



Technical Assistance Subproject Report

Project Number: 54026-010
Knowledge and Support Technical Assistance (C-KSTA)
September 2021

People's Republic of China: Strengthening Capacity, Institutions, and Policies for Enabling High-Quality, Green Development in the Yellow River Ecological Corridor

Subproject 8: Strategic Research on Environmentally Sustainable Development of Paper Mulberry Ecological Agriculture and Pasturage in the Yellow River Basin

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 1 September 2021)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1547
\$1.00	=	CNY6.4607

ABBREVIATIONS

ADB	–	Asian Development Bank
PRC	–	People's Republic of China
TA	–	technical assistance

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: 54026-010
Project Name	Strategic Research on Environmentally Sustainable Development of Paper Mulberry Ecological Agriculture and Pasturage in the Yellow River Basin	Department/Division EARD/EAER
Nature of Activity Modality	Capacity Development Subproject	Executing Agency National Rural Revitalization Administration
Country	China, People's Republic of	
2. Sector	Subsector(s)	ADB Financing (\$ million)
✓ Agriculture, natural resources and rural development	Agricultural policy, institutional and capacity development	0.15
	Land-based natural resources management	0.15
	Total	0.30
3. Operational Priorities	Climate Change Information	
✓ Addressing remaining poverty and reducing inequalities	GHG Reductions (tons per annum)	0.000
✓ 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 1.a	Some gender elements (SGE)	✓
SDG 2.4		
SDG 5.5	Poverty Targeting	
SDG 12.2	Geographic Targeting	✓
SDG 15.1	Household Targeting	✓
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 was approved on 28 October 2020. The overall TA cluster is estimated at \$2.18 million, of which \$1.932 million is financed on a grant basis by Asian Development Bank's (ADB) Technical Assistance Special Fund-other sources. On 8 July 2021, supplementary financing of \$0.9 million was approved, increasing the amount of the TA cluster from \$1.932 to \$2.832 million. The Environment, Natural Resources, and Agriculture Division of ADB's East Asia Department will administer and coordinate implementation of the TA cluster. The National Development and Reform Commission, the lead agency for strategic development in the People's Republic of China (PRC), is the executing agency for the TA cluster and plays a leading role to support knowledge sharing and coordinate with ADB for alignment of ADB lending and non-lending assistance in the Yellow River basin.

2. The Yellow River basin is a strategically important core region for supporting environmentally sustainable development in the PRC. Yet the health of the river basin and its ecosystem need prompt action to enable more environmentally sustainable rural-urban development throughout the river basin. There is a need for nature-positive solutions to address development constraints in the Yellow River basin to take a stronger focus that promotes rural vitalization, innovation, urban–rural development cooperation, environment and ecological conservation, improved natural resources management, and policy reforms.

3. The TA cluster forms part of ADB's Yellow River Ecological Corridor (YREC) program, a multisector programmatic approach that is supporting the goals of the PRC's Yellow River Basin Ecological Protection and High-quality Development Program, 2021–2035¹ to prioritize ecological protection and promote high-quality green development in the Yellow River basin. 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.² To date, nine subprojects were approved under the TA cluster. The supplementary financing of the TA is expected to finance three new subprojects under the TA cluster.

4. Promotion of paper mulberry production can be a new technical model to promote environmentally sustainable development in the Yellow River basin. In fact, the potential of scaling up paper mulberry production to achieve ecological civilization³ has been highlighted by the government's strategic documents.⁴ Paper mulberry can be cultivated in different forms; multiple uses of leaf foliage and its positive impact on environment such as restoration of degraded lands, bioremediation of polluted sites, conservation of water, prevention of soil erosion, and improvement of air quality by carbon sequestration.⁵ It is also used to prepare various products

¹ Government of the PRC. Forthcoming. *Yellow River Basin Ecological Protection and High-quality Development Program*. Beijing.

² 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.

³ Ecological civilization is a set of values and development concepts enshrined in the Constitution of the PRC in 2018, which is simultaneously a philosophy, vision, and compass for a green and prosperous future.

⁴ State Council Leading Group Office of Poverty Alleviation and Development of the PRC. 2018. *Guiding Opinions on Expanding the Poverty Alleviation Pilot Work of Paper Mulberry*. Beijing.

⁵ G. Rohela et al. 2020. *Mulberry (Morus spp.): An ideal plant for sustainable development, Trees, Forests and People*, Volume 2. Some literature reports negative environmental and social impacts of paper mulberry such as intensive use of water and high pollen counts. However, paper mulberry (*B. papyrifera* sp.) is native in East Asia and the risk of invasive effects is much lower than non-native areas.

in pharmaceutical, food, cosmetic, and health care industries. The promotion of paper mulberry production can provide nature-positive solutions to address development constraints in Yellow River basin.

B. Subproject Outcome

5. The TA will have the following outcome: high-quality green agricultural development opportunities through paper mulberry production in the Yellow River basin enhanced. The subproject will support the overall TA cluster outputs by (i) providing policy advice on supporting institutional, policy, and governance reforms to support paper mulberry production that has a potential to address sustainable and high-quality development issues in Yellow River basin (cluster output 1); (ii) developing innovative and nature-positive solution of promoting paper mulberry production that will address development constraints in the Yellow River basin (cluster output 2); and (iii) promoting knowledge generation and dissemination to build capacity of local government, farmers, private sector, and stakeholders to enable the nature-positive approach to be adopted and scaled-up (cluster output 3). When these elements are combined, it will support the preparation of a comprehensive strategy and action plan of promoting paper mulberry production to support environmentally sustainable development in the Yellow River basin.

C. Subproject Outputs, Methods, and Activities

6. **Output 1: Opportunities and strategies to promote environmentally sustainable development through paper mulberry production identified.** This output will support a diagnostic study that will use field surveys, literature reviews, stakeholder interview, and focus group assessments to collect relevant data. The study will focus to: (i) review and analyze the current situation, constraints and requirements, including regulations, policies, institutional and governance settings, and capacity which are essential to promote environmentally sustainable development through paper mulberry production in the Yellow River basin; and (ii) review national and international best practices and experiences of promoting environmentally sustainable development through paper mulberry production and related activities including how to increase private sector engagement, and promote inclusive growth and ecological security. Based on the diagnostic report, this output will propose a policy strategy to promote environmentally sustainable development through paper mulberry production including (i) recommendations for government strategic plan which incorporates best practices from national and international experiences, and which promote private sector participation and ecological security; and (ii) recommendations to strengthen policies, regulations, and institutional arrangements. The diagnostic report and policy strategy will be prepared in consultation with national and local government, farmers, private sector, and stakeholders.

7. This output will directly contribute to the TA cluster output 1: Policy advice on strategic institutional, policy and governance reforms on key Yellow River development issues promoted.

8. **Output 2: Pilot models and an action plan to scale up environmentally sustainable development through paper mulberry production prepared.** Based on the findings from output 1, the TA will prepare pilot models for promoting environmentally sustainable development through paper mulberry production, adapting to different local social, economic and ecological conditions, and including practices such as using paper mulberry to (i) restore local ecological conditions and increase climate resilience; (ii) use as new resources for protein fodder; and (iii) develop local specialty products. Successful models can provide a nature-positive solution to address development constraints in the Yellow River basin. This output will develop the action

plan to implement policy strategy and scale up the pilot models of environmentally sustainable development through paper mulberry production at the local level.

9. This output will directly contribute to the TA cluster output 2: Innovative technologies, approaches, and nature-positive solutions to address development constraints in Yellow River basin proposed.

10. **Output 3: Knowledge and skills on environmentally sustainable development through paper mulberry production enhanced.** This output will support capacity building efforts to promote paper mulberry production for enhancing high-quality green agricultural development opportunities at the local levels. Capacity building activities will be targeted to meet the needs identified under Output 1, and to implement the pilot model and action plan developed under Output 2. These activities will include capacity building workshops and conferences led by the consultants covering experiences from the diagnostic study, pilot models, and action plan. For these capacity building events, training materials will be developed for local government officials and farmers to implement the action plan to scale up environmentally sustainable development through paper mulberry production. Under this output, knowledge product(s), which can be a technical report, policy brief, short video, or other forms that will capture and summarize the experiences and lessons from the studies under the TA subproject will be prepared.

11. This output will directly contribute to the TA cluster output 3: Knowledge sharing, strategic partnerships for multi-stakeholder and private sector engagement with nature-positive recovery approaches enhanced.

D. Subproject Cost and Financing

12. The TA subproject is estimated to cost \$345,000, of which \$300,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund-other sources. The key expenditure items are listed in Appendix 2.

13. The government will provide counterpart support in the form of remuneration and travel expenses of counterpart staff, provision of available government data and studies for the analytical studies, provision of meeting rooms, and other in-kind contributions.

E. Subproject Implementation Arrangements

14. ADB through the Environment, Natural Resources, and Agriculture Division of ADB's East Asia Department will administer and coordinate the implementation of the TA subproject, particularly on the selection, supervision, and evaluation of the TA consultants; provision of staff to act as resource persons for workshop and knowledge dissemination activities; and coordination with the TA consultants. The TA will be implemented over 24 months, tentatively from 1 October 2021 to 30 September 2023.

15. The National Rural Revitalization Administration will be the executing agency responsible for technical guidance and oversight for the project. The China Poverty Alleviation and Development Center is the implementing agency for the TA and will be responsible for day-to-day implementation of the TA activities, engaging multi-agency groups at the provincial level, as well as supporting cross ministry cooperation and consultation and shall provide overall guidance on the TA's direction and participate in the TA workshops and capacity building events.

16. Implementation arrangements are summarized in the table.

Subproject Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	October 2021–September 2023		
Executing agency	National Rural Revitalization Administration		
Implementing agency	China Poverty Alleviation and Development Center		
Consultants	To be selected and engaged by ADB		
	Firm: QCBS quality-cost ratio of 90:10	TA services	\$300,000
Disbursement	Disbursement of TA resources will follow ADB's <i>Technical Assistance Disbursement Handbook</i> (2020, as amended from time to time).		

ADB = Asian Development Bank, QCBS = quality- and cost-based selection, TA = technical assistance.
Source: Asian Development Bank estimates.

17. **Consulting services.** ADB will engage a firm to undertake the TA activities. The TA requires 22 person-months of national expert inputs (agricultural economist and team leader, forestry and natural resources management specialist, livestock and fodder specialist, social development specialist, and project coordinator and capacity building specialist). The consultants, via the firm, will submit progress reports and will be reviewed by ADB and the government. All reports will be available in English and Chinese language. Resource persons may be invited to review the consultants' outputs and share knowledge during workshops and conferences. The consulting firm will be engaged using the quality- and cost-based selection method, with a quality-cost ratio of 90:10 due to the high technical complexity of the consulting assignment, by inviting biodata technical proposals following ADB's Procurement Policy (2017, as amended from time to time) and its associated procurement staff instructions.⁶ For efficient contract management, an output-based contract may be offered.

18. **Knowledge dissemination.** The key lessons and findings of the TA subproject and the recommendations for high-quality agricultural development will be disseminated through progress reports (i.e., inception, interim, draft final, and final reports), workshops and conferences, and knowledge products. The China Poverty Alleviation and Development Center will lead the knowledge product dissemination activities which will include conducting workshops, capacity building, and other awareness raising activities as appropriate. Target audiences will include National Rural Revitalization Administration departments, provincial, city, county, town, and village levels government agencies, private sector, and stakeholders within the Yellow River basin.

19. The subproject will link to the TA Cluster to engage with additional knowledge sharing initiatives within the PRC and regionally, building on TA Cluster Output 3: Knowledge sharing, strategic partnerships for multi-stakeholder and private sector engagement with nature-positive recovery approaches enhanced. The results from the subproject will be used for south-south knowledge sharing.

⁶ 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 High-quality green agricultural development opportunities through paper mulberry production in the Yellow River basin enhanced</p>	<p>By 2024: a. A policy strategy and action plan to promote paper mulberry production for high-quality and green development in Yellow River basin adopted by National Rural Revitalization Administration (2021 baseline: not drafted) (OP 1.2.2; OP 6.2.1)</p>	<p>Announcement, policies, and guidelines issued by the government</p>	<p>R: Change in government priorities may negatively impact the implementation of paper mulberry development initiatives.</p>
<p>Outputs 1. Opportunities and strategies to promote environmentally sustainable development through paper mulberry production identified</p> <p>2. Pilot models and an action plan to scale up environmentally sustainable development through paper mulberry production prepared</p> <p>3. Knowledge and skills on environmentally sustainable development through paper mulberry production enhanced</p>	<p>By 2023: 1a. Diagnostic assessment report to promote environmentally sustainable development through paper mulberry production prepared (2021 baseline: no report)</p> <p>1b. Policy strategy to promote environmentally sustainable development through paper mulberry production drafted (2021 baseline: not drafted)</p> <p>2a. At least three pilot models of promoting environmentally sustainable development through paper mulberry production prepared (2021 baseline: 0) (OP 3.3.4; OP 5.1.4)</p> <p>2b. Action plan to implement policy strategy and scale up pilot models drafted (2021 baseline: not drafted)</p> <p>3a. At least 200 representatives of local governments at the provincial, city, county, town, and village levels; farmers and the private sector, of which at least 30% are women, increased the understanding of a policy strategy and action plan to promote environmentally sustainable development through paper mulberry production (2021 baseline: 0) (OP 2.3.1; OP 6.1.1)</p>	<p>1a–b. Consultants' reports, government announcements, and publications</p> <p>2a–b. Consultants' reports, government announcements, and publications</p> <p>3a. Consultants' reports; survey on participants' feedback</p>	<p>A: Availability of technical expertise and skilled consultants impacts the quality of design and implementation of effective policies, and demonstration projects of paper mulberry production.</p>

	3b. At least one knowledge product sharing experience and lessons on promoting environmentally sustainable development through paper mulberry production prepared (2021 baseline: 0)	3b. Completed knowledge product(s)	
<p>Key Activities with Milestones</p> <p>1. Opportunities and strategies to promote environmentally sustainable development through paper mulberry production identified.</p> <p>1.1 Conduct diagnostic assessments including review and analysis of the current status of paper mulberry production, and its potential to contribute to high-quality, green development of the Yellow River basin by month 7.</p> <p>1.2 Review and assessment of the current institutional, management, legal/policy/regulatory and financing framework related to environmentally sustainable development through paper mulberry, identifying gaps, issues, and constraints and/or barriers by month 7.</p> <p>1.3 Draw on findings from the diagnostic study to make policy recommendations to promote environmentally sustainable development through paper mulberry production in the Yellow River basin which incorporate the best practices from national and international experiences, which promote private sector participation, inclusive growth, and ecological security by month 10.</p> <p>1.4 Conduct consultations of diagnostic report and policy strategy with national and local government, farmers, private sector, and stakeholders by month 12.</p> <p>1.5 Prepare the policy strategy to promote environmentally sustainable development through paper mulberry production, including recommendations for government strategic plan, and strengthening policies, regulations and institutional arrangements based on the diagnostic study and consultations by month 14.</p> <p>2. Pilot models and an action plan to scale up environmentally sustainable development through paper mulberry production prepared.</p> <p>2.1 Draw on findings from the diagnostic report to prepare pilot models for environmentally sustainable development through paper mulberry production adapting to different local social, economic, and ecological conditions by month 12.</p> <p>2.2 Write the action plan which documents the roadmap to implement policy strategy and scaling up the pilot models of environmentally sustainable development through paper mulberry production by month 16.</p> <p>3. Knowledge and skills on environmentally sustainable development through paper mulberry production enhanced.</p> <p>3.1 Develop a training material for local government officials and farmers to promote environmentally sustainable development through paper mulberry production, focusing particularly on developing a holistic value chain, improving ecological environment, and reducing inequality (to be used in capacity building events), by month 12.</p> <p>3.2 Revise and update training material based on results, lessons, and feedback from consultations with local governments and farmers by month 18.</p> <p>3.3 Conduct capacity building events on environmentally sustainable development through paper mulberry production based on the diagnostic study, policy strategy, and pilot models by month 23.</p> <p>3.4 Produce knowledge product(s) showcasing TA lessons and results by month 23.</p> <p>TA Management Activities</p> <p>Develop study framework, prepare the inception report, and conduct the inception workshop by month 2.</p> <p>Prepare the draft interim report within month 10 and conduct the interim workshop by month 12.</p> <p>Prepare the draft final report within month 18 and conduct the final workshop by month 20.</p> <p>Carry out capacity development and knowledge dissemination by month 23.</p> <p>Finalize the TA outputs by month 24.</p>			
<p>Inputs</p> <p>ADB: \$300,000 (TASF-other sources)</p>			

Note: The government will provide counterpart support in the form of remuneration and travel expenses of counterpart staff, provision of available government data and studies for the analytical studies, provision of meeting rooms, and other in-kind contributions.

A = assumption, ADB = Asian Development Bank, OP = operational priority, PRC = People's Republic of China, R = risk, TA = technical assistance, TASF = technical assistance special fund.

^a Government of the PRC. 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 1.2.2: Models for business development and financing established or improved (number)

OP 2.3.1: Women with strengthened leadership capacities (number)

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

OP 5.1.4: Rural economic hubs supported (number)

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

OP 6.2.1: Service delivery standards adopted and/or supported in implementation by government and/or private entities (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).

Source: Asian Development Bank.

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

Item	Amount
A. Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. National consultants	143.0
b. Out-of-pocket expenditures	
i. International and local travel	9.0
ii. Surveys	15.0
iii. Training, seminars, and conferences ^b	88.0
iv. Reports and communications	5.0
v. Printed external publications ^c	10.0
vi. Miscellaneous administration and support costs ^d	10.0
2. Contingencies	20.0
Total	300.0

Note: The technical assistance (TA) is estimated to cost \$345,000, of which contributions from the Asian Development Bank are presented in the table. The government will provide counterpart support in the form of remuneration and travel expenses of counterpart staff, provision of available government data and studies for the analytical studies, provision of meeting rooms, and other in-kind contributions. The value of government contribution is estimated to account for 15% of the total TA cost.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-other sources).

^b Costs may include interpretation and resource persons.

^c It is envisioned publications from the TA will be disseminated as electronic publications. Printing of publications may be considered for dissemination to PRC libraries and agriculture universities if requested.

^d Costs may include office supplies, editing, printing, translation, and administration assistants.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=54026-010-TARreport>

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