



Technical Assistance Subproject Report

Project Number: 54026-012
Knowledge and Support Technical Assistance (C-KSTA)
August 2021

People's Republic of China: Strengthening Capacity, Institutions, and Policies for Enabling High-Quality Green Development in the Yellow River Ecological Corridor Subproject 10: Sustainable Forest-Grassland Management in the Middle Reaches of the Yellow River Basin

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 9 August 2021)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1542
\$1.00	=	CNY6.4831

ABBREVIATIONS

ADB	–	Asian Development Bank
SFGB	–	Shanxi Forestry and Grassland Bureau
SAFGS	–	Shanxi Academy of Forestry and Grassland Science
TA	–	technical assistance
UAV	–	unmanned aerial vehicle

NOTE

In this report, "\$" refers to United States dollars.

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KNOWLEDGE AND SUPPORT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 54026-012
Project Name	Sustainable Forest-Grassland Management in the Middle Reaches of the Yellow River Basin	Department/Division EARD/EAER
Nature of Activity	Capacity Development	Executing Agency Shanxi Forestry and Grass Land Bureau
Modality	Subproject	
Country	China, People's Republic of	
2. Sector		ADB Financing (\$ million)
✓ Agriculture, natural resources and rural development	Agricultural policy, institutional and capacity development	0.08
	Agricultural production	0.08
	Land-based natural resources management	0.08
	Water-based natural resources management	0.06
	Total	0.30
3. Operational Priorities		Climate Change Information
✓ Addressing remaining poverty and reducing inequalities		GHG Reductions (tons per annum) 0.00
✓ Accelerating progress in gender equality		Climate Change impact on the Project Low
✓ Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability		ADB Financing
✓ Promoting rural development and food security		Adaptation (\$ million) 0.00
✓ Strengthening governance and institutional capacity		Mitigation (\$ million) 0.00
		Cofinancing
		Adaptation (\$ million) 0.00
		Mitigation (\$ million) 0.00
Sustainable Development Goals		Gender Equity and Mainstreaming
SDG 2.4		Some gender elements (SGE) ✓
SDG 5.5		
SDG 12.2		
SDG 15.3, 15.4		Poverty Targeting
SDG 16.5, 16.6		General Intervention on Poverty ✓
4. Risk Categorization Risk Categorization does not apply		
5. Safeguard Categorization Safeguard Policy Statement does not apply		
6. Financing		
Modality and Sources	Amount (\$ million)	
ADB	0.30	
Knowledge and Support technical assistance: Technical Assistance Special Fund	0.30	
Cofinancing	0.00	
None	0.00	
Counterpart	0.00	
None	0.00	
Total	0.30	
Currency of ADB Financing: US Dollar		

I. THE TECHNICAL ASSISTANCE SUBPROJECT

A. Overall Progress of the Technical Assistance Cluster

1. The knowledge and support technical assistance (TA) cluster forms part of ADB's Yellow River Ecological Corridor (YREC) program, a multisector programmatic approach that supports the goals of the PRC's Yellow River Basin (YRB) Ecological Protection and High-quality Development Program, 2021–2035 to prioritize ecological protection and promote high-quality green development in the YRB. The TA cluster comprises a series of subprojects, each focused on different aspects of river basin management, to help achieve the aims of the YREC program.

¹ The TA cluster was approved on 28 October 2020. So far, seven subprojects were approved under the TA cluster. The overall TA cluster is estimated to cost \$2.18 million, of which \$1.93 million will be financed on a grant basis from the Technical Assistance Special Fund (TASF-other sources) of the Asian Development Bank (ADB). A minor change in scope and increase in TA amount was approved on 6 July 2021. The change includes addition of three new subprojects (including this subproject) with an additional \$900,000 from TASF-other sources, bringing the total TA cluster amount to \$3.13 million.

2. Shanxi Province is a uniquely important area for the protection of the Yellow River. The Lvliang Mountain range in Shanxi Province, located in the Loess Plateau, is part of the national key ecological barriers. Desertification accounts for 28% of the land area in the northern part of the province. About 13.8% of the sediment transported through the Yellow River is produced in the province. The poor ecological environment has a profound effect on people's livelihoods. Many Shanxi counties in the YRB are among the least developed in the province. A Blue Book of the Yellow River Basin jointly published by researchers from riparian provinces systematically reviewed the challenges and opportunities facing ecological protection and high-quality development in the basin. Ecological protection is a prerequisite, and a key driver for rural vitalization and rebalancing urban-rural inequalities. Accordingly, the Shanxi Forestry and Grassland Bureau (SFGB) published a guidance note on ecological restoration and management for Shanxi's grasslands.

3. The TA subproject aims to support the implementation of the guidance note by developing appropriate technical, policy, and financial solutions for sustainable forest and grassland management in the middle reaches of the Yellow River Basin in Shanxi Province. These solutions will help restore forest and grassland ecosystems, contribute to soil erosion reduction in the Shanxi Loess Plateau, and reduce sediment load in the Yellow River. The TA subproject will further help build up resilience against climate change through sustainable economic development and revenue generation activities in ecosystem conservations. It will support the Shanxi government priorities for restoration of major ecosystems in the Taihang and Lvliang Mountain region.² The design and monitoring framework of the TA subproject is in Appendix 1. The SFGB will be the executing agency and the Shanxi Academy of Forestry and Grassland Sciences (SAFGS) will be the implementing agency of the TA subproject.

4. The TA subproject complements the other subprojects of the TA cluster by focusing on the grassland and forestry management in the middle reaches of the Yellow River. Better grassland and forestry management will help not only the local ecosystems, but also improve soil

¹ The YREC program is described in the TA cluster report. ADB. 2020. *People's Republic of China: Strengthening Capacity, Institutions, and Policies for Enabling High-Quality, Green Development in the Yellow River Ecological Corridor*. Manila.

² The Shanxi Government. 2018. *Taihang and Lvliang Mountains Major Ecosystem Protection and Rehabilitation Program*. Shanxi.

conservation in the main sediment production areas and reduce sediment load and flood intensity in the Yellow River.

B. Subproject Outcome

5. The impact of the TA subproject is aligned with the overall impact of the TA cluster: resilient ecological protection and security in the Yellow River Basin achieved. The TA subproject will have the following outcome: management of forest and grassland in Shanxi Province improved.

C. Subproject Outputs, Methods, and Activities

6. **Output 1: Lvliang Mountain ecosystem services of forest and grassland evaluated.** Output 1 will aim to (i) account the forest and grassland resources (typology, distribution, and areas); (ii) identify and evaluate main ecological functions; (iii) assess market-based forest-grassland sector development and ecological conservation-based income generation opportunities, including agriculture, ecotourism, carbon trade, and forestry entitlement trade; and (iv) estimate economic values of ecological functions and services of the forest-grassland systems. Activities (iii) and (iv) will build on consultative approach with local farmers, business, and the public. A comprehensive evaluation report will be prepared to summarize the results which will be the basis of follow-up activities for the other TA outputs.

7. **Output 2: Lvliang Mountain vegetation restoration guidelines developed.** To build on the research conducted by SAFGS, this output will aim to develop a set of guidelines for restoration of forest and grasslands applicable to Lvliang Mountain, which include (i) Shanxi Province Reforestation Technical Specification, (ii) Subalpine Zone Grassland Protection and Restoration Technical Specification, and (iii) unmanned aerial vehicle (UAV) Grassland Resources Monitoring Specification.

8. **Output 3: Forest-grassland high-quality development plan produced.** Output 3 will build on outputs 1 and 2 to prepare an ecological protection and high-quality development plan for a selected pilot site, including necessary policy actions, and structural and management interventions tailored to the selected site. The assessment of the pilot will demonstrate sustainable grassland and forest management practices based on integration of ecological conservation and economic development activities, promoting ecological conservation as well as job creation and income generation.

9. **Output 4: Forest-grassland protection capacity enhanced.** Output 4 will aim to enhance institutional capacity through trainings, study tours, seminars, and field demonstrations in Shanxi Province. Based on existing laboratory facilities at SAFGS, an inventory of main native grass species and plants in Shanxi Province will be established and a publication will document them. The TA will facilitate participation of different stakeholders – government institutions, private sector, and residents – in forest and grassland sustainable management, by building their capacity and awareness through online learning materials and campaigns, flyers, and interactive games. Outreach activities will also be designed to disseminate and promote the TA outputs from Shanxi to other neighboring provinces for stronger development impact along the Yellow River.

D. Subproject Cost and Financing

10. The TA subproject is estimated to cost \$350,000, of which \$300,000 will be financed on a grant basis by ADB's TASF-other sources. The key expenditure items are listed in Appendix 2.

11. The government will provide counterpart support in the form of remuneration and local travel expenses of counterpart staff; provision of available relevant government data and studies for consultants' use; office accommodation and facilities, including use of meeting rooms; administrative assistance; and other in-kind contributions.

E. Subproject Implementation Arrangements

12. The Environment, Natural Resources, and Agriculture Division of ADB's East Asia Department will administer the TA subproject, particularly on the selection and recruitment, supervision, and evaluation of consultants. The SFGB will be the executing agency and the SAFGS will be the implementing agency for the TA subproject. The SFGB will provide overall guidance on the design, implementation, and recommendations of the TA subproject. A project management office (PMO) will be established at the SAFGS, which will provide oversight to the consultants; organize workshops and studies with support from the consultants, and liaise with the SFGB, provincial agencies, and ADB. Implementation arrangements are summarized in the table below. The PMO, with support from consultants, will carry out procurement of goods and equipment (Appendix 3) following the ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions.

Subproject Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	August 2021–August 2023		
Executing agency	Shanxi Forestry and Grassland Bureau		
Implementing agency	Shanxi Academy of Forestry and Grassland Science		
Consultants ^a	To be selected and engaged by ADB		
	Individual consultant selection	International (1 person-month)	\$156,760
	Individual consultant selection	National (16 person-months)	
Procurement ^b	Package title	Procurement method	Procured by
	Equipment	Shopping	IA
Disbursement	The TA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2020, as amended from time to time).		

ADB = Asian Development Bank, IA = Implementing agency, TA = technical assistance.

^a Output-based contracts will be considered for consulting services under this TA.

^b Procurement Plan accessible from the list of linked document in Appendix 3. Equipment will be handed over to the Shanxi Academy of Forestry and Grassland Science, upon completion of the TA.

Source: Asian Development Bank.

13. **Consulting services.** It is estimated that the TA subproject will require 17 person-months of consulting services, comprising one international and three national consultants: (i) ecological conservation and planning specialist (international, 1 person-month); (ii) grassland and forestry management specialist/team leader (national, 7 person-months); (iii) agriculture/forestry economist (national, 4 person-months); and (iv) grassland and forestry ecologist (national, 5 person-months). ADB will engage the consultants through individual consultant selection, following the ADB Procurement Policy (2017, as amended from time to time) and its associated

project administration instructions and/or staff instructions.³ Output-based engagement will be used for engaging consultants and fixed or lumpsum provision of out-of-pocket expenses will be used. The need for additional consultant support will be reviewed during implementation; and if required, support will be proposed as international or national resource persons.

³ Terms of Reference for Consultants (accessible from the list of linked documents in Appendix 3).

SUBPROJECT DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with Resilient ecological protection and security in the Yellow River Basin achieved (PRC's Outline of the Rural Vitalization Plan, 2018–2022; ADB Strategy 2030) ^a			
Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
<p>Outcome Management of forest and grassland in Shanxi Province improved</p>	<p>By 2024:</p> <p>a. Integrated approach on sustainable management of forestry and grassland adopted in Shanxi Province (2020 baseline: not applicable) (OP 3.3.4)</p> <p>b. At least 110 SFGB officials demonstrate application or use of improved capacities (2020 baseline: not applicable) (OP 2.3.1; OP 6.1.1)</p> <p>c. Three Technical specifications adopted by the Shanxi provincial government (2020 baseline: not applicable) (OP 3.3.4)</p>	<p>a and c. SFGB announcements, publications, and reports on related policy and planning documents</p> <p>b. SFGB officials' survey results included in the TA subproject progress reports</p>	<p>A: Continued economic recovery leading to increasing demand and investments for healthy living and better environment by individual residents and private sectors.</p>
<p>Outputs</p> <p>1. Ecosystem services of forest and grassland evaluated</p> <p>2. Lvliang Mountain vegetation restoration guidelines developed</p> <p>3. Forest-grassland high-quality development plan produced</p>	<p>By 2023:</p> <p>1a. A comprehensive evaluation report on forest and grassland resources, the ecological functions, and the economic opportunities. (2020 baseline: not prepared)</p> <p>2a. Shanxi Province Reforestation Technical Specification prepared (2020 baseline: not prepared) (OP 3.3.4)</p> <p>2b. Subalpine Zone Grassland Protection and Restoration Technical Specification prepared (2020 baseline: not prepared) (OP 3.3.4)</p> <p>2c. UAV Grassland Resources Monitoring Specification guidelines prepared (2020 baseline: not prepared) (OP 3.3.4)</p> <p>3a. A report containing a comprehensive protection and economic development plan for selected site in Lvliang Mountain region prepared</p>	<p>1a. TA subproject progress reports</p> <p>2a.–2c. TA subproject progress reports and published knowledge product, government publications and communications</p> <p>3a. TA subproject progress reports and published knowledge product</p>	<p>R: Competing demand on economic growth across different sectors lead to changes in government priorities and delayed implementation of project activities.</p>

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	(2020 baseline: not prepared) (OP 3.3.4;)		
4. Forest-grassland protection capacity enhanced	<p>4a. An inventory and publication on the main grass species of Shanxi Province prepared (2020 baseline: not prepared)</p> <p>4b. At least 40 officials with at least 16 women in training workshops report improved knowledge on sustainable forest management (2020 baseline: 0) (OP 2.3.1; OP 6.1.1)</p> <p>4c. At least 70 officials with at least 28 female participants in training workshops report improved knowledge on sustainable grassland management (2020 baseline: 0) (OP 2.3.1; OP 6.1.1)</p>	<p>4a. TA subproject progress reports and published knowledge product</p> <p>4b.–4c. TA subproject progress reports and participants' surveys</p>	
<p>Key Activities with Milestones</p> <p>1. Ecosystem services of forest and grassland evaluated</p> <p>1.1 Review of forestry and grassland conservation and economic development laws, policies, regulations and their implementation and institutional coordination (Q3 2021)</p> <p>1.2 Assess forestry and grassland resources and the ecological functions (Q4 2021)</p> <p>1.3 Review forestry and grassland economic development opportunities (Q4 2021)</p> <p>1.4 Evaluate economic values of grassland and forestry-based ecosystems (Q1 2022)</p> <p>1.5 Prepare the assessment report (Q2 2022)</p> <p>2. Lvliang Mountain vegetation restoration guidelines developed</p> <p>2.1 Review research and technical advances and achievement in vegetation restoration (Q2 2022)</p> <p>2.2 Draft, review, and refine Shanxi Province Reforestation Technical Specification (Q4 2022)</p> <p>2.3 Draft, review, and refine subalpine Zone Grassland Protection and Restoration Technical Specification (Q4 2022)</p> <p>2.4 Draft, review, and refine UAV Grassland Resources Monitoring Specification (Q4 2024)</p> <p>3. Forest-grassland high-quality development plan produced</p> <p>3.1 Identify and agree on pilot site selection (Q2 2022)</p> <p>3.2 Collect data and information through field visit, surveys, and consultations (Q4 2022)</p> <p>3.3 Draft a comprehensive protection and development plan for selected site (Q1 2023)</p> <p>3.4 Conduct consultation processes to verify and disseminate the plan (Q2 2023)</p> <p>3.5 Prepare the planning report (Q2 2023)</p> <p>4. Forest-grassland protection capacity enhanced</p> <p>4.1 Prepare the terms of references for survey and sample collections of an inventory for native grass and plant species (Q3 2021)</p> <p>4.2 Conduct the inventory using collected samples (Q4 2022)</p> <p>4.3 Prepare a publication on inventory of native grass and plant species (Q2 2023)</p> <p>4.4 Design and conduct trainings for conservation workers, employees, and officials (Q3 2023)</p> <p>4.5 Prepare, produce, and disseminate education and awareness raising materials in different formats such as articles, online multimedia (Q3 2023)</p>			

TA Management Activities

Mobilize the consultants (Q4 2021)
 Develop study framework, prepare the inception report, and conduct the inception workshop (Q4 2021)
 Prepare the interim report and conduct the interim workshop (Q4 2022)
 Prepare the draft final report and conduct the final workshop (Q1 2023)
 Carry out knowledge dissemination (Q3 2023)
 Finalize the TA outputs (Q3 2023)

Inputs

ADB (TASF-other sources): \$300,000

Note: The government will provide counterpart support in the form of remuneration and local travel expenses of counterpart staff; provision of available relevant government data and studies for consultants' use; office accommodation and facilities, including use of meeting rooms; administrative assistance; and other in-kind contributions. This counterpart support is estimated to be \$50,000.

A = assumption, ADB = Asian Development Bank, OP = operational priority, PRC = People's Republic of China, Q = quarter, R = risk, SAFGS = Shanxi Academy of Forestry and Grassland Sciences, SFGB = Shanxi Forestry and Grassland Bureau, TA = technical assistance, TASF = Technical Assistance Special Fund, UAV = unmanned aerial vehicle.

^a Government of the People's Republic of China. 2018. *Outline of the Rural Vitalization Plan, 2018–2022*. Beijing; and ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila.

Contribution to Strategy 2030 Operational Priorities:

OP 2.3.1 Women with strengthened leadership capacities (number)

OP 3.3.4: Solutions to conserve, restore, and/or enhance terrestrial, coastal, and marine areas implemented (number).

OP 6.1.1: Government officials with increased capacity to design, implement, monitor, and evaluate relevant measures (number).

The expected values and methodological details for all OP indicators to which this TA will contribute results are detailed in Contribution to Strategy 2030 Operational Priorities (accessible from the list of linked documents in Appendix 3 of the TA report). In addition to the OP indicators tagged in the DMF, this TA will contribute results for

OP 1.3.1 Infrastructure assets established or improved (number)

OP 5.1.1 Rural infrastructure assets established or improved (number)

Source: Asian Development Bank.

SUBPROJECT COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	16.00
ii. National consultants	132.12
b. Out-of-pocket expenditures	
i. Local travel	8.64
2. Goods and equipment ^b	25.00
3. Surveys, data, and studies	28.00
4. Trainings, seminars, and conferences ^c	46.10
5. Reports	23.10
6. Miscellaneous administration and support costs ^d	6.00
7. Contingencies	15.04
Total	300.00

Note: The technical assistance (TA) subproject is estimated to cost \$350,000, of which contributions from the Asian Development Bank (ADB) are presented in the table above. The government will provide counterpart support in the form of remuneration and local travel expenses of counterpart staff; provision of available relevant government data and studies for consultants' use; office accommodation and facilities, including use of meeting rooms; administrative assistance; and other in-kind contributions. The value of government contribution is estimated to account for 14.3% of the total TA cost.

^a Financed by ADB's TA Special Fund (TASF-other sources).

^b Office equipment procured under the TA will be turned over to the executing agency upon completion of the TA activities.

^c Includes costs for domestic and international (when possible and allowed by ADB) study visits by government; venue rental; logistics; and international (including ADB staff) and national resource persons, as needed.

^d Includes workshop translation and interpretation costs, office supplies, administration, and logistics costs.

PROCUREMENT PLAN

Project Information

Country	People's Republic of China
Name of Executing Agency	Shanxi Forestry and Grassland Bureau
Project Name	Sustainable Forest-Grassland Management in the Middle Reaches of the Yellow River Basin
TA Reference	To be determined
Date of Effectiveness	To be determined
TA Amount (\$)	\$300,000 from ADB Technical Assistance Special Fund
Approval Date of Original Procurement Plan	
Approval Date of Most Recent Procurement Plan	
Publication for Local Advertisement	To be determined
Period Covered by this Plan	August 2021–August 2023

Procurement Threshold and Goods

Procurement Method	To be used above/below (\$)
Request for quotation	</= \$50,000

List of Contract Packages for Goods

Contract Description	Estimated Cost (\$)	Procurement Method	Expected Date of Advertisement	ADB Review
Grass species sample collection and analysis tool kit (drones, camera, scanner, laptop)	18,000	Request for quotation	First 6 months	Prior
Grass species sample display frames and cabinet	7,000	Request for quotation	First 12 months	Prior

ADB = Asian Development Bank.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=54026-012-TARreport>

1. Terms of Reference for Consultants
2. Contribution to Strategy 2030 Operational Priorities