

SECTOR ASSESSMENT (SUMMARY): AGRICULTURE, NATURAL RESOURCES AND RURAL DEVELOPMENT¹

A. Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. The Yangtze River Economic Belt (YREB) is one of the three key economic growth engines in the People's Republic of China (PRC). While the YREB has benefited from extensive development since the 1980s, economic growth in the middle and upper reaches of the Yangtze River basin lags that of the coastal areas. These parts of the YREB still face significant challenges because of (i) weak institutional coordination for strategic planning; (ii) increasing pollution and pressure on natural resources; (iii) slow transition to green development; and (iv) limited integration of waterways, ports, and intermodal logistics. To manage these challenges, the government formulated the YREB Development Plan, 2016–2030.² The Asian Development Bank (ADB) and the government also agreed to adopt a framework approach that prioritizes (i) institutional strengthening and policy reforms; (ii) ecosystem restoration, environmental protection, and management of water resources; (iii) inclusive green industrial transformation; and (iv) construction of an integrated multimodal transport corridor.³

2. In the YREB, rural livelihood transformation has not kept pace with urban development. As a result, income inequality and poverty persist in rural areas of the less-developed middle and upper reaches of the Yangtze River basin. In 2020, only 29% of villages had appropriate sanitation facilities and 75% had solid waste collection and disposal services, both contributing to poor environmental conditions.⁴ Rural wastewater and solid waste are directly discharged into water bodies without treatment or safe disposal. As the rural economy expands, proper regulatory, administrative, and environmental management will require stronger institutional capacity, policy coordination, and governance mechanisms. Against this background, the central government formulated the rural vitalization strategy to promote poverty reduction, rural development, and green and inclusive growth.⁵ The strategy aims at governance reforms to achieve sustainable land use and prudent management of natural resources, point and nonpoint pollution control, waste management, ecosystem protection, and integrated rural development.

3. Gan River, a major branch of the Yangtze River basin, originates in the mountainous parts of Ganzhou Municipality (Ganzhou). The Gan River watershed area that lies within Ganzhou covers 36,400 square kilometers, or 44.8% of the total watershed area. Gan River runs north through Jiangxi Province (Jiangxi) before flowing into Poyang Lake, the PRC's largest natural freshwater lake, which drains into the Yangtze. Poyang Lake is heavily affected by high levels of nutrient pollution loads in the Gan River, which also accelerate the environmental and ecological degradation of rural areas along the river.⁶ This translates into a pressing need to improve the ecosystem, livability, and livelihoods of local communities while stemming the losses from flood and soil erosion that impact an estimated 2 million rural residents in Ganzhou.

4. Ganzhou lies in the middle reaches of the Yangtze River, and the project is part of the

¹ This summary is based on Sector Assessment Report of Jiangxi Ganzhou Rural Vitalization and Comprehensive Environment Improvement Project, a technical assistance consultant's report. Available on request.

² Government of the PRC. 2016. *Outline of the Yangtze River Economic Belt Development Plan, 2016–2030*. Beijing.

³ ADB. 2018. *Framework for the Asian Development Bank's Assistance to the Yangtze River Economic Belt Initiative: 2018–2020*. Manila.

⁴ The National Thirteenth Five-Year Plan mandated that sanitation systems be installed in 70% of the rural villages.

⁵ Government of the PRC. 2018. *National Strategic Plan for Rural Vitalization, 2018–2022*. Beijing.

⁶ Class III is the minimum allowable level of water quality considered suitable for municipal water use.

YREB framework.⁷ Ganzhou was selected because it is relatively rural, with high rural–urban inequalities, and has weak institutional capacity for environmental management. It is a large prefecture-level municipality in Jiangxi, a national ecological pilot zone. Ganzhou has an estimated population of 9.8 million (2020) and a land area of 39,380 square kilometers.⁸ It lags other municipalities in Jiangxi in terms of economic development.⁹ It also suffers repeated heavy rain and floods. In 2019, 128,600 hectares of farmland were flooded, 472 houses destroyed, and damages totaled CNY3.38 billion. Hence, it is imperative to improve the livability, health, and livelihood outcomes in Ganzhou.

5. Weak ecological and environmental management. The regulatory, institutional, and technical capacities for environmental management and flood protection of the municipalities and counties in Jiangxi are inadequate. The systems for environmental monitoring, environmental information management, river water quality monitoring, and air pollution control are all weak or outdated and require urgent upgrades. Gan River has only a few automated water quality monitoring stations, and the testing equipment is insufficient. Ganzhou also lacks effective institutional mechanisms and capacity to manage water resources and control pollution. Regulatory enforcement is weak, as is effective information sharing between districts and counties, or the advocacy of and public participation in environmental problem-solving.

6. Absence of viable green development and financing mechanisms. As a lagging municipality, Ganzhou lacks sustainable green financing mechanisms to invest in water pollution control and rural livelihood improvements. Green agricultural technologies and practices to reduce nonpoint source pollution are not widely applied.¹⁰ Unsustainable farming practices and poor farm waste management persist. Ganzhou offers no incentives for private sector investments to accelerate green development village-based eco-friendly business development (e.g., ecotourism) and integrated urban–rural economic development. Small and medium-sized enterprises (SMEs) and agriculture cooperatives have limited access to commercial funding sources, and sustainable green financing mechanisms are not fully established.

7. Inadequate environmental infrastructure in rural towns and villages. The ecological environment of Gan River faces many challenges. Point and nonpoint source pollutants¹¹ from urban and rural sewage and agricultural activities degrade the water quality, currently classified as Class III.¹² In 2019, 53,731 tons of chemical oxygen demand and 4,761 tons of ammonia nitrogen were discharged into water bodies from point pollution sources in Ganzhou. While progress was made in urban wastewater treatment, rural sanitation coverage is still very limited, and 70% of rural sewage remains untreated. As of 2019, only 790 villages (22.8% of all villages) in Ganzhou had access to wastewater treatment services. Access to public toilets in townships and rural areas is also inadequate, so the dumping of solid waste into water bodies is a common

⁷ Ganzhou has three districts, one county-level city, and 14 counties. The project includes Nankang District, and the counties of Chongyi, Dayu, Huichang, Ningdu, Shangyou, Shicheng, Xingguo, and Yudu.

⁸ More than 70% of the area is forested, and more than 80% is mountainous. It lies 300–500 meters above sea level.

⁹ In 2019, gross domestic product per capita (in units of CNY1,000) was 100.91 in Nanchang, 81.41 in Xinyu, 79.66 in Yingtan, 63.43 in Jiujiang, 55.11 in Jingdezhen, 48.14 in Yichun, 47.91 in Pingxiang, 42.05 in Ji'an, 39.90 in Ganzhou, 37.21 in Fuzhou, and 36.78 in Shangrao.

¹⁰ Nonpoint source pollutants from forestry and agricultural activities, and from soil erosion, are discharged into rivers. In 2015, the average consumption of agricultural chemicals per hectare of farmland in Ganzhou was 641.3 kilograms of chemical fertilizers and 41.1 kilograms of pesticides, both well above the national and provincial averages. Emissions from Ganzhou and Nanchang accounted for 60%.

¹¹ Point source pollutants from untreated domestic and industrial wastewater are discharged into local rivers and canals, which deteriorate the water quality and ecological environment.

¹² Lake Poyang, the largest freshwater lake and the third largest lake in the PRC, receives 47% of nutrients and pollution from Gan River.

practice. Existing sewage treatment facilities and solid waste management systems are unable to meet the water quality and environmental requirements of growing tourism industry. They are also not being maintained properly because a lack of government funding and limited community engagement. Rural access to water supply does not meet national standards either.

8. **Water-related disaster risks and degraded ecosystems.** Flood infrastructure and management systems are inadequate in the Gan River, and the flood control standards in rural townships and villages need upgrading.¹³ In 2019, a major flood event in Ganzhou inundated 128,600 hectares of farmland, destroyed 472 houses, and caused damages totaling CNY3.38 billion. River infrastructure protection is also weak because of a lack of embankments and nonstructural protection measures. Weak forest management undermines the forests' capacity to control and attenuate soil erosion and water runoff, and thus impairs the resilience of the riverine ecosystem. Ganzhou's soil erosion area was 7,142.3 square kilometers in 2018 (18.14% of total area), which is above the national average. Some wetland areas do not function effectively and have no productive use.¹⁴

2. Government's Sector Strategy

9. The project aims to demonstrate environmental improvements in the watershed of Gan River by (i) improving rural wastewater and solid waste management, (ii) rehabilitating damaged soil and revitalizing rivers, (iii) introducing green financing mechanisms, and (iv) developing institutional capacities. This aligns well with the PRC's goal of building a harmonious and prosperous society through environmentally sustained growth, and revitalizing rural areas. In March 2021, both the State Council and the Jiangxi Provincial Government issued guidelines for preparing the 14th Five-Year Master Plan and the 2035 long-range strategy, which continually prioritize rural vitalization and green development.¹⁵ In response to these efforts, the Ganzhou Municipal Government (GMG) has committed to create a healthier rural environment and better living conditions, develop green financial mechanisms, and tackle the ecological and environmental issues resulting from unsustainable development.

10. Since Ganzhou lies in the middle reaches of the Yangtze River and is part of the YREB, prioritizing sustainable development in this municipality will also help promote environment protection and green development in the YREB. The central government's Yangtze River Basin Integrated Planning focuses on flood prevention and disaster mitigation, efficient allocation and use of water resources, environmental protection, and integrated watershed management in the YREB.¹⁶ The YREB development plan (footnote 2) specifies five milestones: (i) flood mitigation capacity enhanced, (ii) water environment degradation controlled, (iii) compliance with water quality requirements for drinking water sources enforced, (iv) water and soil erosion controlled, and (v) a strict water resource management system established. By 2030, the disaster mitigation system, the river ecosystem, and an integrated system of water resource management in the YREB shall be further improved.

B. Major Development Partners: Strategic Foci and Key Activities

11. Since the 1990s, the GMG has received financial assistance from various bilateral

¹³ The PRC's current flood protection standards in rural areas: 1-in-10 years and 1-in-20 years.

¹⁴ The productive uses of wetlands include nutrient retention for better water quality, biodiversity enhancement, flood risk reduction, and irrigation reservoirs.

¹⁵ The State Council of PRC. 2021. *Guideline for Preparing the PRC's 14th Five-Year Master Plan and 2035 Long-term Development Plan*. Beijing.

¹⁶ Government of the PRC. 2012. *Yangtze River Basin Integrated Planning (2012–2030)*. Beijing.

development agencies and international financial institutions in agriculture, natural resources, rural development, and energy sectors. From 1994 to date, the GMG has received bilateral financial assistance for eight projects with a total loan amount of more than \$149 million from four development partners. The GMG has been involved in two ADB project loans provided to the Government of Jiangxi. The major development partners are listed in Table 1.

Table 1: Major Development Partners

Development Partner	Project Name	Duration	Amount ^a (\$ million)
Agriculture, natural resources, and rural development			
World Bank	Second Red Soils Area Development Project ^a	1994–2000	5.0
IFAD	Jiangxi/Ganzhou Integrated Agricultural Development Project ^a	1996–2001	23.8
ADB	Rural Energy and Ecosystem Rehabilitation Phase IV ^a	2003–2009	2.5
World Bank	Jiangxi Integrated Agricultural Modernization Project ^a	2004–2010	56.6
IFAD	Jiangxi Mountainous Areas Agribusiness Promotion Project ^a	2015–2020	17.3
World Bank	Jiangxi Farm Produce Distribution System Development ^a	2018–2023	38.5
ADB	Jiangxi Sustainable Forest Ecosystem Development Project ^b	2010–2017	40.0
ADB	Jiangxi Pingxiang Integrated Rural–Urban Infrastructure Development Project ^b	2015–2021	150.0
ADB	Jiangxi Xinyu Kongmu River Watershed Flood Control and Environmental Improvement Project ^b	2016–2023	150.0
Energy			
ADB	Integrated Renewable Biomass Energy Development Sector Project (Rural Energy and Ecosystem Rehabilitation [Phase II]) ^a	2009–2018	5.2
NDB	Jiangxi Industrial Low Carbon Restructuring and Green ^a Development Pilot Project ^a	2017–2020	TBA ^c

ADB = Asian Development Bank, IFAD = International Fund for Agricultural Development, NDB = New Development Bank, TBA = to be allocated.

^a The loan amount in the table indicates the project loan amount allocated to Ganzhou Municipality.

^b The loan amount in the table indicates the project loan amount allocated to Jiangxi Province.

^c The total loan amount of the project is \$200 million.

Source: Asian Development Bank estimates.

C. Institutional Arrangements and Processes for Development Coordination

12. ADB is committed to sharing sector information and experiences in partnership with its developing member countries and development agencies. In line with its support for the 2005 Paris Declaration on Aid Effectiveness and the 2008 Accra Agenda for Action, ADB harmonizes its policies, procedures, and practices with its key development partners. ADB also supports global and regional efforts to enhance aid effectiveness. The central government coordinates development assistance through the Ministry of Finance, the National Development and Reform Commission, and other ministries. These agencies work together to ensure that the 14th Five-Year Plan, 2021–2025 serves the PRC's needs, and suits the interests and expertise of each organization.¹⁷ ADB's PRC Resident Mission plays a key role in drawing lessons from project implementation, and in sharing knowledge with development partners.

13. According to the Jiangxi Provincial Development Framework, development coordination is undertaken by the Jiangxi Provincial Development and Reform Commission and the Jiangxi Provincial Finance Department. The commission and department work together to review development assistance requests from the district and county governments under their jurisdiction,

¹⁷ Government of the PRC. 2021. *Outline of the 14th Five-Year Plan (2021–2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035*. Beijing.

and from other provincial departments, align their needs with the priorities and programs of different development partners, and submit requests to the central government for projects.

D. ADB Experience and Assistance Program

14. **Country partnership strategy.** ADB's country partnership strategy, 2021–2025 for the PRC aims to strengthen environmentally sustainable development as well as climate change adaptation and mitigation.¹⁸ It recognizes the PRC's development challenges, and their regional and global implications. ADB's interventions focus on activities where ADB can add value, such as strengthening the management of natural resources, improving biodiversity conservation, stepping up pollution reduction and low carbon development, boosting climate change and disaster risk financing, and involving the private sector in environmental infrastructure solutions as well as climate change adaptation and mitigation.

15. **Yangtze River Economic Belt framework.** In 2017, ADB and the government of the PRC agreed to adopt a framework approach to support economic and environmental development in the YREB. Under the framework, ADB makes targeted, integrated, and high-impact investments in the upper and middle reaches of the Yangtze River. The Ganzhou project emphasizes the prevention and control of environmental pollution, and watershed protection and restoration of Gan River, one of the main branches in the middle reach of the Yangtze River, sourced from Ganzhou. This is in accordance with ADB's lending priority of restoring and protecting the environment and managing water resources.¹⁹

16. **ADB support for rural vitalization.** ADB and the central government signed a memorandum of understanding on the implementation of the PRC's rural vitalization strategy and the need for stronger financial and knowledge cooperation.²⁰ As agreed in the memorandum, ADB's support shall prioritize efficient management of wastewater and solid waste in rural areas while building ecologically friendly and livable rural villages. It shall improve the rural environment, address rural and agricultural nonpoint source pollution, and promote the reuse of agricultural waste. ADB started lending support in the 1980s to the PRC's water infrastructure and services, and its agriculture, natural resources, and rural development (ANR) sector. ADB loans financed infrastructure and capacity development while its technical assistance contributed to knowledge and policies on water resource management, agricultural and rural development strategies, urban–rural development, environmental protection and management, and public participation. From 1971 to 2017, ADB approved 299 sovereign ANR project loans totaling \$9.59 billion to 30 of its members, among them 19 ANR project loans totaling \$1.57 billion for the PRC.²¹ ADB will continue to help overcome the institutional challenges of implementing policy priorities and to support the PRC in areas where it can add the most value, such as developing pilot projects and policy innovation, strengthening institutions, promoting reforms and capacity building, expanding private sector operations that promote advanced technologies, and sharing best practices. Experience suggests that these interventions are effective when they (i) support broader, innovative, and integrated approaches to management and monitoring; (ii) fully engage stakeholders and communities in all project stages; and (iii) are better coordinated in the YREB.

¹⁸ ADB. 2021. [Country Partnership Strategy: People's Republic of China, 2021–2025—Toward High-Quality, Green Development](#). Manila.

¹⁹ ADB. 2018. [People's Republic of China: Support for the Yangtze River Economic Belt](#). Manila.

²⁰ ADB; and PRC National Development and Reform Commission, and Ministry of Finance. 2018. [Memorandum of Understanding on Support for Rural Vitalization in the People's Republic of China](#). Beijing.

²¹ ADB. 2017. [Statement of ADB's Sovereign Loans, 1968–2017](#). Manila.

Problem Tree for Agriculture, Nature Resources, and Rural Development

