FINANCIAL ANALYSIS

A. Introduction

1. Financial analysis of the proposed investment program was carried out in accordance with the Asian Development Bank (ADB) guidelines for the *Financial Management and Analysis of Projects and Financial Due Diligence: A Methodology Note*.[1] The subprojects can generally be classified into nonrevenue-generating and revenue-generating. The aim of this analysis is (i) to assess the financial sustainability of the nonrevenue-generating subprojects; and (ii) financial evaluation of the revenue-generating subprojects which demonstrate a degree of cost recovery.

2. The investment program covers the development of seven subprojects and implementation of technical and institutional support under one provincial level executing agency, the Guangxi Zhuang Autonomous Region (GZAR). Total subproject investment and financing plan is summarized in Table 1.

Table 1: Total Project Investment and Financing Plan

Subproject	Total Investment				Total	Financing Source	
	Base Cost	Contingencies	FCDI	Taxes & Duties		ADB	Govt
1. Chongzuo Sino–Viet Nam border economic cooperation zone demonstration	60.5	9.1	2.7	-	72.3	42.7	29.5
2. Dongxing Changhu road east section construction	51.2	8.1	2.2	-	61.5	36.4	25.1
3. Road connectivity in Pingxiang (Guangxi)–Lang Son (Viet Nam) cross-border	16.2	2.6	0.7	-	19.6	11.7	7.9
4. Qinzhou bonded port cross-border trade e-commerce industrial park	18.3	3.1	0.8	-	22.2	11.5	10.7
5. Qinzhou international cold-chain logistics demonstration	19.6	2.6	1.1	-	23.3	12.0	11.3
6. China–ASEAN SME synergy innovative development	83.2	10.0	2.2	-	95.3	32.6	62.7
7. China–ASEAN educational medicare cooperation	88.1	9.4	2.2	-	99.8	29.5	70.2
8. Technical and institutional support	3.1	0.4	0.3	-	3.7	3.5	0.2
9. Taxes and Duties	-	-	-	42.3	42.3	-	42.3
Total	**340.2**	**45.2**	**12.3**	**42.3**	**440.0**	**180.0**	**260.0**

ADB = Asian Development Bank; ASEAN = Association of Southeast Asian Nations; FCDI = financing charges during implementation; Govt = government; - = nil, SME = small and medium-sized enterprises.
Source: Asian Development Bank.

3. The Government of GZAR (GGZAR) is the main beneficiary of the facilities and services under the project, in the form of increased revenues (taxation and otherwise) from improved trade in the border areas. Associated revenues from four subprojects can be collected from the operation of the facilities and services created by the investment program. However, most of the related implementing agencies and project implementing entities (PIEs) are heavily dependent on the local government for (i) subsidies and/or revenue lines for services rendered directly to

[1] ADB. 2005. *Financial Management and Analysis of Projects*. Manila; ADB. 2005. *Financial Due Diligence: A Methodology Note*. Manila.

government agencies; and (ii) government policy, which directly impacts the regional economic trade that can be undertaken in the local province.

4. While PIEs have been identified to implement the project, the main responsibility for financial sustainability remains with the executing agency. The PIEs are either direct government department or state-owned enterprise, both of which are directly dependent on budget transfers or subsidies from the GGZAR and are not financially self-sufficient. The implementing agencies (IAs) and PIEs for each of the subproject are listed in the following table:

Table 2: Subproject Implementation Arrangement

Subproject	Implementing Agency	Project Implementing Entity
1. Chongzuo Sino–Viet Nam border economic cooperation zone demonstration	Chongzhou Municipal Government	Chongzhou City Xinghe Investment Development Co., Ltd.
2. Dongxing Changhu road east section construction	Fangchenggang Municipal Government	Dongxing Development Investment Limited Liability Company
3. Road connectivity in Pingxiang (Guangxi)-Lang Son (Viet Nam) cross-border	Chongzhou Municipal Government	Pingxiang Urban Construction Investment Co., Ltd.
4. Qinzhou bonded cross-border trade e-commerce industrial park	Qinzhou Municipal Government (Management Committee of Qinzhou Free Trade Port Area)	Guangxi Qinzhou Free Trade Port Area Investment Group Ltd.
5. Qinzhou international cold-chain logistics demonstration	Qinzhou Municipal Government (Management Committee of Qinzhou Free Trade Port Area)	Guangxi Qinzhou Free Trade Port Area Investment Group. Ltd.
6. China-ASEAN SME synergy innovative development	Guilin University of Aerospace Technology	Guilin University of Aerospace Technology
7. China-ASEAN educational medicare cooperation	Youjiang Medical College for Nationalities	Youjiang Medical College for Nationalities

ASEAN = Association of Southeast Asian Nations, SME = small and medium-sized enterprise.
Source: Asian Development Bank.

B. Financial Analysis Approach

5. A two-tier approach was used to undertake financial analysis for the sustainability of the subprojects: (i) GGZAR level analysis to analyze actual and projected financial statements and compared against the incremental recurrent costs generated by all subprojects; and (ii) subproject level analysis for four subprojects where some direct revenues could meet operation and maintenance (O&M) costs.

Tier 1 Analysis: Government of Guangxi Zhuang Autonomous Region

6. An analysis was carried out to compare the financial capacity of the GGZAR with the incremental cost requirements of the subprojects (excluding project advisory support and consulting). Incremental costs include (i) counterpart fund requirements, (ii) annual O&M requirements, and (iii) debt servicing requirements.

7. The fiscal statements of the GGZAR are regularly prepared by the Department of Finance of GZAR in accordance with the Budget Law of 1994. Tax revenues are shared between the central and local governments, including the GGZAR. The GGZAR has an extremely large budget as it oversees a major agricultural region and is a major production center of nonferrous metals and other industrial products, with a gross domestic product of about $275 billion in 2016. Its revenues since 2013 have grown at about 15% per annum on average. Revenues were especially high in 2015 when total revenue increased from $55 billion to $74 billion, driven in large part by budgetary transfers (about 70% of the total) from the central government. The GGZAR has managed expenditures well, and average expenditure budgets have been about $58 billion,

allowing a comfortable surplus build-up in its financial statements. For the purpose of this study, GGZAR's actual and projected financial statements were translated and reviewed for reasonableness of projections. Future projections have been conservatively estimated based on its historical performance (Table 3).

8. The first three subprojects are mostly construction and rehabilitation of roads with wastewater treatment component included under subproject 1.[2] The recurrent O&M costs for all these subprojects were determined based on the technical study. The capacity of the wastewater treatment plant is estimated to be 10,000 cubic meters per day with tariff set at 1.78/m^3. However, the projected revenue collection will not be sufficient to cover all the expenses which includes membrane cleaning, utilities, sludge treatment and transport, and manpower totaling CNY1.26 million annually. The roads construction and rehabilitation will require an annual maintenance cost of about $0.88 million on the first year increasing to $0.94 million on the tenth year. This is just about 0.02% of the total annual allocation for transportation services of GGZAR or 0.01% of annual surplus. Total financing requirements (equity, O&M, and debt service) will, on maximum, be about 0.4% of annual surplus. The GGZAR is expected to fully support the roads and wastewater treatment subprojects (Table 3a).

9. The scenario of assessing the impact of combined incremental cost projections from all seven subprojects on the budget projection of GGZAR was also reviewed and data indicates that the combined incremental costs will have very minimal impact on the fiscal projections of GGZAR, with maximum impact on total yearly surplus being less than 0.81%. The project is thus deemed to be financially sustainable, with all incremental costs amply covered by the GGZAR (Table 3b).

Tier 2 Analysis: Project Implementing Entity Level

10. The four remaining subprojects are considered revenue-generating, being mandated to collect some form of fees and rentals to support their operations. A financial analysis of the subproject was undertaken using basic assumptions to determine their financial sustainability.

11. Subproject 4: Qinzhou bonded port cross-border trade e-commerce industrial park. This subproject will be implemented by the Guangxi Qinzhou Free Trade Port Area Investment Group Ltd. The subproject incremental costs and revenues were projected, based on assumptions that operating revenues can be derived from three possible sources: (i) management charges from e-commerce platform usage, estimated to be about 0.5% of total annual transaction volume of CNY2 billion; (ii) advertisements at about CNY5 million annually; and (iii) space rental in the industrial park at CNY20/m^2 and 60% occupancy rate. Assuming ADB and GGZAR counterpart funds are provided to this state-owned enterprise as debt, a weighted average cost of capital (WACC) of 0.69% was estimated. The results show a positive net present value (NPV) and financial internal rate of return (FIRR) at 4.10%, higher than the WACC, suggesting that the subproject is sustainable and viable.

12. Subproject 5: Qinzhou international cold-chain logistics demonstration project. The subproject will also be implemented by the Guangxi Qinzhou Free Trade Port Area Investment Group Ltd. The total construction area of the project is 45,000 square meters dedicated for frozen storage area, constant temperature warehouse, ordinary warehouse, office and distribution area, cold-chain inspection platform, refrigerated yard, and ordinary yard (including auxiliary facilities).

[2] Chongzuo Sino–Viet Nam Border Economic Cooperation Zone Demonstration Project (Phase I); Dongxing Changhu Road East Section Construction Project; and Road Connectivity in Pingxiang (Guangxi)-Lang Son (Viet Nam) Cross-border Project.

Based on the feasibility study report (FSR), revenues will be derived from the rental of these storage facilities. The revenue will reach its full capacity of CNY35 million on the third operational year (2026). The overall usage rate for the storage spaces is estimated at 60%. FIRR is calculated at 6.74%, which is reasonable and higher than the WACC of 0.86%, making the subproject viable and sustainable. The subproject has a projected NPV of $83.9 million. Both the NPV and FIRR are robust even in sensitivity scenarios negatively impacting costs or revenues.

13. Subproject 6: China–ASEAN SME synergy innovative development project. This involves the expansion of the new campus of the Guilin University of Aerospace Technology. The university is public in nature, thus, supported by fiscal budget. A financial analysis was based on the existing and proposed chart of fees such as tuition fees, accommodation fees, incubator service charges, information service, and government subsidies. The tuition comes from five different types of students with different fee standards: undergraduate (CNY 6,400/year), diploma course (CNY 6,000/year), part-time students (CNY 1,500/year), international students (CNY 18,000/year), and labor trainees (CNY 3,000/year). The accommodation fee is CNY 1,100/bed/year, while provision of information services to SMEs is CNY8 million each year. FIRR is calculated at 1.97%, which is reasonable and higher than the WACC of 0.83%, making the subproject viable and sustainable. The subproject has a projected NPV of $0.8 million. However, both the NPV and FIRR are very sensitive to changes in revenues and costs. Adverse scenarios impacting costs or revenues result to negative FIRR and WACC.

14. Subproject 7: China–ASEAN educational medicare cooperation project. A financial sustainability model was developed, which will be implemented by Youjiang Medical College for Nationalities. The subproject has four revenue streams: tuition fees, accommodation charges, SMEs training fees, and government subsidy. Per the school's projection, the total maximum student capacity of 15,000 is expected to be realized after completion of the subproject in 2023. Cost assumptions were based on O&M projections from FSR. Based on these, WACC is computed at 1.53%. The subproject generates a positive NPV and an FIRR of 4.4%, showing it is financially viable and sustainable for base case scenario, but highly sensitive to any change in revenues and costs.

15. Existing financial operation of the three PIEs were likewise examined. Based on their historical financial statements, they demonstrate similar condition where they are very dependent on budgetary transfers, with dependency varying from 56%-61%.

C. Financial Sustainability Action Plan

16. The two-tier analysis has shown that the sustainability and viability of the subprojects are assured by GGZAR as the project's executing agency. Four subprojects are expected to be self-sustaining with revenue collection covering incremental costs. However, to further ensure subproject sustainability, the following actions are recommended:

(i) An assurance or commitment from GGZAR that it will cover for any shortfall in financial requirements that cannot be covered by the PIE. A covenant to this effect is included in the project agreement.

(ii) Consultancy support to be provided to municipal governments and GGZAR to undertake a study on determining possible ways of creating a dedicated road O&M fund from possible levies or user charges.

(iii) Consultancy support to be provided to IAs and PIEs to further refine the financial model for revenue-generating subprojects, help formulate a business plan with the aim of developing alternative revenue-raising options, and implement sustainable models over time.

Table 3: Government of Guangxi Zhuang Autonomous Region Projections ($ million)

	Actual				Projection									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Revenue from taxes	12,718	14,212	14,993	15,061	15,490	16,265	17,078	17,932	18,828	19,770	20,758	21,796	22,886	24,030
Revenue from nontax sources	6,422	6,457	7,028	7,559	7,693	8,462	9,309	10,240	11,264	12,390	13,629	14,992	16,491	18,140
Budgetary Transfers Received	32,309	34,124	52,136	53,047	47,953	52,749	58,023	63,826	70,208	77,229	84,952	93,447	102,792	113,071
Subtotal	**51,449**	**54,794**	**74,158**	**75,667**	**71,136**	**77,476**	**84,410**	**91,997**	**100,300**	**109,389**	**119,339**	**130,235**	**142,169**	**155,241**
Social Security and Medical Care	10,036	10,794	12,692	14,361	14,473	15,920	17,512	19,264	21,190	23,309	25,640	28,204	31,024	34,127
Education and Public Security	12,171	12,534	14,848	16,378	16,531	18,184	20,003	22,003	24,203	26,623	29,286	32,214	35,436	38,979
General Public Services	5,913	5,915	5,300	6,680	5,867	6,160	6,468	6,792	7,131	7,488	7,862	8,255	8,668	9,102
Transportation Services	3,515	2,941	3,462	3,213	2,877	3,021	3,172	3,330	3,497	3,672	3,855	4,048	4,251	4,463
Agriculture and Irrigation	5,755	5,678	7,204	8,621	6,811	7,492	8,241	9,065	9,972	10,969	12,066	13,273	14,600	16,060
Other Categories	11,491	12,949	15,745	24,014	17,190	18,909	20,800	22,880	25,168	27,685	30,453	33,498	36,848	40,533
Subtotal	**48,880**	**50,812**	**59,250**	**73,267**	**63,749**	**69,687**	**76,196**	**83,334**	**91,161**	**99,746**	**109,163**	**119,493**	**130,827**	**143,264**
Surplus/Deficit for the Year	**2,569**	**3,981**	**14,907**	**2,400**	**7,387**	**7,789**	**8,214**	**8,663**	**9,139**	**9,643**	**10,177**	**10,742**	**11,342**	**11,978**

Table 3a: Scenario 1 - Incremental Costs of Subprojects 1 - 3	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Operations and Maintenance Costs	0.00	0.00	0.00	0.00	0.00	0.88	0.91	0.92	0.94
Counterpart Funds	3.38	13.91	22.52	35.12	25.11	0.00	0.00	0.00	0.00
Debt Service	0.12	0.12	0.35	1.05	1.82	2.14	5.99	5.99	5.99
Total Incremental Costs	**3.50**	**14.03**	**22.87**	**36.16**	**26.94**	**3.02**	**6.50**	**6.52**	**6.53**
Percentage Incremental cost/total surplus	0.04%	0.17%	0.26%	0.40%	0.28%	0.03%	0.06%	0.06%	0.05%
Incremental Recurrent O&M / Allocation for Transportation Services (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.02%	0.02%	0.02%

Table 3b: Scenario 2 - Incremental Costs of Subprojects 1 - 7	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Operations and Maintenance Costs	0.00	0.00	0.00	1.13	1.29	35.09	63.75	65.96	67.75
Counterpart Funds	19.55	44.62	64.15	70.41	56.44	4.82	0.00	0.00	0.00
Debt Service	0.23	0.47	1.29	2.56	3.66	4.12	11.64	11.64	11.64
Total Incremental Costs	**19.78**	**45.08**	**65.44**	**74.10**	**61.39**	**44.04**	**75.40**	**77.61**	**79.40**
Percentage Incremental cost/total surplus	0.25%	0.55%	0.76%	0.81%	0.64%	0.43%	0.70%	0.68%	0.66%