



Technical Assistance Report

Project Number: 51013-001
Knowledge and Support Technical Assistance (KSTA)
December 2017

People's Republic of China: Improving Ecological Protection and Poverty Alleviation Outcomes of the Rare-Earth Sector in Jiangxi Province

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 11 December 2017)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1511
\$1.00	=	CNY6.6175

ABBREVIATIONS

ADB	–	Asian Development Bank
JPG	–	Jiangxi Provincial Government
JPPCC	–	Jiangxi Committee of the Chinese People's Political Consultative Conference
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: 51013-001	
Project Name	Improving Ecological Protection and Poverty Alleviation Outcomes of the Rare-Earth Sector in Jiangxi Province	Department /Division	EARD/EAER
Nature of Activity	Research and Development	Executing Agency	Jiangxi Committee of the Chinese People's Political Consultative Conference (JPPCC)
Modality	Regular		
Country	China, People's Republic of		
2. Sector		ADB Financing (\$ million)	
✓ Agriculture, natural resources and rural development	Agricultural policy, institutional and capacity development		0.40
		Total	0.40
3. Strategic Agenda		Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Low
Environmentally sustainable growth (ESG)	Environmental policy and legislation Natural resources conservation		
4. Drivers of Change		Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Institutional development Institutional systems and political economy	Some gender elements (SGE)	✓
Knowledge solutions (KNS)	Knowledge sharing activities		
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Rural	High
Household Targeting	No	Urban	Low
SDG Targeting	Yes		
SDG Goals	SDG1, SDG8, SDG12, SDG15		
6. Risk Categorization		Low	
7. Safeguard Categorization			
Safeguard Policy Statement does not apply			
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.40	
Knowledge and Support technical assistance: Technical Assistance Special Fund		0.40	
Cofinancing		0.00	
None		0.00	
Counterpart		0.00	
None		0.00	
Total		0.40	

I. INTRODUCTION

1. The knowledge and support technical assistance (TA) will support improved integration of poverty alleviation and ecological protection efforts in Jiangxi Province of the People's Republic of China (PRC). It will explore the influence of the rare-earth mineral sector on poverty alleviation and environmental outcomes in Jiangxi Province, and prepare policy recommendations for improved integration of poverty alleviation and ecological protection efforts in the province, with Ganzhou Prefecture as a focal area.

2. The Government of the PRC requested TA from the Asian Development Bank (ADB) for research on improving ecological protection and poverty alleviation outcomes of the rare-earth sector in Jiangxi. The TA is included in the country operations business plan for the PRC, 2017–2019.¹ In October 2017, ADB reached agreement with the Jiangxi Committee of the Chinese People's Political Consultative Conference (JPPCC) on the TA's proposed outcome and outputs, implementation arrangements, terms of reference for consultants, and implementation schedule.²

II. ISSUES

3. Rural poverty is widespread in Jiangxi Province, with 25 counties included in the national list of identified poverty-stricken counties, including much of the Luoxiao Mountains contiguous area. Poverty alleviation is high on the agenda of the Jiangxi Provincial Government (JPG), as part of national efforts under the PRC's Thirteenth Five-Year Plan (2016–2020).³ However, efforts have focused heavily on development of resource-intensive industries as engines for increasing economic growth. The mineral sector is a major contributor to Jiangxi Province's economy, with rare-earth extraction and processing the most significant subsector.

4. Rare-earth minerals are a series of 17 chemical elements that are essential raw materials for many ubiquitous modern technologies, including consumer electronics, computers and communications, healthcare, advanced transportation, and clean energy. In the 1990s, the PRC became the largest global supplier of rare-earth minerals, with significant reserves developed in Inner Mongolia, Jiangxi, and Sichuan. While development of these natural capital assets has provided opportunities for economic growth, there are increasing problems of water pollution, biodiversity loss, erosion, and deteriorating agricultural productivity. Economic performance has masked the negative impacts of pollution and degradation of natural capital. Such development is unsustainable, limits economic prosperity over the longer term, and is contrary to the PRC's broader goals of building an ecological civilization.

5. Ganzhou is a prefecture of approximately 39,400 square kilometers in the south of Jiangxi Province bordering Fujian Province to the east, Guangdong Province to the south, and Hunan Province to the west. Approximately 70% of its area is forested, and over 80% is mountainous. Ganzhou holds the headwaters of two significant river systems. The Gan River, one of five major rivers in Jiangxi Province, rises in Ganzhou before flowing north to the Poyang Lake, the largest freshwater lake in the PRC, and to the Yangtze River. The Dongjiang River rises in Xunwu County of Ganzhou, flowing south and into the Pearl River. These river systems are significant for

¹ Asian Development Bank (ADB). 2017. *Country Operations Business Plan: People's Republic of China, 2017–2019*. Manila. The original title of the TA was "Research on Integrated Development Mode of Targeted Poverty Alleviation and Ecological Protection in Jiangxi."

² The TA first appeared in the business opportunities section of ADB's website on 9 January 2018.

³ Government of the PRC. 2015. *Outline of the Thirteenth Five-Year Plan for National Economic and Social Development, 2016–2020*. Beijing.

agricultural production, fisheries, and domestic consumption; and are heavily impacted by pollution from rare-earth mineral extraction and processing.

6. Ganzhou contains over 30 explored rare-earth minerals, gold, uranium, lead, and zinc deposits, and is colloquially known as the “Kingdom of Rare Earths.” The rare-earth mineral reserves are particularly high quality, containing high percentage of target elements and low level of radioactivity. However, the development of rare-earth minerals has already caused substantial damage to the local ecology, with limited economic benefits for local communities. In 2012, the PRC’s Ministry of Industry and Information Technology estimated that for Ganzhou alone, the cost of remediation for the heavily polluted rare-earth mineral mining areas could be up to CNY38.0 billion (equivalent to about \$5.8 billion).

7. The root causes of the rare-earth mineral sector’s poor environmental performance and limited contribution to poverty alleviation are complex. Rapidly increasing global demand for these elements has resulted in a massively increased and under-regulated supply that has not effectively incorporated the environmental costs of production and processing. Black market production and smuggling are common across the supply and processing chain. Incentives for improved environmental production and remediation technologies are low, while data limitations constrain local planning capacity, monitoring, and regulatory oversight. Poorer rural communities most affected by local environmental damage are often among those with least access to the economic opportunities of the rare-earth minerals industrial value chain. Inclusive governance, incentives, and financing for increased local processing and value chain additions are lacking.

8. The government has commenced a series of reforms aimed at restructuring and improving regulation of the market to promote the healthy development and sustainability of the rare-earth mineral industry. In 2011, the State Council issued “Opinions on Promoting the Sustainable and Healthy Development of Rare-Earth Enterprises,” with the Ministry of Environmental Protection mandated to perform environmental inspections and verification of rare-earth enterprises. However, the domestic reform process has been complicated by global trade dynamics and involvement of international stakeholders. In 2014, the European Union, Japan, and the United States of America lodged a dispute with the World Trade Organization over the PRC’s mechanisms for controlling exports of rare-earth mineral products through quotas and duties. In 2015, the PRC accepted the resolution of the World Trade Organization and agreed to withdraw its export quota system. The Rare-Earth Industry Development Plan (2016–2020) highlights the government’s future intentions to increase consolidation of market suppliers, limit black market operations, and improve environmental performance.⁴ Jiangxi Province is recognized as an important location for the PRC’s increasing environmental focus. It has been identified as one of three ecological civilization test zones in the PRC and one of five pilot areas for the country’s green finance initiatives.⁵ The TA will assist JPG through JPPCC to deliver inclusive economic growth with improved environmental sustainability in Jiangxi Province, supporting the PRC’s ecological civilization objectives.

9. **Lessons.** The TA builds on ongoing and previous projects in Jiangxi Province, including the Strategy for Inclusive and Green Development of Small Cities, Towns, and Villages in Jiangxi Province; the Jiangxi Pingxiang Integrated Rural–Urban Infrastructure Development Project; the

⁴ Government of the PRC, Ministry of Industry and Information Technology. 2016. *Rare-Earth Industry Development Plan, 2016–2020*. Beijing. <http://www.miit.gov.cn/n1146295/n1652858/n1652930/n3757017/c5287765/content.html>

⁵ Government of the PRC, Ministry of Environmental Protection, 2017. China to Establish Green Finance Reform and Innovation Experimental Zones. *Xinhua News*. Beijing. http://english.mep.gov.cn/News_service/news_release/201706/t20170615_416122.shtml

Jiangxi Sustainable Forest Ecosystem Development Project; and the Provincial Development Strategies for Selected Provinces in the Central Region.⁶

10. **Strategic fit.** The TA is consistent with ADB's Environment Operational Directions 2013–2020, which aims to help the region transition to environmentally sustainable growth or green growth; and the Midterm Review of Strategy 2020, ADB's priority to help accomplish the Sustainable Development Goals.⁷ The project is also in line with ADB's country partnership strategy for the PRC, 2016–2020 in supporting the government's Thirteenth Five-Year Plan (2016–2020) goal on balancing the role of government, society, and the market to deliver inclusive and environmentally sustainable growth (footnote 3).⁸

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

11. The TA is aligned with the following impact: the PRC's supporting system for poverty alleviation improved (footnote 3). The TA will have the following outcome: poverty alleviation and environmental protection policies in Jiangxi Province improved.⁹

B. Outputs, Methods, and Activities

12. **Output 1: Socioeconomic influence of rare-earth industries and opportunities to improve poverty alleviation outcomes in Ganzhou, Jiangxi, identified.** Activities for this output include (i) preparation of an overview of key socioeconomic characteristics, industrial outputs, income levels, and poverty distribution across Ganzhou; and (ii) analysis of the contribution of rare-earth industries to local economy, communities, and livelihoods.

13. **Output 2: Environmental impacts of rare-earth industries and opportunities to improve environmental performance, remediation, and financing mechanisms in Ganzhou, Jiangxi, identified.** Activities for this output include (i) preparation of an overview of environmental impacts, and influence on local residents, of rare-earth industries, including extraction, transport, processing, and waste disposal cycles; (ii) estimation of the economic value of environmental damages identified; and of the costs of remediation, where applicable; (iii) analysis of opportunities to improve environmental performance of rare-earth industries, and the remediation activities and marginal costs of each option; and (iv) assessment of options for financing improved environmental performance, including scale, source, eligibility, disbursement mechanisms, and poverty alleviation effect.

⁶ ADB. 2015. *Technical Assistance to the People's Republic of China for the Strategy for Inclusive and Green Development of Small Cities, Towns, and Villages in Jiangxi Province*. Manila; ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Jiangxi Pingxiang Integrated Rural–Urban Infrastructure Development Project*. Manila; ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the People's Republic of China for the Jiangxi Sustainable Forest Ecosystem Development Project*. Manila; and ADB. 2007. *Technical Assistance to the People's Republic of China for the Provincial Development Strategies for Selected Provinces in the Central Region*. Manila.

⁷ ADB. 2013. *Environment Operational Directions 2013–2020: Promoting Transitions to Green Growth in Asia and the Pacific*. Manila; and ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

⁸ ADB. 2016. *Country Partnership Strategy: Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020*. Manila.

⁹ The design and monitoring framework is in Appendix 1.

14. **Output 3: Rare-earth industrial structure and regulatory mechanisms in Ganzhou, Jiangxi, examined.** Activities for this output include (i) preparation of an overview of rare-earth industry stakeholders, regulation, and unlicensed operations; (ii) preparation of an overview of rare-earth geological, industrial, and environmental data sources; (iii) analysis of current mechanisms for monitoring production and traceability, licensing, accreditation, and environmental performance reporting; and (iv) analysis of current mechanisms to support sustainable practices.

15. **Output 4: Policy recommendations for improved governance, environmental performance, and poverty alleviation outcomes in Ganzhou, Jiangxi, prepared.** Activities for this output include (i) preparation of policy recommendations that will (a) support improvement to the environmental performance and outcomes of the rare-earth sector; (b) improve the contribution of the rare-earth sector to local poverty alleviation outcomes; and (c) improve rare-earth industry monitoring and traceability; and (ii) development of a road map of priority-ranked pilot projects and financing mechanisms that will contribute to improved governance, environmental performance, and poverty alleviation outcomes of the rare-earth industry in Ganzhou, Jiangxi.

C. Cost and Financing

16. The TA is estimated to cost \$450,000, of which \$400,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-other sources). The key expenditure items are listed in Appendix 2.

17. The government will provide counterpart support in the form of supporting staff, meeting rooms, office supplies, secretarial assistance, local domestic transportation, and other in-kind contributions.

D. Implementation Arrangements

18. ADB will administer and coordinate implementation of the TA through the East Asia Department and will work closely with JPG through JPPCC, which will be both the executing and implementing agencies of the TA. ADB will engage a consulting firm following the ADB Procurement Policy (2017, as amended from time to time) and the associated project administration instructions and/or technical assistance instructions. The implementation arrangements are summarized in the table.

Implementation Arrangements

Aspects	Arrangements
Indicative implementation period	December 2017–March 2019
Executing and implementing agency	Jiangxi Committee of the Chinese People's Political Consultative Conference
Consultants	To be selected and engaged by the Asian Development Bank
	Quality- and cost-based selection 21 person-months \$400,000
Procurement	Nil
Advance contracting and retroactive financing	Nil
Disbursement	Disbursements under the technical assistance (TA) will be made following the Asian Development Bank's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).
Asset turnover or disposal arrangement upon TA completion	Any assets or equipment purchased under the TA will be turned over to the executing agency upon completion of the TA.

Source: Asian Development Bank estimates.

19. **Consulting services.** It is anticipated that the TA will require 21 person-months of consulting services, comprising at least three national and two international consultants. Areas of expertise required will include minerals industry analysis, policy and regulation, socioeconomic analysis, and environmental economics.¹⁰ ADB will engage these consultants in accordance with the ADB Procurement Policy (2017, as amended from time to time) and the associated project administration instructions and/or technical assistance instructions. It is anticipated that the consultants will be mobilized during the first quarter of 2018.

IV. THE PRESIDENT'S DECISION

20. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$400,000 on a grant basis to the People's Republic of China for Improving Ecological Protection and Poverty Alleviation Outcomes of the Rare-Earth Sector in Jiangxi Province, and hereby reports this action to the Board.

¹⁰ Terms of Reference for Consultants (accessible from the list of linked documents in Appendix 3).

DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with			
The People's Republic of China's supporting system for poverty alleviation improved (Thirteenth Five-Year Plan for National Economic and Social Development) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Poverty alleviation and environmental protection policies in Jiangxi Province improved	By 2019: One series of recommendations for improving the integration of poverty alleviation and ecological protection efforts provided by JPPCC to the Jiangxi Provincial Government prepared (2017 baseline: 0)	JPPCC annual report and publications	Changes to the JPPCC staff, and involvement in or commitment to the policy recommendations
Outputs 1. Socioeconomic influence of rare-earth industries and opportunities to improve poverty alleviation outcomes in Ganzhou, Jiangxi, identified 2. Environmental impacts of rare-earth industries and opportunities to improve environmental performance, remediation, and financing mechanisms in Ganzhou, Jiangxi, identified 3. Rare-earth industrial structure and regulatory mechanisms in Ganzhou, Jiangxi, examined	By 2019: 1. Findings prepared for presentation at the interim review workshop (2017 baseline: 0) 2. A study on improving environmental performance, remediation, and financing mechanisms in Ganzhou, Jiangxi, prepared for presentation at the interim review workshop (2017 baseline: 0) 3. A study on rare-earth industrial structure and regulatory mechanisms in Ganzhou, Jiangxi prepared for presentation at the interim review workshop (2017 baseline: 0)	1. TA review reports by the ADB missions and consultants' progress reports on the TA implementation 2. TA review reports by the ADB missions and consultants' progress reports on the TA implementation 3. TA review reports by the ADB missions and consultants' progress reports on the TA implementation	Inadequate intersector cooperation and data sharing among key sectors Ganzhou City Government or JPPCC unable to endorse recommendations

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
4. Policy recommendations for improved governance, environmental performance, and poverty alleviation outcomes in Ganzhou, Jiangxi, prepared	4. Final recommendations and pilot plan endorsed by the Ganzhou City Government and JPPCC (2017 baseline: 0)	4. TA review reports by the ADB missions, consultants' progress reports on the TA implementation, and a report by JPPCC and the Ganzhou City Government on endorsement of recommendations	
<p>Key Activities with Milestones</p> <p>1. Socioeconomic influence of rare-earth industries and opportunities to improve poverty alleviation outcomes in Ganzhou, Jiangxi, identified</p> <p>1.1 Prepare an overview of key socioeconomic characteristics, industrial outputs, income levels, and poverty distribution across Ganzhou, Jiangxi (Q1 2018–Q3 2018).</p> <p>1.2 Analyze the contribution of rare-earth industry to local economy, communities, and livelihoods (Q1 2018–Q3 2018).</p> <p>1.3 Complete report for output 1 (Q4 2018).</p> <p>2. Environmental impacts of rare-earth industries and opportunities to improve environmental performance, remediation, and financing mechanisms in Ganzhou, Jiangxi, identified</p> <p>2.1 Prepare an overview of environmental impacts, and influence on local residents, of rare-earth industries, including extraction, transport, processing, and waste disposal cycles (Q1 2018–Q2 2018).</p> <p>2.2 Estimate the economic value of environmental damages identified and the costs of remediation, where applicable (Q1 2018–Q2 2018).</p> <p>2.3 Analyze opportunities to improve the environmental performance of rare-earth industries, remediation activities, and marginal costs of each option (Q3 2018–Q4 2018).</p> <p>2.4 Assess the options for financing improved environmental performance, including scale, source, eligibility, disbursement mechanisms, and poverty alleviation effect (Q3 2018–Q4 2018).</p> <p>2.5 Complete report for output 2 (Q4 2018).</p> <p>3. Rare-earth industrial structure and regulatory mechanisms in Ganzhou, Jiangxi, examined</p> <p>3.1 Prepare an overview of rare-earth industry stakeholders, regulation, and unlicensed operations (Q1 2018–Q2 2018).</p> <p>3.2 Prepare an overview of rare-earth geological, industrial, and environmental data sources (Q1 2018–Q2 2018).</p> <p>3.3 Analyze the current mechanisms for monitoring production and traceability, licensing, accreditation, and environmental performance reporting (Q2 2018–Q3 2018).</p> <p>3.4 Analyze the current mechanisms to support sustainable practices (Q3 2018–Q4 2018).</p> <p>3.5 Complete report for output 3 (Q4 2018).</p> <p>4. Policy recommendations for improved governance, environmental performance, and poverty alleviation outcomes in Ganzhou, Jiangxi, prepared</p> <p>4.1 Prepare policy recommendations that will support improvements to the environmental performance and outcomes of the rare-earth sector (Q3 2018–Q4 2018).</p> <p>4.2 Prepare policy recommendations that will improve the contribution of the rare-earth sector to local poverty alleviation outcomes (Q3 2018–Q4 2018).</p> <p>4.3 Prepare policy recommendations that will improve rare-earth industry monitoring and traceability (Q3 2018–Q4 2018).</p>			

<p>4.4 Develop a roadmap of priority-ranked pilot projects and financing mechanisms that will contribute to improved governance, environmental performance, and poverty alleviation outcomes of the rare-earth industry in Ganzhou, Jiangxi (Q3 2018–Q4 2018).</p> <p>TA Management Activities</p> <p>Field the ADB inception, interim review, and final review missions (Q1 2018–Q4 2018).</p>
<p>Inputs</p> <p>ADB: \$400,000</p> <p>Note: The government will provide counterpart support in the form of supporting staff, meeting rooms, office supplies, secretarial assistance, local domestic transportation, and other in-kind contributions.</p>
<p>Assumptions for Partner Financing</p> <p>Not applicable</p>

ADB = Asian Development Bank, JPPCC = Jiangxi Committee of the Chinese People’s Political Consultative Conference, TA = technical assistance.

^a Government of the People’s Republic of China. 2015. *Thirteenth Five-Year Plan on National Economic and Social Development*. Beijing.

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	135.0
ii. National consultants	113.0
b. International and local travel	60.0
c. Reports and communications	5.0
2. Training, seminars, workshops, forum, conferences ^b	25.0
3. Surveys	15.0
4. Miscellaneous administration and support costs ^c	10.0
5. Contingencies	37.0
Total	400.0

Note: The technical assistance is estimated to cost \$450,000, of which contributions from the Asian Development Bank are presented in the table above. The government will provide counterpart support in the form of supporting staff, meeting rooms, office supplies, secretarial assistance, local domestic transportation, and other in-kind contributions. The government's in-kind contribution accounts for an estimated 11.1% of the total technical assistance cost.

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

^b Includes insurance costs for participants.

^c Includes interpretation and translation costs.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=51013-001-TARreport>

1. Terms of Reference for Consultants