

## PROGRAM RESULTS ASSESSMENT

### A. Program Results Framework

1. The results framework of the results-based lending (RBL) program, the Guangxi Modern Technical and Vocational Education and Training (TVET) Development Program, is anchored in and highlights key results of the Guangxi Zhuang Autonomous Region (GZAR) government's Modern TVET System Development Plan, 2015–2020.<sup>1</sup> The GZAR Modern TVET System Development Plan, developed in the framework of the National Modern TVET System Development Plan, 2014–2020, sets out strategic and policy directions to establish a modern TVET system that supports socioeconomic development in GZAR.<sup>2</sup> More concrete actions, indicators, and targets are defined in its 10 implementation plans covering priority areas identified in the GZAR Modern TVET System Development Plan: (i) the use of information and communication technology, (ii) infrastructure development, (iii) quality improvement, (iv) enhancement of teachers' industry experience, (v) an increase in courses of study and practical training facilities in GZAR's priority industries, (vi) TVET group development, (vii) TVET park development, (viii) use of TVET to support poverty alleviation, (ix) ethnic culture inheritance and innovation, and (x) regional and international cooperation. These priority areas have been grouped into four outputs of the program to increase synergy between actions specified in the 10 plans, and focus on key results.

2. **Impact and outcome.** The expected impact of the program will be socioeconomic development in GZAR accelerated.<sup>3</sup> The outcome will be a TVET system that provides graduates with better employment opportunities in GZAR's industries established. The outcome will be measured by the percentage of TVET graduates who stayed in the first job for more than 6 months, and the percentage of TVET graduates who have dual certification. The outcome will be achieved through four outputs.

3. **Output 1: Industry relevance of technical and vocational education and training enhanced.** The economy of GZAR has been growing rapidly, with changes in the industry structure. Shortages of skilled workers are becoming particularly acute in the "14+10" industries (i.e., 14 key traditional industries and 10 emerging and strategic industries that require intermediate- and high-level skills), which the GZAR government prioritizes for the Thirteenth Five-Year Plan period. Current course offerings and practical training facilities at TVET institutions do not match the changing industry structure in GZAR. Although many TVET institutions have partnering enterprises, enterprises are not necessarily involved in developing curriculum, training materials and methods, and assessment to make courses relevant to their needs. Moreover, mechanisms for industries to ensure the alignment of TVET with their human resources needs are weak. By introducing new methods of engaging industries in defining the competencies required and developing curriculum, training materials and methods, and assessments, as well as in establishing practical training facilities, course offerings and practical training facilities are expected to be better aligned with industry needs, and mechanisms for industry involvement are to be strengthened. This output will be measured by the number of industries in which industry advisory plans are implemented; the number of courses of study being offered using competency-based training; the number of practical training facilities in GZAR's priority industries established in cooperation with enterprises; the number of students who completed modern apprenticeship programs; and an increased number of

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<sup>1</sup> Guangxi Department of Education. 2015. *Plan for Building Modern Vocational Education System in Guangxi Zhuang Autonomous Region, 2015–2020*. Nanning.

<sup>2</sup> Ministry of Education. 2014. *National Plan for Building Modern Vocational Education System (2014-2020)*. Beijing.

<sup>3</sup> Government of the People's Republic of China, Guangxi Development and Reform Commission. 2015. *Thirteenth Five-Year Plan on Guangxi Zhuang Autonomous Region Economic and Social Development Plan, 2016–2020*. Nanning.

demonstration TVET groups comprising TVET institutions offering similar courses of study in an industry, enterprises operating in the industry, and research institutes.

4. **Output 2: Quality of technical and vocational education and training improved.** An adequate teaching and learning environment and materials, practical training facilities, qualified teachers, and quality and relevance of courses of study are essential to keep engaging students and teachers and to prepare work-ready graduates. Many TVET institutions in GZAR do not meet provincial or national standards for the teaching and learning environment and materials, student–teacher ratios, and teachers’ qualifications. TVET institutions, especially secondary TVET schools in rural counties, lag in quality, and no system is in place to ensure consistent quality across TVET institutions in GZAR. Through interventions to strengthen different aspects of quality—self-improvement projects to meet comprehensive standards for model TVET institutions, the teaching and learning environment and materials, the number and qualifications of teachers, leadership and management skills of managers at TVET institutions, and monitoring and reporting—the quality of TVET teaching and learning is expected to improve. This output will be measured by the number of TVET institutions meeting comprehensive standards for model TVET institutions (demonstration TVET institution), student–teacher ratios, the percentage of teachers trained in pedagogy and subject, the percentage of full-time teachers who received practical and in-company training for at least 6 months, the percentage of technical teachers certified with industry experience (dual qualification), the number of course of study clusters with e-learning resources, the number of entrepreneurship and self-employment promotion centers established, the number of managers at TVET institutions reporting improved knowledge in leadership and management, and the number of TVET institutions meeting provincial guidelines for improved monitoring and reporting.

5. **Output 3: Inclusiveness of technical and vocational education and training increased.** GZAR is one of the poorest provinces, with per capita gross domestic product of CNY37,712, ranking 27th out of 31 provinces in the People’s Republic of China (PRC), and 9.9% of the population living below the poverty line (per capita income of CNY2,300) compared with the national average of 5.2%. GZAR is also one of the five ethnic minority autonomous regions, with the largest ethnic minority population in the PRC, accounting for 37.1% of GZAR’s total population in 2015. Thanks to its lower entry requirements (no competitive selection) and affordability (no tuition fees for secondary TVET), TVET enrolls a higher percentage of students from poor families, disadvantaged backgrounds, and rural areas than academic education. Yet dropout rates at secondary TVET schools are high because of the poor relevance and quality of TVET in GZAR and other socioeconomic factors, particularly financial difficulties faced by students from poor families. Although courses of study and practical training facilities dedicated to ethnic cultures and traditions have been established since 2009, more could be done to promote and rejuvenate rich ethnic minority culture and traditions in GZAR. By ensuring financial assistance and other types of support (e.g., counseling, career guidance, employment services, and continuing education) for students from poor families, in addition to the general interventions to improve the relevance and quality of TVET, more students from poor families and disadvantaged backgrounds are expected to complete TVET, rather than dropping out, and find gainful employment or self-employment after graduation. With more courses of study and practical training facilities dedicated to ethnic cultures and traditions established, the growth of industries that tap into human resources devoted to ethnic minority cultures and traditions (e.g., Chinese medicines, traditional folk crafts, ethnic art, food, and architecture) is likely to be facilitated. This output will be measured by acceptance rates of secondary TVET graduates by tertiary TVET colleges, and tertiary TVET college graduates by application-oriented universities; the number of TVET students who received poverty-related subsidies; the number (person-time) of students who received continuing education (lifelong learning) at TVET institutions; and an increased number of TVET bases for ethnic culture inheritance and innovation.

6. **Output 4: Role of technical and vocational education and training in regional economic development expanded.** Located in the southern PRC bordering Viet Nam, GZAR is expected to become the PRC’s gateway to the Association of Southeast Asian Nations (ASEAN) countries, and an important pathway connecting the Silk Road Economic Belt and the 21st Century Maritime Silk Road (Belt and Road Initiative). Despite its strategic location, existing exchanges and regional cooperation activities between TVET institutions in GZAR and ASEAN countries have been limited in scope and effectiveness, lacking a long-term strategy to promote cross-border trade and investment, and technology transfer. By promoting partnerships for long-term cooperation between TVET institutions and enterprises in GZAR and ASEAN countries, and expanding exchanges and cooperation activities between GZAR and ASEAN countries, new opportunities for cross-border trade and investment, and technology transfer, are expected to be created. This output will be measured by the increase (percentage) in the number of participants in partnership training programs between selected TVET institutions and enterprises in GZAR and ASEAN countries; and the number of students from ASEAN countries who received vocational education certificates from GZAR’s TVET institutions.

7. The outcome and output indicators selected for the program results framework are considered an appropriate mix, as they measure both the intermediate results and outcome, which form part of the results chain; they are specific, measurable, achievable, relevant, time-bound, and transparent; and focus on key results of the GZAR Modern TVET System Development Plan related to the relevance, quality, and inclusiveness of TVET, and regional cooperation with ASEAN countries, whose importance is likely to continue and be scaled up after completion of the government program. These results are expected to be sustainable, as they will be underpinned by overall TVET system and program system improvements to be supported through program actions and technical assistance. The RBL program approach allows the government to choose ways to achieve the results flexibly, while motivating it to carry out system-wide improvements in a programmatic manner.

## B. Disbursement-Linked Indicators

8. Eight disbursement-linked indicators (DLIs)—one outcome indicator and seven output indicators—have been selected from the program results framework as they represent key elements of a modern TVET system; reflect priority areas of the GZAR Modern TVET System Development Plan where new initiatives commenced in 2016 or 2017, requiring knowledge, expertise, and close monitoring; and are under the control of Guangxi Education Department, the principal implementing agency of the RBL program. The eight DLIs are in Table 1.

**Table 1: Disbursement-Linked Indicators**

Indicator	Disbursement Allocated (\$ million)	Share of Total ADB Financing (%)
<b>Outcome</b>		
1. TVET graduates who entered stable employment increased	40.0	16.0
<b>Outputs</b>		
<b>Industry relevance of TVET enhanced</b>		
2. TVET provision based on industry needs improved	20.0	8.0
3. Competency-based approach in TVET piloted	22.5	9.0
4. Practical training facilities established in priority industries	47.5	19.0
<b>Quality of TVET improved</b>		
5. Model TVET institutions established	40.0	16.0
6. TVET teachers with industry experience increased	37.5	15.0
7. TVET delivery informed by stronger management information	22.5	9.0
<b>Role of TVET in regional economic development expanded</b>		

Indicator	Disbursement Allocated (\$ million)	Share of Total ADB Financing (%)
8. Contribution of TVET to promote regional cooperation and integration enhanced	20.0	8.0
<b>Total</b>	<b>250.0</b>	<b>100.0</b>

ASEAN = Association of Southeast Asian Nations, TVET = technical and vocational education and training.

Source: Asian Development Bank.

9. DLI 1 concerns the ultimate outcome of the establishment of a TVET system that produces relevant and high-quality graduates in support of GZAR's socioeconomic development. It measures increases in TVET graduates who stayed in the first job for more than 6 months. By the end of the program, the percentage of TVET graduates who stayed in the first job for more than 6 months will increase from 49% to 54%.

10. DLIs 2, 3, and 4 relate to three factors that critically affect the relevance of TVET—mechanisms to align TVET provision with industry needs, and curricula and training materials, and practical training facilities that are developed in partnership with enterprises and industries. DLI 2 points to the improvement of TVET provision based on industry needs, with industry advisory plans to align TVET provision with industry needs implemented. By the end of the program, TVET provision in 16 key industries, including ethnic and traditional art and craft industry, will have been more aligned with industry needs. DLI 3 concerns the completion of pilot projects to introduce new methods of engaging industries in defining competencies and developing curricula, training materials and methods, and assessments. During the program implementation period, 24 courses of study will have been offered using competency-based training, and the pilot projects will have been evaluated by Guangxi Education Department (GED) for scaling up. DLI 4 tracks the establishment of practical training facilities in GZAR's "14+10" industries in cooperation with enterprises. By the end of the program, 380 practical training facilities will have been established in cooperation with enterprises.

11. DLIs 5, 6, and 7 cover three factors that influence the quality of TVET—self-improvement projects to meet comprehensive standards for model TVET institutions, industry experience of TVET teachers, and monitoring and reporting of TVET institutions. DLI 5 tracks the number of TVET institutions evaluated as meeting comprehensive provincial standards (adequacy of teaching and learning environment and materials, and practical training facilities; number and qualifications of teachers; quality and relevance of courses of study being offered; and graduates' employment outcomes) for model TVET institutions (demonstration TVET institutions). With the achievement of the target—30 secondary TVET schools and six tertiary TVET colleges certified as model TVET institutions—41% of public secondary TVET schools and 80% of public tertiary TVET colleges will meet provincial standards for model TVET institutions, attesting to their capacity to provide high-quality training related to key industries in GZAR. DLI 6 measures the implementation of the assessment framework for the industry experience of technical teachers, which set higher standards (having a teaching license for the level they teach and an occupational skills certificate relevant to the subject they teach) than the standards used nationwide ahead of the other provinces in the PRC. By the end of the program, all full-time teachers in technical fields will have been certified with industry experience against the framework. DLI 7 looks to the strengthening the monitoring and reporting of TVET institutions, in line with the national and provincial guidelines and the Ministry of Education (MOE) information system. GED issued the provincial guidelines for tertiary TVET colleges in 2016 and plans to issue the guidelines for secondary TVET schools in 2017, within the framework of the national guidelines published by MOE in 2015. During the initial phase of implementation in 2017–2020, 35 public secondary TVET schools (about 14% of the total public secondary TVET schools) and 20 public tertiary TVET colleges (80% of the total public tertiary TVET colleges) will meet provincial guidelines for monitoring and reporting.

12. DLI 8 involves a factor that facilitates regional cooperation between GZAR and ASEAN countries. It measures the increase in exchanges and cooperation activities between TVET institutions and enterprises in GZAR and ASEAN countries in terms of the number of trainees and trainers who participated in partnership training programs. By the end of the program, partnership agreements for long-term cooperation will be established between selected TVET institutions in GZAR and ASEAN TVET institutions and enterprises, and the number of trainees and trainers who participated in partnership training programs will increase by more than 10% of the 2017 baseline.

13. The eight DLIs, derived from the government program, incentivize the government to achieve results related to its new initiatives, building on existing program systems with necessary measures to strengthen them. At the same time, they allow sufficient flexibility for the government to determine how to achieve the results.

### **C. Managing Risks and Improving Capacity**

14. The program supports the new initiatives designed to improve the relevance, quality, and inclusiveness of TVET and expand regional cooperation with ASEAN countries, which entails risks. Supported by strong economic growth, the economic and industry structure of GZAR has been changing rapidly, which places greater demands on the capacity of TVET institutions for responding to the needs of socioeconomic development. Because of the poor relevance and quality of TVET in GZAR, it might take more time for TVET institutions to enhance their capacity. Exchanges and cooperation activities between TVET institutions and enterprises in GZAR and ASEAN countries, which has been given high priority after the launch of the Belt and Road Initiative in 2015, could be susceptible to broader economic and political contexts.

15. The program includes various measures that aim to mitigate such risks and to ensure that the program results are achieved on time.<sup>4</sup> Some of the measures will be supported under the attached technical assistance, especially in the areas where the need for additional knowledge, expertise, and capacity building has been identified. To enable TVET institutions to enhance their capacity to the comprehensive standards for model TVET institutions set by GED within the 3-year period (2018–2020), provincial standards will be issued to provide clear guidance for applicant TVET institutions, as well as the development, planning, and implementation of self-improvement projects by the applicant TVET institutions. A margin of 1 year (2021) has also been built into the program design, in case some TVET institutions cannot complete their projects within 3 years. The applicant TVET institutions will be regularly monitored for the implementation of their self-improvement projects so that additional support required is identified and provided on time. Some prior results (2017) and targets (2018) have been identified to ensure that critical elements are in place for timely program implementation. The establishment of partnership agreements for long-term cooperation between TVET institutions and enterprises in GZAR and ASEAN countries has been set as a target for 2018 (DLI 8), which could withstand changes in broader economic and political contexts.

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<sup>4</sup> Further described in the Program Action Plan (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President to the Board of Directors).