47</b>
<b>Total Project Cost (A+B+C)</b>	<b>562.65</b>	<b>2,597.54</b>	<b>3,160.19</b>	<b>73.07</b>	<b>337.33</b>	<b>410.40</b>	<b>111.79</b>

CNY = Chinese yuan.

Note: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

**E. Allocation and Withdrawal of Loan Proceeds****Table IV-5: Allocation and Withdrawal of Loan Proceeds**

No.	Item	Total amount allocated for ADB Financing (€)	Basis for Withdrawal from the Loan Account
		Category	
01	Project Costs	170,692,000	Up to 100% of total expenditure claimed
<b>Total</b>			

<sup>a</sup> Detailed category amounts and disbursement percentages to be used during disbursement are in Table IV-6 of the PAM.

\* Inclusive of taxes and duties imposed within the territory of the Borrower.

Source: Asian Development Bank estimates.

**Table IV-6: Detailed Allocation and Withdrawal of Loan Proceeds**

No.	Item	Financing (€)		Basis for Withdrawal from the Loan Account
		Category	Subcategory	
01	Project Costs	170,692,000		
01A	Civil Works and Installation		161,614,017	56.08% of total expenditure claimed
01B	Equipment and Installation		6,808,625	100.00% of total expenditure claimed
01C	Institutional Capacity Building		2,269,558	100.00% of total expenditure claimed
<b>Total</b>		<b>170,692,000</b>		

\* Inclusive of taxes and duties imposed within the territory of the Borrower.

Source: Asian Development Bank estimates.



## F. Detailed Cost Estimates by Financier

Table IV-7: Detailed Cost Estimates by Financier

Item	Total Cost	ADB				Counterpart Fund			
		Amount	Tax and Duties	Total	%	Amount	Tax and Duties	Total	%
<b>A. Investment Costs</b>									
<b>1. Civil Works and Installation</b>	<b>288.17</b>	<b>156.30</b>	<b>5.31</b>	<b>161.61</b>	<b>56.08</b>	<b>122.39</b>	<b>4.16</b>	<b>126.55</b>	<b>43.92</b>
Institutional Support	8.55	4.64	0.16	4.79	56.08	3.63	0.12	3.75	43.92
Rural ecotourism	12.17	6.60	0.22	6.82	56.08	5.17	0.18	5.34	43.92
Small watershed and soil erosion protection demonstration project of Shibao River	2.96	1.61	0.05	1.66	56.08	1.26	0.04	1.30	43.92
Forestry and fruit farming development project-Smart irrigation system	26.27	14.25	0.48	14.73	56.08	11.16	0.38	11.53	43.92
Integrated river management project in Danjiang Henan-Hubei section	38.26	20.75	0.71	21.46	56.08	16.25	0.55	16.80	43.92
Integrated river management project in Xi River	41.63	22.58	0.77	23.35	56.08	17.68	0.60	18.28	43.92
Xichuan County Dongfeng Canal Reconstruction Project	6.44	3.49	0.12	3.61	56.08	2.73	0.09	2.83	43.92
Drainage Improvement and Waterlogging Alleviation in Xichuan County Center Area	45.55	24.71	0.84	25.55	56.08	19.35	0.66	20.00	43.92
Construction of centralized and distributed wastewater treatment facilities and distribution system in urban and rural areas	23.12	12.54	0.43	12.97	56.08	9.82	0.33	10.15	43.92
Xichuan County food waste and municipal sludge treatment center	7.85	4.26	0.14	4.40	56.08	3.33	0.11	3.45	43.92
Xichuan county water supply for urban and rural areas	75.38	40.88	1.39	42.27	56.08	32.01	1.09	33.10	43.92
<b>2. Equipment and Installation</b>	<b>6.81</b>	<b>6.03</b>	<b>0.78</b>	<b>6.81</b>	<b>100.00</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Construction of integrated information system and institutional capacity building for flood mitigation	<b>5.82</b>	<b>5.15</b>	<b>0.67</b>	<b>5.82</b>	<b>100.00</b>	<b>-</b>	<b>-</b>	<b>0.00</b>	<b>0.00</b>
Forestry and fruit farming development project-Smart irrigation system	0.62	0.55	0.07	0.62	100.00	-	-	0.00	0.00
Xichuan County food waste and municipal sludge treatment center	0.37	0.33	0.04	0.37	100.00	-	-	0.00	0.00
<b>3. Land Acquisition and Resettlement</b>	<b>36.08</b>	<b>-</b>	<b>-</b>	<b>0.00</b>	<b>0.00</b>	<b>35.73</b>	<b>0.35</b>	<b>36.08</b>	<b>100.00</b>
<b>4. Project Preparation and Management</b>	<b>33.79</b>	<b>-</b>	<b>-</b>	<b>0.00</b>	<b>0.00</b>	<b>32.18</b>	<b>1.61</b>	<b>33.79</b>	<b>100.00</b>
<b>5. Capacity Building</b>	<b>2.27</b>	<b>2.16</b>	<b>0.11</b>	<b>2.27</b>	<b>100.00</b>	<b>-</b>	<b>-</b>	<b>0.00</b>	<b>0.00</b>
<b>Subtotal (A)</b>	<b>367.12</b>	<b>164.49</b>	<b>6.21</b>	<b>170.69</b>	<b>46.49</b>	<b>190.31</b>	<b>6.12</b>	<b>196.43</b>	<b>53.51</b>
<b>Total Base Cost</b>	<b>367.12</b>	<b>164.49</b>	<b>6.21</b>	<b>170.69</b>	<b>46.49</b>	<b>190.31</b>	<b>6.12</b>	<b>196.43</b>	<b>53.51</b>
<b>B. Contingencies</b>									
1. Physical	18.36							18.36	100.00
2. Price	19.54							19.54	100.00
<b>Subtotal (B)</b>	<b>37.90</b>							<b>37.90</b>	<b>100.00</b>
<b>C. Financial Charges During Implementation</b>									
1. Interest During Construction	4.72							4.72	100.00
2. Commitment Charges	0.67							0.67	100.00
<b>Subtotal (C)</b>	<b>5.38</b>							<b>5.38</b>	<b>100.00</b>
<b>Total Project Cost (A+B+C)</b>	<b>410.40</b>	<b>164.49</b>	<b>6.21</b>	<b>170.69</b>	<b>41.59</b>	<b>190.31</b>	<b>6.12</b>	<b>239.71</b>	<b>58.412</b>

## G. Detailed Cost Estimates by Output

Table IV-8: Detailed Cost Estimates by Output

Item	Total	Institutional capacity of XCG developed							Soil and water conservation practices improved						Rural water services improved			
		Com. 1.1	Com. 1.2	Com. 1.3	Com. 1.4	Com. 1.5	Com. 1.6	Sub-Total	Com. 2.1.1	Com. 2.2.1	Com. 2.2.2	Com. 2.2.3	Com. 2.3	Sub-Total	Com. 3.1.1	Com. 3.2.1	Com. 3.3	Sub-Total
<b>A. Investment Costs</b>																		
Civil works and Installation	288.17	8.55	-	-	12.17	2.96	-	23.68	26.27	38.26	41.63	6.44	45.55	158.15	23.12	7.85	75.38	106.34
Equipment and Installation	6.81	-	-	5.82	-	-	-	5.82	0.62	-	-	-	-	0.62	-	0.37	-	0.37
Land Acquisition and Resettlement	36.08	-	-	-	0.18	-	-	0.18	-	6.40	23.94	0.00	0.82	31.17	0.93	0.82	2.98	4.73
Project preparation and management	33.79	1.42	-	0.43	1.72	0.62	-	4.19	3.50	4.26	4.68	1.07	5.37	18.88	2.84	1.23	6.65	10.72
Capacity Building	2.27	-	0.26	0.30	-	-	1.71	2.27	-	-	-	-	-	-	-	-	-	-
<b>Subtotal A</b>	<b>367.12</b>	<b>9.97</b>	<b>0.26</b>	<b>6.55</b>	<b>14.07</b>	<b>3.58</b>	<b>1.71</b>	<b>36.13</b>	<b>30.38</b>	<b>48.93</b>	<b>70.25</b>	<b>7.51</b>	<b>51.75</b>	<b>208.82</b>	<b>26.89</b>	<b>10.27</b>	<b>85.00</b>	<b>122.17</b>
<b>Total Base Cost</b>	<b>367.12</b>	<b>9.97</b>	<b>0.26</b>	<b>6.55</b>	<b>14.07</b>	<b>3.58</b>	<b>1.71</b>	<b>36.13</b>	<b>30.38</b>	<b>48.93</b>	<b>70.25</b>	<b>7.51</b>	<b>51.75</b>	<b>208.82</b>	<b>26.89</b>	<b>10.27</b>	<b>85.00</b>	<b>122.17</b>
<b>B. Contingencies</b>																		
Physical Contingency	18.36	0.50	0.01	0.33	0.70	0.18	0.09	1.81	1.52	2.45	3.51	0.38	2.59	10.44	1.34	0.51	4.25	6.11
Price Contingency	19.54	0.59	0.00	0.46	0.66	0.20	0.10	2.01	1.61	2.36	3.43	0.27	4.19	11.86	1.53	0.53	3.61	5.68
<b>Subtotal (B)</b>	<b>37.90</b>	<b>1.09</b>	<b>0.02</b>	<b>0.78</b>	<b>1.36</b>	<b>0.38</b>	<b>0.19</b>	<b>3.81</b>	<b>3.13</b>	<b>4.80</b>	<b>6.95</b>	<b>0.64</b>	<b>6.78</b>	<b>22.30</b>	<b>2.87</b>	<b>1.05</b>	<b>7.86</b>	<b>11.79</b>
<b>C. Financing Charges During Implementation</b>																		
Interest During Implementation	4.72	0.12	0.01	0.10	0.21	0.05	0.04	0.54	0.43	0.65	0.67	0.13	0.40	2.28	0.34	0.13	1.42	1.90
Commitment Charges	0.67	0.02	0.00	0.04	0.02	0.01	0.01	0.09	0.06	0.07	0.09	0.01	0.16	0.39	0.05	0.02	0.12	0.19
<b>Subtotal (C)</b>	<b>5.39</b>	<b>0.14</b>	<b>0.01</b>	<b>0.14</b>	<b>0.24</b>	<b>0.05</b>	<b>0.05</b>	<b>0.63</b>	<b>0.49</b>	<b>0.72</b>	<b>0.76</b>	<b>0.14</b>	<b>0.56</b>	<b>2.67</b>	<b>0.40</b>	<b>0.15</b>	<b>1.54</b>	<b>2.09</b>
<b>Total Project Cost (A+B+C)</b>	<b>410.40</b>	<b>11.20</b>	<b>0.28</b>	<b>7.47</b>	<b>15.66</b>	<b>4.01</b>	<b>1.94</b>	<b>40.58</b>	<b>34.00</b>	<b>54.45</b>	<b>77.95</b>	<b>8.30</b>	<b>59.08</b>	<b>233.79</b>	<b>30.16</b>	<b>11.47</b>	<b>94.41</b>	<b>136.04</b>

XCG = Xichuan County Government.

Note: Com.1.1=Institutional Support; Com.Com.1.2=Community-based environment management; Com.1.3=Construction of integrated information system and institutional capacity building for flood mitigation; Com.1.4=Rural ecotourism; Com.1.5=Small watershed and soil erosion protection demonstration project of Shibao River in Xipingou Village; Com.1.6=General capacity building and consulting services for project start-up, implementation, project management, external monitoring, and evaluation; Com.2.1.1=Smart irrigation system; Com.2.2.1=Integrated river management project in Danjiang Henan-Hubei section; Com.2.2.2=Integrated river management project in Xi River; Com.2.2.3=Xichuan County Dongfeng Canal Reconstruction Project; Com.2.3=Xichuan County Drainage Improvement and Waterlogging Alleviation in Xichuan County Center Area; Com.3.1.1=Construction of centralized and distributed wastewater treatment facilities and distribution system in urban and rural areas; Com.3.2.1=Xichuan County food waste and municipal sludge treatment center; Com.3.3=Xichuan County Water supply for urban and rural areas.

Source: Asian Development Bank estimates.

## H. Detailed Cost Estimates by Year

Table IV-9: Detailed Cost Estimates by Year

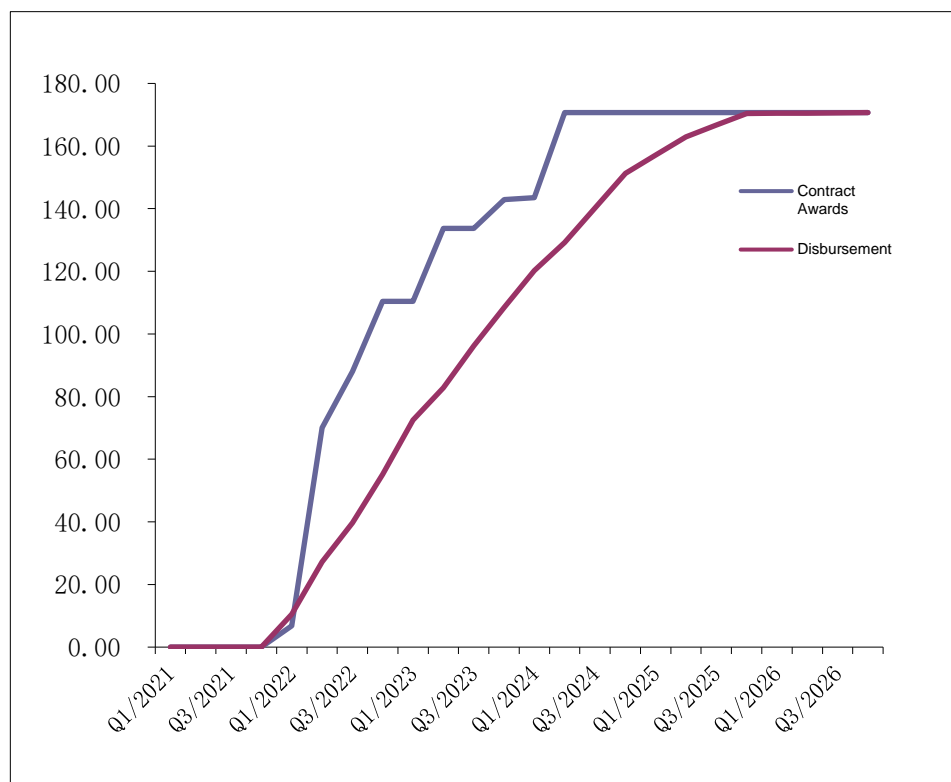
Items	2021	2022	2023	2024	2025	2026	Total
<b>A. Investment Cost</b>							
<b>1. Civil works and Installation</b>	<b>12.25</b>	<b>85.18</b>	<b>93.54</b>	<b>69.39</b>	<b>27.80</b>	<b>-</b>	<b>288.17</b>
Institutional Support	-	-	5.70	2.85	-	-	8.55
Rural ecotourism	-	4.06	8.11	-	-	-	12.17
Small watershed and soil erosion protection demonstration project of Shibao River	-	0.49	1.97	0.49	-	-	2.96
Forestry and fruit farming development project-Smart irrigation system	-	8.76	8.76	8.76	-	-	26.27
Integrated river management project in Danjiang Henan-Hubei section	2.61	10.44	17.68	7.53	-	-	38.26
Integrated river management project in Xi River	2.56	11.50	11.32	16.25	-	-	41.63
Xichuan County Dongfeng Canal Reconstruction Project	-	6.44	-	-	-	-	6.44
Drainage Improvement and Waterlogging Alleviation in Xichuan County Center Area	-	-	-	17.75	27.80	-	45.55
Construction of centralized and distributed wastewater treatment facilities and distribution system in urban and rural areas	-	4.51	7.71	10.90	-	-	23.12
Xichuan County food waste and municipal sludge treatment center	-	1.31	5.23	1.31	-	-	7.85
Xichuan county water supply for urban and rural areas	7.08	37.68	27.07	3.55	-	-	75.38
<b>2. Equipment and Installation</b>	<b>-</b>	<b>-</b>	<b>0.12</b>	<b>3.50</b>	<b>3.18</b>	<b>-</b>	<b>6.81</b>
Construction of integrated information system and institutional capacity building for flood mitigation	-	-	-	2.79	3.03	-	5.82
Forestry and fruit farming development project-Smart irrigation system	-	-	-	0.46	0.15	-	0.62
Xichuan County food waste and municipal sludge treatment center	-	-	0.12	0.25	-	-	0.37
<b>3. Land Acquisition and Resettlement</b>	<b>13.74</b>	<b>6.79</b>	<b>15.06</b>	<b>0.50</b>	<b>-</b>	<b>-</b>	<b>36.08</b>
<b>4. Project Preparation and Management</b>	<b>3.85</b>	<b>6.80</b>	<b>9.82</b>	<b>7.68</b>	<b>4.44</b>	<b>1.20</b>	<b>33.79</b>
<b>5. Capacity Building</b>	<b>0.35</b>	<b>0.43</b>	<b>0.43</b>	<b>0.43</b>	<b>0.32</b>	<b>0.32</b>	<b>2.27</b>
<b>Subtotal A</b>	<b>30.19</b>	<b>99.19</b>	<b>118.97</b>	<b>81.50</b>	<b>35.75</b>	<b>1.53</b>	<b>367.12</b>
<b>B. Contingencies</b>							
Physical Contingency	1.51	4.96	5.95	4.07	1.79	0.08	18.36
Price Contingency	0.66	3.55	6.34	5.70	3.13	0.15	19.54
<b>Subtotal (B)</b>	<b>2.17</b>	<b>8.51</b>	<b>12.29</b>	<b>9.78</b>	<b>4.92</b>	<b>0.23</b>	<b>37.90</b>
<b>C. Financing Charges During Implementation</b>							
Interest During Implementation	0.03	0.25	0.66	1.04	1.29	1.46	4.72
Commitment Charges	0.25	0.21	0.13	0.06	0.01	0.00	0.67
<b>Subtotal (C)</b>	<b>0.28</b>	<b>0.46</b>	<b>0.79</b>	<b>1.10</b>	<b>1.30</b>	<b>1.46</b>	<b>5.39</b>
<b>Total Project Cost (A+B+C)</b>	<b>32.63</b>	<b>108.17</b>	<b>132.05</b>	<b>92.38</b>	<b>41.97</b>	<b>3.21</b>	<b>410.40</b>
<b>%</b>	<b>7.95%</b>	<b>26.36%</b>	<b>32.17%</b>	<b>22.51%</b>	<b>10.23%</b>	<b>0.78%</b>	<b>100.00%</b>

# I. Contract Awards and Disbursement (€ million)

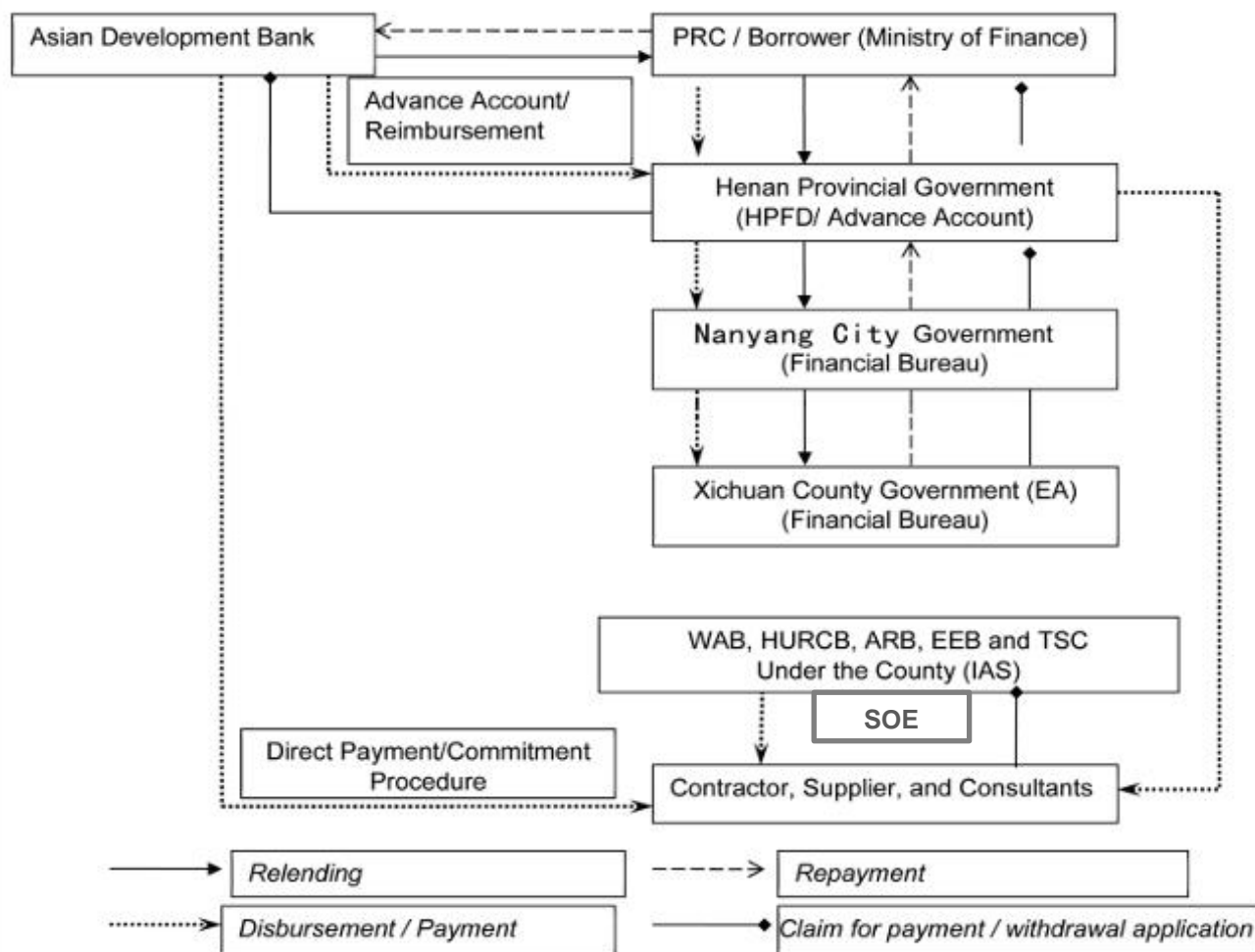
Table IV-10: Contract Awards and Disbursement

Year	Contract Award					Disbursement				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	6.85	63.16	18.00	22.36	110.37	10.50	16.71	12.51	15.41	55.13
2023	0.00	23.32	0.00	9.23	32.55	17.42	10.25	13.41	12.21	53.29
2024	0.62	27.15	0.00	0.00	27.77	11.81	8.96	11.09	10.99	42.85
2025	0.00	0.00	0.00	0.00	0.00	5.89	5.73	3.86	3.62	19.10
2026	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.00	0.00	0.32
<b>Total</b>	<b>170.69</b>					<b>170.69</b>				

# J. Contract and Disbursement S-curve



## Fund Flow Mechanism



ARB = Agriculture and Rural Bureau, EA = executing agency, EEB= Ecology and Environment Bureau, HPFD = Henan Province Financial Department, HURCB = Housing and Urban–Rural Construction Bureau, IA = implementing agency, PRC = People's Republic of China, TDC=Tourism Service Center, WAB=Water Affairs Bureau, SOE = state-owned enterprise, which is 100% owned by the Xichuan County Government and will provide technical inputs to IAs and help IAs supervise construction, procure goods and services, and prepare project documents.

Source: Asian Development Bank.

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

19. The financial management assessment (FMA) is conducted in accordance with ADB's Technical Guidance Note: Financial Management Assessment.

20. The FMA assesses the financial management capacity of Xichuan County Government (XCG) as executing agency (EA) and Water Affairs Bureau, Housing, and Urban-Rural Construction Bureau, Tourism Service Center, Agriculture, and Rural Bureau, and Ecology and Environmental Bureau under the county as project implementing agencies (IA). The assessment covers funds-flow arrangements, staffing, accounting and financial reporting systems, internal and external auditing arrangements, and financial information systems.

21. The assessment showed that the executing and implementing agencies have satisfactory financial management capability to (i) record required financial transactions and balances, (ii) provide regular and reliable financial statements and monitoring reports, and (iii) safeguard financial assets.

22. The assessment identified the main financial management risks as: (i) implementation risk – lack of familiarity with ADB disbursement procedures and requirements which could delay project implementation; (ii) compliance risk – lack of familiarity with ADB financial management requirements, particularly on accounting, reporting, and auditing, which may delay project reporting and detail identification of issues on the use of loan proceeds; (iii) operational risk/inadequate experience in building some project components such as cloud-based transport information system that could impact project progress and quality of the services to be provided after project completion.

23. The overall financial management risk-rating of the project before considering mitigation measures is moderate. The identified financial management risks will be closely monitored during project implementation. The financial management action plan is as follows:

**Table V-1: Proposed Action Plan for Financial Management**

Action	Responsibility	Timing
1. Training on ADB financial management requirements, including disbursement, accounting, asset registration, and management, auditing procedures, foreign exchange, and interest rate risk management	EA/PMO/IAs/Xichuan Finance Bureau /Xichuan Audit Bureau/ADB	1 month before loan effectiveness
2. Recruitment of experienced consultants and skilled accountants to enhance the operational capacities	EA/PMO/IAs	1 month before first disbursement
3. Completing staff deployment in appropriate financial management positions with English language support	EA/PMO/IAs	1 month before first disbursement
4. Development of financial management manuals	EA/PMO/IAs/Xichuan Finance Bureau	Before loan effective date
5. Close monitoring to timely identify potential issues in counterpart funding.	EA/PMO/IAs/Xichuan Financial Bureau /ADB	At least once per year during project implementation

Action	Responsibility	Timing
6. Clear institutional arrangements and coordination mechanisms	EA/IAs/Xichuan Financial Bureau	Before loan effectiveness
7. Methodologies for managing foreign exchange and interest rate risks	EA/IAs/Xichuan Financial Bureau	Before loan effectiveness

ADB = Asian Development Bank, EA = executing agency, IA = implementing agency, PMO = project management office.

Source: Asian Development Bank.

24. It was agreed that the EA and implementing agencies will further enhance their capabilities by (i) setting up clear institutional arrangements and coordination mechanisms; (ii) completing staff deployment in appropriate financial management positions with English language support; (iii) developing methodologies for managing foreign exchange and interest rate risks; and (iv) undertaking more training, particularly on ADB policy, and procedures.

25. The project's financial management arrangements with appropriate mitigation measures are considered satisfactory.

## B. Payment Methods

### Summary

- (i) Direct payment may be used for large contracts.
- (ii) Reimbursement will be used for eligible expenditures incurred and paid for by the government out of its budget allocation or its own resources.
- (iii) Advance account:
  - the account will be established and maintained by Henan Provincial Finance Department (HPFD), on behalf of Henan Provincial Government (HPG), after the loan becomes effective;
  - HPG will be responsible for the use, management, replenishment, and liquidation of the advance account;
  - the advance account will be exclusively used to finance the ADB share of eligible expenditures; and
  - the outstanding advance (initial advance and subsequent deposits) to the advance account should not exceed the EA's estimate of ADB's share of eligible expenditures for the next 6 months which are to be paid through the advance account.

### 1. Disbursement Arrangements for ADB Funds

26. The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time),<sup>4</sup> and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.<sup>5</sup> Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

<sup>4</sup> Loan Disbursement Handbook. <http://www.adb.org/documents/loan-disbursement-handbook>

<sup>5</sup> Disbursement eLearning. [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning).

27. The implementing agencies will be responsible for all disbursement arrangements for expenditures related to the implementation of subcomponents in Xichuan County, including (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing withdrawal applications that will be submitted to ADB by Henan Provincial Government (HPG).

28. Each year, necessary amount of counterpart funding is allocated by XCG and disbursed upon request from the implementing agencies. For ADB's loan proceeds, withdrawal applications to ADB will be prepared by the HPG on behalf of XCG. At the end of each year, realistic projections of contract awards/commitments and disbursement for the following calendar year will be made for an assessment and projection of ADB funds required to cover contract awards/commitments. The PMO will be responsible for preparing contract award/commitment and disbursement projections each year.

29. **Advance fund procedure.** To facilitate project implementation through timely release of loan proceeds, HPFD will establish an advance account promptly after loan effectiveness at a commercial bank. The advance account is to be used exclusively for the ADB's share of eligible expenditures.

30. The currency of the advance account will be Euro. HPFD, who established the advance account in its name, is accountable, and responsible for proper use of advances to the advance account. The total outstanding advance to the advance account should not exceed the estimate of ADB's share of eligible expenditures to be paid through the advance account for the forthcoming 6 months. HPFD may request for initial and additional advances to the advance account based on an estimate of expenditure sheet setting out the estimated expenditures to be financed through the account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by HPFD in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) when liquidating or replenishing the advance account (footnote 2).

31. **Statement of Expenditure (SOE) procedure.** The SOE procedure<sup>6</sup> may be used for reimbursement of eligible expenditures or liquidation of advances to the advance account. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

32. The minimum value per withdrawal application is \$200,000 or 1% of the ADB loan amount, whichever is lower. Individual payments below this amount should be paid by implementing agencies and subsequently claimed from ADB (i) through reimbursement; or (ii) from the advance account, unless otherwise accepted by ADB.

## C. Accounting

33. The EA will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project using the *Accounting Methods for Projects Financed by the World Bank* (reference No. 2000 [13]).<sup>7</sup>

<sup>6</sup> SOE forms are available in Appendix 7B and 7D of ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

<sup>7</sup> Accounting regulations issued by the Ministry of Finance for all foreign aid-funded projects.



34. The EA will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations, which are consistent with international accounting principles and practices.

#### **D. Auditing and Public Disclosure**

35. The EA will cause the detailed consolidated project financial statements to be audited in accordance with national auditing standards by an independent auditor acceptable to ADB. The EA will submit the audited project financial statements together with the auditors' opinion in the English language to ADB within 6 months of the end of the fiscal year.

36. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the purposes of the project or not; (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements (where applicable).

37. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal project supervision, and followed up regularly with all concerned, including the external auditor.

38. The government and the executing and implementing agencies have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements. ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

39. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Access to Information Policy.<sup>8</sup> After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter and additional auditor's opinions will not be disclosed.

---

<sup>8</sup> ADB Access to Information Policy: <https://www.adb.org/documents/access-information-policy>

## **VI. PROCUREMENT AND CONSULTING SERVICES**

### **A. Advance Contracting and Retroactive Financing**

40. The XCG and the five implementing agencies were advised that retroactive financing may only apply up to the equivalent of 20% of the total ADB loan, to cover eligible expenditures incurred for civil works, goods, and consulting services procured through advance contracting before loan effectiveness, but not more than 12 months before the signing of the loan agreement.

41. All advance contracting and retroactive financing should be undertaken in conformity with ADB's Procurement Policy: Goods, Works, Nonconsulting and Consulting Services (2017, as amended from time to time)<sup>9</sup> and Procurement Regulations for ADB Borrowers: Goods, Works, Nonconsulting and Consulting Services (2017, as amended from time to time).<sup>10</sup> The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB's prior approval. The approval of advance contracting and retroactive financing does not commit ADB to subsequently approve the project or to finance the procurement costs. In addition, ADB will not finance expenditures paid by the EA and implementing agencies prior to loan or grant effectiveness, even if advance contracting is approved, unless retroactive financing has also been approved by ADB.

### **B. Procurement of Goods, Works, and Consulting Services**

42. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Policy and Procurement Regulations for ADB Borrowers: Goods, Works, Nonconsulting and Consulting Services (2017, as amended from time to time). Open competitive bidding advertised nationally (OCB-AN) will be used for all civil works packages except for request for payment (RFQ) packages as may be identified in the procurement plan. For goods and equipment, open competitive bidding advertised internationally (OCB-AI) will only be used for supply of high-tech equipment and systems (such as high precision biochemical detector, nuclear magnetic resonance, aeroengine, and business application information system development etc.); OCB-AN will be used for common goods and equipment packages except for RFQ packages identified in the procurement plan. OCB-AI shall be used for Support and Business Application System Development and Integration of Xichuan Integrated Information System Construction (contract no.: ISC-GS03-IT, 1S1E, cost estimated at \$1.335 million). For the first civil works and goods contracts to be procured through OCB-AN, the draft procurement documents in English (prequalification (if applicable), invitation for bids, bidding documents, bid evaluation reports, and draft negotiated contracts) should be submitted for ADB prior review and approval regardless of the estimated contract amount. Subsequent procurement through OCB-AN are subject to post review (sampling). The executing and implementing agencies and PMO shall retain all documentation with respect to each contract where post review (sampling) is required during project implementation and for at least 1 year after the project closing date. All contracts under advance contracting are subject to prior review.

43. For all works contracts and goods/installation contracts, separate service contracts for quality control and site supervision will be procured by the local governments independent of the civil works or goods/installation contracts using country system requirements.

<sup>9</sup> Available at: <https://www.adb.org/documents/adb-procurement-policy>

<sup>10</sup> Available at: <https://www.adb.org/documents/procurement-regulations-adb-borrowers>

44. A procurement plan indicating goods, works, and consulting service contract packages and expected contract preparation and implementation timeline is in subsection C.

45. All consultants financed by ADB will be recruited according to Procurement Regulations for ADB Borrowers: Goods, Works, Nonconsulting and Consulting Services (2017, as amended from time to time).<sup>11</sup> An estimated 228 person-months (22 international, 206 national) of consulting services are required to: (i) facilitate project management and institutional strengthening, (ii) conduct external resettlement and social monitoring, (iii) advise on project implementation support including contract management and disbursement, and (iv) conduct integrated capacity building.

46. The PMO will engage a national project management and procurement specialist by ADB funding for initial project management activities, particularly capacity development for implementation of the project performance monitoring system (PPMS); advance procurement; and consultant recruitment, including recruitment of a team of consultants for project management support. The implementing agencies will engage national consultants by self-funding for detailed design, construction supervision, and quality inspection.

## **1. Open Competitive Bidding for Goods and Works**

47. OCB will be used for ADB financed contracts for works and goods. If a bidding attracts foreign companies, the bidding document will be written in English using the latest ADB standard bidding document for OCB advertised internationally packages, which can be downloaded from ADB website. If a bidding does not attract foreign companies, the following provisions will be applied: (i) an advertisement will be published on a national press, official gazette, or free, and publicly accessible website, as well as on the national e-procurement information and monitoring portal at the ADB special section of the China Tendering & Bidding Public Service Platform (<http://www.cebpubservice.com>); (ii) the PRC specific standard bidding documents (SBD, accepted by ADB, as updated in 2020) will be used unless otherwise agreed between the XCG and ADB; and (iii) documents for bidding and contract will only be in Chinese language (except for documents which require ADB's review and approval), and the currencies for bidding and payment will be in Chinese yuan (CNY) unless otherwise agreed between the XCG and ADB. If a bidding document is internationally advertised, regardless of ADB prior or post review (sampling) arrangements, the invitations for bids need to be submitted to ADB latest 1 week before the advertisement for parallel advertisement in Business Opportunities of ADB's website. Unless otherwise agreed between XCG and ADB and set forth in the procurement plan, procurement under OCB will use the single-stage one-envelope procedure. The relevant sections of ADB's Anticorruption Policy (1998, as amended from time to time) will be included in all procurement documents and contracts.<sup>12</sup>

## **2. Consulting Services**

48. An external environmental monitoring firm will be recruited to conduct regular external monitoring as required in the environmental management plan (EMP). An external resettlement monitoring firm will be recruited to conduct regular monitoring of the implementation of the Resettlement Plan and Land Use Right Transfer (LURT) Framework.

---

<sup>11</sup> Available at: <https://www.adb.org/documents/procurement-regulations-adb-borrowers>

<sup>12</sup> <https://www.adb.org/sites/default/files/institutional-document/32026/anticorruption.pdf>

49. The PMO will engage consulting firms and a national project management and procurement specialist by ADB funding for initial project management activities, particularly capacity development for implementation of the PPMS; advance procurement; and consultant recruitment, including recruitment of a team of consultants for project management support; and the implementing agencies will engage national consultants by self-funding for detailed design, construction supervision, and quality inspection.

50. All ADB financed individual consultants, consulting firms, and above-mentioned monitoring agencies will be recruited according to ADB's Procurement Policy and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a quality–cost ratio of 90:10 or Consultants' Qualifications Selection (CQS) method. The indicative terms of reference are in **Appendixes 2–5**.

### 3. ADB's Prior Review and Post Review (Sampling)

51. Following the ADB Procurement Review: Guidance Note on Procurement Review (June 2018, as amended from time to time)<sup>13</sup> for (i) all ADB financed contracts with advance contracting, and (ii) the first ADB financed contract of each type (OCB advertised internationally or nationally) for civil works and goods, ADB's prior review and approval of the following documents (if applicable) will be required: invitation for bids, bidding document and relevant clarification and addendum (if any), bid evaluation report, draft negotiated contract, and contract variations.

52. ADB's prior review is applicable to other complex packages with high risk and high value, based on the procurement risk assessment and strategic procurement planning.

53. For OCB packages under post review (sampling), (i) ADB's prior approval of the invitation for bids, bidding document, bid evaluation report, and draft negotiated contract (if applicable) will not be necessary, as long as the first type of OCB bidding document approved by ADB is used as the master bidding document without substantial modification; (ii) procurement process can be conducted without ADB's prior approval; (iii) ADB reviews the bid evaluation report and signed contract after the contract is signed; and on sampling basis. Each sample size should cover at least 20% of the total number of the post review (sampling) contracts awarded before the initial post review (sampling), or between two consecutive post reviews (sampling). Total sample size aggregated should capture contracts representing (i) about 30%–50% of total project value and (ii) about 20% of the total number of contracts identified for post review (sampling). It should ensure that, to the extent possible, all types of contracts are included in the sample.

54. For all ADB financed consultant recruitment, ADB's prior review, and approval of each step will be required.

### C. Procurement Plan

Basic Data	
Project Name: Henan Xichuan Integrated Ecological Protection and Environmental Improvement Project	
Country: People's Republic of China	Executing Agency: Xichuan County Government (XCG)
Project Procurement Classification: B	Implementing Agencies: <ul style="list-style-type: none"> <li>Water Affairs Bureau (WAB)</li> </ul>

<sup>13</sup> <https://www.adb.org/sites/default/files/procurement-review.pdf>

Basic Data		
	<ul style="list-style-type: none"> <li>Housing and Urban-Rural Construction Bureau (HURCB)</li> <li>Agriculture and Rural Bureau (ARB)</li> <li>Ecology and Environment Bureau (EEB)</li> <li>Tourism Service Center (TSC)</li> </ul>	
Procurement Risk: Moderate		
Project Financing Amount: €410,400,000 ADB Financing: €170,692,000 Non-ADB Financing: €239,708,000	Project Closing Date: 31 March 2027	
Date of First Procurement Plan: 6 October 2020	Date of this Procurement Plan: 6 April 2021	
Procurement Plan Duration: 18 months	Advance contracting: Yes	E-GP: Yes, e-publishing only (e-bidding could be available from 2023)

## 1. Methods, Review, and Procurement Plan

55. Except as the Asian Development Bank (ADB) may otherwise agree, the following methods shall apply to procurement of goods, works, nonconsulting services, and consulting services.

Procurement of Goods, Works, and Nonconsulting Services	
Method	Comments
OCB	<p>The potential for attracting enough qualified bidders to ensure contracts are delivered on time was examined in the strategic procurement planning and procurement risk assessment. It was concluded that all of civil works and goods contracts can be advertised nationally (AN) and using PRC specific SBD for works and goods (updated in 2020) and following the open competitive bidding (OCB) procedures, except the contract package (No.:ISC-GS03-IT) for Support and Business Application System Development and Integration of Xichuan's Integrated Information System which will follow OCB advertised internationally (AI) using ADB's SBD for Procurement of IT Products and Services.</p> <p>ADB's prior review applies to (i) the first OCB-AN for works; (ii) the first OCB-AN for goods and/or nonconsulting services; (iii) OCB-AI for integrated information system development and integration.</p> <p>All other packages will be for post review (sampling) by ADB.</p>
RFQ	<p>The RFQ (if any) will be applied for small/simple contracts in the procurement of goods, works, and nonconsulting services.</p> <p>RFQ packages will be subject to post review (sampling).</p>
CPP	<p>Distribution of environmental protection publicity lectures and brochures, and for public service advertising, public service video production, and publicity, the Community Participation in Procurement (CPP) shall be applicable.</p> <p>Special procedures and review arrangements for CPP will defined and approved by ADB prior to its implementation.</p>

ADB = Asian Development Bank, AI = advertised internationally, AN = advertised nationally, CPP = Community Participation in Procurement, OCB = open competitive bidding, RFQ = request for quotations, SBD = Standard Bidding Document.

Consulting Services	
Method	Comments
Quality-and cost-based selection (QCBS) or Quality based selection (QBS)	Three (3) submissions required for prior review and approval by the ADB: <ul style="list-style-type: none"> <li>• Submission 1 Shortlisting and draft RFP documents including budget and TOR;</li> <li>• Submission 2 Technical proposal evaluation;</li> <li>• Submission 3 Financial proposal evaluation and overall ranking.</li> </ul> Quality–cost ratio <b>90:10</b> ; may use Full Technical Proposal (FTP). The CSRN must be posted for at least 15 days using ADB's CMS or similar e-procurement systems in receiving EOIs (fully electronic submission).
Selection Based on the Consultants' Qualifications (CQS)	Two (2) submissions required for prior review and approval by the ADB: <ul style="list-style-type: none"> <li>• Submission 1 Shortlisting and draft RFP documents including budget and TOR</li> <li>• Submission 2-3 Combined technical and financial proposal evaluation</li> </ul> Simplified Technical Proposal (STP) or Biodata Technical Proposal (BTP) shall be used. The CSRN must be posted for at least 15 days using ADB's CMS or similar e-procurement systems in receiving EOIs (fully electronic submission).
Individual consultant selection (ICS)	Two (2) submissions required for prior review and approval by the ADB: <ul style="list-style-type: none"> <li>• Submission 1 (short-list, draft contract), and</li> <li>• Submission 2 (signed contract).</li> </ul> The CSRN must be posted for at least 7 days using ADB's CMS or similar e-procurement systems in receiving EOIs (fully electronic submission).

## 2. List of Active Procurement Packages (Contracts)

56. The following table lists goods, works, nonconsulting, and consulting services contracts for which the procurement activity is either ongoing or expected to commence within the procurement plan's duration.

Goods, Works, and Nonconsulting Services							
Package Number	General Description	Estimated Value (€ million)	Procurement Method	Review	Bidding Procedure	Advertisement Date	Comments
<b>CFPS</b>	<b>Output 1 - Subproject 1.1: Construction of Fruit Preservation Storehouse</b>						
CFPS-CW01	Construction works of Fruit Preservation Storehouse	9.59	OCB-AN	Post (sampling)	1S1E	Q4/2022	.
<b>BRC</b>	<b>Output 1 - Subproject 1.4: Rural ecotourism _Beautiful Rural Construction Demonstration Project</b>						
BRC-CW01	Rural tourism, traffic management, lighting, and greening construction of Laocheng town Xiawan village	4.92	OCB-AN	Post (sampling)	1S1E	Q2/2022	
BRC-CW02	Rural tourism, traffic management, lighting, and greening construction of Shangji town Guandi Village	5.35	OCB-AN	Post (sampling)	1S1E	Q2/2022	

<b>Goods, Works, and Nonconsulting Services</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (€ million)</b>	<b>Procurement Method</b>	<b>Review</b>	<b>Bidding Procedure</b>	<b>Advertisement Date</b>	<b>Comments</b>
BRC-CW03	Rural tourism, traffic management, lighting, and greening construction of Cangfang town Muogou village	1.66	OCB-AN	Post (sampling)	1S1E	Q2/2022	
BRC-CW04	Rural tourism, traffic management, lighting, and greening construction of Madeng town Qinglong village	1.70	OCB-AN	Post (sampling)	1S1E	Q2/2022	
<b>SWCD</b>	<b>Output 1 - Subproject 1.5: Soil and Water Conservation Demonstration Project of Shibanche Small Watershed</b>						
SWCD-CW01	Soil and Water Conservation Demonstration project of Shibanche small watershed in Xichuan County_ Overall construction	2.84	OCB-AN	Post (sampling)	1S1E	Q3/2022	
<b>GDFD</b>	<b>Output 2 - Subproject 2.1: Green Development of Forest and Fruit Farming</b>						
GDFD-CW01-2022	Field intelligent irrigation and non-point source pollution control works	8.38	OCB-AN	Post (sampling)	1S1E	Q4/2021	
GDFD-CW01-2023	Field intelligent irrigation and non-point source pollution control works	8.38	OCB-AN	Post (sampling)	1S1E	Q4/2022	
<b>FCDJ</b>	<b>Output 2 - Subproject 2.2: Flood Control Project E-Yu section of Danjiang River</b>						
FCDJ-CW01	Short-term flood control project of the Danjiang River E-Yu reach (Henan Section) _ Phase I (build and reinforce 7.904 km main stream dikes, including 3.254 km newly built embankments, 4.65 km reinforced embankments and 5 culverts and sluices)	14.99	OCB-AN	Post (sampling)	1S1E	Q3/2021	
FCDJ-CW02	Flood control project of E-Yu section of Danjiang River in Xichuan County Phase II (total length of embankments in Jingziguan section, Siwan section, and Xitou section is 10.861 km)	21.64	OCB-AN	Post (sampling)	1S1E	Q4/2022	

<b>Goods, Works, and Nonconsulting Services</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (€ million)</b>	<b>Procurement Method</b>	<b>Review</b>	<b>Bidding Procedure</b>	<b>Advertisement Date</b>	<b>Comments</b>
<b>CTXH</b>	<b>Output 2- Subproject 2.2 Integrated river management project in Xi river</b>						
CTXH-CW01	Main River Regulation Works (the length of the river channel is 8.16 km, mainly including river channel excavation and clearing, dike revetment, ecological water storage facilities, flood control road, maintenance, and reconstruction of connecting sluice, removal, or reconstruction of overflow bridge, new drainage culvert, etc. )	14.69	OCB-AN	Post (sampling)	1S1E	Q3/2021	
CTXH-CW02	Sewage Interception Pipe Network Constructions (28.41 km of new sewage branch pipe network, and 2 new sewage lifting pump stations)	1.82	OCB-AN	Post (sampling)	1S1E	Q4/2021	
CTXH-CW03	Landscape and ecological construction works (build protective green space and ecological interception zone on both sides of the regulation river section, upgrade and transform the coastal landscape, and create landscape nodes locally, with a total area of 1.381 km <sup>2</sup> )	23.34	OCB-AN	Post (sampling)	1S1E	Q2/2023	
<b>URDFC</b>	<b>Output 2 - Subproject 2.4: Upgrading and Reconstruction of Dongfeng Canal</b>						
URDFC-CW01	Upgrading and Reconstruction of Dongfeng canal	6.16	OCB-AN	Prior	1S1E	Q2/2021	First OCB contract for works; may be for advance contracting.
<b>RSCI</b>	<b>Output 3 - Subproject 3.1: Rural Sewage System Construction and Improvement Demonstration Project</b>						
RSCI-CW01	Shangji Town Rural Sewage Treatment Construction	0.71	OCB-AN	Post (sampling)	1S1E	Q4/2021	
RSCI-CW02	Jinhe Town Sewage Treatment Construction	6.48	OCB-AN	Post (sampling)	1S1E	Q2/2023	
RSCI-CW03	Xianghua Town Sewage Treatment Construction	3.09	OCB-AN	Post (sampling)	1S1E	Q2/2023	



Goods, Works, and Nonconsulting Services							
Package Number	General Description	Estimated Value (€ million)	Procurement Method	Review	Bidding Procedure	Advertisement Date	Comments
RSCI-CW04	Houpo Town Rural Sewage Treatment Construction	3.71	OCB-AN	Post (sampling)	1S1E	Q2/2023	
RSCI-CW05	Jiuchong Town Rural Sewage Treatment Construction	5.77	OCB-AN	Post (sampling)	1S1E	Q4/2021	
RSCI-CW06	Pipe Network Improvement Construction of the Second Sewage Treatment Plant in Xichuan County	2.36	OCB-AN	Prior	1S1E	Q2/2021	First OCB contract for works; may be for advance contracting.
<b>KWMS</b>	<b>Output 3 - Subproject 3.2: Kitchen Waste and Municipal Sludge Collaborative Treatment Project</b>						
KWMS-CW01	Construction of Xichuan Kitchen Waste and Municipal Sludge Collaborative Treatment Center	7.51	OCB-AN	Post (sampling)	1S1E	Q3/2022	
KWMS-GS02	Purchase of Kitchen Waste Collection and Transportation Facilities	0.32	OCB-AN	Prior	1S1E	Q2/2023	First OCB contract for goods.
<b>URWS</b>	<b>Output 3 - Subproject 3.3: Urban and Rural Water Supply Project</b>						
URWS-CW01	Construction of Water intake (including civil works and equipment purchase and installation)	3.51	OCB-AN	Post (sampling)	1S1E	Q3/2021	
URWS-CW02	Construction of Raw water transmission pipeline (including civil works and equipment purchase and installation)	15.17	OCB-AN	Post (sampling)	1S1E	Q3/2021	
URWS-CW03	Construction of Xichuan County Water Treatment Plant (The short-term scale is 120,000 m <sup>3</sup> /day, and the long-term scale is 160,000 m <sup>3</sup> /day)	22.00	OCB-AN	Prior	1S1E	Q3/2021	
URWS-CW04	Construction of clear water transmission pipeline in the county (DN1300 ductile iron pipe, double pipe layout, length of 3.6 km; DN300-1000, length:24.5 km)	11.10	OCB-AN	Post (sampling)	1S1E	Q1/2022	
URWS-CW05	Construction of Madeng town water treatment plant (5,000 m <sup>3</sup> /day)	1.44	OCB-AN	Post (sampling)	1S1E	Q3/2022	

<b>Goods, Works, and Nonconsulting Services</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (€ million)</b>	<b>Procurement Method</b>	<b>Review</b>	<b>Bidding Procedure</b>	<b>Advertisement Date</b>	<b>Comments</b>
URWS-CW06	Water supply pipe network and booster pump station construction of Madeng town and surrounding villages and towns (including rural water supply pipe network of Madeng Town, Shangji Town, Maotang town, and Jinhe Town, and pumping station of urban area, Maotang town, and Jinhe Town)	18.93	OCB-AN	Post (sampling)	1S1E	Q3/2022	
<b>XICS</b>	<b>Output 1 - Subproject 1.2: XCG Institutional Capacity Strengthening Community-based environment management</b>						
XICS-NC01/1 - 3	Distribution of environmental protection publicity lectures and brochures (multiple contracts)	0.120	CPP	Post (sampling)	1S1E	Q2/2022 Q2/2023 Q2/2024	These contracts will be implemented separately in 3 years (2022, 2023, and 2024). Community Participation in Procurement (CPP) shall be applicable.
XICS-NC02/1 - 3	Public service advertising, public service video production, and publicity (multiple contracts)	0.127	CPP	Post (sampling)	1S1E	Q2/2022 Q2/2023 Q2/2024	These contracts will be implemented separately in 3 years (2022, 2023, and 2024). Community Participation in Procurement (CPP) shall be applicable.

## Consulting Services

Package Number	General Description	Estimated Value (€ million)	Selection Method	Review	Type of Proposal	Advertisement Date	Comments
XICS	<b>Output 1 - Subproject 1.6: XCG Institutional Capacity Strengthening Technical Assistance and consulting services</b>						
XICS-TA01/1	Project implementation start-up support - procurement management and procurement specialist	0.038	ICS	Prior	N/A	Q2/2021	National advertisement is applicable, and shall be published on government's website ( <a href="http://www.xcggzyjyzyx.com/">http://www.xcggzyjyzyx.com/</a> ) and CMS of ADB. Advance contracting is applicable.
XICS-TA01/2	Project implementation start-up support - financial management specialist	0.013	ICS	Prior	N/A	Q2/2021	National advertisement is applicable, and shall be published on government's website ( <a href="http://www.xcggzyjyzyx.com/">http://www.xcggzyjyzyx.com/</a> ) and CMS of ADB. Advance contracting is applicable.
XICS-TA01/3	Project implementation start-up support - resettlement and social specialist	0.026	ICS	Prior	N/A	Q2/2021	National advertisement is applicable, and shall be published on government's website ( <a href="http://www.xcggzyjyzyx.com/">http://www.xcggzyjyzyx.com/</a> ) and CMS of ADB. Advance contracting is applicable.
XICS-TA01/4	Project implementation start-up support - environment management specialist	0.013	ICS	Prior	N/A	Q2/2021	National advertisement is applicable, and shall be published on government's website ( <a href="http://www.xcggzyjyzyx.com/">http://www.xcggzyjyzyx.com/</a> ) and CMS of ADB. Advance contracting is applicable.
XICS-TA02	Capacity building and project Management	1.622	QCBS	Prior	FTP	Q4/2021	Quality-cost ratio shall be 90:10. International advertisement is applicable, and shall be published on ADB website and China Tendering and Bidding Public Service Platform ( <a href="http://www.cebpublishservice.com">http://www.cebpublishservice.com</a> ). Advance contracting is not applicable.
XICS-TA03	External resettlement and social monitoring and evaluation	0.171	CQS	Prior	BTP	Q2/2021	National advertisement is applicable, and shall be published on government's website ( <a href="http://www.xcggzyjyzyx.com/">http://www.xcggzyjyzyx.com/</a> ) and CMS of ADB. Advance contracting is applicable.
XICS-TA04	External environmental monitoring and evaluation	0.085	CQS	Prior	BTP	Q2/2021	National advertisement is applicable, and shall be published on government's website ( <a href="http://www.xcggzyjyzyx.com/">http://www.xcggzyjyzyx.com/</a> ) and CMS of ADB. Advance contracting is applicable.

ADB = Asian Development Bank, BTP = biodata technical proposal, CMS = consultant management system, CQS = consultants' qualifications selection, FTP = full technical proposal, ICS = individual consultant selection, N/A = not applicable, Q = quarter, QCBS = quality-and cost-based selection, XCG = Xichuan County Government.

### 3. List of Indicative Packages (Contracts) Required under the Project

57. The following table lists goods, works, nonconsulting, and consulting services contracts for which the procurement activity is expected to commence beyond the procurement plan duration and over the life of the project (i.e., those expected beyond the current procurement plan's duration).

Package Number	General Description	Estimated Value (€ million)	Procurement Method	Review	Bidding Procedure	Comments
<b>GDF</b>	<b>Output 2 - Subproject 2.1: Green Development of Forest and Fruit Farming</b>					
GDF- CW01- 2024	Field intelligent irrigation and non-point source pollution control works	9.82	OCB-AN	Post (sampling)	1S1E	
GDF- GS02	Supply and installation of non-point source pollution control equipment (1,925 solar insecticidal lamps)	0.62	OCB-AN	Post (sampling)	1S1E	
<b>DWPF</b>	<b>Output 2 - Subproject 2.5: Drainage and Waterlogging Prevention Facilities construction project</b>					
DWPF- CW01	Drainage and waterlogging prevention facilities for Guanhe Road, Xinjian Road, Danjiang Avenue, and Hongqi Road	21.50	OCB-AN	Post (sampling)	1S1E	
DWPF- CW02	Drainage and waterlogging prevention facilities for Jianshang Road, Jingchu Road, Yong'an Road, Jinbang Road, and sections under Xibinhe Road	8.65	OCB-AN	Post (sampling)	1S1E	
DWPF- CW03	Comprehensive regulation works of inland river	20.97	OCB-AN	Post (sampling)	1S1E	
<b>ISC</b>	<b>Output 1 - Subproject 1.3: XCG Institutional Capacity Strengthening Information System Construction</b>					
ISC- GS01	Supply and installation of perception acquisition system and relevant equipment	4.19	OCB-AN	Post (sampling)	1S1E	E-procurement can be applicable.
ISC- GS02	Supply and installation of information system infrastructural facilities	0.47	OCB-AN	Post (sampling)	1S1E	
ISC- GS03- IT	Support and business application system development and integration	1.20	OCB-AI	Prior	1S1E	E-procurement can be applicable. Procurement of information technology products and services. ADB's IT SBD shall be applicable. Prequalification, domestic preference, and advance contracting are not applicable. E-procurement shall not be applicable.

1S1E = one stage-one envelope, ADB = Asian Development Bank, E- = electronic, IT = information technology, OCB = open competitive bidding, OCB-AI = OCB advertised internationally, OCB-AN = OCB advertised nationally, SBD = standard bidding document.

<b>Consulting Services</b>							
Package Number	General Description	Estimated Value (€ million)	Estimated Value (\$ million)	Selection Method	Review	Type of Proposal	Comments
None							

#### 4. List of Awarded and Completed Contracts

58. The following table lists the awarded contracts and completed contracts for goods, works, nonconsulting, and consulting services.

<b>Goods, Works, and Nonconsulting Services</b>					
Package Number	General Description	Contract Value	Date of ADB Approval of Contract Award	Date of Completion	Comments

None					

Consulting Services					
Package Number	General Description	Contract Value	Date of ADB Approval of Contract Award	Date of Completion	Comments
None					

## 5. Non-ADB Financing

59. The following table lists goods, works, nonconsulting, and consulting services contracts over the life of the project, financed by non-ADB sources.

Goods, Works, and Nonconsulting Services					
General Description	Estimated Value (cumulative, € )	Estimated Value (cumulative, \$)	Estimated Number of Contracts	Procurement Method	Comments
None					

Consulting Services					
General Description	Estimated Value (cumulative, € million)	Estimated Value (cumulative, \$ million)	Estimated Number of Contracts	Recruitment Method	Comments
Engineering survey and design	9.997	11.713	Multiple contracts	Domestic procedures	Financed by government. Advertisement date will depend on the civil works contracts. Prequalification and domestic preference are not applicable. Advance contracting is not applicable. The e-GP system in Local PRTC shall be used.
Construction supervision	3.916	4.588	Multiple contracts	Domestic procedures	Financed by government. Advertisement date will . depend on the civil works contracts. Prequalification and domestic preference are not applicable. Advance contracting is not applicable. The e-GP system in Local PRTC shall be used.

<b>Consulting Services</b>					
<b>General Description</b>	<b>Estimated Value (cumulative, € million)</b>	<b>Estimated Value (cumulative, \$ million)</b>	<b>Estimated Number of Contracts</b>	<b>Recruitment Method</b>	<b>Comments</b>
Bidding agency	0.510	0.598	1	Domestic procedures	Financed by government. Advertisement date will be on Q3/2020. Prequalification and domestic preference are not applicable. Advance contracting is applicable. The e-GP system in Local PRTC shall be used.
Environmental impact assessment	0.337	0.395	1	Domestic procedures	
Social impact assessment	0.336	0.394	1	Domestic procedures	

## **D. Open Competitive Bidding (National Advertising)**

### **1. Regulation and Reference Documents**

60. The procedures to be followed for Open Competitive Bidding (National Advertising) shall be those set forth in the Government Procurement Law of People's Republic of China approved on 29 June 2002 (revised in August 2014) and Law of the People's Republic of China on Bid Invitation and Bidding of the People's Republic of China promulgated on 30 August 1999 (revised on 28 December 2017) with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the ADB Procurement Policy: Goods, works, Nonconsulting and Consulting Services (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers: Goods, works, Nonconsulting and Consulting Services (2017, as amended from time to time).

### **2. Procurement Procedures**

#### **a. Competitive Bidding Procedure (TBL Art. 10 and GPL Art. 26)**

61. Public tendering is the acceptable method of government procurement, and public invitation is the accepted bid invitation mode.

#### **b. Eligibility**

62. The eligibility of bidders shall be as defined under section I of the Procurement Regulations for ADB Borrowers; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those provided in section I of the Regulations, as amended from time to time.

#### **c. Advertising**

63. All invitations to prequalify or to bid shall be advertised in a free and open access website (<http://bulletin.cebpubservice.com>). Such advertisement shall be made in sufficient time (e.g. at

least 30 days for OCB-AN) for prospective bidders to obtain prequalification or bidding documents and prepare and submit their responses. In any event, a reasonable time shall be given to the bidders for preparation of their bid docs. The preparation period shall count (a) from the date of advertisement, or (b) when the bidding documents are available for issue, whichever date is later. The advertisement and the prequalification and bidding documents shall specify the deadline for such submission.

#### **d. Bidding Period**

64. The minimum bidding period should be reasonable enough for bidders to prepare their bids prior to the deadline for the submission of bids.

#### **e. Participation by Government-Owned Enterprises**

65. Government owned enterprises in the Borrower's country may be permitted to bid if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law and (c) are not a dependent agency of the Borrower/Project executing agency.

#### **f. Re-bidding**

66. Re-bidding shall not be allowed solely because the number of bids is less than three (3).

### **3. Bidding Documents**

#### **a. Qualification requirements**

67. Qualification requirements of bidders and the method of evaluating the qualification of each bidder shall be specified in detail in the bidding documents, and in the prequalification documents if the bidding is preceded by a prequalification process.

#### **b. Bid Submission and Opening**

68. Bidders shall be allowed to submit bids by mail or by hand.

69. All bids shall be opened in public; all bidders shall be afforded an opportunity to be present (either in person or through their representatives) at the time of bid opening, but bidders shall not be required to be present at the bid opening.

70. Under the e-procurement approved by ADB, all bids shall be allowed to submit by the e-procurement system, and all bids opening will follow the procedure of e-procurement system.

#### **c. Bid Evaluation and Award**

71. No bid may be rejected solely on the basis that the bid price falls outside any standard contract estimate, or margin or bracket of average bids established by the Borrower/Project executing agency.

72. Each contract of goods and works shall be awarded to the lowest evaluated responsive bidder, that is, the bidder who meets the appropriate standards of capability and resources and whose bid has been determined (a) to be substantially responsive to the bidding documents and (b) to offer the lowest evaluated cost. The winning bidder shall not be required, as a condition of

award, to undertake responsibilities for work not stipulated in the bidding documents or otherwise to modify the bid as originally submitted.

#### **d. ADB Policy Clauses**

73. Each contract financed with the proceeds of the Loan shall provide that the suppliers and contractors shall permit ADB, at its request, to inspect their accounts and records relating to the performance of the contract and to have said accounts and records audited by auditors appointed by ADB.

74. A provision shall be included in all bidding documents for OCB (National Advertising) works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question.

75. A provision shall be included in all bidding documents for OCB (National Advertising) works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely, or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB financed contract.

### **VII. SAFEGUARDS**

76. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).

#### **A. Environment**

77. **Domestic EIAs and consolidated IEE.** The project is classified as environmental category B. Domestic Environmental Impact Assessment reports (DEIAs) were prepared for each of the subprojects and were reviewed and approved by Xichuan Ecology and Environment Department (EED). The methods and standards applied in the preparation of DEIAs for the project components are in accordance with the guidelines of the Ministry of Ecology and Environment, and also meet national, and provincial laws and regulations. A consolidated initial environmental examination (IEE), including an environmental management plan and environmental monitoring program, was prepared, which complies with ADB's policies and requirements, including ADB's Safeguard Policy Statement (2009). The IEE was disclosed in ADB website on 5 October 2020.

78. **Environmental Management Plan (EMP).** An EMP has been developed covering all subprojects. The EMP defines all potential impacts of the project components, mitigation measures to avoid, or reduce these impacts to acceptable levels, monitoring measures, and defines the responsibilities, procedures, and budgets for implementation of the EMP.

79. **EMP Implementation Responsibilities.** The XCG will have the overall accountability for the overall project and its subprojects for ensuring compliance with the PRC's laws and regulations as well as the provisions of ADB's Safeguard Policy Statement (2009). PMO will also be accountable for ensuring the implementation of the environmental management plan and



responsible for ensuring the implementation of the specific mitigation measures as prescribed in the EMP.

80. The PMO, through the environmental officer, and in coordination with the Loan Implementation Environmental Consultant (LIEC) will prepare and provide the following specification clauses for incorporation in the contract documents for project implementation: (i) environmental management requirements to be budgeted by PMO and their construction contractors; (ii) environmental clauses for contractual terms and conditions; and (iii) the EMP.

81. A LIEC will be contracted by the PMO to provide assistance during the pre-construction, construction, and initial operational periods. The LIEC should be contracted as soon as possible after loan approval so that the LIEC can assist in the important pre-construction activities listed in the EMP. The LIEC will advise the PMO on all aspects of environmental management and monitoring for the Project. The LIEC will ensure the compliance of construction and initial operation activities with the mitigation and management measures in the EMP and report to the ADB.

82. PMO will be responsible for (i) updating the IEE and EMP during detailed design as required, and establishing the grievance redress mechanism (Section VII.D); (ii) implementing the EMP and developing further implementation details; (iii) supervising their staff and contractors' implementation of mitigation measures during construction; (iv) implementing training programs for construction crews; (v) incorporating environmental management, monitoring, and mitigation measures into construction and operation management plans; (vi) developing and implementing internal regular environmental monitoring; (vii) redressing public grievances; and (viii) reporting performance of the EMP to ADB semiannually.

83. The environmental performance of the project will be verified by an external environmental monitoring agency (EMA). The EMA will be contracted by the PMO. The EMA will conduct the external monitoring of EMP implementation. The results will be forwarded to the PMO and to the EPBs at the district/county level, delegated by provincial EPD, who will ensure compliance with the PRC and local environmental regulations.

84. **Training.** Environmental officer(s) in PMO and IAs will receive training in environmental management, environmental monitoring, and supervision, mitigation planning, emergency response, environmental policy-making, and other environmental management techniques. PMO will ensure that the training plan defined in the EMP is implemented. The LIEC will facilitate training. The scope of training will also include efficient and effective environmental monitoring at the project operation phase.

85. **EMP Costs.** Cost estimates for mitigation measures, environmental monitoring, and training in EMP procedures are estimated in the EMP. Before implementing a monitoring plan, responsible agencies will present a more detailed breakdown of the estimated budget. During project implementation, the budgets will be adjusted based on actual requirements. PMO and their contractors will bear the costs for all mitigation measures during construction, which will be included in the contract documents. The IAs will also bear the costs related to mitigation measures during operation.

## **B. Involuntary Resettlement**

86. The project is classified as category "B" for involuntary resettlement according to ADB's Safeguard Policy Statement (SPS, 2009).

87. The project will involve land acquisition/transfer and resettlement impacts. It will require a total land use of 3,184.73 *mu*, including the state-owned land occupation (SLO) of 491.09 *mu*, permanent land acquisition (PLA) of 2,309.64 *mu*, and land use rights transfer (LURT) of 384 *mu*. In addition, 1,841.6 *mu* land will be used temporarily during construction. No households will be physically relocated. A total of 728 households with 2,815 persons will be affected by the project's permanent land acquisition, of which, 4 households with 8 persons will experience more than 10% income loss because of permanent land acquisition. In addition, 151 households with 604 persons will be affected by temporarily land occupation. The due diligence was carried out on existing facilities confirming that there are no outstanding and legacy issues of past land acquisition. The due diligence of existing LURT confirmed no outstanding issues; and a LURT framework has been prepared for voluntary LURT agreements to be completed during project implementation.

88. The Government will ensure that (i) the draft Resettlement Plan that was prepared for the project and that is agreed between the Government and ADB is updated based on final detailed design and detailed measurement surveys, and submitted to ADB for review and concurrence prior to land acquisition and house demolition activities and prior to contract award of concerned civil works contracts, and be implemented in accordance with applicable Government laws and regulations and ADB's Safeguard Policy Statement (2009); in case of any inconsistency between Government laws and ADB's policy, the latter will prevail; (ii) all affected persons are given adequate opportunity to participate in resettlement planning, updating, and implementation; (iii) counterpart funds for land acquisition and resettlement activities are provided according to the budget based on the finalized resettlement plans and project schedule; (iv) any additional costs in excess of the resettlement plan budget estimates are met within the project schedule; (v) all PMOs will designate adequate staff and resources to supervise and monitor updating and implementation of the Resettlement Plan and submit semiannual internal monitoring reports to ADB; (vi) a functional and effective grievance redress mechanism (GRM) is established; (vii) an external monitor acceptable to ADB is engaged by the Government and financed from the ADB loan to monitor progress and evaluate results of implementation of the Resettlement Plan; and (ix) voluntary LURT agreements are prepared and monitored following the LURT Framework. The external monitor will submit semiannual external monitoring reports to the PMO and ADB.

### **C. Indigenous Peoples/Ethnic Minorities**

89. The project is categorized as category C on indigenous peoples; and it is not expected to impact distinct and vulnerable communities of indigenous peoples or ethnic minorities. There are Hui, Man, Mongolian ethnic minority population accounting for 0.64% of the total population in the project area, and no significant differences exist between them and Han residents in terms of language and socioeconomic conditions. The ethnic minority population will benefit from improved services and employment opportunities under the project.

### **D. Grievance Redress Mechanism**

90. A Grievance Redress Mechanism (GRM) has been established to prevent and address community concerns, reduce risks, and assist the project to maximize environmental and social benefits. The PMO will act as the head office for the GRM, establishing a tracking, and documentation system of complaints and responses. The project implementing agencies (IAs) will operate the GRM at the local level and will ensure that all complaints received and immediately resolved are reported, and that more difficult issues are referred to the PMO for a coordinated response. PMO will report all GRM records to the ADB through semiannual progress reports.

## VIII. GENDER AND SOCIAL DIMENSIONS

91. **Social and Poverty Dimensions.** A poverty, gender and social analysis (PSA) of the Project was conducted under the guiding frameworks on social development, gender, poverty reduction, ethnic minorities, resettlement, and public participation in ADB's Handbook on Poverty and Social Analysis: A Working Document (2012), ADB's Guidelines for Gender Mainstreaming Categories of ADB Projects (2012) and ADB's Safeguard Policy Statement (2009).

92. In total, 605,080 people in the 17 project towns/subdistricts are identified as project direct beneficiaries, including 307,381 rural residents (50.8% of the total), 286,808 women (47.4%), and 89,921 poor people <sup>14</sup> (15%). The project will benefit: (i) 382,827 rural and urban residents, who will have access to safety water supply; (ii) 367,239 rural and urban residents, who will have access to livable environment through improved river embankment management, soil, and water conservation, sewage management, kitchen waste and municipal sludge management; (iii) 13,703 rural residents, agricultural cooperatives, and enterprises, who/which will have access to improved rural infrastructure, smart irrigation facilities and cold storages; and (iv) restaurants and enterprises having canteens in the urban area of the county and the center area of the towns/townships of the county, which will access to improved kitchen waste management.

93. Employment targets for vulnerable groups and women are included in the design and monitoring framework (DMF) and loan assurances. This will provide the local people including women, and APs an opportunity to have temporary jobs. The local people including women will also have the opportunity to participate in capacity building/public awareness campaign on improved health and sanitation, environmental protection that will be conducted during the duration of project implementation phase.

94. A Social Development Action Plan (SDAP) has been prepared to facilitate continued consultation and participation of communities in the project, as well as ensure that labor rights and entitlements are observed and that the needs of poor households are considered.

95. The SDAP indicates that civil works contracts will stipulate (i) that local people will receive priority with respect to employment; (ii) Contractors will sign labor contract with construction workers and follow labor regulations.

96. **Gender Dimension.** The project has been designed as **effective gender mainstreaming**. Women focus group discussions found that environmental improvements, better service of water supply and wastewater treatment are anticipated to have a significant positive impact toward gender equality. The project will also create women's employment opportunities. A gender action plan (GAP) has been prepared to ensure that women benefit from the various activities under the project and are kept fully informed and consulted throughout its implementation. Gender specific indicators have also been included in the project's design and monitoring framework.

97. The gender action plan (GAP) includes specific measures and targets for women, including (i) fair and equitable participation in decision-making during project design, with at least 40% women participants; (ii) in Xipingtou Village, promote women's participation in the project design, implementation and supervision of Xipingtou Village watershed management by community women committee's leadership trainings and capacity building activities; (iii) In the

---

<sup>14</sup> The poor people refer to those who have registered as poverty people.

four villages of Xichuan County Rural Infrastructure Construction Project, initiate “Beautiful Family” activities led by Village Women's Committees to promote women’s engagement in the beautiful village governance; (iv) priority employment opportunities for women, with 25% quota of skilled jobs and 35% quota of non-skilled jobs for women; (v) provide awareness trainings on environment protection and skills trainings in agriculture and tourism aspects, with at least 40% women participants. Key gender targets have also been included in the design and monitoring framework.

98. For effective GAP implementation, the GAP includes provisions to ensure that staff of the PMO and Implementing Agencies is fully briefed on gender in development and the GAP, at the commencement of project implementation. The staff responsible for social safeguards and gender will work with women’s federations, contractors, related government agencies, and community/village office staff to facilitate the participation of women in opportunities for physical works; and, ensure that all PRC labor laws and core labor standards are respected. The staff will also ensure (i) gender disaggregated baseline and survey data will be collected, (ii) the GAP is implemented, monitored, and reported to ADB as part of the semiannual project progress reports. Progress in implementation of actions and achievement of GAP targets will also be reported in midterm and project completion reports. Social development and gender specialists engaged for project management support will mentor the staff as necessary and facilitate achievement of the project’s gender and development objectives. The GAP will be monitored during ADB review missions and supervision will be supported by ADB’s social development specialist.

Table VIII-1: Gender Action Plan

Actions	Targets and Indicators	Timeframe	Responsible Agencies	Budget Sources
<b>A. Output 1: Institutional capacity of XCG on environment management and knowledge services developed</b>				
1. In four pilot villages of Guandi, Xiawan, Mogou, and Qinglong, implement pilot activities of “Beautiful Family” program in the leadership of Village Women’s Committees to promote women’s engagement in the beautiful village governance; 2. In the watershed demonstration pilot village of Xipingtou, set up garbage sorting collection barrels for every 4 households, and assign village personnel for regular recycling and transportation to the town treatment station for centralized treatment. 3. Conduct consultations on project detailed design, and solicit needs and views from women in project towns under output 1; 4. Awareness and capacity building of residents in flood prevention and emergency response with participation of women. 5. Promote residents’ awareness on environment protection. 6. Provide trainings for women skills development in: (i) planting and water saving technologies; (ii) business management skills, such as brand promotion, marketing, logistics, and e-commerce platform; and (iii) tourism related skills such as homestay, farmhouse, or agriculture tourism. 7. Set quotas for women skilled and unskilled jobs created during construction and operation stage	1.1 All pilot activities of “Beautiful Family” program in the four pilot villages are implemented in the leadership of by Village Women’s Committee. (2020 baseline: NA)	2021–2026	PMO, IAs, contractors (supported by TGs and VCs, PAO, LSSB, ACWF, Design institute, social, and gender consultants)	Project loan funds
	1.2 At least 20 members of women’s committee in the four pilot villages get the leadership trainings to conduct pilot activities. (2020 baseline: NA)			
	2.1 Village paid personnel assigned for regular recycling and transportation of garbage in the pilot village, including 40% women (2020 baseline: NA)			
	2.2 All the assigned personnel and members of women’s committee in the pilot village get skills training of waste and watershed management. (2020 baseline: NA)	2021–2026		
	3. 20 representatives in each town participated in detailed project design, of whom 40% are women. (2020 baseline: NA)			
	4. 1000 residents in each town participated in awareness and capacity building for flood prevention and emergency response, including 40% women. (2020 baseline: NA)			
	5. Participatory awareness raising activities conducted in 17 town/townships, with 40% women. (2020 baseline: NA)	2020–2021		
	6. 5,400 villagers get the skills trainings, of which 40% are women. (2020 baseline: NA)	2021–2026		
	7.1. 703 skilled jobs generated during construction and operation, of which 25% provided to women (2020 baseline: NA)	2021–2026		
	7.2. 412 non-skilled jobs generated during construction and operation, of which 35% provided to women (2020 baseline: NA)	2021–2026		
		2021–2026		

Actions	Targets and Indicators	Timeframe	Responsible Agencies	Budget Sources
B. Output 2: Soil & water conservation practices improved				
8. Mobilize communities for flood prevention and protection measures in the project area, including early preparation, and rehearsal involving women. 9. Create new management jobs for fruit garden management under forestry and fruit development. 10. Conduct consultations on project detailed design to solicit needs and views of women in project towns under output 2; 11. Create skilled and unskilled jobs during construction and operation stage and set job quotas for women.	8. 60,000 people are protected with flood prevention measures, including 47% women. (2020 baseline: 0)	2021–2026	PMO, IAs, contractors (supported by TGs and VCs, PAO, LSSB, ACWF, EPB, Design institute, social, and gender consultants)	Project loan funds
	9. 90 new management jobs including 20% jobs for women. (2020 baseline: NA)	2025–2026		
	10. 20 representatives of beneficiaries in each town, including 40% women. (2020 baseline: NA)	2020–2021		
	11.1. 860 skilled jobs generated, of which 25% provided to women (2020 baseline: NA) 11.2. 1,845 non-skilled jobs generated, of which 35% provided to women (2020 baseline: NA)	2021–2026		
C. Output 3: Rural water service improved				
12. Conduct consultations on project detailed design during the project design and construction stage in project towns under output 3;  13. Provide residents with access to tap water ensuring improved quality and quantity; and save women’s time for fetching water during dry seasons.  14. Conduct public consultations with women for water supply tariff proposals.  15. Quotas for women are set for skilled and unskilled jobs created during construction and operation stage  16. Conduct a study to assess if the project has positive results in reducing women’s time for fetching water.	12. 20 representatives of beneficiaries in each town/subdistrict participated in consultation for detailed design, including 40% women. (2020 baseline: NA)	2021–2026	PMO, TG, and VC, ACWF, LSSB, PAO, Design institute, EPB, social, and gender consultants	Project loan funds
	13.1 300,000 have access to water supply, including 47% women. (2020 baseline: 0) 13.2 Women’s time for fetching water during dry season saved by 1-2 hours per day. (2020 baseline: NA)	2026		
	14 A total of 17 public consultation meetings, with 20 representatives in each town/subdistrict participated in tariff proposal discussions, including 40% women. (2020 baseline: NA)	2020–2021		
	15.1. 337 skilled jobs generated, of which 25% provided to women (2020 baseline: NA) 15.2. 1,274 non-skilled jobs generated, of which 35% provided to women (2020 baseline: NA) 16. 1 study on women’s time use for fetching water conducted (2020 baseline: NA)	2021–2026		

ACWF = All China Women's Federation, DI = design institute, EPB = environment protection bureau, IA = implementing agency, LSSB = labor and social security bureau, PAO = poverty alleviation office, PMO = project management office, TG = town government, VC = village committee.

Source: Asian Development Bank.

**Table VIII-2: Social Development Action Plan**

Actions	Targets and Indicators	Timeframe	Responsible Agencies	Budget Sources
A. Output 1: Institutional capacity of XCG on environmental management and knowledge services developed				
A.1 Conduct consultations on project detailed design, including the representation of low-income people, during the project preparation, and construction stage in 5 towns.	A.1 20 representatives of beneficiaries per each village participated, including 15% low-income people. (2020 baseline: NA)	2020–2021	PMO, IAs, contractors (supported by TGs and VCs, PAO, Design institute, social consultants)	Government counterpart fund and loan funds
A.2 Promote residents’ environment protection awareness through dissemination of information and related activities, with full participation of residents, in 17 town/townships.	A.2 Awareness raising activities are organized in 17 town/townships, with full participation of residents, including 15% low-income people. (2020 baseline: NA)	2022-2026		
A.3 In the demonstration watershed of Xipingtou Village near Shibao River, garbage sorting collection barrels are set up for every 4 households, and the village will assign special personnel to be responsible for regular recycling and transportation to the town solid waste treatment station for centralized treatment.	A.3 Personnel are assigned for garbage recycling and transportation, including 30% low-income people. (2020 baseline: NA)	2022-2026		
A.4 Capacity building for flood prevention and enhancement of emergency response with residents including low-income people.	A.4 100 participants in each town, including 15% low-income people. (2020 baseline: NA)	2022-2026		
A.5 Capacity building for farmers or ACs to enhance their planting, marketing, tourism related skills through trainings or workshops.	A.5 5,400 villagers get the trainings, including 15% low-income people. (2020 baseline: NA)	2021-2026		
A.6 Quotas for the low-income are set for skilled and unskilled jobs created during construction and operation stage	A.6 703 skilled jobs and 412 non-skilled jobs generated, of which 15 % provided to low-income people (2020 baseline: NA)	2021-2026		
B. Output 2: Soil and water conservation practices improved				
B.1 Conduct consultations on project detailed design, including the representation of low-income people, during the project preparation, and construction stage in 11 towns.	B.1 20 representatives of beneficiaries per town participated, including 15% low-income people. (2020 baseline: NA)	2021–2026	PMO, IAs, contractors (supported by TGs and VCs, PAO, Design institute, social consultants)	Project budget
B.2 Residents are protected from 20 years flood in project area.	B.2 60,000 people including 15% low-income people are protected from 20 years flood. (2020 baseline: 0)	2022-2026		
B.3 New jobs for fruit garden management are created by forestry and fruit project.	B.3 90 new jobs created in fruit and forestry, including 15% of the jobs for low-income people. (2020 baseline: NA)	2022-2026		
	B.4 860 skilled jobs and 1,845 non-skilled jobs	2021-2026		

Actions	Targets and Indicators	Timeframe	Responsible Agencies	Budget Sources
B.4 Quotas for the low-income are set for skilled and unskilled jobs created during construction and operation stage.	generated during project construction and operation, of which 15% provided to low-income people (2020 baseline: NA)			
<b>C. Output 3: Rural water service improved</b>				
C.1 Conduct consultations on project detailed design, including the representation of low-income people, during the project preparation and construction stage in 17 towns/townships/subdistricts. C.2 Residents have access to tap water with improved quality and quantity. C.3 Residents in 25 villages of 5 towns have access to wastewater treatment. C.4 Conduct public consultations with residents, including low-income people, for water supply tariff and assistance programs for the low-income C.5 Quotas for the low-income are set for skilled and unskilled jobs created during construction and operation stage	C.1 20 representatives of beneficiaries participated per town/subdistrict, including 15% low-income people. (2020 baseline: NA) C.2 300,000 residents have access to tap water with improved quality and quantity, including 15% low-income people. (2020 baseline: NA) C.3 30,000 residents have access to wastewater treatment, including 15% low-income people. (2020 baseline: 0) C.4 50 representatives consulted in each relevant town, including 15% from low-income households. C.5 337 skilled jobs and 1,274 non-skilled jobs generated, of which 15% provided to low-income people (2020 baseline: NA)	2021–2026         2021–2026	PMO, township government, and village committee, PAO, Design institute, social consultants	Project budget
<b>D. Comply with labor laws and core labor standards (all outputs)</b>				
D.1 Ensure contractors comply with labor laws and core labor standards, including no child labor, minimum wages, equal pay to equal work, and occupational health, and safety D.2 Ensure participation of residents in public health knowledge promotion and trainings regarding prevention and control of HIV/AIDS, COVID-19, STI, and other infectious disease D.3 Ensure contractors' construction personnel involved in HIV/AIDS COVID-19, and STI publicity activities D.4 Distribute locally information and publicity materials (e.g. posters and brochures) regarding the prevention and treatment of HIV/AIDS COVID-19, and STI	D.1-D.4 100% of workers receive training and information (2020 baseline: NA)	2021–2026	PMO, IAs, contractors (supported by LSSB, contractors, social consultants)	Project budget
<b>E. Project management support</b>				
E.1 Ensure social specialists are included in project implementation support team to guide the implementation of SDAP, and provide training to the PMO, IAs, and town governments.	E.1 Social specialists are recruited to guide and assist in implementing SDAP activities (2020 baseline: NA)	2021–2026	PMO, IAs, TGs (supported by PAO, LRB, Social consultants)	Project capacity building and/or



Actions	Targets and Indicators	Timeframe	Responsible Agencies	Budget Sources
<p>E.2 Assign social focal staff in PMO, IAs, and project towns to ensure the effective implementation of d SDAP</p> <p>E.3 Provide training for PMOs and IAs on: (i) ADB social development policies; (ii) how to implement and monitor SDAP; and (iii) project-related social issues and the importance of social inclusion in all project components</p> <p>E.4 Employ monitoring experts to monitor the SDAP (together with other resettlement and gender plans) and prepare periodical reporting</p> <p>E.5 Collect data disaggregated by low-income</p>	<p>E.2 At least one social focal person in PMO, IAs, and project town governments is appointed to undertake the SDAP activities (2020 baseline: NA)</p> <p>E.3 All staff in the PMO and IAs receive training on SDAP, relevant social issues, and how to implement and monitor SDAP (2020 baseline: NA)</p> <p>E.4 Social monitoring reports included in the quarterly project progress reports; and semiannual external resettlement and social monitoring and evaluation reports (2020 baseline: NA)</p> <p>E.5 Disaggregated data by low-income collected during project implementation (2020 baseline: NA)</p>			training budget

AC=agriculture cooperative, AIDS = acquired immune deficiency syndrome, DI = design institute, EPB = environment protection bureau, SDAP = social development action plan, HH = household, HIV = human immunodeficiency virus, IA = implementing agency, LSSB = labor and social security bureau, LRB=land resource bureau, PAO = poverty alleviation office, STIs = sexually-transmitted infections, TG = town government, VC = village committee.

Source: Asian Development Bank.

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

### A. Project Design and Monitoring Framework

<b>Impact the Project is Aligned with</b> Rural vitalization with environmental improvement and green development along the Yangtze River Economic Belt realized (National Strategic Plan for Rural Vitalization, 2018–2022; and Yangtze River Economic Belt Development Plan, 2016–2030) <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Risks and Critical Assumptions</b>
<b>Outcome</b>  Water resources management and sustainability of agricultural production systems in Xichuan County improved	By the end of 2028, within the project area: a. Water quality improved (COD concentration is reduced by 20%) at the Xi River outlet (2020 baseline: 14.9 mg/L) b. Irrigation efficiency increased to 75% on 4,633 hectares of irrigated land (2020 baseline: <50%) (OP 5.3) c. 75,000 people in Xichuan County are protected from 20-year flood <sup>b</sup> (2020 baseline: <50,000) (OP 3.2) d. 8,600 households in 25 rural villages are connected to wastewater treatment (2020 baseline: 0) (OP 5.1)	a. Water quality monitoring report at the Xi River's outlet in Xichuan County by Ecology and Environment Protection Project of XCG a.–d. XCG report, records, annual statistics, and periodic surveys a.–d. XCG statistical yearbooks	R: Outbreak of epidemics deteriorate rural living environment
<b>Outputs</b> 1. Institutional capacity of XCG on environmental management developed	By the end of 2027, within the project area: 1a. Installation of 15 real-time water quality, water level, and sediment sampling stations to support flood early warning and research and development in soil and water conservation (2020 baseline: 0) (OP 6.2.1) 1b. At least three different ecological conservation plans (short-, medium-, and long-term) drafted by the XCG (2020 baseline: 0) 1c. At least 4,500 village residents (40% women) participated in and reported increased knowledge on community-based environmental management (2020 baseline: 0) (OP 2.5; OP 2.5.1)	1a.–g. Project progress reports by project management office 1a.–g. XCG report, records, annual statistics, and periodic surveys 1a.–d. Survey of participants 1d. Project progress reports and/or external resettlement and social development	R: Natural factors (mainly climatic and geological) worse than projected in the region

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	<p>1d. 703 skilled and 412 non-skilled jobs created, with 25% of skilled jobs and 35% of non-skilled jobs provided to women (2020 baseline: 0) (OP 1.2)</p> <p>1e. At least 100 employees from the XCG and implementing agencies, of whom 30% are women, have improved knowledge and understanding of climate change adaptation and environmental management through training workshops conducted during project construction (2020 baseline: 0) (OP 2.5; OP 2.5.1)</p> <p>1f. At least two knowledge products on the lessons from the project are published in international publications including conference proceedings (2020 baseline: 0)</p>	<p>monitoring and evaluation reports</p>	
2. Soil and water conservation practices improved	<p>2a. Fruit trees maintained on at least 5,000 hectares of land with smart irrigation facilities (2020 baseline: 0)</p> <p>2b. Fruit production in Xichuan County exceeded 80,000 ton/year (2020 baseline: 63,548 ton/year)</p> <p>2c. 18.8 km of Danjiang river and 8.2 km of Xi River and Shibao River rehabilitated to control floods with a 20-year return period (2020 baseline:0) (OP 3.3.4)</p> <p>2d. 6.7 km of new storm water drainage and 4.4. km of local natural creeks rehabilitated to mitigate water logging and soil erosion (2020 baseline: 0) (OP 3.3.4)</p> <p>2e. 860 skilled jobs and 1,845 non-skilled jobs created, with 25% skilled jobs and 35% non-skilled jobs provided to women (2020 baseline: 0) (OP 1.2)</p>	<p>2a.–e. Project progress reports</p> <p>2a.–d. XCG report, records, annual statistics, and periodic surveys</p>	

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
3. Rural water services improved	<p>3a. A total of 280 km sewer pipelines and 32 rural sewage treatment facilities with 3,077 m<sup>3</sup>/day capacity are constructed, serving 380,000 people (2020 baseline: 0) (OP 5.1.1)</p> <p>3b. Solid waste treatment facility of 100 tons/day capacity (30 tons/day kitchen waste, and 70 tons/day municipal sludge) constructed, serving 360,000 people (2020 baseline: 0) (OP 5.1.1)</p> <p>3c. Water supply provision with 26 km long raw water transmission pipeline, water treatment plant of 125,000 m<sup>3</sup>/day capacity, and 7 km of treated water transmission line up to exiting distribution network constructed, serving 350,000 people (2020 baseline: 0) (OP 5.1.1)</p> <p>3d. 337 skilled and 1,274 non-skilled jobs created, and 25% skilled jobs and 35% non-skilled jobs provided to women (2020 baseline: 0) (OP 1.2)</p>	<p>3a.–c. Project progress reports</p> <p>3a.–c. XCG report, records, annual statistics, and periodic survey</p>	
<p><b>Key Activities with Milestones</b></p> <p><b>1. Institutional capacity of XCG on environmental management developed</b></p> <p>1.1 Prepare the preliminary design and revise the initial environmental examination, resettlement plan, and ethnic minorities development plan (Q1 2021–Q4 2021).</p> <p>1.2 Prepare the bidding documents and conduct procurements (Q2 2021–Q4 2025, intermittently).</p> <p>1.3 Conduct the land acquisition and resettlement (Q1–Q3 2022).</p> <p>1.4 Apply e-commerce (Q4 2022).</p> <p>1.5 Mobilize community on environmental protection and flood preparedness (Q3 2022).</p> <p>1.6 Install hydrometeorological and water quality monitor stations (Q2 2025).</p> <p>1.7 Develop rural ecotourism basic infrastructure and services in four demonstration villages (Q4 2023).</p> <p>1.8 Pilot integrated soil and water conservation measures in Shibao River watershed (Q1 2024).</p> <p>1.9 Construction of a pilot cold storage facility together with farmer cooperative center equipped with digital market platform (Q4 2025)</p> <p>1.10 Draft ecological conservation plans (short-, medium-, and long-term) (Q3 2023).</p> <p>1.11 Organize training programs on environmental risk management and climate change adaptation (Q4 2025)</p> <p>1.12 Engage researchers from domestic universities in research and development on soil and water conservation (Q2 2022).</p> <p>1.13 Identify relevant conference events and register for participation (Q4 2024).</p> <p>1.14 Draft the knowledge products and get it reviewed by international experts (Q1 2024).</p> <p>1.15 Publish knowledge products and disseminate this through conferences (Q4 2024).</p>			

## 2. Soil and water conservation practices improved

- 2.1 Install smart drip irrigation and associated facilities (Q4 2024).
- 2.2 Develop and apply irrigation demand management system (Q4 2024).
- 2.3 Complete civil works for peripheral rainfall harvest system (Q4 2024).
- 2.4 Complete civil works for integrated river management for Dan and Xi rivers (Q4 2024).
- 2.5 Complete reconstruction of Dongfeng canal (Q4 2022).
- 2.6 Complete civil works for drainage improvement and waterlogging mitigation (Q4 2025).
- 2.7 Pilot drone technology and apply geographical information system for monitoring and evaluation of soil and water conservation (Q2 2022).

## 3. Rural water services improved

- 3.1 Complete civil works for centralized and distributed wastewater treatment facilities (Q4 2024).
- 3.2 Complete civil works for wastewater distribution system in 25 villages and five towns (Q4 2024).
- 3.3 Complete civil works for water supply transmission pipelines (Q1 2024).
- 3.4 Complete civil works for water supply treatment plants (Q1 2024).
- 3.5 Complete civil works and equipment installation for solid waste treatment center (Q4 2024).

## Project Management Activities

- Recruit project management consultants (Q1 2021).
- Recruit community mobilization consultants (Q2 2022).
- Recruit an external monitor for external environmental and resettlement monitoring and evaluation (Q2 2021).
- Implement environmental management plan and submit semiannual environmental monitoring reports to the Asian Development Bank (Q4 2021–Q4 2026).
- Implement gender action plan and social development action plan, and monitor targets achievement (2020–2025).
- Monitor and evaluate project impact, outcome, and outputs using the project performance management system; submit quarterly project progress reports (Q4 2021–Q4 2026).
- Carry out training programs, policy dialogue, study tours, and awareness-raising campaigns (Q4 2021–Q2 2026).
- Submit project completion report (Q4 2026).

## Inputs

Asian Development Bank: € 170.69 million (ordinary capital resources loan)

Government of the People's Republic of China: €240.78 million

COD = chemical oxygen demand, km = kilometer, m<sup>3</sup> = cubic meter, mg/L = milligrams per liter, OP = operational priority, Q = quarter, R = risk, XCG = Xichuan County Government.

<sup>a</sup> National Development and Reform Commission. 2016. *Yangtze River Economic Belt Development Plan, 2016–2030*. Beijing; and State Council of the People's Republic of China. Policies: [Latest Releases](#).

<sup>b</sup> A 20-year flood has a 5% chance of occurring in any given year.

## Contribution to Strategy 2030 Operational Priorities:

- OP 1.2 Jobs generated and at least 40% for women (number)
  - OP 2.5 Women and girls with increased resilience to climate change, disasters, and other external shocks (number)
  - OP 2.5.1 Community-based initiatives to build resilience of women and girls to external shocks implemented (number)
  - OP 3.2 People with strengthened climate and disaster resilience (number)
  - OP 3.3.4 Solution to conserve, restore, and/or enhance terrestrial, coastal, and marine areas implemented (number)
  - OP 5.1 People benefiting from increased rural investments (number)
  - OP 5.1.1 Rural infrastructure assets established or improved (number)
  - OP 5.3 Land with higher productivity (hectares)
  - OP 6.2.1 Service delivery standards adopted and supported in implementation by government entities (number)
- Expected values and methodological details for all OP indicators to which this operation will contribute results are detailed in Contribution to Strategy 2030 Operational Priorities (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President). In addition to the OP indicators tagged in the design and monitoring framework, this operation will contribute results for
- OP 3.1 Total annual greenhouse emissions reduction (tCO<sub>2</sub>e/year)
  - OP 3.3.1 Pollution control enhancing infrastructure assets established or improved (number)
  - OP 3.3.2 Solutions to enhance pollution control and resource efficiency implemented (number)
- Source: Asian Development Bank.

## B. Monitoring

99. To monitor the progress of the project in achieving the planned outcome and outputs, the PMO will establish a project performance monitoring system (PPMS) before the project implementation starts (before loan effectiveness), and will maintain accordingly. The basis for project performance monitoring and reporting will be the DMF which identifies performance targets for the outcomes and outputs of the project. It will be designed to permit adequate flexibility to adopt remedial action regarding project design, schedules, activities, and development impacts. The PPMS will cover the following aspects of the project implementation: (i) project physical and financial progress; (ii) progress and results of capacity development; (iii) farmer institutions establishment; (iv) implementation of EMP; (v) implementation of GAP, SDAP, Resettlement Plan, LURT Framework; and (vi) compliance with loan covenants (policy, financial, economic, sector, and others). The PMO agreed and confirmed that they will (i) establish the PPMS before the loan effectiveness; (ii) recruit the LICs before the loan effectiveness to facilitate the project start-up and provide consulting service as described in Appendix 2; (iii) confirm that targets are achievable; and (iv) develop recording, monitoring, and reporting arrangements.

100. **Compliance monitoring.** During project implementation, ADB and the PMO will closely monitor the compliance of all the covenants under the project and will take necessary remedy actions for any noncompliance. The compliance requirements are given in the EMP, and their status will be reported in the semiannual progress reports by the PMO and will be reviewed during project review missions. Compliance monitoring will also be undertaken by (i) the PMO's environment officer to ensure overall compliance of all relevant agencies with the EMP, and (ii) the PMO's social officer to ensure overall compliance with the relevant social, gender, and resettlement plans. Semiannual environmental monitoring reports and social monitoring reports will be prepared by the PMO, supported by the LICs, and will be submitted by the PMO to ADB.

101. **Environmental monitoring.** Three types of environment safeguard monitoring will be conducted under the EMP: compliance monitoring, internal monitoring, and external monitoring. The environmental monitoring program, including roles, responsibilities, monitoring frequency, and variables, is described in the EMP. ADB and the PMO will monitor the status of EMP implementation through: (i) semiannual project progress reports and semiannual environmental monitoring reports to ADB; and (ii) review missions. EMP implementation will be coordinated by the PMO environment officer, supported by the LICs, and IAs, to ensure overall compliance of all relevant agencies with the EMP.

102. **Resettlement monitoring.** Internal and external monitoring of the resettlement plan implementation will be conducted. The PMO will carry out internal supervision and monitoring to ensure compliance with the provisions of the resettlement plan and LURT Framework, and submit internal resettlement monitoring reports semiannually during project implementation, to be submitted together with the semiannual social monitoring reports. The PMO will also employ an external monitoring organization to conduct external monitoring. The external monitoring agency will prepare a baseline study and implement external monitoring and evaluation of the resettlement plan and LURT Framework implementation. Semiannual external monitoring reports will be prepared and submitted to the PMO and ADB during the project implementation.

103. **Gender and social dimensions monitoring.** Project activities will be monitored for impacts on gender and social dimensions with the assistance of PICs. In particular, the activities laid out in the GAP and SDAP will be monitored, and sex-disaggregated data on project activities collected. GAP and SDAP monitoring information will be included in the semiannual social monitoring reports and will describe the progress on GAP and SDAP implementation against the

targets. The format of social monitoring report will be finalized and agreed between ADB and the PMO during the project inception.

### **C. Evaluation**

104. In addition to regular monitoring, project performance will be reviewed at least once a year jointly by ADB and XCG. The review will assess implementation performance and achievement of project outcomes and outputs, assess financial progress, identify issues and constraints affecting implementation, and work out a time-bound action plan for their solution. ADB will undertake annual project reviews during the project period. Additionally, ADB, and XCG will undertake a midterm review of the project in 2024, covering all institutional, administrative, organizational, technical, environmental, social, poverty reduction, economic, financial, procurement, and other relevant aspects that may have an impact on the performance of the project and its continuing viability. The review will (i) examine the progress in implementing project outputs; (ii) evaluate the project's environment, social, and poverty impacts; (iii) ensure compliance with assurances in the loan agreement; and (iv) evaluate the effectiveness of the procurement implementation activities of the executing agency and tendering company using procurement review for effective implementation evaluation. The review shall also undertake a comprehensive review of potential loan savings, identify areas for reallocation of loan proceeds, and change disbursement percentages, as appropriate. Within 6 months of physical completion of the project, the XCG will submit a project completion report to ADB.<sup>15</sup>

### **D. Reporting**

105. The XCG, acting through the PMO, will provide ADB with (i) semiannual project progress reports in a format consistent with ADB's project performance reporting system, including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; (ii) semiannually environment monitoring reports; and (iii) a project completion report within 6 months of physical completion of the project. To ensure that the project will continue to be both viable and sustainable, project accounts and the audited project financial statements together with the associated auditor's report, should be adequately reviewed.

### **E. Stakeholder Communication Strategy**

106. Project information will be communicated through public consultation, information disclosure mechanism in ADB's and government's website, meetings, interviews, focus group discussions, and community consultation meetings, in accordance with ADB's requirements of information disclosure policy. Main stakeholders are the different government agencies, beneficiaries, displaced persons, and participants in the project implementation.

107. **Environment.** Meaningful public participation and consultations, and information disclosure were conducted during project preparation. Information disclosure and public consultations included posters in public bulletin boards, local governments' websites and newspaper disclosure; informal and formal communication with key stakeholders, including residents, local authorities, and implementing agencies; questionnaire surveys; and wider stakeholder meetings attended by affected people, nearby communities, and other concerned stakeholders. A GRM has been designed to prevent and address community concerns, reduce risks, and assist the project in maximizing environmental and social benefits. The project IEE and

<sup>15</sup> Project completion report format is available at:

[https://asiandevbank.sharepoint.com/:w:/r/teams/org\\_iau/layouts/15/Doc.aspx?sourcedoc=%7BE40FAF80-3341-4AEA-8EA2-F1EC9A19429D%7D&file=PCR%20Standard.docx&action=default&mobileredirect=true](https://asiandevbank.sharepoint.com/:w:/r/teams/org_iau/layouts/15/Doc.aspx?sourcedoc=%7BE40FAF80-3341-4AEA-8EA2-F1EC9A19429D%7D&file=PCR%20Standard.docx&action=default&mobileredirect=true)

EMP have been disclosed on the ADB website and the domestic environmental assessment reports are available from the executing agency and provincial and local bureaus of ecology and environment. During implementation, (i) the translated EMP will be circulated to all project agencies, and (ii) public consultations will be held with affected communities before works to inform about the established GRM and the planned works, and during, and after works to monitor community feedback and concerns.

108. **Involuntary resettlement.** Affected households, villages and towns/townships governments will be involved in updating and implementing the resettlement plan. Through meetings, interviews, focus group discussions, public consultation workshops, and community consultation meetings, local representatives have participated in the planning stage and concerns have been integrated into the resettlement plan. Before implementation, the PMO, Implementing Agencies and other relevant agencies will further discuss and consult with the affected persons' representatives in every town/township to update the resettlement plan to ensure affected persons' rights are protected during project implementation. The PMO and Implementing Agencies will disclose the updated resettlement plan in the local government offices and to affected people. The updated resettlement plan will also be posted on the ADB website. Resettlement information booklet was distributed to affected households during the project preparation, which contained information such as the affected project area, proposed land acquisition, compensation standards for land acquisition, assistance and livelihood restoration strategy. The PMO and implementing agencies will be responsible for supervision of implementation of resettlement plan, continued public consultation, monitoring of progress, and response to grievances. The grievance redress procedures have been included in the resettlement plan and disclosed to affected people.

109. **SDAP and GAP.** Consultations with communities have taken place and will continue at implementation of the SDAP and GAP. Special attention will be paid to the participation of women and vulnerable groups.

## **X. ANTICORRUPTION POLICY**

110. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>16</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB financed activity and may not be awarded any contracts under the project.<sup>17</sup>

111. To support these efforts, relevant provisions are included in the loan and project agreement and the bidding documents for the project. The project design and implementation arrangements provide for mitigating corruption risks. Risks associated with project management will be mitigated by (i) training of the executing and implementing agencies' staff in the procurement of civil works, goods, and services under the project; and (ii) periodic inspection of contractors' activities related to fund withdrawals and settlements by the executing agency's staff.

## **XI. ACCOUNTABILITY MECHANISM**

<sup>16</sup> Anticorruption Policy: <https://www.adb.org/sites/default/files/institutional-document/32026/anticorruption.pdf>

<sup>17</sup> ADB's Office of Anticorruption and Integrity: <https://www.adb.org/site/integrity/main>



112. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>18</sup>

## **XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL**

113. All revisions and/or updates during implementation should be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the PAM, including revision to contract awards and disbursement s-curves.

<b>No.</b>	<b>Description of Revision</b>	<b>Date</b>
1.	Initial draft for discussion prepared	
2.	Discussed during loan fact-finding mission	
3.	Discussed and agreed during loan negotiations	

---

<sup>18</sup> Accountability Mechanism. <https://www.adb.org/site/accountability-mechanism/main>.

## Detailed Implementation Arrangement

Outputs, components, and detailed activities		Location	Implementing Agency	Construction unit	O&M unit	Users
<b>Output 1: Institutional Capacity of XCG on Environmental Management and Knowledge Services Developed</b>						
	<b>1.1 Institutional Support</b>					
	<b>1.1.1 Institutional Support for Agricultural Market Reform</b>					
		Application of e-commerce, establishment of farmers' cooperative centers, and improvement of fruit marketing logistics.	ARB	Xichuan County Investment and Holding Company Limited		
	<b>1.1.2 Provision of fruit cold storage facilities</b>					
		This subproject involves the construction of 19 no. 35 no. 200-tons fruit cold storage facilities, 17 no. 500-tons fruit cold storage facilities, and 1 no. 5,000-tons fruit cold storage facility, including supportive electricity, refrigeration, and others.	ARB	Xichuan County Investment and Holding Company Limited		
	<b>1.1.3 Draft ecosystem protection framework to aid development planning</b>					
		Compile the list of projects from local development plans including 14th five year plan according to their potential environmental and ecological impacts through quick impact assessment and recommend the measures for improvements.	XCG	Xichuan County Investment and Holding Company Limited		
	<b>1.2 Community-based environment management</b>					
	<b>1.2.1 Awareness improvement</b>					

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
			Providing public with environmental protection education to raise their awareness of environmental protection. In addition, skills training for farmers to adopt environmentally friendly planting methods and use of advanced technologies to raise their awareness of environmental protection and increase their earning capability.		XCG	Xichuan County Investment and Holding Company Limited		
		<b>1.2.2 Pilot of rural non-degradable waste including plastic separation tool</b>						
			In the demonstration watershed of Xipingtou Village near Shibao River, garbage sorting collection barrels are set up for every 4 households, and the village will assign special personnel to be responsible for regular recycling and transportation to the town treatment station for centralized treatment.		XCG	Xichuan County Investment and Holding Company Limited		
		<b>1.3 Institutional capacity building for flood mitigation</b>						
		<b>1.3.1 Installation of hydrometeorological and water quality monitor devices</b>						
			Provision of automatic control water gates for Danjiang River, and Xi River, and some river sections to regulate the flow of water for the river sections which do not have sufficient embankment protection.		WAB	Xichuan County Investment and Holding Company Limited		
		<b>1.3.2 Strengthening local early warning system</b>						

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
			Establishment of a routine supervision and inspection system for river courses, and improvement of management efficiency and emergency response capability.		WAB	Xichuan County Investment and Holding Company Limited		
		<b>1.3.3 Enhancement of emergency response capacity</b>						
			Utilizing the River Chief System to conduct information campaign on flood preparation and emergency responses tailored to the needs of the community. The target audience include general public, government officials, and residents living in flood prone area. One of the key activities is the development and publication of flood warning, evacuation, and emergency response procedures for the community.		WAB	Xichuan County Investment and Holding Company Limited		
		<b>1.4 Rural ecotourism</b>						
			Provision of Rural Infrastructure for 4 villages, including Guandi Village, Xiawan Village, Mogou Village, and Qinglong Village. The infrastructures include rural reception service facilities, internal transportation facilities, rural sanitation facilities, guide, and recreation facilities, rainwater management facilities, and greening landscape.		TSC	Xichuan County Investment and Holding Company Limited		
		<b>1.5 Soil erosion mitigation measures - Small Watershed and Soil Erosion Protection Demonstration Project of Shibao River in Xipingou Village</b>			WAB	Xichuan County Investment and Holding Company Limited		
		<b>Ecological restoration zone</b>						

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
			The proposed works include installation of 13 rehabilitation publicity board for protected area, and 1.34 km chain-link fence, planting of 33,500 Giant Cedar/ <i>Sequoiadendron giganteum</i> , and 26,800 Acer Mono/ <i>Acer spp</i> , and hiring 7 protection management workers.		WAB	Xichuan County Investment and Holding Company Limited		
		<b>Ecological management zone</b>						
			Construction of 97 m earth check dam, 240 m loose stone check dam, 150 m plant check dam, 115.56 ha slope-to-terrace, 6.1km field operation road, 39.8km earth drainage ditch, and 18.9km concrete drainage ditch. Building 13 water cellars for rainwater harvesting, 13 sediment pool and 6 water storage pool, and 15 km river bank protection. Planting 39,300 apricot plum, 314,300 rosemary/ <i>Rosmarinus officinalis</i> , and 29,800 Acer pictum. Providing ecological bag slope protection of 6.67 ha, grass seed slope protection of 4.00 ha and turf slope protection of 2.67 ha.		WAB	Xichuan County Investment and Holding Company Limited		
		<b>Ecological agriculture zone</b>						
			Construction of 161.94 ha conservation farming, and 2 picking gardens for tourism.		WAB	Xichuan County Investment and Holding Company Limited		
		<b>Livable environment zone</b>						



Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
			<p>(i) <b>Embankment:</b> Construction of embankment of 18.765 km, in which newly built retaining wall embankment 6.347 km, newly built sloping wall embankment 6.971 km, and reinforced embankment 5.447 km.</p> <p>(ii) <b>Culvert and sluice:</b> Construction of 12 new culverts and sluices, rebuilding 1 culvert, and sluice.</p> <p>(iii) <b>River flood control information program:</b> Purchasing and installing water level acquisition equipment and remote online surveillance device.</p>		WAB	Xichuan County Investment and Holding Company Limited		
		<b>2.2.2 Integrated River Management Project in Xi River</b>						

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
			<p>(i)<b>River training:</b> Restoration of Xi River, and Shibao River, with a total length 10.39 km, including dredging, bank slope restoration, dike, and flood control road construction.</p> <p>Construction of 1 new ecological weir, and 3 culverts</p> <p>Demolition and rebuilding 1 ecological water storage weir, and 2 submersible bridges</p> <p>Demolition of 2 abandoned submersible bridges</p> <p>Reconstruction of 2 connecting gates</p> <p>(ii)<b>Wastewater intercepting pipe network:</b> Construction of 28.41km length of new wastewater interceptors along Shibao River and Xi River.</p> <p>(iii)<b>Ecological construction:</b> The total construction area is 138.1 ha.</p> <p>Construction of protective green space and ecological interception zone on both sides of the river section under control, and part of landscape node along the river; enhance the riverside landscape.</p>		HURCB	Xichuan County Investment and Holding Company Limited		
		<b>2.2.3 Dongfeng Canal Reconstruction</b>						



Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
			<p>(i)<b>Water inlet section:</b> The total length of reconstruction is 1.86 km, including desilting, and dredging, removing dangerous rock, demolishing and rebuilding an aqueduct, and providing concrete lining.</p> <p>(ii)<b>Old county town section:</b> The total length of the reconstruction is 11.34 km, including desilting, and dredging, adding railings, building new masonry retaining wall, demolishing and rebuilding 1 bridge, and providing concrete lining.</p> <p>(iii)<b>Downstream section:</b> The total length of the renovation is 8.7km, including desilting, and dredging, provision of new masonry gravity retaining wall, concrete lining, and 1 sluice gate.</p>		WAB	Xichuan County Investment and Holding Company Limited		
		<b>2.3 Drainage Improvement and Waterlogging Alleviation in Xichuan County Center Area</b>						

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
		Improvement of Drainage System and Provision of Waterlogging Alleviation Measures in Xichuan Urban Center	<p>(i)<b>Municipal drainage and flood mitigation project:</b> Reconstruction of drainage and sewage system for 3 roads: 4.816 km Guanhe Road, 0.715 km Jiankang Road, and 0.671 km Jinchu Road.</p> <p>(ii)<b>Reconstruction of drainage system in waterlogging areas:</b> drainage improvement for 6 roads, to mitigate the flooding problems of 9 water logging points in the town center</p> <p>(iii)<b>Integrated river management for Nei River:</b> Renovation of 4.4 km Nei River; reinforcing the embankments and revetments, provision of landscape, and planting along the river, construction of sewage interception pipelines; reconstruction of 8 bridges, and provision of ecological water storage facilities.</p>		HURCB		Xichuan County Investment and Holding Company Limited	
<b>Output 3: Rural Wastewater Management</b>								
	<b>3.1 Rural Wastewater Management</b>							
	<b>3.1.1 Construction of Centralized and Distributed Wastewater Treatment Facilities and Distribution System in Urban And Rural Areas of Xichuan</b>							
		(i) Pipeline construction	<p><b>Rural Area</b> A total of 14 sub-items are planned in rural areas, involving 25 villages in 5 towns including Jinhe Town, Shangji Town, Xianghua Town, Jiuzhong Town, and Houpo Town. Among the 14 sub-items, 3 items are included in the sewage pipe network of surrounding towns, 9 items are</p>		HURCB/ EEB (for commercial area)		Xichuan County Investment and Holding Company Limited	
		(ii) Centralized wastewater treatment plants						

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
		(iii) Decentralized wastewater treatment plants	centralized treatment, and 2 items are decentralized treatment. The design scale of sewage treatment is 3109 m <sup>3</sup> /d, with DN150 ~ DN600 sewage pipe of 247.20 km. <b>Commercial Area</b>					
		(iv) Decentralized Sewage Treatment Program	Improvement of pipe network of the second wastewater treatment plant located in Xiangjiuhou Commercial Area, expansion of service area of the wastewater treatment plant to include surrounding villages, and improve the sewage collection rate of the wastewater treatment plant. 31.5 km of DN 300 ~ DN 400 sewage pipeline is newly built.					
<b>3.2 Rural Solid Waste Management</b>								
		<b>3.2.1 Xichuan County food waste and municipal sludge treatment center</b>						
			Treatment of municipal organic waste involving kitchen waste and municipal sludge The total treatment capacity is 100 t/d, which includes 30t/d kitchen waste and 70t/d municipal sludge.		HURCB	Xichuan County Investment and Holding Company Limited		
<b>3.3 Water Supply for Urban and Rural Areas</b>					WAB			
		(i) Water intake	(i) Construction of an intake and a pumping house with design capacity 181,500 m <sup>3</sup> /day and install equipment with capacity 137,500 m <sup>3</sup> /day. (ii) Construction of a raw water conveyance pipeline (22 km main and 4.8 km branch).					

Outputs, components, and detailed activities				Location	Implementing Agency	Construction unit	O&M unit	Users
		(ii) Water treatment plant	(i) Construction of a new water treatment plant (WTP) with capacity 120,000 m <sup>3</sup> /day in the urban area, and another new WTP with capacity 5,000 m <sup>3</sup> /day in Madeng town.					
		(iii) Water distribution pipe network	(i) Construction of a transmission pipeline (3.5 km, DN1200 DIP); (ii) Construction of approximately 25 km water main in urban network; (iii) Construction of approximately 200 km water main and branch pipes in the rural network; (iv) Construction of 8 pressurizing pumping stations (1 in urban area and 7 in rural area).					

ARB = Agriculture and Rural Bureau, EEB = Ecology and Environment Bureau, EMB = Emergency Management Bureau, HURCB=Housing and Urban-Rural Construction Bureau, TSC = Tourism Service Center, WAB = Water Affairs Bureau, XCG = Xichuan County Government, XCUMB = Xichuan County Urban Management Bureau.  
Source: Asian Development Bank.

## INDICATIVE TERMS OF REFERENCE FOR PROJECT START-UP CONSULTANTS

### A. Overview

1. The proposed Henan Xichuan Integrated Ecological Protection and Environmental Improvement Project will promote rural vitalization and ecological protection by (i) focusing on environment, water resource and soil erosion protection; (ii) improving access to safe drinking water and sanitation services for urban and rural residents; (iii) forestry development and fruit farming, including smart irrigation system comprising the provision of irrigation and ancillary facilities, construction of peripheral rainfall harvest system and automated fertilizer mixture in drip irrigation system; (iv) piloting soil erosion mitigation at watershed scale through research and development including implementation of integrated measures as well as monitoring and evaluation provisions; (v) community-based environment management including awareness raising, capacity development, and pilot activities water and environmental management; (vi) institutional capacity development for flash flood mitigation, including enhancement of existing river flood monitoring system, improvement of localized early warning system, and development of flood response capacity; and (vii) rural ecotourism development to promote environment friendly tourism services and improve living conditions. The project is envisaged to serve as a model for counties facing climate change and ecological pressures in the Yangtze River Economic Belt (YREB), similar parts of the PRC and other developing member countries.

### B. Project Description

2. The project is aligned with the following impact: rural vitalization and ecological protection in the YREB realized.<sup>19</sup> The project will have the following outcome: rural living environment and water resources management in Xichuan County improved.

3. **Output 1: Institutional capacity of XCG on environmental management and knowledge services developed.** This output will include: (i) institutional support and capacity building program for agricultural value chain including establishment of cold storage facilities and improvement of farmers' accessibility to digital market platforms; (ii) pilot soil erosion mitigation at watershed scale through research and development including implementation of integrated measures as well as monitoring and evaluation provisions and; (iii) community-based environment management including awareness raising, capacity development, and pilot activities water and environmental management; (iv) institutional capacity development for flash flood mitigation, including enhancement of existing river flood monitoring system, improvement of localized early warning system, and development of flood response capacity; (v) rural ecotourism development to promote environment friendly tourism services and improve living conditions; and (vi) general capacity building and consulting services for project start-up, implementation, project management, external monitoring, and evaluation.

4. **Output 2: Soil and water conservation practices improved.** This output will implement (i) forestry development and fruit farming, including smart irrigation system comprising the provision of irrigation and ancillary facilities, construction of peripheral rainfall harvest system and automated fertilizer mixture in drip irrigation system; (ii) river training works in Danjiang Henan-Hubei section and Xi River as well as Dongfeng canal reconstruction; and (iii) drainage system improvement and waterlogging alleviation including improvement of road drainage, reconstruction of drainage, sewage interception, and desilting, and restoration of rivers in low-lying flood prone areas.

---

<sup>19</sup> Government of the PRC. 2018. *Outline of Rural Vitalization Plan, 2018–2022*. Beijing.

5. **Output 3: Rural water services implemented.** This output will implement (i) rural wastewater management including construction of centralized and distributed wastewater treatment facilities and distribution system in urban and rural areas; (ii) urban and rural solid waste management including construction of food waste and municipal sludge collaborative treatment center; and (iii) water supply for urban and rural areas including construction of water intake, treatment plants, transmission, and distribution.

### C. Institutional Arrangement

6. The Xichuan County Government will serve as the executing agency, and a project leading group (PLG) has been established to oversee and coordinate the project planning, management, and implementation. Under the PLG, a project management office (PMO) has been established to manage all implementation works during preparation and implementation. The detailed roles and responsibilities are defined in Table 5 of the PAM.

7. According to the capacity assessment of the PMO, project start-up support and project implementation support have been proposed to conduct project management and capacity building for the PMO and other stakeholders.

### D. Tentative Consultants' Inputs

8. For the project start-up, the consulting services will be carried out by individual consultants and will be **financed by ADB through advance contracting**. The consulting services will be provided to PMO and 5 project implementing agencies (IAs), including Water Affairs Bureau, Housing, and Urban-Rural Construction Bureau, Agriculture, and Rural Bureau, Tourism Service Center, and Ecology, and Environment Bureau. The contract terms of each individual consultant are listed in Table 1.

9. The project will be coordinated by the PMO, whose overall responsibility includes implementation of the project. In the early stages of project implementation, the PMO, and IAs will be assisted by the start-up consultants, who will help establish the preparatory administrative and technical work required for efficient project implementation. After completion of this start-up phase, a team of loan implementation consultants will take over the work of the start-up consultants, to provide full support to the PMO and IAs during the whole project implementation period.

**Table XII-1: List of Individual Consultants for Project Start-up Support**

No.	Position	Input (person-month)	Budget € (\$US)	Indicative contract duration
1.	Project Management and Procurement Specialist	6	38,405.75 (45,000)	Jan. 2021- Sept. 2021
2.	Financial Management Specialist	2	12,801.92 (15,000)	Jan. 2021- Sept. 2021
3.	Resettlement, Social, and Gender Specialist	4	25,603.83 (30,000)	Jan. 2021- Sept. 2021
4.	Environmental Specialist	2	12,801.92 (15,000)	Jan. 2021- Sept. 2021
<b>Total</b>		<b>14</b>	<b>89,613.41 (105,000)</b>	

Source: Asian Development Bank Estimates.

## **D. Detailed Scope of Services and Consultants' Inputs**

### **1. Project management and procurement specialist** (national, 6 person-months, intermittent)

10. The specialist will have a university degree or above in management, accounting, or related field with demonstrated knowledge in procurement procedures and processes. S/he will have at least 10 years of experience in procurement of civil works, goods, and services in the PRC, including international competitive bidding, preferably on projects funded by the ADB or other international funding agencies. Knowledge of ADB or other international funding agency procurement guidelines and procedures will be required. This position requires English language proficiency. Tasks and responsibilities of the specialist include but are not limited to the following:

- (i) Organize and maintain a project filing system according to specifications by the PMO and ADB in both hard copy and electronic files and will be used by all start-up consultants and PMO;
- (ii) Assist in the preparation of procurement packages;
- (iii) Assist PMO in updating the procurement plan as needed;
- (iv) Provide technical support in design review, bill of quantities, and bidding document review, technical specification review, and other procurement documents review;
- (v) Support PMO during the procurement processes and prepare documents, including bidding documents, specifications, bid evaluation reports, etc., for preparation of procurement packages intended for advance contracting;
- (vi) Provide assistance to the PMO and IAs, and to the bid evaluation committee during the bidding process in preparing the following in accordance with ADB procurement guidelines: (a) detailed terms of reference for relevant packages in consultation with relevant technical experts, (b) invitations to bid, (c) answers to bidders' queries, and (d) bid evaluation reports;
- (vii) Coordinate with ADB during bid evaluation;
- (viii) Assist the PMO in preparing necessary documents for contract signing and contractor/consultant mobilization;
- (ix) Prepare a report on the status of project start-up and procurement; and
- (x) Handover documents and files to the project implementation support consulting firm and report on the status and outstanding issues.

### **2. Financial management specialist** (national, 2 person-months, intermittent)

11. The specialist will have (i) a relevant master's degree or higher; (ii) professional accountancy or finance qualification such as a CFA, CA, CPA or ACCA and (iii) proficient in English and shall have at least 10 years of experience in preparation or implementation of ADB or other international funding agency funded projects. Knowledge on ADB's financial management requirements and other ADB procedures are required. Tasks and responsibilities of the specialist include but are not limited to the following:

- (i) Provide consulting supports in financial management particularly ADB loan withdrawal application and disbursement procedures, funds following a sound accounting, budgeting, financial control, and audit procedures in line with ADB policies and guidelines and acceptable to the Xichuan County Government and Henan Provincial Government;
- (ii) Provide the PMO with guidance on how to fill-in the format by assisting them in preparing the first loan withdrawal application and disbursement report;
- (iii) Assist the PMO to finalize the project financial management manual;

- (iv) Assist the XCG and PMO to develop or introduce financial management information system including recordkeeping and asset management system for this project. Recordkeeping will ensure that all documents, information, and supporting materials are kept in safe custody and are readily made available to ADB and the auditors;
- (v) Assist the XCG to set up the project account applying the government budgeting, financial planning and reporting and following the project categorization for ADB funded expenditures;
- (vi) Prepare quarterly contract awards and disbursement targets and monitor closely with the progress to ensure timely contract awards and disbursement;
- (vii) Financially manage the disbursement/withdrawal application on each contract package (e.g., contract variations);
- (viii) Provide training on effective project financial management, specially to prepare the regular financial reports and arrange timely financial information for external audit purposes;
- (ix) Assist the PMO in preparing financial parts of the progress reports;
- (x) Assist the PMO in handing over relevant documents and files to the project management and capacity development support consultant team and brief the team, particularly the financial specialist in the team, status and outstanding issues;
- (xi) Regularly review and update as necessary, the financial management action plan and provide financial risk mitigation for any identified risks; and
- (xii) Perform any other tasks for financial management during the start-up phase of the project.

### **3. Resettlement, social, and gender specialist** (national, 4 person-months, intermittent)

12. The specialist will have: (i) a master's degree or higher in social science or related field; (ii) at least 10 years of experience in social development and social safeguards; (iii) familiarity with ADB projects and ADB's requirements on resettlement, social and gender issues; and (iv) proficiency in spoken and written English, including an ability to prepare reports meeting ADB requirements. Tasks and responsibilities of the specialist include but are not limited to the following:

- (i) Assist the PMO, IAs, and design institute in updating the RP approved by ADB, in ADB format, and based on the detailed designs; disclose the updated RP to the affected persons prior to ADB's approval; and obtain ADB's approval of updated RP;
- (ii) Assist the PMO in implementing activities in accordance with the RP, LURTF, SDAP, and GAP;
- (iii) Ensure that the GRM is correctly established and functioning well;
- (iv) Assist the PMO in supervising contractors to ensure compliance with requirements of the RP, LURTF, SDAP, and GAP, applicable laws and regulations, and ADB's policies;
- (v) Assist the PMO to develop and prepare the first internal resettlement and social monitoring progress report, and review external M&E reports prepared by the external resettlement and social monitor and ADB's comments on the reports, monitor compliance with the RP, LURTF, SDAP, and GAP, assess the degree of effectiveness and key implementation issues, explain key issues to the PMO and assist them in conducting follow-up actions to address the key issues;
- (vi) Deliver training to staff of the PMO and all relevant staff employed under the project to implement the project RP, LURTF, SDAP, and GAP and comply with ADB's relevant requirements;
- (vii) Handover documents and files to the project implementation support consulting firm and report on the status and outstanding issues; and



- (viii) Perform any other tasks for resettlement, gender, and social development during the start-up phase of the project.

**4. Environmental specialist** (national, 2 person-months, intermittent)

13. **Scope and duration of work.** The consultant will help with early establishment of the project environmental management plan (EMP). This is a short-term position at the beginning of project implementation.

14. **Qualifications.** The specialist will have: (i) a master degree or higher in environmental management or related field; (ii) at least 12 years of experience in environmental management, monitoring, and/or impact assessment, including specific experience on the management and monitoring of environmental projects; (iii) familiarity with ADB project management requirements and national environmental management procedures; (iv) ability to communicate and work effectively with local communities, contractors, and government agencies; (v) ability to analyze data and prepare technical reports; (vi) willingness and health to regularly visit the subproject sites; and (vii) proficiency in spoken and written English.

15. **Detailed tasks.** The environmental specialist will undertake the following tasks:

- (i) Work closely with the PMO, IAs and design institutes to ensure that preparation of the detailed engineering designs (DEDs) fully incorporates the designs and mitigation measures described in the project initial environmental examination (IEE) and environmental management plan (EMP);
- (ii) Assess whether any of the DEDs are sufficiently different from the preliminary designs approved by the Government and ADB that updates to the IEE, EMP are required. This may include, but not be limited to: major changes in proposed alignments and/or locations of facilities; new subcomponents requiring infrastructure works and/or which may have environment; and/or cancellation of approved components;
- (iii) With the PMO and ADB, discuss any changes required for the IEE and EMP. Assist the PMO to prepare any new impact assessments and/or updates as required; and to submit these to ADB for review. No changes to any of the ADB-approved documents will be made without prior approval of the Government and ADB;
- (iv) Assist the PMO and IAs in establishing the project grievance redress mechanism (GRM), including procedures to ensure documentation and reporting of complaints, follow-up actions, and results;
- (v) Provide training to PMO and IA staff so that they will understand ADB's Safeguard Policy Statement (2009), policies, and compliance requirements for environmental management; national and local regulations and standards for environmental protection, health, labor, and occupational safety; and the project IEE and EMP; and
- (vi) Provide hands-on guidance in preparing the first environmental monitoring report to ADB.

16. **Reporting requirements.** Upon completion of the consultancy, submit a written report describing the work accomplished, any key challenges encountered and/or technical concerns for further consideration, and lessons learned.

17. **Logistical support to be provided by the PMO. The PMO will support the specialist** for (1) Provision of hard and soft copies of the project EMP, domestic, and project environmental reports, feasibility study reports, loan, and project agreements, maps, and other supporting materials as necessary to ensure the officer can implement the tasks; and (2) Facilitation of site visits and meetings, as needed.

## INDICATIVE TERMS OF REFERENCE FOR CAPACITY BUILDING AND PROJECT MANAGEMENT

### A. Introduction

1. The proposed Henan Xichuan Integrated Ecological Protection and Environmental Improvement Project will promote rural vitalization and ecological protection by (i) focusing on environment, water resource and soil erosion protection; (ii) improving access to safe drinking water and sanitation services for urban and rural residents; (iii) forestry development and fruit farming, including smart irrigation system comprising the provision of irrigation and ancillary facilities, construction of peripheral rainfall harvest system and automated fertilizer mixture in drip irrigation system; (iv) piloting soil erosion mitigation at watershed scale through research and development including implementation of integrated measures as well as monitoring and evaluation provisions; (v) community-based environment management including awareness raising, capacity development, and pilot activities water and environmental management; (vi) institutional capacity development for flash flood mitigation, including enhancement of existing river flood monitoring system, improvement of localized early warning system, and development of flood response capacity; and (vii) rural ecotourism development to promote environment friendly tourism services and improve living conditions. The project is envisaged to serve as a model for counties facing climate change and ecological pressures in the Yangtze River Economic Belt (YREB), similar parts of the PRC and other developing member countries.

2. Consulting services will be provided to PMO and 5 project implementing agencies (IAs), including Water Affairs Bureau, Housing, and Urban-Rural Construction Bureau, Agriculture, and Rural Bureau, Tourism Service Center, and Ecology, and Environment Bureau.

3. The consulting services will be divided into two parts (i) capacity building; and (ii) project management during project implementation.

4. **Capacity building will be conducted for:** (i) enhancement of agricultural value chain including effective use of cold storage facilities and improvement of farmers' accessibility to digital market platforms; (ii) pilot soil erosion mitigation at watershed scale through research and development including implementation of integrated measures as well as monitoring and evaluation provisions; (iii) community-based environment management including awareness raising, capacity development, and pilot activities water and environmental management; (iv) institutional capacity development for flash flood mitigation, including enhancement of existing river flood monitoring system, improvement of localized early warning system, and development of flood response capacity; and (v) rural ecotourism development to promote environment friendly tourism services and improve living conditions.

Project management support is to provide consulting services during project implementation stage to ensure that the project is effectively implemented in terms of output quality, proper contract procurement and contract management, enforcement of safeguards, and effective control of financial and economic aspects of the project.

### B. Implementation Arrangements

5. The consulting services will be carried out by a team of consultants through a firm and will be financed through ADB loan proceeds, and the procurement will be conducted in accordance with ADB's Procurement Policy: Goods, works, nonconsulting and consulting services (2017, as amended from time to time).

6. A total of **22** person-months of international and **156** person-months of national consultants will be required. The consulting firm will be selected by (i) inviting full technical proposals; and (ii) using the quality- and cost-based selection (QCBS) method, with a quality–cost ratio of **90:10**. Various training sessions, workshops, and public engagement exercises will be conducted.

7. The consulting services of this package are expected to last for 6.5 years, starting in October 2021 until March 2028. List of consultants are provided in Table 1.

**Table 1: List of consultants and inputs**

<b>Position</b>	<b>International</b>	<b>National</b>
Project Management Specialist/Team Leader	10	0
Contract Management and Procurement Specialist/Deputy Team Leader	0	48
Flood and Environmental Risk Management (FERM)/Capacity Building and Training Specialist	12	0
Agricultural Marketing Specialist	0	12
Soil and Water Conservation Specialist	0	12
Community-based Environment Management Specialist	0	12
Rural Ecotourism Specialist	0	12
Information System Operation Specialist	0	12
Environmental Specialist	0	12
Resettlement Specialist	0	12
Social Specialist	0	12
Economist	0	2
Financial Specialist	0	10
<b>Total</b>	<b>22</b>	<b>156</b>

Source: Asian Development Bank estimates.

### **C. Cost Estimate**

**Table 2: Cost Estimate**

<b>No.</b>	<b>Description</b>	<b>Total Cost (€ '000)</b>	<b>Total Cost (\$'000)</b>
1	Consultants		
	a. Remuneration and per diem (22 international and 156 national)	1,467.95	1,720
	b. Travel	68.28	80
2	Reports and communications	25.60	30
3	Miscellaneous administration and support costs	17.07	20
4	Contingencies	42.67	50
	<b>Total</b>	<b>1,621.58</b>	<b>1,900</b>

Source: Asian Development Bank estimates.

## **D. Reporting Requirements**

8. The consultant team will produce (i) an inception report within 4 weeks of the start of the consulting services, and (ii) a semiannual progress report by the end of each half year during 2021 – 2028. The inception and semiannual progress reports will be subject to reviews by ADB and PMO, and (iii) end of service completion report. All reports are to be written in English and translated into Chinese. One soft and three hard copies of each report are to be submitted to ADB (English version only) and the PMO (both Chinese and English versions).

## **E. Scope of Services and Consultants' Inputs**

9. Unless otherwise stated, for each of the consultant positions, s/he should have (i) possession of a related degree, qualification, memberships of related academic societies, and/or participation in related training courses, (ii) experience in similar positions for projects or technical assistance, and (iii) experience in working with international organizations and consultants, will be highly evaluated.

### **1. Project Management Specialist/Team Leader (International)**

10. The specialist will (i) coordinate all project management support activities as team leader; (ii) finalize approaches for project management support; (iii) prepare the inception report, interim reports, semiannual reports, draft project completion report (PCR), and final PCR; (iv) assist the PMO in implementing, monitoring, and evaluating the overall project and subprojects; (v) assist the PMO in preparing quarterly project progress reports in a format provided by ADB; (vi) assess needs for capacity development for staff of the PMO, IAs, and others, and plan, design, organize, and implement seminars, workshops, and/or training for project management; financial management; disbursement arrangements, implementation, monitoring; and evaluation of resettlement, gender development, and environmental management, and project monitoring and evaluation [M&E]), if necessary; (vii) monitor compliance with the loan covenants, assess key implementation issues, and make recommendations for improvement; and (viii) conduct any other necessary work for smooth and appropriate implementation of the project.

### **2. Contract Management and Procurement Specialist/Deputy Team Leader (National)**

11. Tasks and responsibilities of the Contract Management and Procurement Specialist include but not limited to the following:

- Assist the PMO in conducting management of contracts for civil works, goods, and consulting services, including, but not limited to, supervision, and inspection of activities under contracts; payments to contractors, suppliers, and consultants; preparation of withdrawal applications; improvement of fund flow efficiency by streamlining the preparation of withdrawal applications; and contract variations;
- Assist the Project Management Specialist/Team Leader in monitoring compliance with the loan covenants, assess key implementation issues, and make recommendations for improvement, from procurement and contract management viewpoint;
- Monitor procurement activities under the project and assist the PMO in updating and implementing the procurement plan;
- Provide support in preparation and review of the bidding documents including technical specifications, bill of quantities, and drawings;
- Provide support to the Project Management Specialist/Team Leader for assessing needs for capacity development, and planning, designing, organizing, and

- implementing seminars, workshops, and/or training for procurement;
- Provide support to the Project Management Specialist/Team Leader for preparing the inception report, semiannual reports, draft project completion report (PCR), and final PCR;
- Conduct any other necessary work for procurement and contract management assigned by the Project Management Specialist/Team Leader.

### **3. Flood and Environmental Risk Management (FERM)/Capacity Building and Training Specialist (International)**

12. The FERM/Capacity Building and Training Specialist has dual roles, namely (A) capacity building and training and (B) flood and environmental risk management:

#### **A. In terms of capacity building and training:**

- Coordinate all capacity building and training activities;
- Assess needs for capacity development for staff of the PMO, IAs, and others, and plan, design, organize, and implement seminars, workshops, and/or training for agricultural marketing reform, asset management, community environment management, flood mitigation measures, emergency responses, and development of rural ecotourism;
- Finalize approaches for capacity building and training support, and assist the PMO in implementing, monitoring, and evaluating the capacity building and training on the overall project and subprojects;
- Prepare inception report, interim reports, semiannual reports, draft completion report, and final completion report.

#### **B. In terms of Flood and Environmental Risk Management:**

- Support in implementation of a comprehensive FERM plan;
- Support initiatives in mainstreaming FERM to mitigate and reduce the flood and environmental risks;
- Conduct information campaign for general public, government officials, and residents living in flood prone area. The information campaign will be tailored to the needs of the community. A variety of media can be used, such as local radio and TV stations, internet, newspapers, pamphlets, and posters, schools, and exhibitions. In flood prone area, use of warning boards, and different illustration, placed, or distributed at local community centers or main road intersection.
- Conduct public education on flood preparation and emergency responses. The activities should include the development of methods of publicizing flood risk under different rainstorm intensity and river level using language and formats that the public can understand; development and publication of flood warning, evacuation, and emergency response procedures for the community.
- Provide support to the Project Management Specialist/Team Leader for preparing the inception report, semiannual reports, draft completion report, and final completion report; and (vii) conduct any other necessary work for FERM assigned by the project management specialist/team leader.

### **4. Agricultural Marketing Specialist (national)**

13. Tasks and responsibilities of the agricultural marketing specialist include but not limited to the following:

**(i) Marketing strategy development**

- Adopt various ways to publicize enterprise brands and expand brand awareness and market share both at home and abroad.
- Pay attention to the market demand and consumer psychology, constantly adjust the variety, quality, specifications, and quantity structure according to market demand. Promote products driven by the market, study fruit products of different varieties, different packages and different processing degrees, and continuously increase the market share to obtain long-term and stable returns.
- Implement various promotion strategies such as prize-winning promotion, small profits but quick turnover on the premise of consistently ensuring quality.

**(ii) Improvement of supply chain and marketing of fruit products**

- Establish a sales team with clear responsibilities, high efficiency, and division of labor. Cooperate with major supermarket chains, food stores, and schools to improve the supply chain of fruit products. Develop indirect sales outlets in the form of principal-agent and direct distribution, and eventually form a sales network combining direct sales and indirect sales to improve the market competitiveness of enterprises.

**5. Soil and Water Conservation Specialist (national)**

14. Tasks and responsibilities of the soil and water conservation specialist include but not limited to the following:

**(i) Training contents for soil and water conservation technicians mainly include:**

- Water and soil conservation planning, feasibility study, design and construction;
- Project implementation management, investment management and financial management;
- Data collection and management of water and soil conservation archives;
- Convert slope to ladder construction technology;
- Technical requirements for soil conservation tillage measures;
- Cultivation techniques of forest and grass for soil and water conservation;
- Observation and monitoring techniques for soil and water conservation benefits;
- Popularization and application of new technologies and achievements in soil and water conservation.

**(ii) Contents of the training for cadres and the masses in the soil erosion prevention and control areas mainly include:**

- Techniques in converting slope to ladder, construction and maintenance management technology;
- Soil conservation tillage technology;
- Maintenance and management techniques for small-scale water storage irrigation projects;

- Cultivation and tending management techniques of forest and grass for water and soil conservation;
- Conservation of soil and water conservation measures.

#### **6. Community-Based Environment Management Specialist (national)**

15. Tasks and responsibilities of the community-based environment management specialist include but not limited to the following:

- Analyze the current damaging environmental situation to raise the people's awareness of environmental protection and make them feel that environmental protection is closely related to their life.
- Enhance the local residents' awareness of environmental protection by conducting lectures, issuing brochures, playing video movies, public service advertisements in the neighborhood committees (village committees).
- Training farmers in planting skills to improve farmers' ability to identify raw materials, fertilizers and other auxiliary materials, and improve farmers' planting skills and use of new technologies.
- Strengthen the management and daily operation and maintenance of fruit growing areas, promote the use of advanced technologies, such as drones, satellite, and global positioning systems to monitor soil erosion areas, plant growth, fruit quality. In addition, introduce the new concepts of internet plus and the Internet of Things (IoT), and create a smart operation system for fruit growing areas.

#### **7. Rural Ecotourism Specialist (national)**

16. Tasks and responsibilities of the rural ecotourism specialist include, but are not limited to, the following:

- Promote the development of local tourism focusing on green transportation, catering, hotel, entertainment, shopping, processing of tourism commodities, development of ethnic and folk arts and crafts, and promotion of folk culture.
- Improve the awareness of ecological environment protection. Increase the awareness of local people in national culture protection and healthy development which will contribute to the sustainable development of Xichuan County and creating a better living environment in future.
- Enhance cultural exchange, information exchange, and interpersonal exchange between the local residents with the tourists. Promote better etiquette behaviors of local residents to improve the tourism business.

#### **8. Information System Operation Specialist (national)**

17. Tasks and responsibilities of the information system operation specialist include but not limited to the following:

- Review the proposed system software for forecast and warning systems according to hydraulic model calculation, and establish early warning and contingency plans at various levels;
- Review the proposed system software, and establish forecast and warning systems according to water quality model calculation, and establish early warning and



- contingency plans at various levels;
- Review the proposed forecast and early warning plan, including the system resource sharing of upstream and downstream of the river, automatic real-time warning, automatic issuance early warning information (SMS, radio, proclamation, etc.), and automatically activate emergency plans under the river chief system;
- Ensure the proposed system to incorporate automatically the early warning system into the designated monitoring center; install video system for uniformly dispatching and command;
- Evaluate computer demonstration system provided by the system developer for simulation and observation results and assess warning information release system for flood risk and water pollution, based on forecasting model, and observation data of hydrological, hydraulic and water quality data;
- Provide trainings to staff of emergency management center on the system operation and data collection; and
- Jointly with the FERM Specialist, guide the staff of emergency management center to conduct data analysis.

## **9. Environmental Specialist (national)**

18. The specialist will carry out the following activities:

### **Before construction:**

- Ensure project environmental readiness, including: (i) all contractor contracts include, and will comply with, the EMP; and (iii) relevant sections of the EMP are incorporated in construction plans and contracts.
- Assist the PMO and IAs to implement the grievance redress mechanism (GRM), including: (i) establish and publicize the GRM; and (ii) collate and evaluate grievances received.
- Develop procedures to: (i) monitor EMP implementation progress; (ii) collate and evaluate data collected in the EMP environmental monitoring program; and (iii) prepare and submit the semiannual environmental monitoring reports to ADB (to continue until project completion report).
- Undertake training of project agencies as required by the EMP training plan.
- Provide hands-on support and on-the-job training to the PMO, IAs, and contractors on the specific requirements of the EMP as required.

### **During project implementation:**

- Undertake site visits to all IAs during subproject construction and operating phase.
- Assist in the ongoing public consultation process as described in the project IEE.
- Conduct and monitor project compliance with the EMP and all relevant assurances and covenants in the loan and project agreements for environmental safeguards; identify any environment-related implementation issues; and propose necessary responses in corrective action plans.
- Assist the PMO and IAs in managing the accredited environmental external monitoring agencies for conducting periodic environmental impact monitoring in compliance with the approved monitoring plan defined in the EMP.
- Undertake training of project agencies as required by the EMP training plan, and provide hands-on support and on-the-job training to the PMO and/or IAs and

contractors on the specific requirements of the EMP, as required.

- Undertake simple and cost-effective on site quantitative measurements to regularly check that the construction complies with the environmental monitoring standards and targets, especially for noise, using a basic hand-held meter.
- Design a simple and cost-effective water monitoring program for the subprojects involving crop production. The objective of the program is to assist the PMO and IAs in measuring and reporting monthly and annual water use for agriculture in each subproject. This will enable: (a) the PMO, IAs, and county water bureaus to monitor water use in relation to allocation quotas and overall sustainability; (b) the PMO, IAs, and ADB to assess whether the project is achieving improvements in water use (compared with existing crop production). Prepare and finalize the program methodology in consultation with the PMO and IAs. The program should include the data collected through the soil moisture sensors to be installed by the project; and, be integrated with the data collection and storage system to be prepared by the IAs, so that the water monitoring data is incorporated as part of the overall project computer systems and can be easily viewed as needed by the PMO and IAs.
- Assist PMO to prepare semiannual environmental monitoring progress reports for submission to ADB. The reports will focus on progress with implementation of the EMP, compliance with environment-related project assurances, and results of the water monitoring.

## **10. Resettlement Specialist (national)**

19. Tasks and responsibilities of the Resettlement Specialist include but not limited to the following:

- Assist the PMO, IAs, and design institute in updating the resettlement plans approved by ADB, in ADB format, and based on the detailed designs; disclose them to the affected persons prior to ADB's approval; and obtain ADB's approval of them; as necessary;
- Assist the PMO and IAs in implementing land acquisition and resettlement in accordance with the resettlement plan and LURTFs,
- Assist the IAs in supervising contractors to ensure compliance with requirements of the resettlement plan, LURTF, applicable laws and regulations, and ADB's Safeguard Policy Statement;
- Assist the PMO and IAs in supervising the processes of resettlement and LURT by collecting and updating basic data, and closely coordinating between the PMO and IAs, and an external resettlement monitor;
- Follow-up with the districts and county governments for post resettlement subsidies to be provided to households displaced by the Project components;
- Review external M&E reports prepared by the external resettlement monitor and ADB's comments on the reports, monitor compliance with the resettlement plans, assess the degree of impacts and key implementation issues, explain key issues to the PMO and IAs and assist them in conducting follow-up actions to address the key issues;
- Assist the PMO to monitor compliance with the resettlement plan and LURTF, assess key implementation issues, formulate remedial measures, and assist them in conducting follow-up actions;
- Provide the PMO with support for the preparation of resettlement and LURT aspects, including semiannual internal resettlement monitoring of semiannual progress reports;

- Provide support to the project management specialist/team leader for assessing needs for capacity development, and planning, designing, organizing, and implementing seminars, workshops, and/or training for implementation and M&E of land acquisition, resettlement and LURT;
- Provide support to the project management specialist/team leader for preparing the inception report, semiannual reports, draft project completion report (PCR), and final PCR; and
- Undertake any other necessary work assigned by the project management specialist/team leader.

## **11. Social Specialist (national)**

20. Tasks and responsibilities of the Social Specialist include but not limited to the following:

- If there is a change in the project scope, assist the PMO, IAs, and design institute in updating the SDAP and GAP approved by ADB, in ADB format and based on the change; and obtain ADB's approval of it;
- Assist the PMO and IAs in implementing the SDAP and GAP prepared during project preparation;
- Assist the PMO and IAs in supervising contractors to ensure compliance with requirements of the SDAP and GAP, and applicable laws and regulations;
- Monitor compliance with the SDAP and GAP; assess the degree of impacts and key implementation issues; explain key issues to the PMO and IAs; and assist them in conducting follow-up actions to address the key issues;
- Provide the PMO with support for the preparation of social and gender aspects of semiannual progress reports, including semiannual internal social monitoring reports;
- Provide support to the project management specialist/team leader for assessing needs for capacity development, and planning, designing, organizing, and implementing seminars, workshops, and/or training for implementation and M&E of the SDAP and GAP;
- Provide support to the project management specialist/team leader for preparing the inception report, semiannual reports, draft PCR, and final PCR; and
- Undertake any other necessary work assigned by the project management specialist/team leader.

## **12. Economist (national)**

21. The specialist will

- Review background documents, including the economic analysis of the project undertaken during project preparation;
- Conduct economic analyses of the overall project and each subproject to determine economic internal rate of return of the overall project and each subproject at the midterm of project implementation, and at physical completion of the project;
- Provide support to the project management specialist/team leader for assessing needs for capacity development; and planning, designing, organizing, and implementing seminars, workshops, and/or training for economic analysis, as necessary;
- Provide support to the project management specialist/team leader for preparing the inception report, semiannual reports, draft project completion report (PCR), and final

PCR; and

- Undertake any other necessary work assigned by the project management specialist/team leader.

### **13. Financial Specialist (national)**

22. The specialist will

- Review background documents, including the financial analysis of the project undertaken during project preparation;
- Conduct financial analysis at the midterm of project implementation, and at physical completion of the project, including (a) financial sustainability analysis to assess the fiscal sustainability debt repayment capacity; and (b) an assessment of the financial viability of the revenue-generating components;
- Assist PMO and IAs in establishing and implementing a financial management system;
- Assist the Xichuan County Government, PMO and IAs in preparing withdrawal applications and streamlining the preparation of withdrawal applications;
- Assist the Xichuan Finance Bureau, PMO and IAs in meeting requirements of the financial management action plan;
- Provide support to the project management specialist/team leader for assessing needs for capacity development; and planning, designing, organizing, and implementing seminars, workshops, and/or training for financial analysis, as necessary;
- Provide support to the project management specialist/team leader for preparing the inception report, semiannual reports, draft PCR, and final PCR; and
- Undertake any other necessary work assigned by the project management specialist/team leader.

## **INDICATIVE TERMS OF REFERENCE FOR EXTERNAL RESETTLEMENT AND SOCIAL MONITORING AND EVALUATION**

### **A. Introduction**

1. The proposed Henan Xichuan Integrated Ecological Protection and Environmental Improvement Project will promote rural vitalization and ecological protection by (i) focusing on environment, water resource and soil erosion protection; (ii) improving access to safe drinking water and sanitation services for urban and rural residents; (iii) forestry development and fruit farming, including smart irrigation system comprising the provision of irrigation and ancillary facilities, construction of peripheral rainfall harvest system and automated fertilizer mixture in drip irrigation system; (iv) piloting soil erosion mitigation at watershed scale through research and development including implementation of integrated measures as well as monitoring and evaluation provisions; (v) community-based environment management including awareness raising, capacity development, and pilot activities water and environmental management; (vi) institutional capacity development for flash flood mitigation, including enhancement of existing river flood monitoring system, improvement of localized early warning system, and development of flood response capacity; and (vii) rural ecotourism development to promote environment friendly tourism services and improve living conditions. The project is envisaged to serve as a model for counties facing climate change and ecological pressures in the Yangtze River Economic Belt (YREB), similar parts of the PRC and other developing member countries.

2. Consulting services will be provided for external resettlement and social monitoring and evaluation (M&E) needed to ensure that the project will be implemented in conformity with the PRC laws and regulations and the ADB's Safeguard Policy Statement (2009).

3. The consulting services will be provided to PMO and 5 project implementing agencies (IAs), including Water Affairs Bureau, Housing, and Urban-Rural Construction Bureau, Agriculture, and Rural Bureau, Tourism Service Center, and Ecology, and Environment Bureau.

### **B. Implementation Arrangements**

4. The external resettlement and social M&E will be carried out by a team of specialists through a competent independent external monitoring agency (EMA). The M&E will be financed by ADB, and the team of specialists will be recruited by the PMO according to ADB's regulations (2017) through consultants' qualifications selection (CQS). The PMO and IAs will provide assistance to the EMA, particularly in the aspects of field survey, staffing, and logistics.

### **C. Reporting Requirements**

5. The EMA will submit to ADB and PMO semiannual external resettlement and social M&E reports during the implementation of LAR for the project, and annual external social and resettlement M&E reports for 2 years after the completion of the LAR for the whole project (for each report, a soft copy of the English version to ADB and soft copies of the English and Chinese versions to each of the PMO and IAs), not later than 30 days after the completion of the field investigations.

6. The EMA will take full responsibility on the content and quality of the reports; and if necessary, must revise reports based on the comments of ADB. Format of the reports will be proposed by the EMA in the technical proposal. The EMA may seek guidance from ADB's Involuntary Resettlement Safeguards: A Planning and Implementation Good Practice Sourcebook (Draft Working Document) and from examples of reports on ADB website.

#### **D. Scope of Services and Consultants' Inputs**

7. According to ADB's requirements, the implementation of the resettlement plan should - besides internal monitoring undertaken by the XPMO and IAs—be monitored by the EMA. The EMA to be selected will monitor the implementation of the resettlement plan, LURTF, SDAP, and GAP and report progress semiannually during the implementation of LAR for the project, and annually for two years after the completion of the LAR for the whole project. The EMA will establish an M&E team. The main duties of the team are to (i) carry out the M&E on the implementation of the resettlement plan, LURTF, SDAP, and GAP to ensure it is in compliance with ADB-approved plans; (ii) advise PMO and IAs on the implementation of the resettlement plans LURTF, SDAP, and GAP to ensure relevant policies and procedures are complied with; and (iii) provide information and data, monitoring results, and observations that the team leader will aggregate into the external M&E reports. The tasks to be undertaken by key experts are described but not limited to the following:

8. **M&E of RP and LURTF Implementation- Specific Tasks** To carry out the M&E, the EMA will address the following tasks.

- (i) **Periodic M&E.** For each subproject, during the implementation of LAR and LURT, the EMA will semiannually monitor and evaluate the implementation of the resettlement plan and LURTF.
- (ii) **Post resettlement M&E.** For each subproject, for two years after the completion of the implementation of the resettlement plan and LURTF, the EMA will annually carry out post resettlement M&E to evaluate the results of the LAR and LURT implementation and impact on the affected/involved persons.
- (iii) Participate with the PMO in ADB's review missions, as required.

9. **Monitoring indicators.** There are various monitoring indicators on the implementation of the resettlement plan and LURTF. Once selected, the EMA will have to present in detail the monitoring indicators to the PMO and ADB for approval. Below are main monitoring indicators:

- (i) For compliance of compensation payment and support provision
  - (a) In case of land-for-land compensation, whether the replaced land is equal in area and location as well as production, living conditions compared with the affected land; in case of cash-for-affected land, whether the replacement cost principle is ensured.
  - (b) Whether compensation for affected structures is equal to materials and labor replacement cost according to standards and specification of the work; whether reused materials are not deducted or discounted; and whether assets are depreciated based on age.
  - (c) Whether compensation for trees and/or crops takes into account market rates.

- (d) Whether compensation is fully paid to affected persons; either through single installment or multiple installments prior to displacement or impacts occur.
  - (e) Whether other assistance as specified in the resettlement plans is provided to affected persons, as required.
- (ii) For compliance of information disclosure and community consultation
  - (a) Whether project documents (resettlement information booklet and relevant documents) are disseminated to communities.
  - (b) Whether information (results of detailed measurement survey, prices application, disbursement of payment) is promulgated at public places, and whether the process was effective.
  - (c) Whether the affected persons are fully consulted about issues of land recovery, policies on compensation, resettlement, livelihood restoration, and access to a grievance redress mechanism.
  - (d) Whether the concerns and recommendations of the affected persons are resolved during the implementation of the resettlement plan; as well as the manner by which they have been addressed.
- (iii) For relocation plan and implementation
  - (a) Resettlement methods, participation in relocation planning, announcement of relocation plan, and support to relocated households.
- (iv) For compliance of LAR implementation for the relocated affected persons
  - (a) Housing and living conditions in resettlement sites (such as road, domestic power, water distribution and/or drainage system); and restoration of community, education, and health services.
  - (b) Whether replacement housing was provided in a complete and timely manner.
  - (c) Any issues related to transitional housing and/or period.
  - (d) Whether the new location has had any impact on the affected persons' livelihoods.
- (v) For compliance of income restoration and support to livelihood stabilization
  - (a) Whether support to income restoration is adequately provided, and efficiency of the income restoration support (e.g., training, credit assistance).
  - (b) Post resettlement life and production stabilization. How affected persons stabilize their life and production.
  - (c) Problems that affected persons are facing during the income restoration and life stabilization.
  - (d) Compensation and restoration of temporary land occupation.
- (vi) For compliance of the satisfaction of the affected persons

- (a) Satisfaction of the determination of losses and compensation valuation.
- (b) Satisfaction of compensation payment and other assistance.
- (c) Satisfaction of information disclosure and consultation.
- (d) Satisfaction on life stabilization and income restoration support activities.
- (e) Satisfaction of resettlement site, relocation site, and completeness of facilities.
- (vii) For compliance of grievance redress mechanism of the affected persons
  - (a) Degree of efficiency of the grievance redress mechanism (time, efficiency of resolution).
  - (b) Results of complaint resolution at various levels.
  - (c) Satisfaction of the grievance redress mechanism.
- (viii) Specific to LURT, monitor and assess the implementation of the LURT Framework based on the key principles as follows:
  - (a) Equality, voluntariness, legal procedure, and fair compensation
  - (b) Ownership of transferred land remain unchanged
  - (c) Effectiveness of Grievance Redress Mechanism
  - (d) Failure of negotiation has not resulted in the acquisition of land or any restriction on land use

### **M&E of SDAP and GAP Implementation- Specific Tasks**

10. Main tasks on SDAP and GAP monitoring are described but not limited to the following:
  1. Liaise with the social focal persons at PMO and IAs, monitor the appointments of town level focal points, as well as monitor and evaluate the implementation of the SDAP and GAP and other social measures;
  2. Monitor social and gender measures and ensure social and gender targets in the project planning documents are achieved during the project implementation as stated in SDAP and GAP;
  3. Monitor to ensure labor standards are upheld throughout project implementation;
  4. Monitor to ensure that local residents have been meaningfully consulted during all times of project implementation, that women and vulnerable groups are consulted (meeting SDAP and GAP targets) and that all consultation processes are adequately documented;
  5. When necessary, monitor training to PMO, IAs, as well as concerned township authorities and village committees in the gender disaggregation of all project-related activities and ensure that adequate records are kept in accordance with good implementation practice;



6. Monitor to ensure women and vulnerable households are offered opportunities to participate in employment and other benefits as stated in SDAP and GAP;
  7. Monitor to ensure that women employed during construction and operation stages are offered appropriate facilities (e.g. separate toilets, bathrooms/ showers) which are considered adequate by women and conform to occupational health and safety requirements, as referenced in the SDAP and GAP;
  8. Monitor reporting and monitoring forms for IAs and PMO regarding SDAP and GAP targets and indicators and ensure regular monitoring on these;
  9. Verify internal monitoring reports on the progress of SDAP and GAP activities to be provided to the PMO and ADB;
  10. Monitor social and gender indicators included in the DMF; and
  11. Perform any other tasks deemed necessary to externally monitor social issues and social dimensions as they apply to the project.
11. **Methodology of M&E.** The EMA will apply both qualitative and quantitative methods during monitoring, including the following.
- (i) Quantitative methods
    - (a) Conduct baseline survey covering a representative sample of affected persons, focusing more on those seriously affected and vulnerable affected persons.
    - (b) Conduct annual questionnaire survey during project implementation for 50% of severely affected households and 20% of all other affected households.
    - (c) Use the existing statistical data at local levels, and data from district, and/or county resettlement bureaus.
    - (d) Survey affected businesses and workers.
    - (e) Conduct final M&E by conducting a sample survey on 50% of severely affected households and 20% of all other affected households.
  - (ii) Qualitative methods
    - (a) Review project documents, ADB relevant policies, laws, and regulations of the PRC and Xichuan County.
    - (b) Consult and discuss with different stakeholders, including Xichuan County Government and local stakeholders through consultation meetings, in-depth interviews, and group discussions.
    - (c) Undertake focused group discussions, in-depth interviews with the target affected persons; and/or groups such as severely affected households, relocated households, vulnerable households, and women's groups.

## (iii) Site visits

- (a) Conduct site visits to the project area, including original housing areas, and resettlement sites, as well as project construction sites to check whether activities in relevant plans have been implemented properly.

12. All information and data collected will be processed, analyzed, and included in the baseline or subsequent M&E reports. The EMA must store the processed data to be used for the next M&E. These data will belong to (and will be the asset of) the PMO and will be made available to ADB and the PMO on request. All documentation will be transferred to the PMO at the completion of the contract.

13. **Qualification.** The EMA should be a registered social organization (research institution, design institute, consulting institution and/or firm, university or nongovernment organizations) without direct administrative subordination relations with the Xichuan County Government. The EMA should have 5 or more qualified technical staff members. Professional staff members of the EMA should have degree in economics, sociology and/or anthropology, or relevant field of social sciences; are familiar with ADB's or World Bank's resettlement and social policies and procedures; and have previous experience in M&E of resettlement and social for projects funded by ADB or World Bank. The EMA should also have experience in undertaking similar projects in the PRC. Three (3) national specialist positions will provide a total of **24** person-months of consulting services to support extremal resettlement M&E. The key responsibilities are proposed but not limited to the following:

#### 1. Resettlement Specialist and Team Leader

14. The specialist will undertake the following tasks: (i) lead all the activities of the team; (ii) lead and set up the monitoring methodology, including design of baseline and tracer surveys; (iii) work and coordinate with relevant agencies and/or bodies within the project to implement the task of M&E activities; (iv) lead and conduct the M&E activities and required surveys to collect data and information at office and project sites, and then analyze the findings; (v) prepare external resettlement and social M&E reports which include conclusions and recommendations; (vi) discuss findings with the PMO and IAs to reach agreement on follow-up actions; and (vii) participate in ADB review missions.

#### 2. Social Evaluation Specialist

15. The specialist will undertake the following tasks: (i) monitor the activities mentioned in the resettlement plan, LURTF, SDAP, and GAP to ensure activities are being carried out in compliance with relevant plans; (ii) provide inputs to the external resettlement and social M&E reports, which would include progress, challenges and/or bottlenecks during implementation; and propose solutions and/or recommendations to address these issues; (iii) participate in ADB review missions, if required; and (iv) conduct any other duties assigned by the resettlement specialist/team leader.

#### 3. Field Surveyors

16. The surveyors will (i) assist the resettlement and social evaluation specialists in carrying out the monitoring on the implementation of the relevant plans to ensure that their implementation is in compliance with ADB-approved plans; (ii) under the guidance of the resettlement and social evaluation specialists, carry out field surveys; (iii) analyze the data collected from the field surveys; (iv) provide assistance to the resettlement and social evaluation specialists for the preparation of the

external resettlement and social M&E reports; and (v) conduct any other duties assigned by the resettlement specialist/team leader.

**Table 1: Tentative Consultants' Inputs**

<b>Position</b>	<b>National</b>
Resettlement specialist/Team Leader	10
Social evaluation specialists	6
Field surveyors	8
<b>Total</b>	<b>24</b>

Source: Asian Development Bank estimates.

## **E. Cost Estimate**

**Table 2: Cost Estimate**

<b>No.</b>	<b>Description</b>	<b>Total Cost (€'000)</b>	<b>Total Cost (\$'000)</b>
1	Consultants		
	a. Remuneration and per diem		
	National consultants (24.0 person-months)	153.62	180.00
	b. Local travel	7.00	8.20
2	Reports and communications	2.39	2.80
3	Surveys	2.90	3.40
4	Miscellaneous administration and support costs	1.71	2.00
5	Contingencies	3.07	3.60
	<b>Total</b>	<b>170.69</b>	<b>200.00</b>

Source: Asian Development Bank estimates.

## **INDICATIVE TERMS OF REFERENCE FOR EXTERNAL ENVIRONMENTAL MONITORING AND EVALUATION**

### **A. Introduction**

1. The proposed Henan Xichuan Integrated Ecological Protection and Environmental Improvement Project will promote rural vitalization and ecological protection by (i) focusing on environment, water resource and soil erosion protection; (ii) improving access to safe drinking water and sanitation services for urban and rural residents; (iii) forestry development and fruit farming, including smart irrigation system comprising the provision of irrigation and ancillary facilities, construction of peripheral rainfall harvest system and automated fertilizer mixture in drip irrigation system; (iv) piloting soil erosion mitigation at watershed scale through research and development including implementation of integrated measures as well as monitoring and evaluation provisions; (v) community-based environment management including awareness raising, capacity development, and pilot activities water and environmental management; (vi) institutional capacity development for flash flood mitigation, including enhancement of existing river flood monitoring system, improvement of localized early warning system, and development of flood response capacity; and (vii) rural ecotourism development to promote environment friendly tourism services and improve living conditions. The project is envisaged to serve as a model for counties facing climate change and ecological pressures in the Yangtze River Economic Belt (YREB), similar parts of the PRC and other developing member countries.

2. Consulting services will be provided for external environment monitoring and evaluation (M&E) needed to ensure that the project will be implemented in conformity with the PRC laws and regulations and the ADB's Safeguard Policy Statement (2009).

### **B. Implementation Arrangements**

3. The external environmental M&E will be carried out by a team of specialists through a competent independent external monitoring agency (EMA). The M&E will be financed by ADB, and the team of specialists will be recruited by the PMO according to ADB's regulations (2017) through consultants' qualifications selection (CQS). The PMO and IAs will provide assistance to the EMA, particularly in the aspects of field survey, staffing, and logistics. Specifically, they will (i) provide the EMA with hard and soft copies of the EMP, domestic environmental impact assessment, IEE, domestic feasibility study report, loan, and project agreements, maps, and other supporting materials, as necessary; (ii) facilitate and arrange meetings with key project agencies, including contractors and construction supervision companies; (iii) conduct overall coordination, including review of external environmental monitoring reports; and a consolidated external environmental monitoring report; and (iv) take final responsibility for submission of the external environmental monitoring reports and the consolidated external environmental monitoring report to ADB.

### **C. Reporting Requirements**

4. The EMA will take full responsibility on the content and quality of the reports; and if necessary, must revise reports based on the comments of ADB. Format of the reports will be proposed by the EMA in the technical proposal. The EMA may seek guidance from examples of reports on ADB website.

5. The EMA will submit to ADB, PMO, and local PMOs external environmental monitoring reports regularly twice a year during the construction of the facilities and in the first year of the operation of the facilities, and a consolidated external environmental monitoring report within 2

months after the completion of the project. For each report, the EMA will submit a soft copy of the English version to ADB and soft copies of the English and Chinese versions to each of the PMO and local PMOs.

6. The external environmental monitoring reports will include, but not be limited to, (i) description of activities conducted in the reporting period and results; (ii) all cumulative data collected up to the current reporting period; (iii) any cases of noncompliance with the target standards; (iv) any additional observations (qualitative or quantitative); (iv) lessons learned; and (f) work schedule for the next semiannual monitoring period.

7. The consolidated external environmental monitoring report will summarize the results, conclusions, lessons learned, and recommendations for the overall monitoring program. All raw data will be handed over to the PMO and local PMOs in a clear and simple format. The EMA will submit to ADB (i) a draft final consolidated external monitoring report for review by ADB, PMO, and local PMOs; and (ii) a final report incorporating comments made by ADB, PMO, and local PMOs.

8. The EMA will take full responsibility for the content and quality of the reports and, if necessary, must revise reports based on comments of ADB. Format of the reports will be proposed by the EMA in the technical proposal. The EMA may seek guidance from examples of reports on ADB's website.

#### **D. Scope of Services**

9. The EMA should (i) possess relevant domestic certifications required to conduct environmental monitoring; (ii) ensure the provision of all certified equipment and other resources needed for monitoring, analyses, and reporting, including field sampling and laboratory equipment and logistical resources (vehicles etc.); and (iii) assign qualified and experienced staff to be directly involved in site visits, monitoring, analyses, and reporting activities who has (a) a degree in environmental management or related field (preferable master's or higher degree); (b) an ability to communicate and work effectively with local communities, contractors, and government agencies; (c) experience in data collection and analyses and report preparation; and (d) good physical health and fitness to visit remote project construction sites and in different seasons.

10. Tasks and responsibilities of the consultant team are described but not limited to the following:

- (i) Gain familiarity with the project sites and monitoring requirements through: (i) review of the items listed "external monitoring" in Table EMP-5 of the EMP, as well as the overall IEE and EMP; (ii) meetings with the project agencies; and (iii) site visits.
- (ii) If needed, recommend additional monitoring variables and/or changes in the monitoring methods (e.g., monitoring locations or frequency) for the items listed as "external monitoring" in Table EMP-5 of the EMP and provide a clear rationale for any proposed changes. Note: No changes to the monitoring plan in Table EMP-5 will be made without the prior review and endorsement by the PMO and ADB.
- (iii) Design an environmental monitoring plan which (a) focuses on specific variables listed in Table EMP-5 of the EMP for "external monitoring;" (b) includes a clear methodology and work schedule; and (c) includes any additional variables recommended.
- (iv) Design and establish a simple database (e.g., in Excel) to store all collected data.

Data should be entered and stored in a clear and simple format that enables comparison of values over time; and ensure that data is backed up on at least one external storage device.

- (v) Implement the monitoring program.
- (vi) While on site, provide demonstrations to the project agencies (including the PMO, local PMOs, contractors, and construction supervision companies) in the monitoring; and emphasize the links between good construction practices and reduction of environmental risks.
- (vii) Immediately report to the local PMOs any cases of noncompliance with the EMP monitoring standards and/or any other environmental management issues that may be observed while on site.
- (viii) Identify any cases of exceedance of values against the project standards, and the reasons for such exceedance.
- (ix) Prepare and submit external environmental monitoring reports and a consolidated external environmental monitoring report.
- (x) Work closely with the PMO, local PMOs, contractors, construction supervision companies, consultants, communities, and other stakeholders, as necessary, to conduct these tasks.

11. **Qualification.** An experienced and registered national environmental specialist will provide intermittent consulting services for about 12 months to support external environmental monitoring. The key responsibilities are proposed but not limited to the following:

#### **1 Environmental Specialist/Team Leader (national)**

12. The specialist will undertake the following tasks: (i) lead all the activities of the team; (ii) lead and set up the monitoring methodology, including design of baseline and tracer surveys; (iii) work and coordinate with relevant agencies and/or bodies within the project to implement the task of M&E activities; (iv) lead and conduct the M&E activities and required surveys to collect data and information at office and project sites, and then analyze the findings; (v) prepare external environmental M&E reports which include conclusions and recommendations; (vi) discuss findings with the PMO and IAs to reach agreement on follow-up actions; and (vii) participate in ADB review missions. Specifically:

- (i) To coordinate overall M&E activities in compliance with contract requirements;
- (ii) To develop detailed work plan and procedures;
- (iii) To conduct regular site visits for guidance of local site workers;
- (iv) To hold regular meeting to review work progress and propose actions for improvement;
- (v) To review M&E work plan and training programs;
- (vi) To review and approve M&E reports and consolidated M&E report at completion;
- (vii) To propose suggestions based on the progress and participate in handling pollution accidents;
- (viii) To review variations in relation to environmental components and provide advice; and
- (ix) To review environmental sections contained in the construction management plan, and to review compliance of environmental protection systems developed by contractors.

**Table 1: Tentative Consultants' Inputs**

<b>Position</b>	<b>National</b>
Environmental specialist	12
<b>Total</b>	<b>12</b>

Source: Asian Development Bank estimates.

## **F. Inputs and Cost Estimate**

**Table 2: Cost Estimate**

<b>No.</b>	<b>Description</b>	<b>Total Cost (€'000)</b>	<b>Total Cost (\$'000)</b>
1	Consultants		
	a. Remuneration and per diem		
	National consultants (12.0 person-months)	76.81	90.00
	b. Local travel	3.58	4.20
2	Reports and communications	1.62	1.90
3	Surveys	1.45	1.70
4	Miscellaneous administration and support costs	0.85	1.00
5	Contingencies	1.54	1.80
	<b>Total</b>	<b>85.35</b>	<b>100.00</b>

Source: Asian Development Bank estimates