

SUMMARY SECTOR ASSESSMENT: EDUCATION

A. Sector Performance, Problems, and Opportunities

1. The technical and vocational education and training (TVET) system in Guangxi Zhuang Autonomous Region (GZAR) comprises secondary TVET schools (3 years, 15–18 years old), tertiary TVET colleges (3 years, 18–21 years old), and application-oriented universities (4 years, 18–22 years old). During the Twelfth Five-Year Plan, 2011–2015, the TVET system in GZAR was expected to balance student enrollments against general education. Table 1 presents changes in the TVET system vis-à-vis the general education system in 2011–2016.¹

Table 1: Changes in Technical and Vocational Education and Training System Compared with General Education System, 2011–2016

Item	No. of Students ^a (female students; ethnic minority students)		No. of Graduates (female graduates; ethnic minority graduates)		No. of Institutions ^b (private institutions)		No. of Teachers ^c (female teachers; ethnic minority teachers)		Public Expenditures (CNY million)	
	2011	2016	2011	2016	2011	2016	2011	2016	2011	2016
TVET										
Secondary TVET Schools ^c	956,916 (...)	809,849 (...)	212,149 (82,997)	251,438 (100,089)	375 (117)	324 (78)	25,242 (9,178; 5,069)	24,617 (10,324; 4635)	5,084	6,739
Tertiary TVET Colleges	315,408 (163,086; 107,850)	387,333 (198,808; 132,222)	89,299 (45,939; ...)	106,924 (57,767; ...)	40 (9)	36 (11)	12,243 ... (...)	12,091 ... (...)	3,369	4,979
Application-oriented Universities	(...)	156,971 (...)	(...)	34,540 (...)	(...)	12 (3)	(...)	9,165 (...)	1,104	3,024
General Education										
Senior Secondary Education	773,562 (402,067; 284,972)	918,939 (495,283; 340,121)	238,408 (123,150; 91,284)	268,465 (145,478; 99,676)	446 (72)	450 (95)	43,069 (20,528; 15,260)	53,370 (28,778; 18,765)	6,261	
Tertiary Education ^d	600,094 (315,389; 190,103)	810,282 (438,892; 243,338)	151,052 (79,470)	189,441 (...)	70 (21)	73 (23)	33,459 (15,506; 7,076)	38,924 (19,149; 8,444)	11,365	

(...)/ ... (...) = data not available, TVET = technical and vocational education and training.

^a Includes fulltime and part-time students.

^b Includes institutions that have a license but no longer operate.

^c Includes fulltime teachers only.

^d Includes undergraduate and tertiary TVET.

Source: Guangxi Education Department.

2. The balance was achieved partly by lowering the entry requirements (no competitive selection unlike in senior secondary education); exempting tuition fees for secondary TVET; and introducing transition schemes from secondary TVET to tertiary TVET such as “3+2” (3 years in secondary TVET and 2 years in tertiary TVET colleges), “2+3” (2 years in secondary TVET and 3 years in TVET colleges), or “5-year through” and “3+4” (3 years in secondary TVET and 4 years in tertiary TVET colleges or application-oriented universities). Although significant investments were made to improve the teaching and learning environment and increase qualified teachers through the national and provincial programs during the Twelfth Five-Year Plan period, the quality

¹ Government of the People's Republic of China, National Development and Reform Commission. 2011. *The Outline of the Twelfth Five-Year Plan, 2011–2015*. Beijing.

and relevance of TVET in GZAR remained poor. Nonetheless, the employment rate of TVET graduates in GZAR was 97.1% for the secondary level and 91.5% for the tertiary level in 2016, on a par with the national average of about 95%.

3. During the Thirteenth Five-Year Plan, 2016–2020, the TVET system in GZAR continues to face the following issues, constraints, and challenges:²

- (i) **Misalignment of technical and vocational education and training with human resources needs in industries.** The steady economic growth and accompanying changes in the economic structure have made course offerings and practical training facilities increasingly misaligned with human resources needs in industries. Shortages of skilled workers are becoming particularly acute in the “14+10” industries to which the GZAR government gives priority for the Thirteenth Five-Year Plan period. The rationalization of course offerings and practical training facilities is necessary across the TVET system by reducing the oversupply of certain courses of study, and standardizing similar courses of study provided by secondary and tertiary TVET. Moreover, the curriculum, training materials, training methods, practical training facilities, and assessments in use often lack relevance to employers’ needs. Although many TVET institutions have partnering enterprises, enterprises are not necessarily involved throughout the whole process of developing curriculum, training materials and methods, practical training facilities, and assessments to make courses relevant to their needs. Furthermore, institutionalized mechanisms for industries to ensure the alignment of TVET with their human resources needs are weak, even though there have been attempts to establish sector- and industry-specific committees and groups to strengthen the alignment. These committees and groups are yet to be functional as a platform for steering TVET toward industry needs.
- (ii) **Inadequate teaching and learning environment and teachers’ qualifications.** Many TVET institutions in GZAR do not meet the provincial standards or higher national standards for the teaching and learning environment and materials, student–teacher ratios, and teachers’ qualifications. Whereas the student–teacher ratio in the country was on average 21:1 for secondary TVET schools and 19:1 for tertiary TVET colleges in 2015, in GZAR it was 37:1 for secondary TVET schools and 23:1 for tertiary TVET colleges. TVET institutions in GZAR are seriously understaffed because of a cap on budgeted teacher positions. Moreover, the proportion of dual qualification teachers (having both a teaching license and industry experience) was 38% for secondary TVET and 42% for tertiary TVET in 2015, far below the national standards of 60%. County secondary TVET schools (about 32% of all the secondary TVET schools) particularly lag in meeting the standards, with limited funding and training opportunities for teachers (especially practical and in-company training), resulting in lower quality of teaching and learning. Apart from the standard system, no system is in place to ensure consistent quality across TVET institutions in GZAR.
- (iii) **Ineffective exchanges and cooperation activities.** Despite GZAR’s strategic location as a gateway to the Association of Southeast Asian Nations (ASEAN) and a pathway connecting the Silk Road Economic Belt and the 21st Century Maritime Silk Road (Belt and Road Initiative), and its status as a front-runner in education exchanges and cooperation between the People’s Republic of China (PRC) and ASEAN countries, exchanges and other types of regional cooperation activities

² Government of the People’s Republic of China, State Council. 2015. *National Economy and Social Development Thirteenth Five-Year Plan, 2016–2020*. Beijing.

between TVET institutions and enterprises in GZAR and ASEAN countries have been limited in scope and effectiveness. No provincial program promotes cooperation activities between TVET institutions and enterprises in GZAR and ASEAN countries with a view to creating new opportunities for cross-border trade and investment, and technology transfer. The majority of the partnership training with ASEAN countries being offered is short-term and does not lead to any recognized skills certification. Moreover, the GZAR government has no effective institutional coordination mechanism for setting strategic and policy directions, financing, and implementing and monitoring policies and programs to promote cooperation activities between TVET institutions and enterprises in GZAR and ASEAN countries.

- (iv) **Insufficient funding for technical and vocational education and training.** Insufficient funding for TVET in GZAR underlies the issues above. Spending per student was lower than the national average of CNY9,128 for secondary TVET and CNY10,147 for tertiary TVET in 2014, only reaching CNY6,978 for secondary TVET (ranked 30 out of 31 provinces) and CNY9,282 for tertiary TVET (ranked 23 out of 31 provinces). The capital expenditures on TVET during the Twelfth Five-Year Plan period were on average 33% of the total expenditures, which were not sufficient to meet the investment needs in the TVET system. The GZAR government plans to increase spending per student to CNY12,000 for tertiary TVET in 2017, while tapping into more resources from industries and students.

4. Importance of technical and vocational education and training for economic growth.

TVET graduates comprised one fourth of new employees in GZAR in 2016. Although TVET graduates sometimes obtain employment in sectors other than those in which they were trained (at secondary TVET level, the percentage of graduates employed in the sectors in which they were trained was on average 80.4% in 2016), they are an important skilled (intermediate and high level) workforce, especially in the secondary and tertiary industries (Table 2). Since shortages of skills in GZAR's "14+10" industries are becoming acute, if TVET is better aligned with the needs of those industries, the significance of TVET to the growth of GZAR's economy will rise.

Table 2: Sectors where Technical and Vocational Education and Training Graduates were Trained and Employed, 2016
(%)

Item	Primary Sector	Secondary Sector	Tertiary Sector
Share of GDP	15.3	45.9	38.8
Share of secondary TVET graduates whose main course of study was in:	4.2	49.2	46.6
Share of secondary TVET graduates employed in:	6.9	28.5	64.6
Share of tertiary TVET graduates whose main course of study was in:	1.9	43.9	54.2
Share of tertiary TVET graduates employed in:

... = data not available, GDP = gross domestic product, TVET = technical and vocational education and training.

Source: Guangxi Education Department.

5. Importance of technical and vocational education and training for poverty reduction and inclusiveness.

Despite its vigorous economic growth, GZAR remains one of the poorest provinces in the PRC. Per capita gross domestic product is CNY37,712, ranking 27th out of 31 provinces, while 9.9% of the population lives below the poverty line compared with the national average of 5.2%. TVET enrolls a higher percentage of students from poor families, disadvantaged backgrounds, and rural areas than academic education because of its lower entry requirements and affordability. The share of students from poor families ranges from 20% to 80% among secondary TVET schools in GZAR. Being one of the five ethnic minority autonomous regions in

the PRC, GZAR's TVET also enrolls large numbers of ethnic minority students (28.3% at secondary TVET schools and 37.8% at tertiary TVET colleges in 2016), especially those from poor families (in secondary TVET). In this context, secondary TVET plays a crucial role in poverty reduction and social inclusion. Yet, high dropout rates in secondary TVET, especially among students from poor families, remain a serious concern.³

6. **Opportunities.** The GZAR government is committed to establishing a modern TVET system that supports socioeconomic development in GZAR. This will entail (i) enhancing the responsiveness of the TVET system to human resources and skills needs of industries, especially emerging and strategic industries; (ii) improving the quality of TVET, in particular county secondary TVET schools in terms of the teaching and learning environment and materials, and teachers; (iii) increasing the number of qualified teachers; (iv) strengthening mechanisms for engaging employers and industries in TVET; (v) improving the retention of students, especially from poor families and disadvantaged backgrounds, and their employment or self-employment; and (vi) expanding cooperation activities between TVET institutions and enterprises in GZAR and ASEAN countries. The results-based lending (RBL) program will address these issues.

B. Sector Strategy

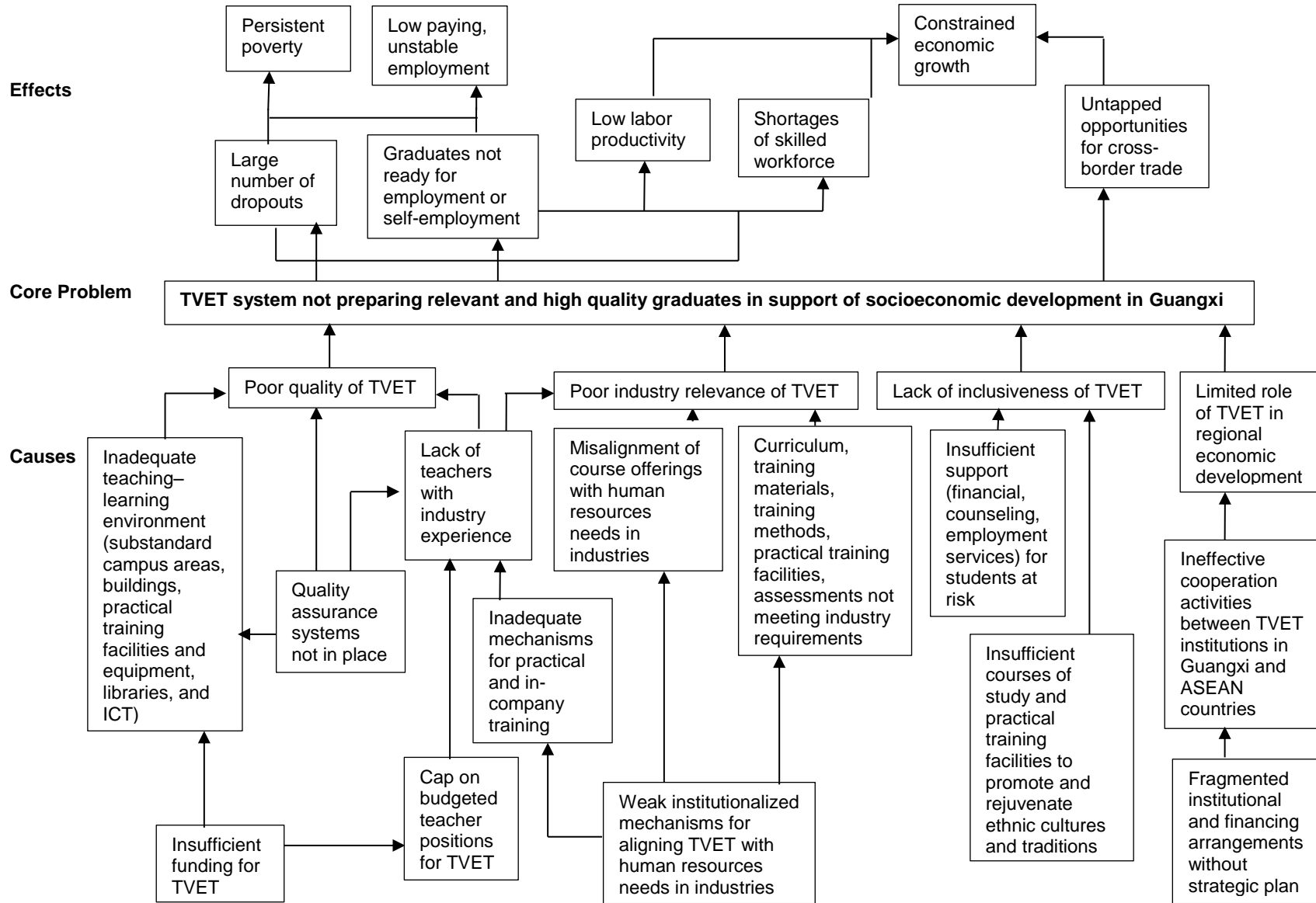
7. The GZAR government's strategy for TVET is set out in the GZAR Modern TVET System Development Plan, 2015–2020, prepared in response to the National Modern TVET System Development Plan, 2014–2020. The overall goal of the plan is to establish a modern TVET system that supports socioeconomic development by better articulating secondary and tertiary TVET; expanding pathways to general academic education; further integrating education and industry training; better aligning it with industrial development; contributing to poverty alleviation; providing continuing education; promoting unique features of different ethnic groups; and opening up TVET for international and regional cooperation. To provide more detailed guidance, including concrete actions, indicators, and targets, the GZAR government issued 10 implementation plans covering priority areas such as (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.

C. ADB Sector Experience and Assistance

8. The Asian Development Bank (ADB) has been one of the major development partners supporting the TVET sector in GZAR since 2013. In the TVET sector, ADB also supports the first RBL program in the PRC (approved in 2015 for Guizhou Province). Lessons learned from these experiences include the importance of sustained incremental adjustments and improvements to the existing system based on national and international good practices, rather than introducing new practices in a fragmented manner, and the need for institutional mechanisms to engage industries in TVET. ADB's assistance to the overall education sector has increasingly been geared toward subsectors of education that interface with the world of work. This RBL program is consistent with ADB's overall strategic direction for the education sector. Relying on the sector-wide and programmatic approaches that the RBL modality facilitates, ADB entered into a cofinancing agreement with German development cooperation through KfW to jointly support this RBL program.

³ An unofficial calculation shows that the dropout rate in secondary TVET is close to 20%.

PROBLEM TREE



ASEAN = Association of Southeast Asian Nations, ICT = information and communication technology, TVET = technical and vocational education and training.