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Improving Technical and Vocational Education and Training in West Bengal

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STRATEGIC REFORM ROAD-MAP

for the Technical and Vocational
Education and Training Sector in
West Bengal



THE WORLD BANK

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in West Bengal

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Preface

The Minister in-charge of the Department of Technical Education and Training (DTET), Government of West Bengal approached the World Bank seeking technical support to review and diagnose the current technical and vocational education and training (TVET) system in the state, and based on the outcomes of the review suggest a reform road map that can be implemented in the TVET system to make it demand driven. The DTET wanted the technical assistance to assess the existing TVET institutional framework, relevant policy framework, current financing and governance of the TVET system, possibilities of having public-private partnership in the context of the youth bulge, and the labor market which is envisioned to undergo rapid change as result of the new government's thrust on industrialization and job creation. Based on the assessments and technical due diligence, and drawing lessons from international good practices, this task has tried to address the needs of the DTET and suggest a strategic reform roadmap in this report, that the DTET may consider taking forward.

The Bank task team engaged with the GOWB and followed an intensive participatory process of consultation with several government departments involved in skills development, industries and industry associations, public and private training providers, vocational training providers, and other key stakeholders. Some of the key departments, among others consulted are, technical education and training and their councils, rural development, industry and commerce, medium, small and micro enterprises, women and child development, West Bengal Industrial Development Corporation, and labor and employment. Focused group discussions were held with leather industries, health, construction, and petrochemicals, which are among the growing sectors in the state. Workshops were conducted with public and private training providers such as Industrial Training Institutes, Polytechnics, Vocational Training Centers at secondary education level, and Vocational Training Providers. Apart from these consultations and workshops, a number of in-depth studies were conducted and background technical papers were prepared focusing on governance and capacity of TVET sector, quality assurance in TVET, performance of training institutions in public and private sector, public finance and skills development, convergence for optimal utilization of resources for financing TVET, mainstreaming public-private partnerships in skills development, and skills for informal sector.

The key points that emerged out of the analysis are:

- West Bengal, the fourth populous state in India, is witnessing a youth bulge in its population due to demographic transition. The labor force participation rate in the state has been historically low for

various reasons. The labor market is dominated by the informal sector with more than 90% of all employment in the informal sector.

- The average years of education in the population is rising, but a large number of people, nearly 20% of male and 30% of female youth are either illiterate or have less than primary education. Less than 1% of youth have any formal vocational training. There is a stock and flow issue in the labor force
- Currently, training delivery in West Bengal is weak with poor resources, lack of performance incentives, and ad-hoc financing of a TVET system that is largely dominated by the public sector. There is little monitoring and evaluation, and no quality assurance either internally within the system, or externally from industry and end-users, namely employers. Demographics in the state may put pressure on the system to expand; however, without up-front reforms to improve quality, governance and accountability, any expansion of the system will be costly and wasteful. Any TVET strategy in the state will need to first tackle the problems of quality and cost-effectiveness before expansion.
- Private provision, public private partnerships and various forms of demand side financing and cost-sharing can both generate resources for skill development and make the system more competitive, efficient and integrated. Resource allocation mechanisms perforce need to take performance into account; otherwise any expansion of the system will reproduce current inefficiencies.
- The government needs to create an enabling policy framework to forge stronger coordination among various departments providing skills training with sound quality assurance, monitoring and evaluation mechanisms, and promote private sector participation in provisioning and enhancing quality.

Acknowledgments

We would like to thank Mr. Ujjwal Biswas, the Minister-in-Charge, Technical Education and Training, and Mr. Hridayesh Mohan, Secretary, Department of Technical Education and Training, Government of West Bengal, for their generous support to this activity. We also express our gratitude to Mr. Rabi Ranjan Chattopadhyaya, former Minister-in-charge, Technical Education and Training, Mr. Manoj Aggarwal and Mr. Anil Verma, former Secretaries of the Department of Technical Education and Training, Government of West Bengal, who approached us to help the Government of West Bengal in developing a strategic road map for Technical and Vocational Education and Training (TVET) reform in the state. We acknowledge with deep appreciation the contribution of Mr. Parijat Dey, Director, Technical Education, Mr. Hari Prasanna Dey, Director, Industrial Training, and Mr. Pradip Kumar Chakrabarti, Director, Vocational Education and Training, who kept providing continuous support to the World Bank team in this endeavor. In the course of the study, the Bank team met with several senior officials of the Government of West Bengal, representatives of industries and industry associations, private training providers and academicians – to all of whom we express our sincere gratitude.

The Kolkata-based team of FICCI headed by Ms. Mousumi Ghose provided day-to-day support for data collection, coordinating meetings, organizing workshops and consultations. We are thankful to her and her team of young researchers, Amrita Niyogi and Ayena Mitra, for their assistance. For the background papers for this report, we would like to thank Ms. Belinda Smith (Quality Assurance), Mr. Saurabh Johri (Governance), Ernst & Young (Public Private Partnerships), Dr. S.A.A. Alvi (Status of Polytechnics and ITIs), and Mr. A.K Ganguli (leveraging resources for expanding access of TVET). Renu Gupta from the World Bank provided administrative and logistics support.

The report was prepared by Nalin Jena, Senior Education Specialist and Sangeeta Goyal, Senior Economist under the overall guidance of Amit Dar, Education Sector Manager. Special thanks are due to Jee-Peng Tan, Advisor, HDN, World Bank, Balasubramaniam, DfID, and Xiaoyan Liang, Senior Education Specialist, EAP, World Bank for providing technical comments on the concept note as well as the draft report. The team would also like to thank John Blomquist, Lead Social Protection Economist, and Tobias Linden, Lead Education Specialist for their support in the process of carrying out the task.

Last, but not the least, we thank DfID for providing resources through a Trust Fund and the office of the Country Director, World Bank Delhi office for facilitating the execution of this report.

Executive Summary

West Bengal has done well to improve literacy and elementary education in the last 10 years. However, educational attainment in the state has faltered beyond the elementary level. Due to past failures, a large share of the youth population has low or no education. A miniscule share of young people chooses to acquire technical and vocational education and training.

With a population size of 91.3 million, West Bengal is the fourth largest state in India and accounts for 7% of the Indian population. The labor force participation rate in the state has historically been on the low side, and female labor force participation is one of the lowest in the country. West Bengal's labor market is dominated by the informal sector. More than 90% of all employment is in the informal sector, and nearly 60% of the employed labor force is in the tertiary or services sector. Most employment is of the casual or self-employed kind. Organized sector employment, both public and private, has been on a historical path of decline. With the size of the labor force remaining nearly constant over a decade and loss of formal sector jobs, the informal sector has become an even larger absorber of employment in the state.

The number of employed in the age-group 15-59 years increased by nearly 3.9 million between 2004-05 and 2009-10. Most of this increase was accounted for by increase in employment in agriculture, manufacturing, construction, and transport, storage and communication, and whole-sale and retail trade, sectors which together account for more than 80% of all employment in the state. Seventy percent of the increase was in casual employment, though both regular wage employment and self-employment also rose.

West Bengal's youth constitutes a structural bulge in its population profile due to the demographic transition. Nearly 30% of the state's population is between 15-29 years of age, and between 0.7-0.8 million youth join the labor market every year. While, the average years of education in the population has been rising every year, especially in the younger age groups, nearly 20% of male and 30% of female youth are either illiterate or have less than primary education. The situation is worse among youth workers with higher shares reporting either being illiterate or with less than five years of education. Furthermore, less than 1% of youth have any formal vocational training. With low levels of education and skills in the overall youth population and among the youth workers, the state needs to develop a strategy for developing skills in its current and future work-force.

West Bengal has a small formal Technical and Vocational Education and Training Sector (TVET) sector with a total capacity of only about 0.2 million. Of this, 0.15 million seats are in Vocational Training Providers which offer short-term training for the informal sector. The rest are in Industrial Training Institutes (ITIs), Polytechnics and Secondary Schools. The latter offer two types of training – Vocational Training Centers (VTCs) offer a 2 year program to grade 10 pass-outs; Vocational Training Providers (VTPs) offer short-term vocational training (usually 6 months long) to those who have completed at least grade 8 and who are more likely to be employed or self-employed in the informal sector. Unlike most other states in India, public formal TVET provision is greater than private; and most TVET on offer is concentrated in the more economically advanced southern and eastern districts of the state. The quality of TVET is also unsatisfactory. Less than 50% of ITI graduates are employed, even 12-24 months after graduation. Industry perception of ITI graduates identifies shortcomings with practical

knowledge as critical gaps in their skills. Girls have lower probability of employment and lower average wages compared to boys. This is true for all types of TVET training.

West Bengal spends less than 3% of its GDP on Education and Training overall (revenue account), and a minuscule 0.03%-0.06% on TVET. The fiscal requirements to provide greater access to TVET and to offer skills that have greater value and are in demand from the market are substantial. Just to increase the rate of youth participation in TVET from the current 1% to 2% would require that West Bengal increase its investment in the sector by six to eight times. Such a fiscal burden for a state which is already fiscally stretched will not be easy. Options to increase investment should include enabling more private provision, partnerships with the private sector, and leveraging funds available from different ministries of the central government.

Despite the presence of a large informal sector in West Bengal, training and skills development for the informal sector remains small in scale and ad-hoc. Labor and credit market constraints, coordination failures and weak policy making process towards the informal sector, all contribute towards the difficulty and complexity of planning and implementation of training programs for the informal sector. The experiences of vocational training providers, both public, private and in the NGO sector, in training targeted towards current and potential workers highlight critical issues that arise in implementing such training programs. There has been little experience with using different forms of demand-side financing modalities for training and skill development for the informal sector; these can prove effective, efficient, and also can correct for some of these issues.

TVET in the state is administered by the Department of Technical Education and Training, and its Councils and Directorates. A harmonized governance structure reduces the difficulties associated with reaching out across line ministries for integrated coordination and planning for TVET. On the other hand, low coordination, overlapping functions and shortages in staff capacity, both in terms of numbers and skills have weakened TVET governance. Staff shortages, specifically, adversely affects TVET quality, and the inability to fill staff positions quickly due to the long drawn out recruitment process further exacerbates the situation. A restructuring of the governance structure around functions, taking measures towards operational decentralization, and establishment of more efficient staff recruitment mechanisms can strengthen TVET governance, accountability and quality in West Bengal. TVET quality will be further strengthened by putting in place a quality assurance framework which is inclusive and has strong linkages with employers and industry.

Currently, training delivery in West Bengal is weak with poor resources, lack of performance incentives, and purely ad-hoc financing of a TVET system that is largely dominated by the public sector. There is little monitoring and evaluation, and no quality assurance either internally within the system, or externally from industry and end-users, namely employers. Public financing is largely used to pay instructor salaries', and does not take into account the substantial dispersion in employment outcomes even within the public sector. Demographics in the state may put pressure on the system to expand; however, without up-front reforms to improve quality, governance and accountability, any expansion of the system will be costly and wasteful. Any TVET strategy in the state will need to first tackle the problems of quality and cost-effectiveness before expansion.

Expansion by itself does not mean public provision. Private provision, public private partnerships and various forms of demand side financing and cost-sharing can both generate resources for skill development and make

the system more competitive, efficient and integrated. Resource allocation mechanisms perform need to take performance into account; otherwise any expansion of the system will reproduce current inefficiencies.

A strategic road-map of reform for the TVET sector in West Bengal

Five dimensions of the TVET sector can serve as thematic goals for reform in West Bengal to direct investment and intervention in the sector. Properly implemented, they can help maximize benefits for a sector that has historically experienced relative neglect and negligible investment. These themes are: (i) governance and accountability, (ii) human resources, (iii) financing and provision for access, quality and efficiency, (iv) quality and outcomes, and (v) research and development, and monitoring and evaluation. A strategic phase-wise time-based implementation plan for reform measures will allow the state to build implementation capacity as it goes along, and take corrective measures based on experience. The table below lists steps the state can undertake in the short-term (1-2 years), medium term (3-5 years) and long-term (5+ years) to achieve these goals.

Table ES 1: Road-map for strategic reform of the TVET Sector in West Bengal			
Goal	Short-term (1-2 Years)	Medium-term (3-5 Years)	Long-term (5+ Years)
Goal 1: Improving Governance and Accountability	Draft State Skills and Employment Policy Establish State Skills and Employment Mission <ul style="list-style-type: none"> ▪ To coordinate all TVET related activities across departments and with industries/employers ▪ Provide policy advice on systemic reforms ▪ Undertake monitoring and evaluation ▪ Promote innovations Strengthen the existing Councils <ul style="list-style-type: none"> ▪ More representation from industries (at least 30-40%) ▪ Structural alignment between Departments and Councils for integrated planning and around functions ▪ Form Committees and Boards with qualified and experienced professionals for curricular development, quality 	State Skills and Employment Policy adopted State Skills Mission fully operational Strengthen the existing Councils <ul style="list-style-type: none"> ▪ Establish Policy and Planning Unit (PPU) in the Directorate for integrated planning and monitoring and evaluation ▪ Formation of State Council of Vocational Training 	Monitor and update State Skills and Employment Policy

	<p>assurance, examination and certification, and teacher professional development</p> <ul style="list-style-type: none"> Establish the proposed 6 regional skills, training and employment centers towards decentralized governance and system management <p>Performance Based Funding</p> <ul style="list-style-type: none"> Introduce performance-based funding of training institutions through a partial block grant modality Pilot performance contracts for government aided private training institutions <p>Institutional Autonomy</p> <ul style="list-style-type: none"> Establish joint management with significant industry participation in training institutions Provide financial, academic, administrative and managerial autonomy to training institutions 		
<p>Goal 2: Improving Human Resources in TVET</p>	<p>Fill-up existing vacant administrative positions in the Councils and Directorates</p> <p>Create a talent pool of academic faculty primarily from retired/part-time/private sector for specialized training or in situations where there is no faculty due to delayed recruitment or absence</p>	<p>Establish a separate state TVET service commission/Use existing College Service Commission in the state PSC for recruitment of Polytechnic and ITI personnel</p> <p>Full implementation of the PCDP Policy for TVET</p> <p>Establish a TVET Human Resource Development Fund in the Directorate for in-service programs, continuing education, exchange, deputation and advanced research</p>	

	<p>Develop a Professional and Career Development Policy (PCD) for TVET managerial and academic personnel</p> <p>Review current teacher recruitment and management policy</p>	<p>Link revised teacher recruitment and management policy to PCD policy</p>	
<p>Goal 3: Improve TVET Provision and Financing for Access, Quality and Efficiency</p>	<p>Formulate PPP policy for TVET</p> <p>Undertake strategy formulation for expanding access to underserved areas and growing industrial sectors</p> <p>Increase capacity of current infrastructure to train through introduction of multiple shifts using PPP modalities</p> <p>Improve girls' enrollment in TVET through appropriate scholarships, subsidies, hostel facilities and job placement assistance</p> <p>Introduce, where appropriate, innovative financing modalities such as cost-sharing with employers, targeted subsidies, vouchers, student loans in longer term formal training, and in further education of teachers</p> <p>Expand allocation from the state budget for TVET according to plans developed by the Policy and Planning Unit (including gap financing)</p> <p>Undertake in-depth evaluation of VET at secondary level</p>	<p>Enable and incentivize more private sector provision of TVET</p> <p>Reform based provision to meet demand for skills in the formal and informal sector by leveraging available financing through various central schemes, Ministries, private sector (CSR)</p> <p>Conduct a feasibility study for a State Training Fund</p> <p>Based on the findings of the evaluation redesign the VET at secondary level with strong linkage with labor market needs and pilot the redesigned strategy</p>	<p>Establish the State Training Fund</p> <p>Based on the lessons from the pilot, decide to scale-up appropriately or otherwise</p>

	<p>Training for the Informal Sector</p> <ul style="list-style-type: none"> ▪ Reach out to inactive youth through specifically tailored programs ▪ Evaluation of a sample of ALMPs for the informal sector run by government and non-government providers 		
<p>Goal 4: Improving Delivery Quality and TVET outcomes</p>	<p>Introduce apprenticeships/internships for developing work-readiness of formal and informal sector trainees and workers</p> <p>Establish a TVET Quality Assurance Committee drawing personnel from the Councils, Department and External Experts and Industry Representatives</p> <p>Establish Curricula Development Committee as an integrated function of the 2 Councils</p> <p>Develop Training Quality Indicators (TQI)</p> <p>Introduce Training Quality Awards for Training Institutions based on TQI</p> <p>Conduct Training Needs Analysis for teachers</p> <p>Identify and remove redundant courses and plan to retrain and retain the teachers</p> <p>Build capacity of public and private training providers</p>	<p>Develop and adopt a Quality Assurance Framework</p> <p>Implement teacher training according to needs analysis and using the PCD framework</p> <p>Enable public and private training institutions and providers to be eligible to offer different levels of TVET teacher training</p>	

<p>Goal 5: Improving Research and Development (R & D) and Monitoring and Evaluation (M & E)</p>	<p>Conduct labor and training market studies</p> <ul style="list-style-type: none"> ▪ Employment surveys ▪ Household surveys ▪ Tracer Studies ▪ Cost-benefit analysis of various training schemes 	<p>Institutionalize R & D and M & E through the establishment of a state level institute</p> <p>Operationalize state, regional and sub-regional offices towards collection of labor market information</p>	
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Chapter 1: Overview

Introduction

1.1 This report focuses on one of the key pillars of economic growth – namely, human development, and in particular, on skills development in West Bengal. It examines the current status of skills development, and potential ways forward for making the production of skills in the state more aligned to its economic growth needs. More specifically, the report investigates the characteristics of the technical and vocational education and training system that produces skills, how these skills match up in quantity and quality with what is in demand from employers in the organized and informal sectors, governance and quality assurance systems, emerging partnerships between the government and private providers of skills, and the availability of financial resources for skills development. Based on the findings from primary surveys, secondary data analysis, in-depth consultations with stakeholders, and declared policy priorities, the report provides a strategic framework and a time-based implementation road-map for reforming and reorienting technical and vocational education and training in West Bengal.

1.2 This task was undertaken at the specific request of the new Government of West Bengal (GOWB) who took office in 2011. The GOWB wanted to know how to improve the quality of vocational and technical education and training in the state, and provide greater access to skill development to more young people. The request was formally transformed into a Non-Lending Technical Assistance (TA) with the Education Unit of the World Bank's New Delhi office. This report is one key output of the TA which covered a range of activities including bringing on board national and international expertise on various TVET issues, consultations with a variety of public and private sector stakeholders in the state, a series of learning and dissemination workshops, and partnerships with organizations who are engaged in this sector.

West Bengal: Harnessing Human Resources

1.3 West Bengal grew at a higher than Indian average annual growth rate of 7% between 1993-94 and 2003-04¹, helped by agricultural growth which was twice the Indian average. Other key inputs to development² have also shown continuous improvement. Literacy has surged in the state, and poverty has declined at rates faster than the Indian average. West Bengal has been at the forefront with respect to land reforms and decentralized governance through the Panchayati Raj Institutions. Reforms in the agriculture sector have been inclusive, and shared relatively evenly.

1.4 Since the middle of the 2000s, however, growth in the state has slowed. In 2011, West Bengal's per capita income was approximately US\$900, which was the 13th highest among the major Indian states. West Bengal did better only than the poorer eastern states, and the large states of Bihar, Rajasthan, Madhya Pradesh and Uttar Pradesh, lagging behind the southern and western states.

¹ In 1993-04 prices; India's annual growth rate for the same period was 5.9%.

² These are also development outcomes.

1.5 Economic slow-down in the state can be attributed partly to leveling out of earlier reforms especially with respect to land reforms and agriculture, the long term trends of slowing industrial growth and shrinking organized employment, high state-level fiscal burden, infrastructural deficits, and human development failures beyond the post-secondary (and even at lower levels).³

1.6 Demographics favor West Bengal whose 91.3 million people according to the latest Census⁴ data accounts for 7% of the Indian population. The state adds approximately 700,000-800,000 new entrants to the labor force every year, a key input to growth (Aiyar and Modi, 2010). West Bengal can harness its demographic dividend – change in the population’s age-structure that can contribute to economic growth – by providing the right policy environment and making specific investments in education and training. With a youthful ‘bulge’ characterizing the labor force, resources oriented towards better education and job training can raise productivity and incomes in the informal sector. For poor farmers and agricultural workers with small tracts of land, low levels of human capital makes switching to alternative occupations costly, a state of affairs further exacerbated by lack of insurance mechanisms and access to credit (Ghatak and Banerji, 2009).

1.7 In recent years, the Government of West Bengal (GOWB) too has been focusing on inclusive growth strategies, with human capital and skill development, particularly of the state’s youth, as a key strategic pillar. This report is aligned to GOWB’s development and growth objectives, and provides a description of how the Technical and Vocational Education and Training Sector can be reformed, re-oriented and developed towards the achievement of these objectives.

Organization of the Report

1.8 The report is organized as follows. Chapter 2 provides an overview of the stock of human capital in the state, and the pattern of participation in education and training by its youth population. Chapter 3 describes employment characteristics in the formal and informal sectors, and the sectoral and geographical distribution of employment. Chapter 4 provides a detailed description of the Technical and Vocational Education and Training (TVET) sector in West Bengal. These include Industrial Training Institutes, Polytechnics, Vocational Training Centers and Vocational Training Providers. A tracer study of graduates of these institutions was undertaken in 2012. Key findings from the study are presented in this chapter. In Chapter 5, skills development for the informal sector is discussed. In this chapter, key points from discussions with different sets of training providers who offer short-term training targeted towards the informal sector are also presented. Chapter 6 discusses current expenditure on TVET and projected financial requirements based on a set of economic and population growth scenarios. Chapters 7 and 8 describe and analyze the governance, accountability and quality assurance systems in the state. In these two chapters, the key strengths and weaknesses of these systems are identified and solutions proposed. In Chapter 9, the data and analysis presented in the preceding chapters are pulled together to present a strategic road-map for reform of the TVET sector in West Bengal. The reform road-map is

³ Industrial growth rate of the state has declined from 3.9% in 2000 to 1.7% in 2010. According to the Annual Survey of Industries (2010), West Bengal’s industrial gross value per worker added to the state’s GDP was Rs 3.26 lakhs/US\$ 5520 giving it the 11th spot among Indian states (in comparison, Maharashtra added Rs 9.05 lakhs/US\$18100 and Gujarat, Rs 7.20 lakhs/US\$14400).

⁴ Provisional Population Totals; Paper 1 of 2011, Office of the Registrar General and Census Commissioner, India

structured along two criteria – a set of goals, and by what is plausibly achievable in the short-term (1-2 years), medium-term (3-5 years), and long term (5+ years).

Chapter 2: Education and Training Attainment in West Bengal

Introduction

2.1 Education and training provides skills and knowledge that make people more productive in their jobs, and enables them to earn higher incomes; they also provide the basis for technological productivity, allowing economies to push their production possibilities frontier outward, even when keeping the level of resources constant. Skills and knowledge can be acquired through formal pre-employment education and training, and through formally provided in-service training, as well as through informal apprenticeships and learning on the job. In this chapter, we examine the distribution of education and training in the population of West Bengal. The stock of human capital – i.e. the prevalence of skills and knowledge in the population, reflects past investments by governments and households. It may be noted that education and training contribute to growth, but other favorable factors such as an attractive business environment, infrastructural adequacy and financial access also need to be present.⁵

The Stock of Human Capital

Literacy

2.2 West Bengal's literacy rate increased to 77.08% in 2011 from 68.6% in 2001, which is higher than the Indian average. West Bengal's female to male literacy ratio is 86% whereas for India as a whole, it is only 79%. However, for a state with a population size of more than 90 million people, the current literacy rate translates to nearly 21 million men and women without the ability to read and write. According to the 66th round of the National Sample Survey Data (NSS), in 2009-10, 28% of the population in the state aged 7 years and above, were either not literate or had below primary education. The situation was much worse for females at 33%.

School Education

2.3 Figures 2.1 and 2.2 show the educational attainment of the population for the ages 7 years and above for West Bengal and India in 2009-10. A comparison of the two by highest levels of education achieved shows that (a) West Bengal does better than India vis-à-vis primary and middle school, and (b) a higher share of the population in West Bengal completes secondary and higher secondary education than in India as a whole. For graduate and post-graduate levels of education, the shares are roughly the same.

⁵ Sources of data used in this chapter: Census 2001, 2011, 66th round of the NSS, DISE 2003-04, 2011-12, SEMIS 2010-11, ASER 2012, UGC 2012.

Figure 2.1: Education attainment of population 7 years and above, West Bengal (2009-10)

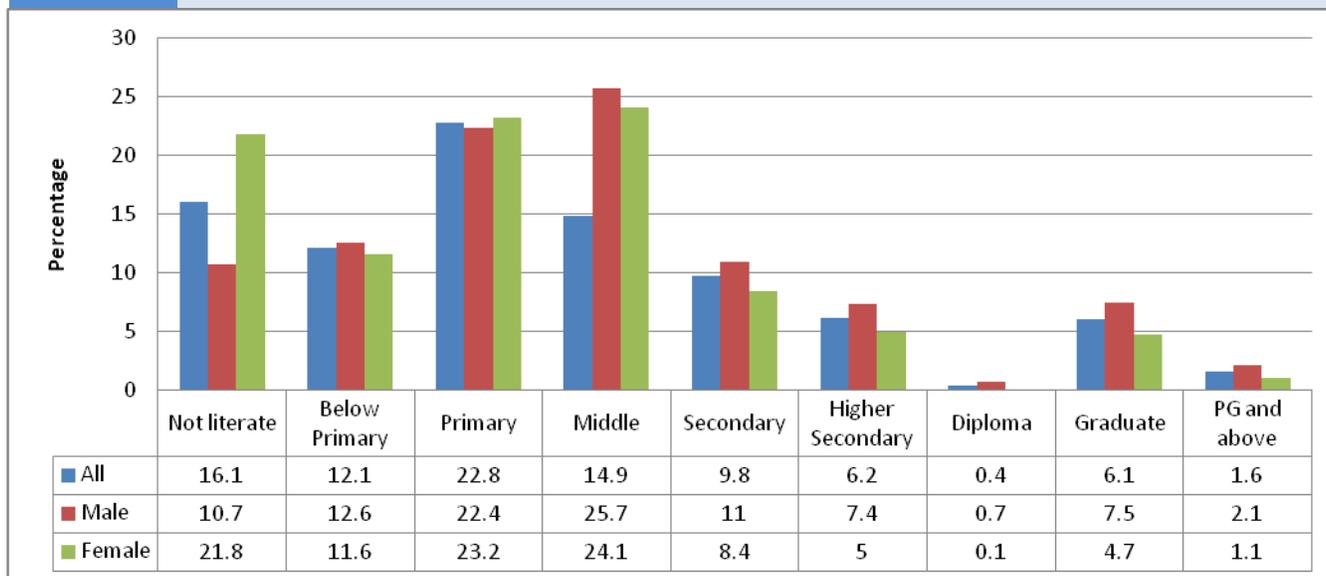
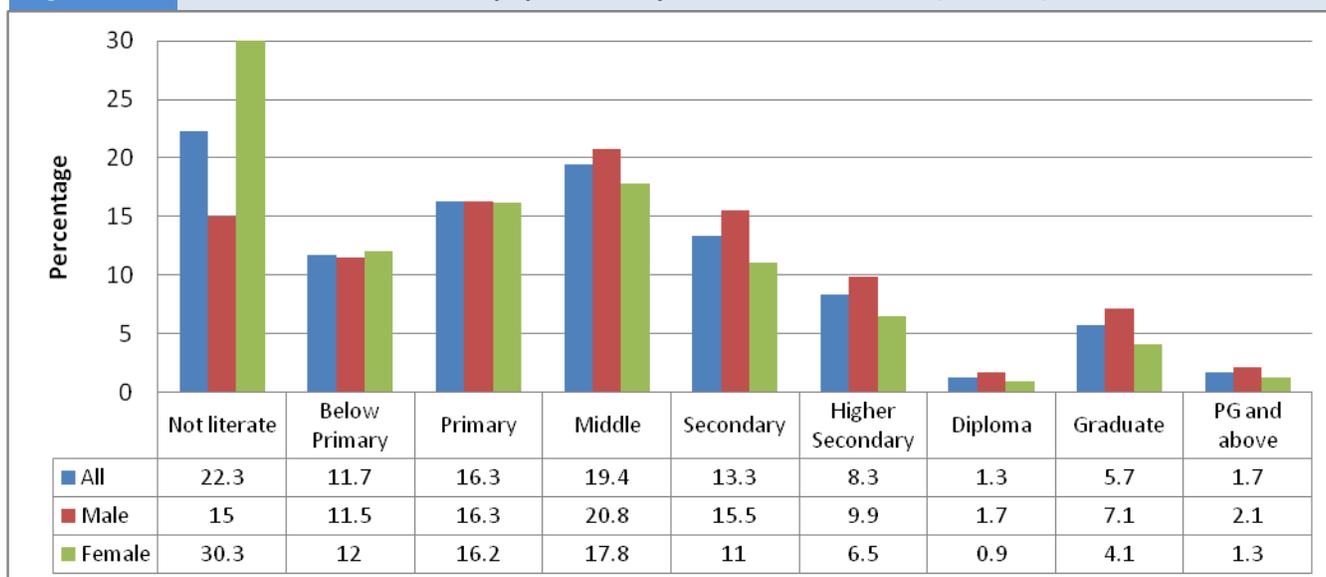


Figure 2.2: Education attainment of population 7 years and above, India (2009-10)



- Trends in School Enrollment and Completion:** Enrollment in primary (grades 1-5) and upper primary (grades 6-8) has steadily increased in the state. Between 2002-3 and 2011-12, enrollment in the eight primary and upper primary grades combined increased by 2 million from 12.8 million to 14.8 million. The Gross Enrollment Ratios (GERs) in both primary education and upper primary education registered significant increase – from 103.4 to 136.9 for primary grades, and from 55.2 to 92.4 for upper primary grades. This is due to better population coverage of both primary and upper primary schools (and sections) and increasing household demand for education.

- **Internal Efficiency and Transition:** Drop-outs from primary grades have reduced over time. The survival rate in primary grades between 2002-03 and 2011-12 increased from less than 65% to more than 80%. The transition rate from primary grades to upper primary grades also increased from less than 50% to nearly 85%. However, the transition rate to secondary grades lags behind. While enrollments have increased in secondary and higher secondary grades, they are still lower than expected. In 2010-11, the total enrollment in secondary grades (grades 9-12) in West Bengal was 3.4 million – only a quarter of enrollments in grades 1-8, constituting a GER of less than 50% in secondary and higher secondary grades.
- **Learning Outcomes:** While the state has made rapid progress in getting children into school, poor education quality is a very serious concern in West Bengal. Nearly 10% of children in grades 1-8 cannot recognize a letter. Only 48% of children in grade 5 can read a grade 2 text; and only between 20-30% of children in grade 5 can subtract and divide (Annual Survey of Education Report, 2011). The GOWB is addressing the serious issues of quality in school education through the Right to Education Act and the Sarva Shiksha Abhiyan (SSA – Universalization of Elementary Education Scheme).

Higher Education, Diplomas and Vocational Training

2.4 The GER in tertiary education in West Bengal is 9%, which, as the distribution of education levels in the population suggests, is similar to the Indian average. According to University Grants Commission data, in 2012, West Bengal had 26 degree-awarding institutions (India: 634) and 932 institutions of higher education (India: 33023). The number of students in higher education in West Bengal at 94000+ in 2010-11, was nearly the same as those in diploma courses and formal vocation training (roughly 90,000-100,000).

2.5 With respect to diplomas, which is a post-secondary but below-graduate qualification, West Bengal is an outlier state – it not only produces significantly fewer diploma graduates compared to India, but it also does worse than the average Indian state, compared to its level of development.

Table 2.1:	Percentage of youth population with a diploma, 2009-10					
	West Bengal			India		
	All	Male	Female	All	Male	Female
Percentage of youth population with diploma	0.4	0.7	0.1	1.3	1.7	0.9

2.6 Only a minuscule share of the youth population undergoes any formal or non-formal vocational training. In 2009-10, only 10-11% of youth in West Bengal reported having undertaken or having received any form of vocational training whether formal or non-formal; and 70% of all reported vocational training was through non-formal means.

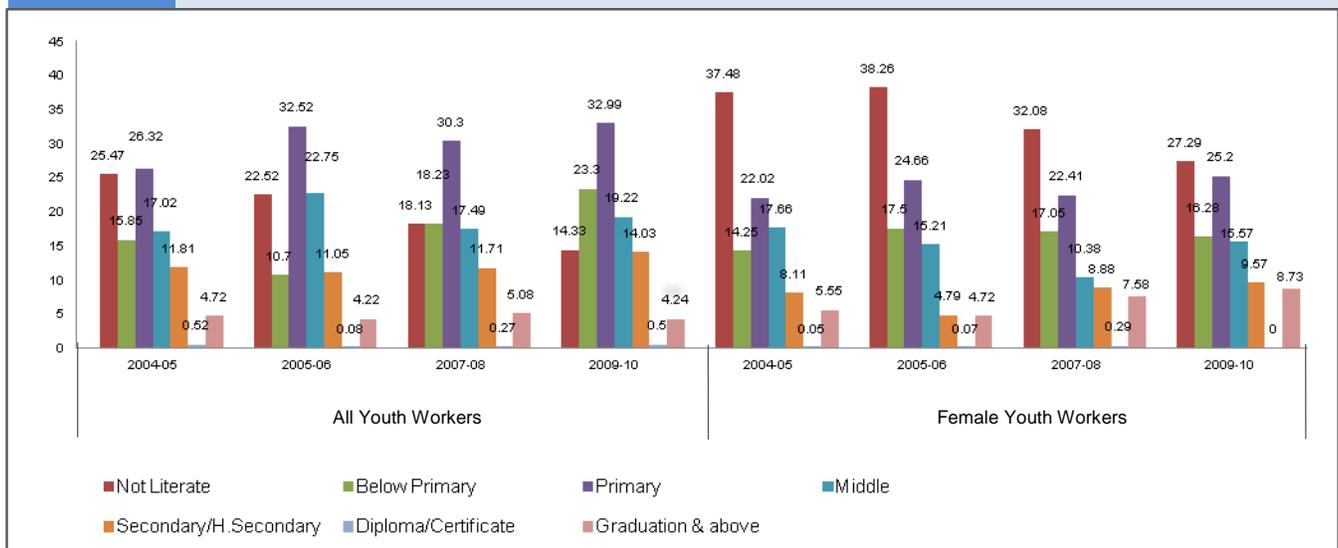
Education among the Youth Population and Youth Workers

2.7 Over time, illiteracy in the younger age-groups has been declining because of the norm of universal enrollment in primary schools. However, due to poor educational quality and high drop-outs, low educational achievements among youth remains a worry for the state. In 2009-10, 8% of male youth and 16% of female youth were non-literate, and another 11% and 14% of male and female respectively had less than a primary school education.

Education and Training and Labor Market Participation

2.8 Figure 2.3 below shows the education levels of all youth workers and female youth workers in the state over time. For youth workers overall, and for female youth workers, education levels have risen over time, and illiteracy has come down. However, in 2009-10, 30% of all youth workers, and 45% of female youth workers were either not literate or had not completed primary schooling. These shares are higher than those for the overall youth population in the state, indicating a flatter relationship between education and labor force participation.

Figure 2.3: Education among youth workers in West Bengal, 2004-05 to 2009-10



* For Diploma/Certificate, the '0' is due to rounding off.

2.9 Data from the 66th round of the NSS shows that the prevalence of vocational training is higher among youth workers (those in the age-group 15-29 years) and higher still for self-employed youth workers (Tables 1 and 2 in Annex 2 show the shares of youth by gender and rural-urban location who report any vocational training and some form of non-formal vocational training). Female youth workers have more training than male youth workers overall. Nearly all vocational training among female and male youth workers and self-employed workers is of the non-formal kind. The exception is the employed urban female youth, whether employed or self-employed, who reports more formal vocational training compared to any other disaggregated category (gender; rural-urban location).

2.10 The positive relationship between vocational training and employment/self-employment is confirmed when we do a multi-variate regression of labor force participation and employment of youth as dependent variables, controlling for a number of personal and socio-economic characteristics such as age, gender, caste, and rural-urban location. Youth with any training (whether formal or informal) were 30% more likely to be in the labor market, albeit most of the training reported is informal consisting of learning-by-doing and non-formal apprenticeships⁶. There was also a positive and significant, but small, relationship between having any training and being in employment/self-employment for youth, compared to youth with no training.

2.11 The good news for the state is that shares of the youth population and of youth workers in the state with little or no education have declined over time, and the trend is likely to continue. On the other hand, for less educated and illiterate youth already in the labor market, options for second chance acquisition of basic literacy and numeracy are non-existent. As we will see in Chapter 3, more than 90% of the employment in the state is in the informal sector and more than 40% of all employment is in agriculture and allied services. If basic literacy and numeracy skills of workers in these sectors were improved, it can lay the basis for accumulation of further skills that can lead to higher productivity and incomes and also contribute to faster poverty reduction. Furthermore, the availability of skilled labor is not uniform across sectors, and across regions within the state (KPMG, 2012). West Bengal will need to re-orient its technical and vocational education and training system, towards better alignment with its regional development strategy, to provide access to basic literacy and numeracy and training for the informal sector in a cost-effective manner, and ameliorate institutional, market and other failures so that the TVET system produces those skills that are needed by the labor market and key growth sectors.

⁶ This does not require the youth to be necessarily literate.

Chapter 3: Employment Characteristics

Introduction

3.1 The onset of demographic transition in West Bengal has taken place earlier than that of India, lowering the rate of population growth in the state below the country's. Between 2001 and 2011, the average annual growth rate of population was 1.31% for West Bengal and 1.7% for India. Fertility decline has led to a high share of population in the working age group (15-59 years), and a high share of youth (15-29 years) in the population. In fact, the state will continue to experience a youth bulge for at least another 2-3 decades before it starts to peter out.

3.2 The structure of the economy in West Bengal mirrors that of other Indian states, and that of other developing countries. Nearly 60% of the state's income comes from services, while industry and agriculture provide the remaining, more or less, equally. Agriculture hires the maximum labor with 40% of all employment, and more than 90% of jobs are informal in nature, mostly casual or related to self-employment.

3.3 From the 1980s to the middle of the 2000s, West Bengal was among the fast growing states of India. Agricultural growth took off due to a pro-rural strategy that included land reforms and empowering the system of decentralized administration. There was however a decline in manufacturing in the state. Since 2005-06, the state has experienced economic slow-down as the effects of earlier reforms have worn off, and a new generation of reforms are yet to be introduced.

Labor Force, Participation and Employment

3.4 The size of the labor force in the state has remained more or less constant in the last half decade at 43-44 million. This constancy of the labor force has been partly due to declining youth and very low female participation.⁷ West Bengal has the third lowest female labor force participation rates in India after Bihar and Goa. Open unemployment in the state is as per historical trends; the female unemployment rate is lower than the overall unemployment rate, and one percentage point higher for West Bengal than for India.

Table 3.1: Key demographic and labor force characteristics for West Bengal and India

	West Bengal 2009-10	India 2009-10
Labor Force, 15-59 years	44 million	479 million
Labor Force Participation Rate, 15-59 years	55.9%	59.6%
Youth Labor Force Participation Rate, 15-29 years	42%	
Female Labor Force Participation Rate, 15-59 years	21.9%	34.5%
Unemployment Rate, 15-59 years	14%	14%
Youth Unemployment Rate, 15-29 years		
Female Unemployment Rate, 15-59 years	9%	8%

⁷ West Bengal also has a high youth idleness rate – 7% of male and 65% of female youth report that they are neither in the labor force nor in educational pursuits.

Employment Characteristics

Employment in the Formal Sector

3.5 Formal sector employment in the state is a small proportion of all employment, and has been on a downward path since the early 2000s. In 2010, formal sector employment was 7% of total employment in the state (using NSS 2009-10 figures for the latter). Between 2001 and 2010, the estimated employment in the public sector and the organized private sector declined by nearly a fifth from 2.4 million to 1.91 million. Employment in the organized private sector declined from 0.75 million to 0.72 million, and that in the public sector from 1.65 million to 1.2 million.⁸ With a constant labor force size, and decline in formal sector jobs, more people now find employment in the informal sector, or have informal contracts in the formal sector.

Employment in the Informal Sector

3.6 Employment in the informal sector is and will remain the backbone of the West Bengal economy for some decades to come. A shrinking formal sector only means that it is the informal sector that is absorbing any increase or change in the distribution of the labor force by employment type. According to the 66th round of the NSS data, only 7.5% of the rural employed and 37% of the urban employed were in employment for regular wages. The rest of the workers were either employed as casual workers or were in some form of self-employment.

Industry-based Employment: Medium and Small Scale Industries

3.7 The informal sector in West Bengal includes a substantial number of medium and small scale establishments. According to the Fifth Economic Census (2005), there were 4.2 million medium and small scale establishments in West Bengal of which 95% were urban and the remaining rural. The compound annual growth rate (CAGR) for establishments was 3.82%, lower than the all India rate of 4.69%. Even so, the state was among the top five states in 2005 both in terms of share of establishments and share of employment in these establishments. Altogether these 4.2 million establishments employed roughly 10 million persons, 4.8% in rural establishments and the remaining 95.2% in urban. This is roughly in the same proportion as the distribution of establishments by location. For the state and for India as a whole, the growth rate of establishments was higher than the growth rate of employment. The latter was 2.78% for India and 1.94% per annum for West Bengal between 1998 and 2005.

3.8 Making a rough assumption of a constant labor force of over 44 million for the state between 2001 and 2011, these establishments accounted for nearly a quarter of all employment in the state. Nearly 43% of these establishments were in retail trade, and another 26% were in manufacturing. Transport and storage, education and wholesale trade comprised another 15%.

Industry-based Employment: Formal Establishments and Factories

3.9 According to the Fifth Economic Census (2005), West Bengal had 10.25% of all establishments in the country with 10 or more workers. As of 2010, there were 15248 registered factories in the state in 2010 with an

⁸ Source of data in this section: Economic Review of West Bengal, 2010-11, 2011-12

average daily employment of 0.97 million. Of these nearly 60% of the factories were engineering-based. Rice mills, chemical and chemical products and leather and leather products were the other major industries.

3.10 The number of registered factories has grown by nearly 20 percentage points between 2000 and 2010. All major industries have shown positive growth except for rubber and rubber products. Employment in numerical terms has also grown in all major industries except for coal mines, where employment numbers have declined sharply, (from 82,158 in 2000 to 62,000 in 2009).

Sectoral Distribution of Employment

3.11 Table 3.2 below shows the distribution of the employed and self-employed population in the age-group 15-59 years by sector or work (using National Industrial Classification levels). Forty two percent of the employed population is in agriculture, most of them in the rural areas. Manufacturing employs 17%, and the rest of the employment is in services, especially wholesale and retail trade, construction and transportation and storage.

Sector	15-59 Years		
	All (%)	Rural (%)	Urban (%)
Agriculture, Hunting and Related Services	42.42	55.32	3.18
Manufacturing	17.2	14.47	25.52
Wholesale and Retail Trade	12.57	8.89	23.76
Construction	6.54	6.5	6.67
Transport, Storage and Communications	6.47	4.97	11.04
Education	3.09	2.01	6.39
Public Administration and Defense	2.06	0.85	5.75
Other Community, Social and Personal Services	1.83	1.6	2.52
Undifferentiated Production by private households and persons	1.81	1.06	4.1
Hotels and Restaurants	1.46	1	2.87
Fishing	0.99	1.23	0.25
Real Estate, Renting and Business Activities	0.96	0.53	2.28
Health and Social Work	0.92	0.53	2.12
Financial Intermediation	0.83	0.39	2.2
Mining and Quarrying	0.64	0.64	0.66
Electricity, Gas and Water Supply	0.18	0.02	0.69
Total	100	100	100

3.12 The West Bengal economy is becoming more 'informal' and service oriented over time. Table A3.1 in Annexure 3 shows the change in employment by sector and by type of employment between 2004-05 and 2009-10 for the age-group 15-59 years. Between the two years, total employment increased by 3.89 million in this age-group. Seventy percent of the increase was in casual employment, 16% in regular wage employment and 14% was in self-employment. The sectors contributing most to the change were transport, storage and

communications and wholesale and retail trade (48%), agriculture (25%) and construction (16%). These sectors account for 83% of all employment in the age-group 15-59 years (Table 3.2).

3.13 The pattern of change within these sectors is, however, different. In agriculture, there was a substantial decline in self-employment and sharp increase in wage employment (some of which is likely due to take-up of the National Rural Employment Guarantee Scheme). In construction and manufacturing, all three types of employment increased, albeit more than 50% of the increase was in casual employment. In transport, storage and communications and wholesale and retail trade, casual employment declined but regular and self-employment increased.

Geographical Distribution of Industries

3.14 The main industrial centers in West Bengal are Kolkata, Salt Lake, Haldia, Asansol-Durgapur and Kharagpur. In terms of districts, the combined North and South 24 Parganas, Howrah, Kolkata and Burdwan account for more than 80% of all registered industrial units in the state. Between 2012-22, Murshidabad, South 24 Parganas, North 24 Parganas, Burdwan and West Medinipur will add the most number of jobs according to a district-wise analysis done by the consulting firm KPMG. Job growth in these districts will be in services such as animal husbandry, pisciculture, construction and IT and ITES, and in manufacturing in iron and steel, chemicals, plastic, jute and textiles, and in agro-based industries. Annexure 3 provides a district wise table adapted from the KPMG report.

Youth Inactivity

3.15 West Bengal has very high shares of youth, especially female youth, who are 'NEET' – i.e. those who report neither in education, employment or training. According to the NSS (2009-10), 36% of youth reported being inactive, 7% of male youth and a very high 65% of female youth. Seventy percent of the inactive female youth are rural, where cultural norms of modesty, marriage and child-bearing preclude participation in higher levels of education (which may require travelling to distant locations) and employment. These factors are relevant for all the states in India; however, the share of NEET youth in West Bengal is one of the highest among all Indian states.

Urbanization, Entrepreneurship and Cities

3.16 Entrepreneurship is strongly and positively related to job creation in India (Ghani, 2011). Despite being a stronghold of small and medium scale industries, with most of them belonging to the unorganized sector as noted above, West Bengal has one of the lowest rates of entrepreneurship growth⁹ among Indian states.

3.17 Factors that spur entrepreneurship include the business environment and investment climate – providing easier entry, financial access, and fewer regulatory burdens. West Bengal is ranked middling to low with respect to investment climate (World Bank, 2003). As noted by the World Development Report (2013), which discusses the

⁹ One measure of entrepreneurship growth used by Ghani (2011) is the ratio of young firms (<3 years in operation) per working age population.

role of job creation in economic development, growth policies have to work in tandem with job creation policies to maximize growth potential. Promoting entrepreneurship connects the two nicely. Promotion of entrepreneurship also provides one policy lever towards harnessing the demographic dividend, supporting greater youth and, in particular, female youth employment, and helping the self-employed to overcome the multiple constraints they face in upgrading their skills and scaling-up.

Urbanization and Growth of Cities

3.18 West Bengal, Maharashtra, Tamil Nadu (and other developed states) continue to be the top urban states contemporarily. Thirty-seven percent of West Bengal’s population lives in urban areas, compared to 31% for India. Nearly 70% of the increase in the urban population in West Bengal, however, can be accounted for by natural increase, and the remaining by through net in-migration. The rate of growth of the urban population in West Bengal has declined in the past two decades, in part due to the rural strategy followed by the state government. Most of the migration in West Bengal is due to seasonal distress, from rural-to-rural areas.

3.19 The growth rate of cities has tended to converge over time in India, with smaller cities growing at a faster rate than bigger cities.¹⁰ The share of West Bengal’s urban population living in Kolkata and its agglomerations has sharply declined from 70% in the 1970s to 59% in 2001 and again to 27 % in 2011. Other small and medium-sized towns and cities in the state in the more industrial districts have grown in the meantime. This presents the state with the happy opportunity for a regional and urban growth and development strategy that accommodates job creation and skills development.

3.20 As seen in Table 3.4, Kolkata’s competitiveness is hampered by a relatively poor performance in skills and innovation. The situation, if not corrected for, can also become constraints for the other growth hubs in the state. According to the India City Competitiveness Report 2012, Kolkata was the fifth most competitive city in India. The table below shows the indicators on which the city had the same or better rank than its overall position and on those it did worse among top 50 Indian cities.

Table 3.4: Kolkata’s competitiveness rank and related indicators		
Overall Competitiveness Rank	5	
	Same or Better Rank	Worse Rank
Factor Conditions		
Financial	3	
Physical	5	
Communication	4	
Administrative		33
Human Capacity		9
Innovation		10
Demand Conditions		
Demographics		11

¹⁰ There has also been convergence across states with respect to urban growth – the less urban states have tended to grow at a faster rate compared to the more urban states.

Income Distribution & Spending Patterns		17
Firm Strategy and Rivalry		
Competition Intensity and Firm Diversity		15
Business Incentives	5	
Related and Supporting Industry		
Supplier Sophistication		23
Institutional Support	1	

3.21 Looking ahead, West Bengal will have to pursue a diversified strategy of developing skills among its youth, those in the labor force, and those who will join it in the near future. The strategy will have to account for labor market and employment characteristics, the potential for growth in the urban and rural areas, emerging sectors, and to reach out to a large mass of inactive youth.

Chapter 4: Technical and Vocational Education and Training System in West Bengal

Introduction

4.1 The education systems adopted by the states in India have a uniformity of structure guided by policy directions from the center. The model for the Technical and Vocational Education and Training (TVET) systems across the states too owe their genesis to the model developed by the central government's Ministry of Labor and Employment, which the states have implemented with limited variation.

4.2 The TVET system in West Bengal mirrors the national TVET institutional system described in Box 4.1. In comparison to the school and higher education sectors, the TVET system in West Bengal can be considered to be relatively underdeveloped. The system is small in size, has grown at a relatively slow rate, which in turn has not correlated with the growth of the industrial and service sectors in the state.

Box 4.1 The TVET System in India

Broadly, the formal TVET system in India covers education and training from grade 8 to the tertiary level.

Vocational Education refers specifically to vocational courses offered in school grades 11 and 12 under a centrally sponsored scheme named, "Vocationalization of Secondary Education". Vocational Education falls under the purview of the Ministry of Human Resource Development (MHRD) of the Government of India. The All-India Council for Vocational Education (AICVE), under MHRD, is responsible for planning, guiding and coordinating the program at the national level. State Councils of Vocational Education (SCVE) perform similar functions at the state level.

Vocational Training is institution-based with varying entry requirements, and the duration of the course varies, depending on the level of competency sought and type of occupational training involved. The minimum qualification requirement for admission to a vocational training course can vary from grade 8 to grade 10. The Craftsmen Training Scheme and the National Apprenticeship Scheme of the Ministry of Labor and Employment (MOLE) at the national level, and delivered through Industrial Training Institutes (ITIs), is the most recognized vocational training program in India. Currently, there are more than 2000 ITIs in the public sector and around 7,000 ITIs in the private sector with an enrollment capacity of 1.4 million students. The National Council of Vocational Training (NCVT), a non-statutory body, at the national level and State Council of Vocational Training (SCVT) at the state level, advises the government on policies and guidelines on vocational training.

Technical education is post higher secondary qualification generally leading to a diploma or a degree in polytechnics and engineering colleges at the national and state levels. The All-India Council of Technical Education (AICTE) is a statutory authority for planning, formulation and maintenance of norms and standards, quality assurance through accreditation, funding in priority areas, monitoring and evaluation, maintaining parity of certification and awards and ensuring coordinated and integrated development and management of technical education in the country.

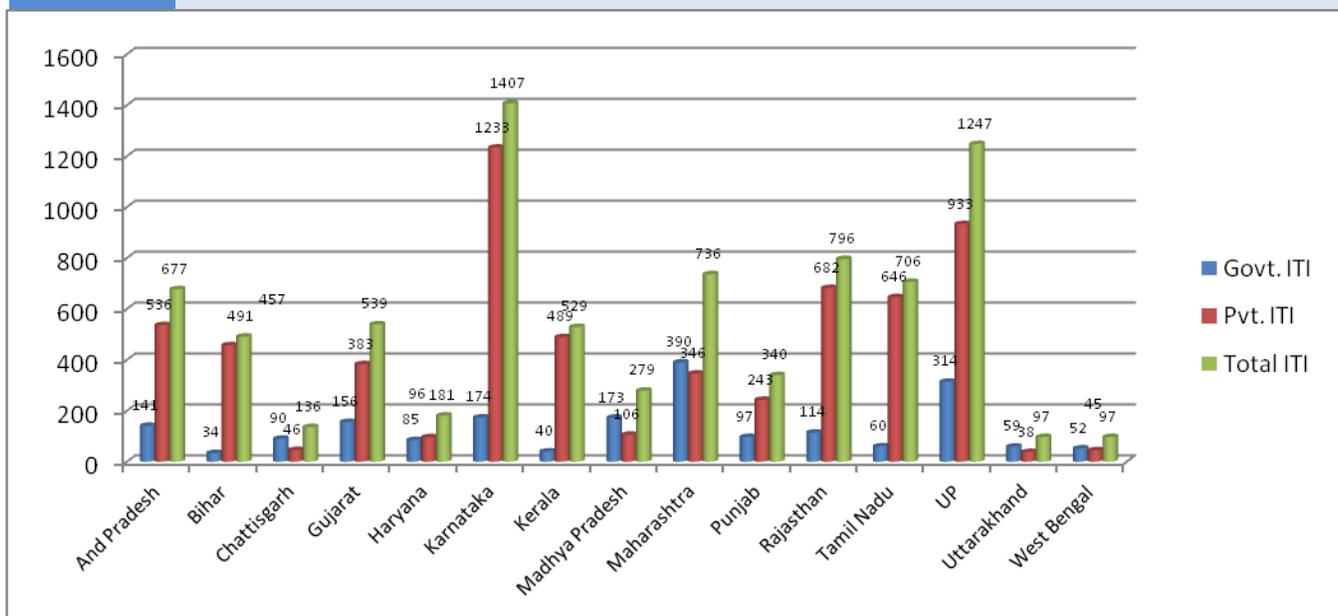
Size of the TVET sector

4.3 Currently the number of institutes providing vocational training and technical education in the state is small, both in absolute numbers and in comparison to other states.

Industrial Training Institutes

4.4 Figure 4.1 provides a snapshot of the total number of Industrial Training Institutes (ITIs) in West Bengal vis-à-vis other states. West Bengal has a total of 97 ITIs, 52 in the public sector and 45 in the private sector. Even a comparatively smaller state like Uttarakhand¹¹ with a population size one-ninth of West Bengal has the same number of ITIs as the latter. Additionally, in most states the number of private ITIs outnumbers public ITIs as much as 5-10 more times, except in West Bengal, Madhya Pradesh, Chhattisgarh and Uttarakhand.

Figure 4.1: Number of ITIs in major Indian states



4.5 According to the estimates of the National Commission for Enterprises in the Unorganized Sector (2008), between 2006-07 and 2016-17, 52.9% of the total increase in labor force and 81.6% of the increase in the young labor force (15-29 years) will be in the eastern and central states (Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar, Uttar Pradesh, West Bengal, Odisha, Assam and other north-eastern states), while the southern and western states will contribute only 28.9% of the total increase in labor force and -2.6% to the increase in the young labor force. On the other hand, the share in the combined seating capacity in public and private ITIs in West Bengal is 1.5 %, compared to 12.1 % in Andhra Pradesh, 11.3 % in Maharashtra, 8.3 % in Orissa, and 3.1 % in Bihar (Table 4.1 in Annex 4).

4.6 The distribution of ITIs in the state is geographically uneven. Figure 4.1 shows the number of ITIs by district in West Bengal. ITIs are present in all 19 districts, but the majority of the ITIs, both public and private, are

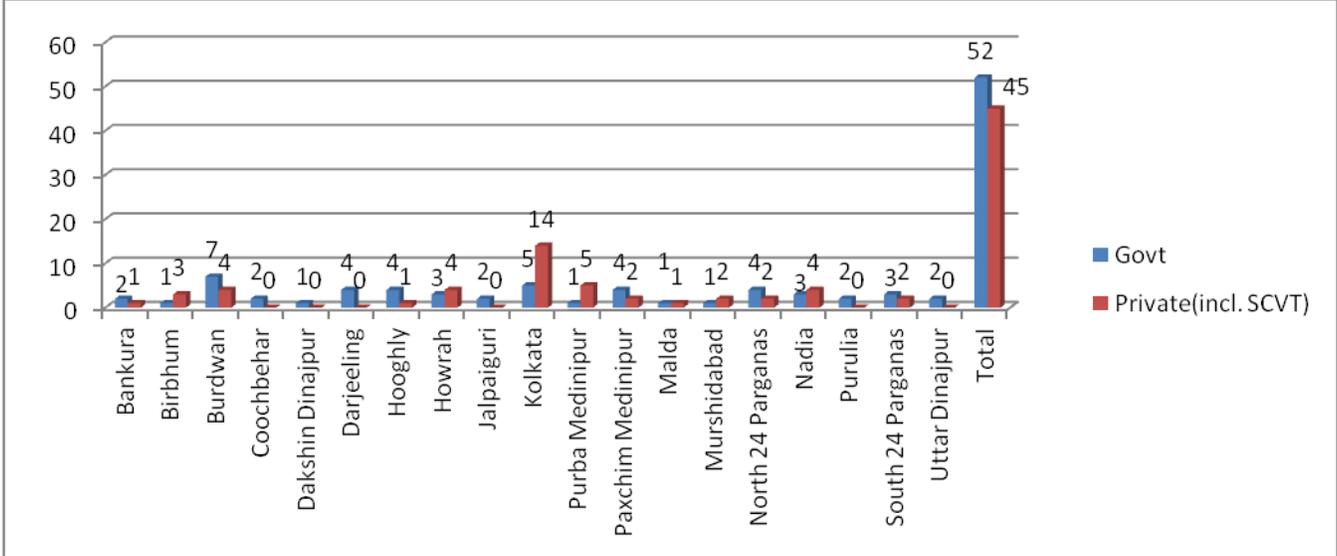
¹¹ Uttarakhand had a population of 10.1 million according to the 2011 Census.

located in the more urban and richer districts in the south and east of the state (Kolkata, Howrah, Hooghly, Burdwan, and Darjeeling). Seven districts do not have a single private ITI.

4.7 There is a clear social demand for ITI places. For every ITI seat, there are currently on an average seven applicants. According to the heads of institutions and Directorate officers who were interviewed as part of the background work for this report, the ratio of applicants to seats have increased with time, also due to the rise in the number of secondary graduates, and of out-of-district applicants who want to enroll in ITIs.

4.8 The total intake capacity of the 97 ITIs in the state is only about 17,000. Private ITIs are much smaller in size than public ITIs – they constitute nearly half of all ITIs in the state, but have only 17% of the total ITI seating capacity. Access to ITI training is, therefore, restricted to the affluent districts, given that generally 95% of the students in any particular ITI come from the same district. Youth in other districts have little access to formal vocational training. The situation is worse for girls who constitute less than 10% of all ITI enrollments. Girls tend to enroll in non-engineering trades whereas most ITIs offer engineering trades which are linked to ‘male-occupations’. This reduces job-related motivation for girls to join ITIs. Lack of secure hostel facilities and distance from home further compound the gender bias. The government, as of now, also does not offer any financial incentives for girls to study in ITIs that would offset some of their direct and indirect costs.

Figure 4.2: Number of ITIs across districts of West Bengal



Polytechnics

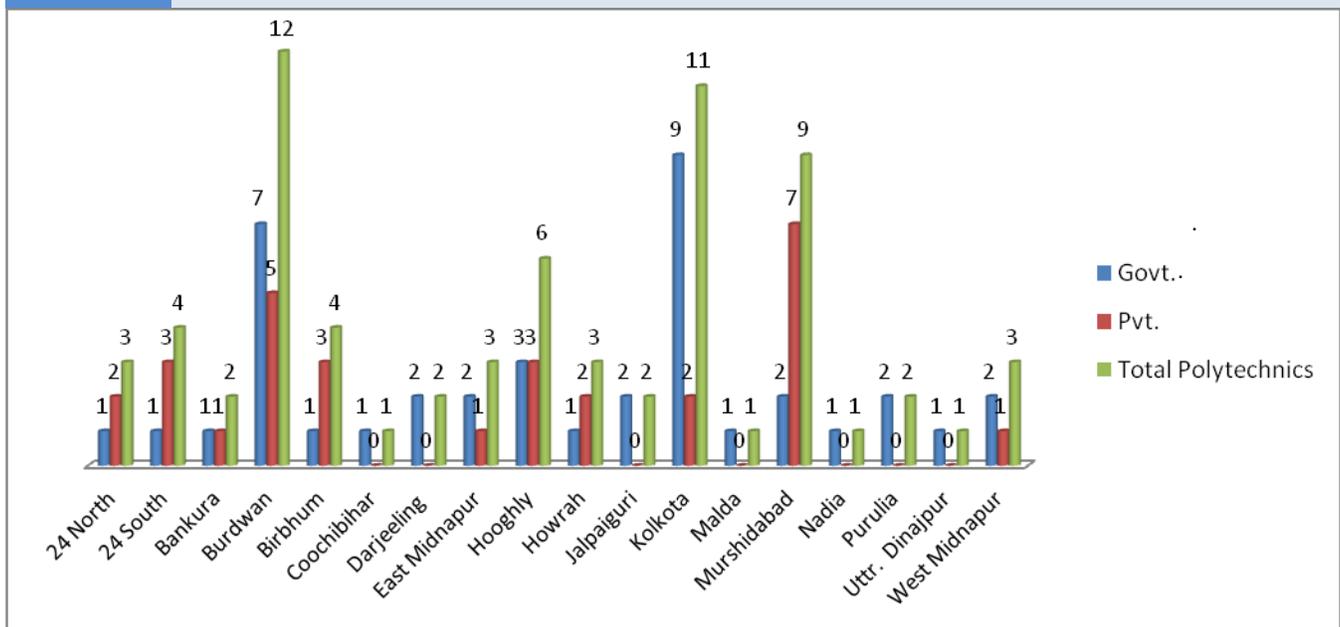
4.9 Figure 4.3 shows the distribution of public and private polytechnics in the state. There are about 70 polytechnics in West Bengal – 38 public, 2 government-sponsored¹², and 30 private ones. The distribution pattern of polytechnics across districts is similar as in the case of ITIs – a clustering in the southern and eastern districts and few private polytechnics in some. Additionally, public polytechnics are clustered in Burdwan and Kolkata, and the two districts between them have 16 of the 38 public institutions. Most of the private

¹²Government bears the salary but no development grant is given.

polytechnics are located in Murshidabad and Burdwan. Uttar Dinajpur, Purulia, Nadia, Malda, Howrah, Coochbihar, Birbhum, Bankura, South and North 24 Parganas have only one government polytechnic each.

4.10 The existing polytechnics have a total seating capacity of about 28,000, 90% of which gets filled on average. Annually, nearly 80,000 students apply for the 28,000 seats in Polytechnics. The Polytechnics in the state compete directly for students with engineering colleges which have grown significantly in number in the last 5-10 years. For those who can afford it, and for those who are able to gain admission, higher education remains the preferred option for students.. Girls’ enrollment in polytechnics at 15% is slightly better than ITIs. There are two polytechnics exclusively for women.

Figure 4.3: Number of polytechnics across districts of West Bengal



Vocational Education at Secondary Level and Other Short-term Courses

4.11 West Bengal has a fairly large system of vocational training providers (VTPs) and vocational training centers (VTCs) managed by the Directorate of Vocational Training and the West Bengal State Council of Vocational Education and Training. Both the short-term and long-term vocational education and training are provided mainly in secondary schools with some private and non-governmental organizations outside of the school system also offering these courses.

4.12 About 3500 Vocational Training Providers (VTPs) offer short-term vocational training in 5 trade areas and 70 courses within those trade areas. This training is open to anyone in the age-group 15 to 40 years with a minimum qualification of grade 8. This is a relatively large system with nearly 1, 30,000 seats. The training is mainly targeted for employment and self-employment in the informal sector. Girls and women constitute about 20% of all enrollees in VTPs. The VTP sub-sector normally gets the highest resource allocation from the state government budget within the TVET sector.

4.13 Vocational Training Centers (VTCs), on the other hand, with an annual intake capacity of 26,000, offer the two year senior secondary vocational stream to those who have completed grade 10. Twenty percent of polytechnic seats in the state are reserved for students who complete the senior secondary certificate with vocational subjects.

4.14 Apart from the VTPs, there are about 150 NGOs and private training providers offering the West Bengal State Council's approved SCVT courses of six and twelve month duration). These training providers have the capacity to train 7,000 trainees annually. The state also runs the Modular Employable Schemes (MES) of the Ministry of Labor and Employment through VTPs. By 2012, 200 VTPs had imparted short-term training under MES to approximately 67,000 trainees. However, the placement rate of MES graduates is as low as 10%. This indicates serious problems pertaining to the relevance of training for employment and self-employment, apart from the overall management and implementation issues, which have significantly affected MES outcomes everywhere.

Private Sector Provision of TVET

4.15 As has been already noted, private sector provision of TVET is less than that by the public sector, a reverse pattern from what we see even in less developed states such as Odisha and Rajasthan. The biggest factor contributing to this state of affairs is the lack of an enabling policy, especially with respect to land availability. Lack of affordability on the part of the populace adds to the mix, especially in the poorer and economically less developed parts of the state, which cannot then adequately substitute for missing policy enablers. As seen in Figures 4.1 and 4.2, in 6-7 districts, there are no private ITIs or polytechnics. This lack of private sector provision puts the burden of providing TVET entirely on a fiscally constrained state.

4.16 Apart from TVET provision in the private sector that is regulated by the various Directorates and Councils, there is a range of formal and unregulated private sector providers offering many types of training in areas such as IT, retail, hospitality, logistics, management, finance and a variety of soft-skills among others. There is no central directory of such training providers; most rely on advertisements, word-of-mouth and increasingly the internet to generate interest among potential customers. These are also fee-charging establishments, operating on a profit-making basis. As of now, there is no systematic study that has looked into the quality of training on offer by these training providers or their outcomes. They are however regulated by market forces, and anecdotally, it seems that there is a high rate of exit of such providers from the market (and also a high rate of entry).

TVET and Industry

4.17 Related to this is the lack of response from the TVET sector to the growth industries in the state such as leather, chemicals, light manufacturing, IT shipping and port-based services. So far, the state has not attempted any formal tie-ups with growth industries. The state ranks fourth with respect to the share of Medium, Small and Micro Enterprises (MSMEs) in India. However, skills development for MSMEs does not currently exist as a concept.

4.18 Even within the current system, linkages between industries and the TVET institutes are almost non-existent. Lack of industry engagement has contributed to the disconnection between the curriculum and market demand. Training institutions' curricula are updated based on the advice of internal committees with little input from the industrial units that constitute the market demand for the graduates they produce. This disconnection, coupled with outdated machinery and infrastructure, is also responsible for the low employability of their graduates. Industry also has discouraging perceptions of the current quality of vocational training institutions and their graduates. Many industrial units who were surveyed as part of one of the background studies for this report said that they were unsatisfied with the technical skills of their semi-skilled workforce, who are usually graduates of ITIs. Both soft skills, an area not touched upon in the training curricula at all, and technical skills that do not match industries' requirements, were consistently mentioned as being below par or absent with adverse consequences for industrial productivity.

On-the-Job Training

4.19 On-the-job training can supplement institution-based training for development of skill sets that are required to complete tasks associated with different occupations. However, except for large export-oriented industries or subsidiaries of international firms, there is little employer-sponsored on-the-job training in India. According to a survey of manufacturing and service enterprises in India in 2006, only 15.9% of the firms offered formal training to their permanent full-time employees (Enterprise Surveys, The World Bank, 2006). [Skills Report] West Bengal has a small organized sector and therefore the scale of any on-the-job training is likely to be lower than other states with a larger formal and organized sector. According to one set of estimates, the extent of on the job training by firms was 11% in West Bengal compared to 27% in Andhra Pradesh and Karnataka (World Bank, 2008). Among the industrial units surveyed for the background study mentioned earlier, on-the-job training if made available was on offer only for professional and managerial staff. No unit had organized any sort of training for their technical and semi-skilled staff (including ITI graduates hired by them).

4.20 Many states, including West Bengal, are now exploring apprenticeships and internships as a means to creating more work-ready TVET graduates. The system of apprenticeship is the most widely used modality for purposes of on-the-job training in developed and developing countries. Varieties of apprenticeship systems exist in different countries adapted to their contexts and labor market characteristics. The more successful systems combine institution and work-place-based training in the design of the apprenticeships (see Box 4.2 for some prominent examples).

Box 4.2: Variety of Apprenticeships

The apprenticeship contract is probably the most widely used instrument for promoting on-the-job training, both in the developed and developing world (Almeida, Behrman and Robalino, 2012). The terms and conditions, duration, and content of the contract vary considerably across countries depending on many factors including history and level of development.

Over 60% of each cohort in **Germany** goes into apprenticeships. Apprentices start between the ages of 16 and 19, after secondary education, and participate for three to four years. The apprenticeship is a legal contract between employer and apprentice: there is an initial probationary period of one to three months, and covers a wide range of occupations. Secondary education takes two broad forms: schools mainly for those going into apprenticeships at age 16 (**Hauptschule** and **Realschule**), with the **Hauptschule** at a lower academic level than the **Realschule**; and schools mainly for those going into higher education, (**Gymnasien**). Recent years have seen a steady increase in the number of apprentices with a university entry certificate (**Abitur**).

The **Canadian Apprenticeship Forum** defines an apprenticeship as ‘an agreement that is signed by the apprentice, the employer, and the apprenticeship authority (office) of the province/territory where the apprentice and the employer work’ (CAF, 2012). Apprentices have to find employment as an apprentice and the employer then acts as a ‘sponsor’ (although there is an employer incentive); and the employer provides the workplace portion of the training. Generally, apprenticeship consists of both periods of work ‘on-the-job’ and periods of ‘in class’ instruction. The ‘in class’ (or academic release) period to provide technical training usually ranges from around four to ten weeks per year (with the norm being 6 to 8). Technical training can occur at a college, a union training centre, with a private trainer, or online.

Egypt has four major apprenticeship schemes. Three of the schemes are offered by governmental bodies: 1) the Productivity and Vocational Training Department (PVTD) of the Ministry of Industry, 2) a dual education program by the Ministry of Education (MoE), and 3) a joint program with mainly public sector companies also offered by the MoE. The fourth scheme is offered by an employers’ organization, the Egyptian Federation for Building and Construction Contractors (EFBCC) where the federation is also playing the role of an intermediary (Badawi, 2009). What is common for the four schemes is that; a) completing basic education is a prerequisite for admission, b) duration, with some particular issues in the case of EFBCC, is three years and c) graduates are granted either a technical secondary school certificate (for MoE programmes) or the same level diploma (for PVTD program).

Source: World Bank and ILO Report, 2012

Lifelong Learning and Recognition of Prior Learning

4.21 In the formal education and training sector, with the Education for All program, while enrollment and completion of eight years of elementary education has improved, enrollment in secondary, tertiary and higher education is still very small, which implies that a large number of youth go out of the formal education and training system at an early stage without “second chance” opportunities to gain basic and work-related skills. Therefore, it was felt necessary to introduce the concept and model of lifelong learning (LLL) approach with Recognition of Prior Learning (RPL) as a tool for skills development, and provide opportunities to youth and adult to have access to learning that could be assessed and certified.

4.22 In the recent years, the development of LLL policy in many countries has shown that there is a growing demand by adults and young people for knowledge, skills and competencies acquired within different contexts (work, education, family life, community and society). Lifelong Learning is defined by European Commission (EC, 2001) as, “All learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective.” RPL, which is being practiced by several countries now, is considered as a significant process for widening participation of youth and adults in education activities while creating a workforce with formally recognized transferable skills (Guimaraes, 2012). RPL is primarily concerned with validating the skills and competencies non-formally and informally acquired, enabling the people to advance in employment and the education and training system. It is a form of assessment with the purpose of taking into consideration the prior learning experiences, competencies of individuals for skilling them further to make them better employable and to meet the market needs. A growing number of countries have implemented RPL for validating non-formal and informal learning, opening up opportunities for a wide range of learners and providing individuals a ‘second chance’ to reach their full learning potential. Some of the international practices of RPL are:

Table 4.1: Recognition of Prior Learning (RPL): International Examples	
Countries	RPL Practices
Mauritius	Used to transform the education and training system in widening access with a view to further promote LLL. Provided opportunity for those who are left out of the system to have their skills and knowledge which is developed outside the formal education system to be valued into formal qualifications.
Seychelles	To facilitate access, transfer and award of credits leading to certification of qualifications within NQF, to promote equity of access and fair chance to all learners.
Namibia & South Africa	Support transformation of education and training system of the country, remove barriers and the extension of benefits to all learners and stakeholders. Values human development and LLL.
Japan	Some knowledge and skills gained informally can be translated into credits of formal education.
Myanmar	Those who participate in non-formal training are provided certificate of completion and based on their skills gained they are able to attend the next higher level courses.
Thailand	Every citizen has the opportunity to learn continuously through-out their life through four programs. The credits accumulated by learners from these programs are transferrable within the same type or between different types of education regardless of how the credits have been obtained.

New Zealand	Recognition and certification of non-formal and informal learning makes visible the skills, knowledge and competencies of an individual. By promoting the individual's self-knowledge, self-esteem and self-concept, recognition encourages individuals who have not previously taken part in the formal education system to do so.
Denmark	Has a long tradition of individual's competency evaluation.
Germany	Recognition of non-formal and informal learning provides access to tertiary education, the second chance education for adults who are working.
Philippines	National Certificate / Certificate of Competency awarded by Technical Education and Skill Development Authority to TVET graduates and workers are recognized locally and abroad as a proof of their competencies. It serves as their passport for employment.
Austria	On the labor market, recognition of competences can lead to better opportunities by matching competences demanded on the labor market to competence profiles of employment seeking persons.
France	Key factor when it comes to recognizing the experience gained through work. It gives greater visibility to acquired knowledge and skills and encourages businesses to explain the skills they expect. It marks out more clearly career paths through validation in the form of collectively guaranteed certifications and emphasizing skills that are useful to the labor market.
Brazil	Government created the National Network of Professional Certification and Training Basic and Continuing "Rede CERTIC". This is social inclusion public policy.

4.23 The rationale for implementing RPL in West Bengal is to facilitate access to a large section of disadvantaged youth and adults to learning and improving competences. While several public and private training providers are providing short-term skills training to people, there is no provision for RPL. In the context of India's changing economic scenario, in general, and West Bengal's strong emphasis on promoting growth in primary, secondary and tertiary sectors of the economy, in particular, a lifelong learning system with a credible RPL mechanism will provide opportunities to a large number of people in the workforce to validate their knowledge and skills already acquired, up-grade their skills and also acquire new skills required for employment, both wage and self-employment. Therefore, the Department of Technical Education and Training, Government of West Bengal may consider developing strategies for RPL in short and medium term and implement it on pilot basis before it is scaled-up.

TVET Quality in West Bengal

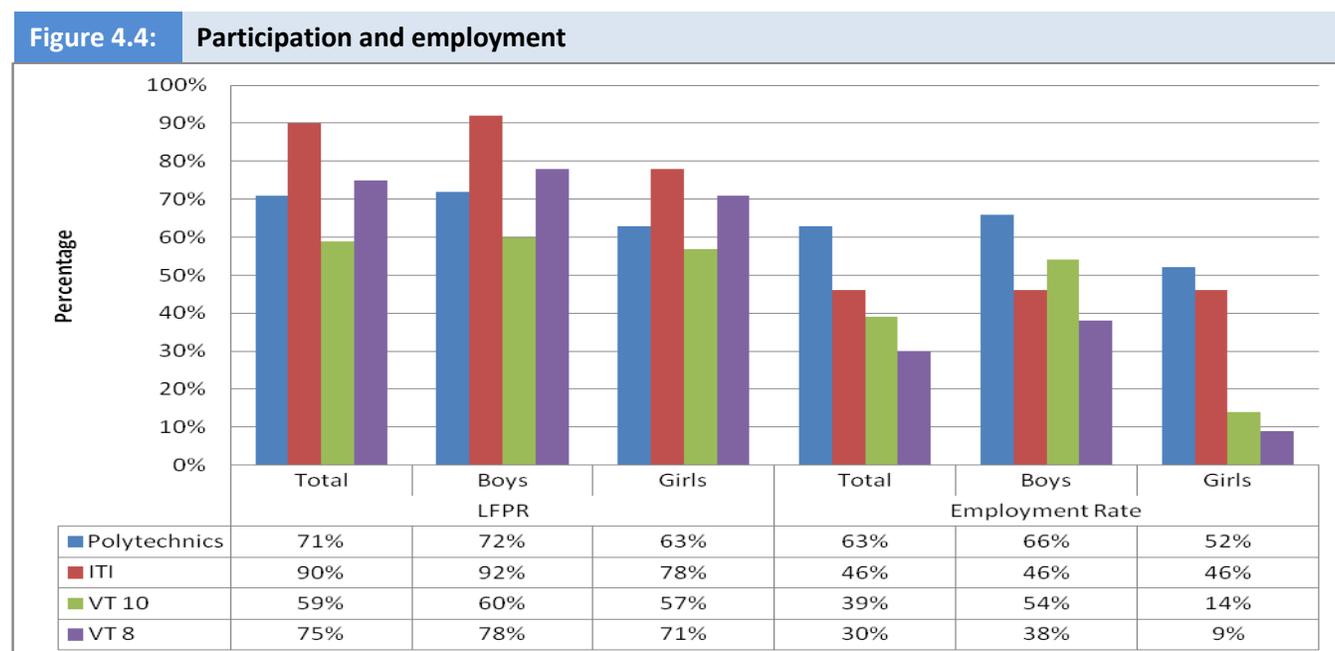
Labor market outcomes and TVET: Findings from a state level tracer study

4.24 Any discussion of the quality of TVET will be incomplete without examining what happens to those who opt to enroll in TVET programs, especially if they choose to join the labor force. A tracer study¹³ of enrollees from four types of TVET programs in West Bengal was carried out in December 2012. All four programs, namely Industrial Training Institutes, polytechnics, Vocational Training Centers (VTCs/VT10) and Vocational Training Providers (VTPs/VT8) are under the administrative purview of the Department of Technical Education and Training (DTET). The tracer study involved physically tracing a representative group of students from the sample institutions for face-to-face interviews. This section summarizes the main findings from the tracer study.

Participation and Employment

4.25 Polytechnics and VTCs lead to qualifications that have relatively stronger linkages with general education; ITIs and VTPs offer vocational technical skills with direct relevance to specific occupations and with low level linkages with higher qualification levels. VT 8 offers short-term training to people between the ages of 16-40 years with at least a grade 8 education, in only vocational trades. This is the only program that in principle that targets informal sector employment and self-employment.

4.26 As Figure 4.4 below shows, participation rates in the labor force vary by program type, and by gender participation (hereafter LFPR – labor force participation rate); it is highest for ITI enrollees. The lower LFPR for polytechnics and VT 10 is due to higher participation of graduates from these programs in further education. Girls in general have lower LFPR than boys, but the pattern of LFPR across programs is the same for girls as for boys.



¹³ Tracer studies are thus called because they generally involve physically locating the sample respondent.

4.27 Sample respondents had spent between 12-24 months in the labor force at the time the study was conducted. Employment rate is based on their job status at the time of the interview for the study. Employment status includes wage/salary employment and self-employment.

4.28 Employment rate is highest for polytechnic students, and lowest for those from VT8. The employment rate for ITI students is around 46%. This is 15 percentage points lower than the all India average of around 60% (DGET, 2012). For boys, the employment rate of those who take the vocational education stream in higher secondary grades is higher at 54% compared to ITI male students. Here we'd like to note that for both sets of students, the basic criteria for enrolling into either the vocational education stream and for many courses in ITIs is the same -- having a grade 10 certificate.¹⁴ Another striking feature of employment rates is the variance for girls by program type – it is above 45% for girls with polytechnic and ITI qualifications, but below 15% for those with VT 10 and VT 8 qualifications (it is 9% for the latter).

4.29 The share of public sector employment in the study sample is minuscule, as most sample respondents who were employed were either in private sector employment or self-employment. Private sector employment dominated for Polytechnic, ITI and VT 10 students; whereas a higher share of employed VT enrollees reported self-employment. Of those respondents who provided an answer to what they were doing if they were not in the labor market, a third said they were pursuing further studies. Marriage was a common reason cited by female respondents for not participating in work.

Wages

4.30 We have median monthly wages for those sample respondents who were employed for wages or salaries, but not for those who were self-employed (Figure 4.5). Polytechnic graduates earn the highest at INR 10,000 per month as median wage, and males from these programs are awarded at twice the rate than those from other TVET programs. The lowest average wages are for the VT 8 graduates (INR 4000), whereas boys with ITI and VT 10 qualifications have the same average wage of Rs. 5000. The wages of ITI students is similar to the national average wage for ITI students at Rs 5330.¹⁵

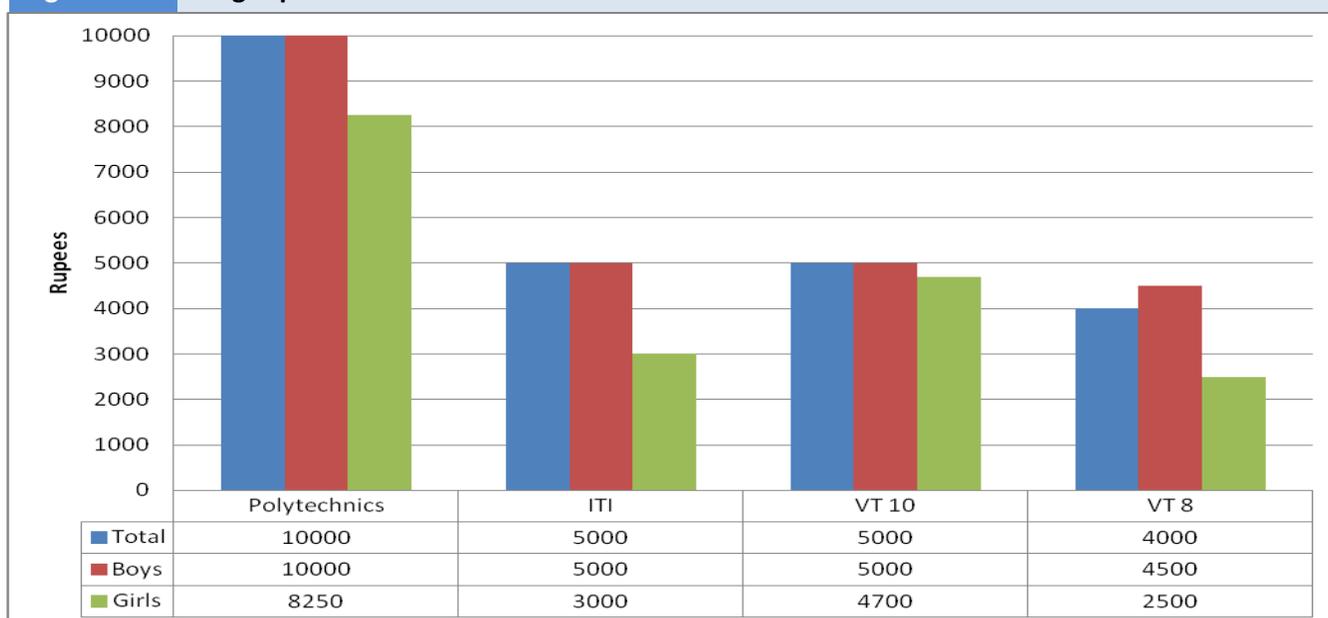
4.31 Girls are awarded at a lower rate than boys across all qualification type. Having a polytechnic or VT 10 qualification is better for a girl than an ITI and VT 8 qualification. Girls with ITI or VT 8 qualifications are more likely to be in the labor market, but less likely to be employed, and earn lower wages than girls with polytechnic and VT 10 qualifications. Youth who have only a grade 10/grade 12 qualification, which is the minimum requirement for enrolling in an ITI, have similar employment probability but earn considerably less than those with an ITI certificate (the difference is due to those with only a grade 10 qualification who earn 60-70% of the average wages of an ITI pass-out). Youth who have only a grade 12 qualification, which is the minimum requirement for enrolling in Polytechnics, have an average employment rate that is 15 percentage points lower, and half the wages compared to those with a diploma from a Polytechnic.¹⁶ These comparisons, however, are only a point in time comparison, and more research is needed to compare age-wage profiles of these groups.

¹⁴ Vocational education in higher secondary grades is a mix of general academic and vocational education courses.

¹⁵ In the study, Rs 5330 is the mean wage. The median wage which will be lower will be closer to the West Bengal median wage.

¹⁶ Comparisons have been made using data from the National Sample Survey Data for West Bengal, 66th round, 2009-10.

Figure 4.5: Wages per month*



*rounded to the nearest 1000

Transition to work

4.32 The main sources of information about jobs used by the respondents were newspapers, family, and to some extent employment exchanges. The major constraints cited by respondents in searching for jobs were inadequate information, lack of knowledge of English, lack of computer skills, and distance. Distance is particularly a challenge for ITI students because the wages on offer do not compensate for migration related costs, and the higher cost of living due to moving away from household economies of scale.

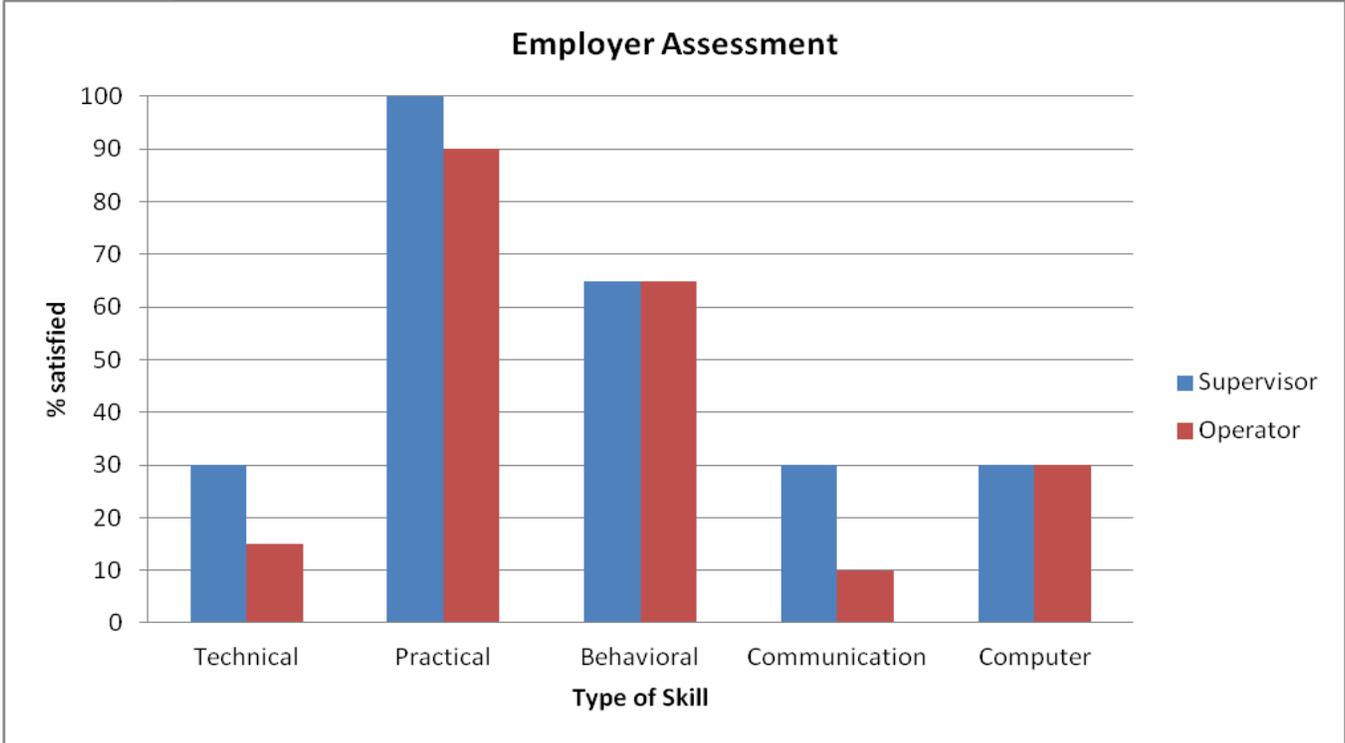
4.33 There is a clear unmet need among TVET graduates vis-à-vis help in getting jobs. Nearly 70% of ITI respondents expressed willingness to pay for job searching assistance. For the other programs, between 45-50% said they were willing to do so. While 90% of willing ITI, VT 10 and VT 8 respondents said they would pay Rs. 100 or less per month for the service (approximately US \$2), 40% of polytechnic respondents were willing to pay up to Rs. 200 (approximately US\$ 4) for the same. Polytechnic graduates earn higher returns in the labor market compared to the others, and this is reflected in the greater value they put on placement assistance.

Employer satisfaction with TVET graduates' skills

4.34 A survey of 18 industrial units in 5 Industrial Parks in West Bengal was undertaken to assess employers' satisfaction with skills of workers directly contracted by them (and not through a labor contractor). These units represented 6% of all units in these parks, and more than 20% of all direct employment. Workers whose skills were assessed were either supervisors or operators, most of whom are graduates from Polytechnics or ITIs respectively. Employers expressed most satisfaction with the practical skills of their workers (90-100% of employers surveyed) followed by behavioral skills (65% of employers surveyed). For all other skills, technical, communication and computing, most employers expressed serious dissatisfaction. Dissatisfaction with

communication and computing skills vis-à-vis TVET institutions is plausible, as the first is not taught separately, and the second does not apply to all category of courses taught in these institutions. However, the core competence of TVET institutions is the delivery of technical skills. According to the employers, factors behind poor technical skills of their workers were related to lacuna in training institutions, viz. outdated equipment and curricula, lack of infrastructure, poor resources and almost no linkages with industry to understand their needs.

Figure 4.6: Employers' satisfaction with skills



Weak Delivery in TVET

4.35 Apart from access and equity-related issues, the formal TVET system (Polytechnics/ITIs/VTPs/VTCs) in the state suffers from a number of serious constraints that adversely affect quality and service delivery: acute shortage of heads (principals) of institutions and instructors/teachers in many instances, almost no in-service training of faculty, poor infrastructure and obsolete equipment, lack of institutional autonomy, weak institute-industry linkage, obsolete curricula, little or no resources for training consumables, lack of any room for innovations at the institution level to improve quality of training, and lack of adequate support from the Councils and Directorates. There are no performance incentives for public sector institutions. Financing of these institutions is almost entirely input based and correlates with historical precedence, and not with either need or performance.

4.36 Given the small scale of the TVET sector in the state and, its concentration in a few districts, access remains a concern. However, the current quality of TVET delivery and outcomes is an even more serious one. Without putting into place mechanisms that will lead to better service quality and labor market outcomes for

trainees who pass through the system, increasing access by itself will not solve the state's problem of equipping its youth with the right kinds of skills.

4.37 The labor market outcomes of TVET students in West Bengal clearly highlight the needs to improve the skills of trainees undergoing various training programs. Those with more general academic content in their training seem to enjoy a higher probability of employment in West Bengal, despite the fact that the economic structure of the state, with a large base of medium and small enterprises seem to be better suited for offering employment to ITI students in greater numbers.

4.38 With respect to VTPs (VT 8), even though they are administered by the DTET, is not continuous with the other formal TVET surveyed (which are also linked as there is a limited path within the system for the same pool of students to vertically move from one training to another, i.e. from school to ITI to Polytechnic). Training through VTPs is second chance in nature. It is in principle meant for those who are either in or will join the informal sector. The state clearly needs to revisit training provided for the informal sector through their VTPs (VT 8). This part of the TVET system enrolls nearly two-thirds of the DTET supported TVET seats in the state. It also receives the highest share of the government's TVET budget. However, with a 30% employment rate and low wages (self-employment earnings are not only lower also but likely uncertain), this system, which hires nearly 20,000 teachers, needs to be funded on the basis of criteria that includes performance. The efficiency of the system can also be enhanced if placement and other axillary support is also be provided to those who opt for this training.

Chapter 5: Meeting the Skills Needs of the Informal Sector in West Bengal

Introduction

5.1 The informal sector makes up the largest share of employment in West Bengal. More than 90% of the jobs are in the informal sector or informal jobs in the formal sector. As the state has suffered a large number of private sector job losses in recent years (RBI, 2010), there has been an increase in the informal economy and its jobs.

5.2 Profiling occupational skills needs in the informal sector is not an easy task, given its heterogeneity and diffuseness. The target population is complex, comprising, as it does, of those already engaged in various occupations, the self-employed, and youth who are at various stages of transitioning to work, and who are likely to become either employed or self-employed in this sector. A large share of the labor force also comprises those who have made an early exit from the formal education and training system, and in most scenarios will not have either the credentials or the resources for any taking-up of further formal education and training. Many workers may in fact be in low-productivity traps.

5.3 Furthermore, the skills development needs of the informal sector are also usually not a stand-alone issue. This has been the experience with Active Labor Market Programs (ALMPs) globally, where skills alone are not enough to reduce the risk of unemployment and/or raise productivity.

Skills Development and Training for the Informal Sector: Challenges

Market and Government Failures

5.4 A number of market and government failures negatively impact the TVET sector in general. These are even more binding for skills development for the informal sector. Labor market and capital market imperfections in general lead to a low skills equilibrium in the informal sector. Table 5.1 lists some key market and government failures, and suggested policy interventions.

Market Failure	Suggested Policy Intervention
<p>Imperfections in the labor market</p> <ul style="list-style-type: none"> • Pecuniary externalities of training • Imperfect job-search information and asymmetric bargaining power (matching externalities) 	<ul style="list-style-type: none"> • Payback or Apprenticeship contracts • Training subsidies to workers/firms • Job intermediation services • Trial employment arrangements
<p>Imperfections in the capital markets</p> <ul style="list-style-type: none"> • Credit constraints 	<ul style="list-style-type: none"> • Training subsidies for workers • Training Vouchers
<p>Coordination Failures</p> <ul style="list-style-type: none"> • Inaccurate information about returns to investment in training or the quality of 	<ul style="list-style-type: none"> • Counseling for workers and other support services fostering information dissemination • Training subsidies to increase expected rate of return

providers	on investment
<ul style="list-style-type: none"> • Inconsistent time preferences • Cognitive and psychological limitations 	
Government Failure	Suggested Policy Intervention
<ul style="list-style-type: none"> • <i>Weak policy-making process</i> 	<ul style="list-style-type: none"> • Establish well-articulated strategy for skills and development policies for the informal sector

Adapted from Almeida, Behrman and Robalino (2012)

5.5 Those who attend formal TVET – Polytechnics, ITIs and Secondary School Vocational Education -- do not generally end up in the informal sector. Seventy percent of ITI pass-outs and 90% of polytechnic pass-outs who report themselves as employed are engaged in enterprises with 10 or more workers (estimated from data reported in the tracer study). As noted in the previous chapter, training for the informal sector is provided by Vocational Training Providers (VTPs), public and private, and by other types of private training providers, NGOs and various departments of the government. There are many other types of training institutions in the broadly non-government sector who are not associated with the DTET or any other government department necessarily (the ones that are registered need not have accreditation or affiliation from any of the state level education and training bodies per se).

The experience of training providers for the informal sector

5.6 Training by VTPs has provided a second-chance opportunity for those between the ages of 16-40 years who have dropped out of the education system after grade 8. Similarly, many private training providers reach out to disadvantaged youth. However, there are a number of quality and systemic challenges that need to be addressed for the sector to become more effective. Furthermore, the social perception that vocational education and training is inferior continues to deter candidates from enrolling in these courses. For those who do, vocational education and training is more like a last option.

5.7 Table 5.2 below is an expanded version of Table 5.1 above and summarizes the experience of VTPs and private training providers who target beneficiaries, mainly for occupations in the informal sector. The experience of these training providers highlights problems that are generally faced when offering training for disadvantaged groups. The source of information for this table was a series of workshops held with private and government training providers in Kolkata. The non-government training providers who participated in the workshop ran mostly fee-based training programs; many had entered into MOUs and contracts with various government departments for providing training in specific areas to disadvantaged youth or groups. The concerns raised by the training providers spanned a range of issues. These included identifying and selecting beneficiaries, to government support and trainer- and trainee-related difficulties encountered during training delivery. These concerns reveal that the current modus operandi of training for the informal sector still neglects many market and other failures. They also reveal the extent to which even the better placed private and NGO sector is limited in reaching out to the under-served and the disadvantaged.

Table 5.2: Constraints faced by training providers for the informal sector

Market Failure	Experience of Training Providers in West Bengal	Suggested Policy Intervention
<p>Imperfections in the labor market</p> <ul style="list-style-type: none"> • Pecuniary externalities of training • Imperfect job-search information and asymmetric bargaining power (matching externalities) 	<ul style="list-style-type: none"> • Firms unwilling to train due to fear of poaching 	<ul style="list-style-type: none"> • Job intermediation services • Trial employment arrangements
<p>Imperfections in the capital markets</p> <ul style="list-style-type: none"> • Credit constraints 	<ul style="list-style-type: none"> • Credit constraints on the part of trainees (fees and opportunity costs) and training providers (capital costs) 	<ul style="list-style-type: none"> • Training subsidies for workers • Training Vouchers • Incentive for training providers • Subsidies, developmental and bank Loans to training providers on easier terms
<p>Coordination Failures</p> <ul style="list-style-type: none"> • Inaccurate information about returns to investment in training or the quality of providers • Inconsistent time preferences • Cognitive and psychological limitations 	<ul style="list-style-type: none"> • Communication failures between training providers and potential trainees • Lack of basic literacy and numeracy skills among trainees • 	<ul style="list-style-type: none"> • Counseling trainees and other support services fostering information dissemination • Require training to include a basic literacy and numeracy component • Use other infrastructure available such as local schools for conducting out-of-hours literacy and numeracy classes • Training subsidies to increase expected rate of return on investment
Government Failure		
<p>Weak policy-making process</p>	<ul style="list-style-type: none"> • Tax and other benefits limited to National Council of Vocational Training courses which limits flexibility in provision • Delays in release of funds hampering operations 	<ul style="list-style-type: none"> • Establish well-articulated strategy for skills and development policies for training overall

Service Delivery Constraints	Issues
<ul style="list-style-type: none"> • Availability of Qualified Instructors • Limited infrastructure 	<ul style="list-style-type: none"> • Locally not available limiting the range of training that can be offered and reducing quality of delivery • Training with high technical content cannot be offered due to higher cost
Social and Other Constraints	Issues
<ul style="list-style-type: none"> • Location • Gender 	<ul style="list-style-type: none"> • Even private training providers prefer locating close to urban areas leaving out the large swathes of the rural population • Distant (from home) location of training provider reduces parents' motivation in sending their children, especially girls • Households prefer to use scarce resources towards male children

Monitoring and Evaluation of Training Programs for the Informal Sector

5.8 Discussions with private training providers during the workshops mentioned above clearly brought out the fact that there was very little monitoring and oversight on the part of the government even for those interventions that were partly or fully funded by the latter. In general, the only monitoring that takes place is fiscal and account keeping. There is no monitoring of the types of enrollees, the training programs on offer, their standards and pedagogy, the availability of facilities, instructors and training materials, skills acquired by the trainees, and how the training helps in employment/self-employment.

5.9 Furthermore, none of the training programs on offer had been evaluated, making it difficult to know which ones are successful and should be considered for further strengthening and/or scaling-up, and which are not and therefore should be discontinued. Self-reports by training providers are not adequate – they are likely to over-estimate their own success, and there is no counterfactual available for making comparisons.

5.10 There are a number of ways in which the GOWB can promote more monitoring and evaluation of training programs for the informal sector. The government in partnership with think-tanks and institutions such as the Indian Institute of Technology, Indian Institute of Management and similar institutions located in the state can consider conducting evaluations that can help in identifying what works. Over time, and properly and systematically implemented, making evaluations a part of the training process will lead to better training programs and more cost-effective use of scarce resources. GOWB can also allocate resources only to those training providers and training programs for which evaluations have been carried out. That is to say, training providers will have to offer some acceptable proof of concept before they become eligible to receive state funding.

Experiments with Demand-side financing for the Informal Sector: Vouchers and Subsidies

5.11 As has been pointed out earlier, labor market programs that target workers who are already engaged in occupations in the informal sector, or the less educated and disadvantaged who are likely to end up working in

the informal sector, are usually not stand-alone programs. Such programs have proven to be more successful where the existing education and training systems are of relatively high quality.

5.12 In all other contexts, labor market programs prove more beneficial if they are designed keeping the potential trainees' life issues in mind – such as mobility, availability of credit, marketing and financial resources for self-employment and entrepreneurial opportunities etc. Some of these issues have been brought out with clarity by the private sector training providers whose particular programs target the disadvantaged and women.

Box 5.1: Vouchers and Subsidies

Kenya: An evaluation of a pilot voucher program in Kenya (“The Technical and Vocational Vouchers Program”) showed that vouchers can be an effective way of giving job seekers employable skills. Success is boosted by allowing private vocational schools to participate in the program, as voucher recipients were more likely to sign up and stay in school if allowed to use the voucher in a private school.

Source: Do Vouchers for Job Training Programs Help? From Evidence to Policy, The World Bank, November 2011.

Adolescent Girls Initiative (AGI): The AGI helps young girls, usually in the age-group 16-24 years, in eight countries to make the successful transition to the labor market. The AGI program is tailored to suit the context of each individual country; however, common program elements include subsidies for short-term technical training in demand-driven trades, life-skills training to address age and gender issues, capacity-building of training providers, and a strong outreach and communication strategy to reach out to the disadvantaged groups. A rigorous impact evaluation is built into the project design which has allowed the successful program elements to be scaled-up in some of the countries.

Source: Adolescent Girls Initiative, Status of Pilot Implementation, The World Bank, April 2012

Training for the Informal Sector

The ***Jua Kali*** program in Kenya was established as a voucher program in 1997 under the Micro and Small Enterprise Training and Technology Project after a successful pilot was undertaken in 1996. The program issued the disadvantaged, mostly the youth, with vouchers to choose a training provider of their own preference from the open market. The objectives of the program were to help job-seekers build their skills, empower them with choice, and promote competition between public and private training providers. Voucher recipients paid 10% of the cost of training, and the rest was paid by the government. The majority of the training was provided by master craftsmen who responded to market demand. Between 1997 and 2001, more than 37,000 vouchers were issued to entrepreneurs and employees in enterprises with 50 or less workers. Program evaluation has found positive effects of the training on employment, assets and the business of enterprises (compared to a control group).

Chapter 6: Financing TVET in West Bengal

Introduction

6.1 Much of the financing of TVET in West Bengal, as in the rest of India, is of the conventional variety – public training institutions are almost wholly dependent on public funds, and trainees/households use personal finances for training provided by the private sector. Skills learnt in the informal sector are more by way of learning on the job, and likely involve implicit cost-sharing between the employer and the employee. How TVET is financed can have a substantive and critical impact on the overall policy objective of developing an effective and efficient TVET system. Public funding, for example, is guided by historical benchmarks, is input-based, and does not take into account needs or performance standards. That cuts into the policy objective of a TVET system that is demand-oriented and has the institutional levers to flexibly respond to the changing needs of employers and trainees over time.

Current Financing of TVET in West Bengal

6.2 The two main sources of TVET financing in the state are the public sector and trainees/households. The likely inference from the data available is that a substantive share of formal TVET in West Bengal is funded using public resources. For one, there are more public polytechnics and ITIs compared to private institutions. Secondly, private institutions, on the average tend to be smaller in size. Also, private ITIs, polytechnics and VTCs in West Bengal receive significant public aid.

6.3 Total public expenditure (both state and central expenditure) on TVET in the state constituted 0.06% of the state GDP in 2011-12. Though low, this is a break from historical trends in expenditure on TVET in the state, which until 2009-10 was on an average around 0.02% of state GDP. In 2011-12, the state provided a total of \$75.51 million towards recurrent and developmental outlay in the TVET sector. The recurrent budget expenditure (non-plan) of the Department of Technical Education and Training in 2011-12 was US \$30 million (Rs 1516.40 million¹⁷ using an exchange rate of Rs 51 per US\$), 94% of which was used towards paying salaries. For the same year, plan expenditure was US \$45.51 million (Rs. 2275.76 million) of which the state's plan expenditure was US \$39.2 million; and the remaining was received through centrally sponsored and central sector schemes sources. Forty five percent of the state's share of the plan expenditure was also earmarked for salaries.

6.4 Annual per capita TVET public expenditure in 2011-12 was \$180 for recurrent expenditure and \$280 if fixed (plan) expenditure is also included. Monetary units here are reported in current prices.

¹⁷ Revised Budget Estimate from the State Economic Review, 2011-12.

Table 6.1: Per capita expenditure, TVET, 2011-12

Budget Head	Total Budget 2011-12 (in US million \$)	Cumulative Total Budget, 2011-12 (in US million \$)	Per Student Expenditure (US \$)
Recurrent Expenditure	29.73	29.73	112.41
State Plan Salary Expenditure	17.74	47.47	179.49
State Plan Non-Salary Expenditure	21.47	68.95	260.67
Central Plan Salary Expenditure	0.03	68.98	260.80
Central Plan Non-Salary Expenditure	5.37	74.35	281.12

Source: Economic Review, 2011-12

6.5 The computations above have not distinguished between public and private training places. From Table 6.1, it is clear that the private sector plays an important role in providing training places in the state. The reason for not excluding private sector seats in doing our calculations is because of the extensive support provided by the government to private training institutions. Additionally, the average cost per training seat is still higher in practice due to the less than optimum internal efficiency of public training institutions. The per capita expenditure can then be interpreted as the amount of resources required for maintaining an active training seat in the state.

6.6 The total expenditure on TET in the state is higher due to considerable household expenditure. Without even taking into account opportunity cost, households spend a considerable amount of money in direct costs towards TET. Rough estimates show that households spend between \$13-20 million (Rs. 65-100 crores) per annum on training provided by all types of TET institutions.

Future Enrollment in TVET

6.7 Even with the current share of 1% of youth who are enrolled in some form of TVET in the state, maintaining the same rate of participation will require that the number of TVET spaces in the state increase by a tenth to a fifth by 2020 (depending on the rate at which population grows). The question of how these new training places will be financed, however, is not a simple one. The lack of something by itself does not provide a rationale for public finance. The question becomes more vexed when the quality of TVET is included into the equation. The strategies used for financing can enhance the efficiency and effectiveness of the TVET system by creating the proper incentives for performance, more competition, and better integration between public and private provision. This means that the role of the government in the financing and provision of TVET will also need to undergo a reformation as part of a future oriented strategy for the TVET sector.

6.8 Table 6.2 shows the current and projected population for the state in 2015 and 2020 using two scenarios for decadal growth rate between 2011 and 2020. First, the current growth rate of 14 % and the second being the lowest decadal population growth rate across all districts of West Bengal, which is 12% over the same time period.

Table 6.2: Projected state population by 5 year age groups						
Age-group (years) (↓)	% of the population (2001 Census)* (↓)	Current	Decadal Population Growth Rate = 14%		Decadal Population Growth Rate = 12%	
		Current and Projected Population Size				
		2011 (in lakhs)	2015 (in lakhs)	2020 (in lakhs)	2015 (in lakhs)	2020 (in lakhs)
0-4	9	82.21	87.97	93.72	87.15	92.08
5-9	12	109.62	117.29	124.96	116.19	122.77
10-14	12	109.62	117.29	124.96	116.19	122.77
15-19	9	82.21	87.97	93.72	87.15	92.08
20-24	9	82.21	87.97	93.72	87.15	92.08
25-29	9	82.21	87.97	93.72	87.15	92.08
30-34	8	73.08	78.19	83.31	77.46	81.85
35-39	7	63.94	68.42	72.90	67.78	71.62
40-44	6	54.81	58.65	62.48	58.10	61.39
45-49	5	45.67	48.87	52.07	48.41	51.15
50-54	4	36.54	39.10	41.65	38.73	40.92
55-59	3	27.40	29.32	31.24	29.05	30.69
Above 60	7	63.94	68.42	72.90	67.78	71.62
Total	100	913.48	977.42	1041.37	968.29	1023.10

*Consistent with National Sample Survey, 2009-10

Sources: Census of India, 2001, 2011

6.9 Currently 1% of the population in the age-group 15-29 years attends a training program – either in Industrial Training Institutes, polytechnics, or in Vocational Training Centers, both in the public and the private sectors. Table 6.3 below shows the number of training places needed in 2015 and 2020 to maintain the current rate of attendance given the increase in population in the age-group 15-29 years using the projected figures from Table 6.2. It also shows the number of training places needed if the participation rate of youth in TVET was to increase to 2%, 3% and 5% respectively.

Table 6.3: Projected required number of TVET places, 2015 and 2020					
Share of youth attending a training program (↓)	Current	Decadal Population Growth Rate = 14%		Decadal Population Growth Rate = 12%	
	Required Number of Training Places				
	2011 (in lakhs)	2015 (in lakhs)	2020 (in lakhs)	2015 (in lakhs)	2020 (in lakhs)
1%	2.6	2.9 (12%)	3.09 (19%)	2.87 (11%)	3.04 (17%)
2%	2.6	5.27 (103%)	5.62 (116%)	5.22 (100%)	5.52 (112%)
3%	2.6	7.91 (204%)	8.43 (224%)	7.84 (200%)	8.28 (218%)
5%	2.6	13.19 (407%)	14.05 (440%)	13.07 (400%)	13.81 (431%)

N. B. Numbers in parentheses shows percentage increase over the base-line of 2011

6.10 What will be the extent of resources required for financing TVET if the current rate of public expenditure out of GDP is maintained? We make two assumptions in order to generate upper and lower bounds required to finance the participation of 1%, 2%, 3% and 5% of the youth population in TET in 2015 and 2020 under two population growth scenarios. In the first case, we assume that all future growth will be funded by private resources (this will give us the lower limit for the requirement of public resources), and in the second case we assume that all future growth will be funded by public resources (which will give us an upper limit for the requirement of public resources). In reality, the future growth of TVET will be funded by a mix of public and private resources and therefore the extent of public finance required will lie somewhere between the lower and upper limits *for a constant level of training quality*. In computing the required public resources, per student expenditure of US \$ 180 as computed above has been used, which includes both state and central plan and non-plan expenditure. The rationale for doing this is fungibility of resources, the state's use of funds largely towards salaries, and the use of plan funds towards expenditures other than infrastructure and other fixed costs (Economic Review, 2011-12). The lower limit for total public expenditure (recurrent) on TVET for the state is the maintenance of the current level in real terms over time. This requires maintaining at least a public expenditure level of \$75.51 million in 2011-12 prices.

6.11 Even with keeping the current quality of training constant, the short-fall in resources required varies between \$40 million to \$300 million depending on which population growth and TVET participation rate scenario.

Table 6.4: Using current public financing of TVET to estimate future requirements -- 2015 and 2020				
	Decadal Population Growth Rate = 14%		Decadal Population Growth Rate = 12%	
	Required Public Resources (in US million \$)*			
Year	2015	2020	2015	2020
Youth TET participation rate				
1%	81.52	86.86	80.68	85.46
2%	148.15	157.99	146.74	155.18
3%	222.36	236.98	220.40	232.76
5%	370.79	394.97	367.42	388.22
State GDP in 2011-012 prices	139333.80	188797.29	139333.80	188797.29
Total Public Expenditure on TVET @ 0.06% of State GDP (State GDP real growth rate @ 7.1%) in 2011-12 prices	83.60	113.28	83.60	113.28
Youth TET Participation Rate	Shortfall in \$ million in 2011-12 prices			
1%	-2.12	-26.94	-2.98	-28.38
2%	65.84	45.60	64.41	42.74
3%	141.54	126.18	139.53	121.88
5%	292.94	287.33	289.50	280.44

*This is computed by multiplying the unit cost of an active training seat with the total number of seats.

6.12 The estimated future requirement of resources shown above takes into account only recurrent expenditure and assumes no change in training quality. If we also include capital expenditure, development expenditure towards improvement of quality, providing more equitable access and supporting greater participation of youth belonging to disadvantaged population groups, the requirement of resources will rise even further. Currently, the Government of India provides \$2.2 million to states for establishing a new ITI with the capacity to provide training to 200 trainees annually. Another scheme towards establishment of new polytechnics provides \$2.5 million per polytechnic with a similar capacity. If we use these as minimum benchmark figures for establishing the infrastructure associated with new ITIs and polytechnics in any state. Doubling the seating capacity from their current level in these institutions will require resources to the tune of \$400+ million at the least.

Financing TVET: Encouraging More Private Provision and Other Innovative Mechanisms

6.13 When it comes to financing training, the role of the government in the first order is to allow private markets to work well, and complement private financing and provision with public financing (and in select cases provision) where the private sector is unwilling or unable to establish itself, and to back social policies.

6.14 The financing needs of West Bengal with respect to TVET will increase even if nothing else changes, due just to demographics. Additionally, any TVET policy for expanding access and improving quality will have to be backed by reforms and practices that generate skills in a cost-effective manner. In any case, there are limits to how far government resources can be used – even doubling the number of seats at the current level and quality of expenditure will require increase in public funding by six to eight times. This is neither a feasible nor a tenable way forward.

6.15 Private sector provision: The state needs to review and reform policies and guidelines to enable greater growth of private training centers which has been relatively slow in West Bengal compared to other states. Private training provision may also be constrained due to stringent regulatory requirements, financial needs and start-up costs, fee policy, and other issues. In such cases only, the government can consider support to private sector provision through subsidies and/or developmental loans in areas that are of particular importance to the state, growth and export markets for example.

6.16 **Partnerships with the private sector:** Public private partnerships are increasingly being used as institutional options for leveraging funds and more efficient organizational structures for the provision and delivery of public services. There are multiple examples at the national level of skills development for the informal sector delivered using a PPP modality such as the NSDC, NRLM, SJYSR, MES, etc. These partnerships generally take the form of public entities writing contracts with private providers for training and placement services.¹⁸ Annex 4 lists successful examples of PPPs from many Indian states. Box 6.1 lists two industry-led initiatives, one in Malaysia and the other in Bangladesh that have used the PPP modality to overcome government and market failures in training markets.

¹⁸ This is different from running a VTC where the center gets accreditation from the government to run short term courses but not a contract for delivery of the training.

Box: 6.1: Industry-led Skills Training

There are successful examples of industry-led skills training which can substitute for market failures that cannot be overcome through a public training fund alone.

The **Penang Skills Development Center (PSDC)** is the first industry-led skills training centre to be set up in Malaysia. The PSDC's tripartite model brings together industry, academia, and the government. This model pools resources and management expertise, and allows the PSDC to provide advice and guidance on the latest technology, training and educational programs. PSDC operates as a non-profit society with its mission to pool resources amongst the 4 Free Trade Zones and 4 Industrial Estates in Penang. It has a total of 775 factories, employing more than 170,000 workers, and provides up-to-date training and educational programs in support of operational requirements, as well as helps in keeping abreast of technological progress. The center has been in operation since 1989 and counts some of the biggest corporates in Malaysia among its members.

Source: <http://www.psdc.org.my/index.aspx>

The **Chittagong Skills Development Centre (CSDC)** is modeled after the PSDC. It is the first industry-led, non-profit skills training centre in Bangladesh, established as a private-public partnership, and focuses on providing skilled labor to ICT manufacturing and services, especially multinationals and export-oriented firms.

CSDC aims to cater to all rungs of the skills ladder – entry level to senior management – working with vocational school and university graduates. CSDC's corporate members share their training resources, technologies, trainers, space and equipment; they also actively get involved in the development, assessment and evaluation of training programs.

6.17 Demand-side financing: Demand-side financing, such as targeting public subsidies towards the poor and disadvantaged, can make use of public resources more efficiently, in areas under-served by training providers, particularly the northern and eastern districts of the state. Covering fixed and variable costs through demand-side financing can encourage the supply of training, and ensure targeted use of training subsidies. In better-served areas such as the southern and western districts, demand-side financing can be used to introduce more choice for trainees. This has the potential to better match trainee aspirations with quantity and quality of training, and by putting competitive pressures on providers, can reduce wastage. Demand-side financing can also be used as a vehicle to share costs of training with employers and potential trainees/employees in sectors which have specific demands for skills.

Government Funds

6.18 GOWB can also leverage funds available to Department of Technical Education and Training (DTET) and other departments from various state and central government resources. The funds across all departments due to various government policies and schemes that are already extant if pooled can allow the state to harness economies of scale, cross-learning and lead to diffusion of good practices and uniform standards in vocational training. A good example of a training fund with these characteristics that has demonstrated reasonable success

in the Indian context is the National Skills Development Corporation. Table 6.5 shows a list of schemes that allocate funds to states towards TVET. In West Bengal, these funds are being/will be channeled to DTET

Scheme	Central Government Ministry	Target for West Bengal
Polytechnics	Ministry of Minority Affairs	2 Polytechnics
Polytechnics	Human Resource Development	11 Polytechnics
Multi-sectoral development program for minority-concentration districts	Ministry of Minority Affairs	12 ITIs
PPP ITIs and Skills Development Centers	Labor and Employment	35 ITIs and 16 Skills Development Centers
Skills Development in LWE areas	Labor and Employment	1 ITI and 2 Skills Development Centers

6.19 At least 10-12 other departments other than DTET in West Bengal are engaged in vocational training of various kinds.¹⁹ These departments use the state budget and funds available through various central government ministries and centrally sponsored schemes such as NRLM, SJYSR, etc. for the purpose of training and skills development. There is, however, little coordination in planning and implementation of these programs at the state level. This leads to the risk of duplication, repetition, avoidable transaction costs, and further non-standardization across types of training on offer. For example, curricula, instructors, and certification available with the DTET may be exactly what another department such as rural development with a large training target (0.2 million) needs. But such exchanges between departments rarely take place. West Bengal can explore the possibilities of initiating a **training cess** in key growth sectors of the economy such as construction, petrol and chemical which are likely to face skills shortages in quantity and quality.

Resource Allocation Mechanisms: Financing Performance

6.20 The role of the TVET system is to supply various skills in demand by the labor market. A good TVET system will have the incentives and the information to supply more of the skills that are in demand by the labor market. Contrariwise, the TVET system should have built-in disincentives to discourage skills mismatch and wastage of scarce resources. Public training provision, especially pre-employment training, is at a greater risk of skills mismatch and ensuing inefficiency, more so if there are large information gaps, where public training institutions do not face many competitive pressures, and where the internal accountability system neither rewards good performance, nor censures bad performance.

6.21 There is large dispersion in the quality of public training – whether we use internal measures of efficiency such as enrollment ratio to capacity or the average time taken by a student to qualify (pass the final examination) or external measures such as employment rate within a certain time period, and average

¹⁹ A partial list includes: school education, rural development, forestry, labor and employment, and Panchayati Raj.

wages.²⁰ Despite this variation in performance, resource allocation to public training institutions is done only on the basis of inputs such as number of instructors, number of training courses on offer and so on. Even within training institutions, promotion of staff (which is a positive incentive) is based on number of years in employment, and not on any other aspect of performance.

6.22 There are certain resource allocation practices that are always good such as collecting performance based information before making decisions. On the other side, the training production function is complex, and depends on a multitude of factors. Discovering or identifying aspects of performance over which the training provider has greater control takes trial and error and experimentation.

Financing performance

6.23 The GOWB can use performance based commitments or contracts for both public and private training institutions it supports. These contracts or commitments will define and describe specific and measurable levels of operational performance which can include internal practices and outcomes. These commitments or contracts can take into account the separate contexts in which parties to the contract operate, for example, urban versus rural location. They can be reviewed and revised with experience, and can combine incentives for performance with appropriate levels of insurance payment (for example, base pay to instructors along with an incentive payment) to reduce the risks arising out of bad luck.

6.24 Examples of financing performance are now available from both within India as well internationally that can provide the information basis for developing a system of financing performance, rather than only inputs. Performance based financing is increasingly being used in sectors such as health, public transport, and even manufacturing. In the education and training sector, demand side financing is an example of financing performance. A pre-condition to the use of any sort of performance based funding is a good monitoring and evaluation system to measure performance as defined and agreed upon.

²⁰ In situations where the enrollment ratio to capacity is much less than 100%, the formula used for funding institutions remains the same, as a result of which the per unit cost of training is actually much higher than a direct computation of opportunity and market costs would imply. If the system is inefficient in the sense that a student takes a long time to graduate, the cost is higher still. And if the system's efficiency is measured on the basis of number employed, low employment rates further push the unit cost up.

Chapter 7: Governance and Accountability

Introduction

7.1 The management of the TVET sector in West Bengal is unified under one department, which governs polytechnics, ITIs, vocational education in secondary schools and short-term vocational training. The Department of Technical Education and Training (DTET) and two autonomous Councils, which are statutory bodies, oversee most TVET activities in the state.

Box 7.1: Autonomous Councils for Technical and Vocational Education in West Bengal

Two autonomous Councils, (i) The West Bengal State Council of Technical Education for Polytechnics, and (ii) The West Bengal State Council of Vocational Education and Training for vocational education at the school level and short-term vocational training were formed through two special State Government Acts in 1995 and 2005 respectively. The State Council of Vocational Training (SCVT), which was supposed to be formed for ITIs is yet to be established. Each council was mandated to strengthen technical and vocational education and training in West Bengal.

Structure and Functions of DTET

7.2 DTET is headed by the Minister-in-Charge, followed by the Secretary, who generally is an Indian Administrative Services (IAS) cadre official. He is supported by other Additional, Joint and Deputy Secretaries. The Department constitutes of three separate Directorates as mentioned below:

1. Directorate of Vocational Education and Training (DVET) which looks after vocational training centers and providers in secondary schools located in the capital city of Kolkata with 6 regional offices in Jalpaiguri, Malda, Hooghly, Burdwan, Kolkata and Kolaghat. Each regional office is headed by a District Officer and is expected to have around 7 full-time staff.
2. Directorate of Industrial Training (DIT) is responsible for Industrial Training Institutes. It is located in Kolkata, and is supported through a regional structure with offices in Durgapur and Siliguri headed by a Joint Director and a team of Deputy Directors, Additional Directors, UDCs/LDCs, supervisors etc.
3. Directorate of Technical Education and Training (DTET) which looks after polytechnics is also located in Kolkata. The regional structures for this Directorate have not been established yet.

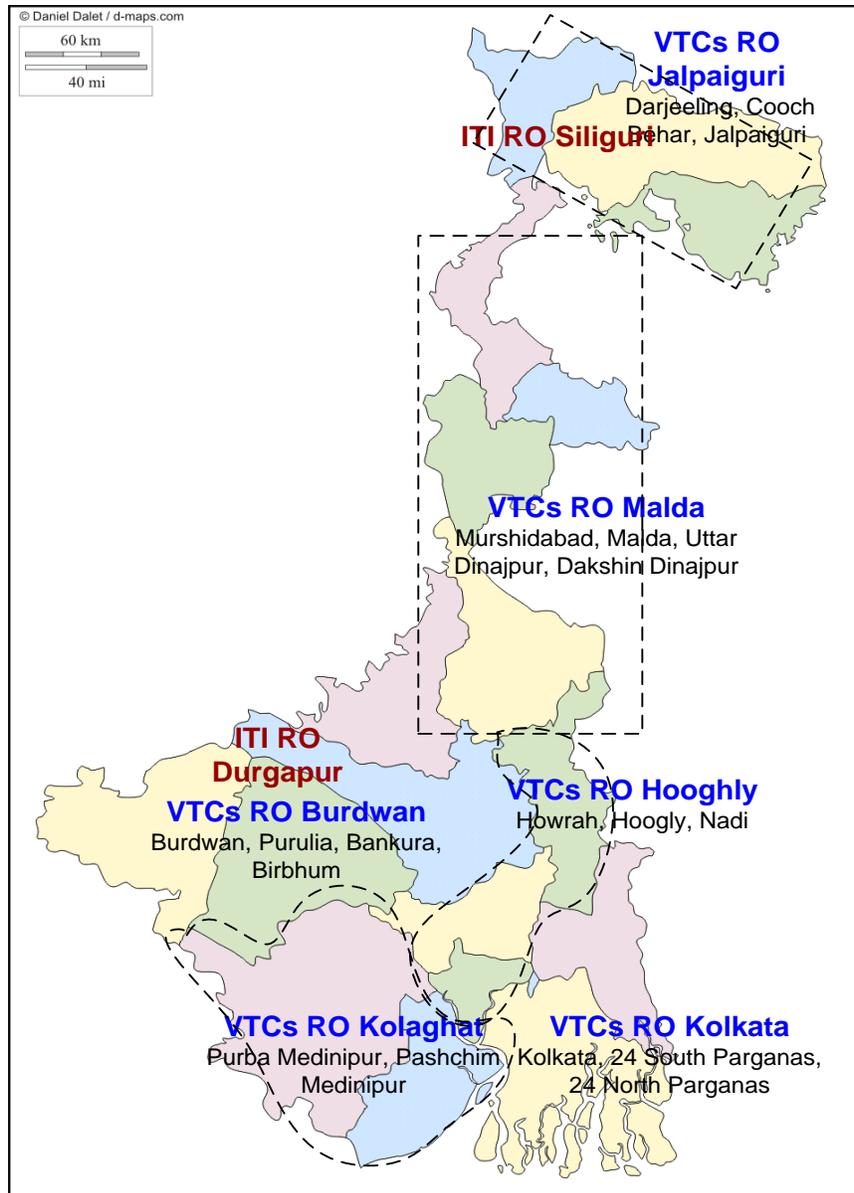
7.3 The DTET and the Directorates of ITI, polytechnics and VTCs are responsible for the following:

- Planning of the technical education functions of the Department and the respective Directorates which include estimating the growth of institutions and demand for TVET over time in five year periods. The Directorates are responsible for preparing annual and five-year human and financial resource requirements.
- The Directorates of ITI, Polytechnic and VTC are responsible for mandates from the central government through the DGET, AICTE and MHRD respectively. Central government schemes are therefore incorporated in State Plans. The annual plans also incorporate the financial requirements of the respective Councils; however the planning for Councils is conducted independently of the Directorates.
- Coordinating, especially with Central Government departments like DGET, AICTE, MHRD and others, for the implementation of programs in technical and vocational education. The Directorates also coordinate with Industry and prospective employers for placement and employment of the students. Further coordination is needed with higher education institutes for the students who pursue further education after the technical and vocational courses.
- Estimating current gaps in staffing (sanctioned vs. available), gaps arising out of annual retirements and demand arising out of future growth in institutions, and preparing proposals for composite recruitment which are forwarded to the Public Service Commission (PSC). The Department is also responsible for managing the staff of the Directorates and the training institutions under their administrative control including salaries, transfers, leaves, promotions and appraisals (ACRs) as per the West Bengal Service Rules.
- Managing the infrastructure of institutions which includes liaising with PWD for new infrastructure and maintenance of the old equipment, purchase and maintenance and other infrastructural requirements.
- The finances are managed by each Directorate by its own officers or deputed officers from Audit and Accounts office of Govt. of West Bengal. They oversee the utilization of funds by the Directorates and institutions, manage the treasury functions, and also function as Drawing and Disbursement Officers.
- Coordinating with Industry and prospective employers for placement and employment of students.
- Some of the academic functions are also handled at the Directorate level especially of centrally assisted programs which follow the NCVT curriculum of DGET or CDTP or STVT of AICTE and so on.
- Though the Councils are responsible for admission, registration, examination and certification of students, the Directorates also maintain a detailed database of students.

7.4 As noted above, the DVET and DIT are supported by six and two regional offices, respectively. These regional centers are short-staffed and lack the expertise to perform any planning, supervisory, monitoring and support role to the institutions.

Figure 7.1: Current regional structures of Directorate of VTC and Directorate of ITI

Current Regional Structures of Directorate of VTC and Directorate of ITI

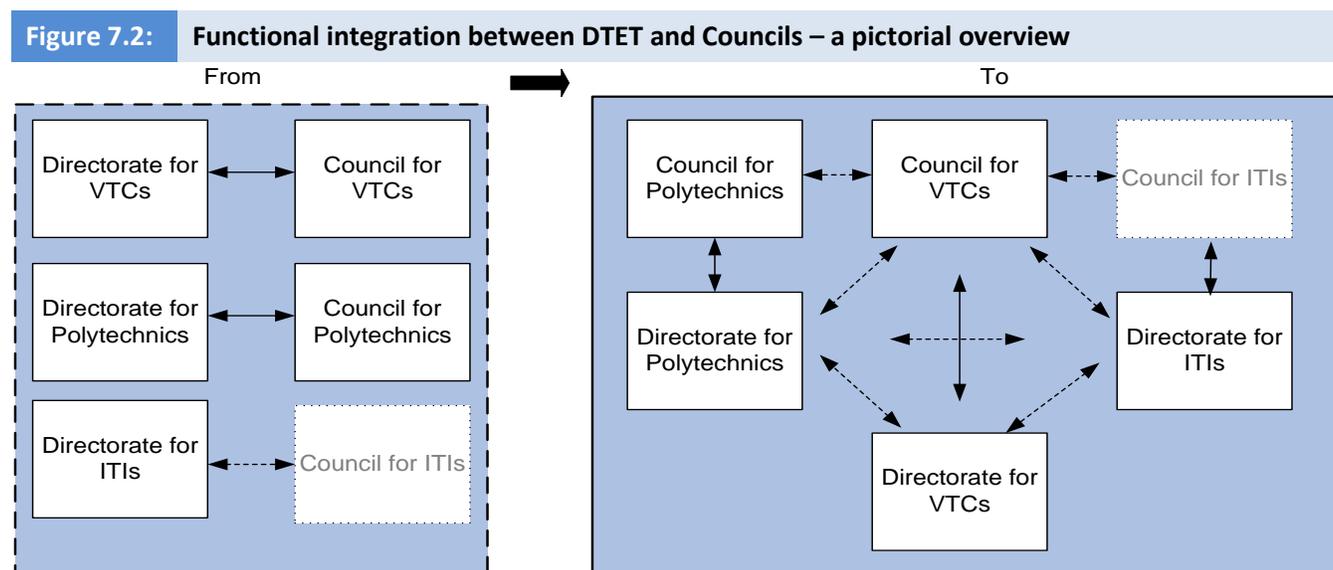


Functional Integration between DTET and Councils

7.5 Even though the Directorates and Councils are independent of each other, the overall objective of quality technical education and skills development in the state cannot be achieved without forging functional integration and collaboration between the Directorates and Councils. Synergy is also needed between ITIs, polytechnics, VTCs and their respective Councils to execute the larger mandate of TVET and skill development in

the state. For example, the agenda of the Councils is well structured and autonomous around developing, maintaining and monitoring the overall quality of technical education, yet its functions have strong influences over the operations of the Directorates, e.g. if the introduction of a course is decided at the Council, it has its direct effect on the Directorate in the form of the need for creating infrastructure, providing faculty and arranging for other resources for the course. Similarly, training of faculty to execute new or updated courses is an important function of the Council, however the lack of joint planning or a structured system, leads to a void in capacity-building of existing staff.

7.6 TVET and skills development cannot be attributed to “a” single department, in-fact the spread of the subject across 17 ministries/departments is an indication that the subject needs multiple levels of inter/intra departmental cooperation and coordination. Vocational education, industrial training, polytechnic education and even professional education in higher education institutions and school education are all closely linked to each other. Though there is a large scope of harmony across departments, in the context of technical and vocational education and training more of it is needed between the three Directorates and the two Councils. An integrated approach to problem-solving is needed in the DTVET.



7.7 In order to achieve better outcomes of the TVET system in the state, the Department of Technical and Vocational Education and Training and the Councils (now two and later may be three), would need to work closely, complementing each other in the following areas:

- **Planning:** TVET and skills development need to be planned cohesively and comprehensively, especially keeping in mind the demands of the industry, opportunities for wage and self-employment, aspirations of the youth, the nature of the economy and the required work-force for the future. Planning would not mean, aggregating different department plans, but would be organic, based on needs and availability of infrastructure and other resources. This sort of coordinated planning could be achieved by putting together an empowered “Policy Planning Unit (PPU)” on TVET.
- **Labor Market Intelligence System (LMIS):** Skills training without targeting real jobs or entrepreneurial opportunities would lead to further unemployment of trained youth, which would result in wastage of

resources and possible social unrest. A robust Labor Market Intelligence System under the Directorate and Councils which can track current and future employment information from the employers/industries, both within the state and outside, can help build the necessary linkages with industry and market needs.

- **Management Information System (MIS):** In the absence of any real-time management information system, there is a genuine problem of planning, and assessing the operations of each institution as well as the departments. Many of the operational difficulties of the heads of the institutions, faculty and students, for example, go unreported. Those which reach the decision-making authorities, have little backing of data and facts. For example, the leave-tracking system is currently manual and does not give an overview of how many people are on leave, and types of leave at a given point of time. Similarly, there is no comprehensive system for tracking of employment (salaried or self-employed) across different courses and institutions across the Directorates.

7.8 A state-wide IT based MIS for the whole TVET/skills development sector can cover:

- a. **Human resources:** Employment records, current staff strength and gaps, information on staff training, etc.
 - b. Staff attendance and leave-tracking system.
 - c. Enrolment, attendance, performance in examination and placement of students/trainees.
 - d. Fund utilization tracking.
 - e. Training needs analysis system – for both students and faculty.
- **In-service Training and Faculty Development:** Another common area of cooperation could be professional development of faculty and other staff, not only on academic content and its delivery but also professional and management skills. Cross-departmental exposure, interaction between faculty of different institutions and academic exchanges on pedagogical matters could help in raising the teacher competencies and their motivation to a great extent. A formal platform would need to be created to execute exchanges.

This could be done by creating a TVET Human Resource Development Fund (HRDF) which would facilitate these regional and cross-institutional interactions. Such a fund could be managed jointly by the Department and the Councils under the direct control of the office of the Minister-in-charge.

- **Course and Curricula Rationalization and Alignment:** The Councils could form an empowered “Board of Studies” on the issue, with members of the Council and officers of the Directorate for course and curricula rationalization and alignment. Functions of the Board of Studies could include:
 - a. Conduct a system-wide course audit not only in terms of duration of courses but also its content and their relevance across institutions like VTCs, ITIs and polytechnics.
 - b. Realign the courses across institutions based on their core competency. For example, exploring the mandate for running all short-term courses to Directorate of VTCs.
 - c. Industry-wise vetting of courses with potential employers and incorporating modifications to make the curricula relevant.
 - d. Revisit the continuity of courses which are low in demand, and have poor employability potential. A state-wide student response survey could be organized to incorporate feedback.

TVET Human Resources

Staff Capacity

7.9 DTET and DIT manage 70 polytechnics and 87 ITIs, respectively, spread over 19 districts of West Bengal. The total current staff capacity across all institutions in different groups is about 3000. Unfortunately the current strength is only half of the sanctioned strength leaving large gaps and serious pressure on those currently in position. In addition, about 3000 operational VTCs out of the 3500 sanctioned, have about 20,000 contractual teachers and instructors. They are managed by a Directorate with about 15-20 officers on deputation and about 10 regular staff out of 66 sanctioned posts.

All Staff	Sanctioned			Filled Up			% Vacancy		
	VTC	ITI	Polytechnic	VTC	ITI	Polytechnic	VTC	ITI	Polytechnic
Group A	36	393	1539	0	115	724	100%	71%	53%
Group B	4	1647	1041	0	819	421	100%	50%	60%
Group C	10	420	256	1	198	88	90%	53%	66%
Group D	16	550	804	9	246	448	44%	55%	44%
Total	66	3010	3640	10	1378	1681			
Overall	6716			3069			54%		

7.10 The stark gaps in current human resources are serious and need urgent redressal. These numbers do not include the expansion plans of the departments which will likely add multi-fold to these gaps. Staff shortage and vacancy is affecting the overall functioning of the department as well as impacting the quality of services to the students. The recruitment, unfortunately, has not been able to keep pace with the expansion or the annual vacancy growth in the institutions and the Directorates. The newly created Directorate of Vocational Education & Training is the worst affected with most of the recruitments pending with the Public Service Commission.

Recruitment Practices

7.11 Recruitment for the Directorates is managed by the State Public Service Commission (PSC). The vacancy information is periodically submitted by the Directorates to the PSC which is normally processed in 6-8 months' time. However, the requests from multiple departments of the Government of West Bengal (GOWB) and the limited capacity of the PSC inadvertently delays the processing time, which in some cases may stretch up to 18-20 months. The recruitment at the institutional level in polytechnics and ITIs are also managed by PSC, based on the standard recruitment rules of the Directorates, whereas the selection of contract instructors for VTCs is the responsibility of the Directorate under the prescribed norms of the Council. The norms set by AICTE, DGET and MHRD are also closely followed.

7.12 The system and the delays are no different from other departments, or for that matter other parts of the country. This slow process could be attributed to the single point of entry and lengthy authorization requirements. The eligibility criteria, testing protocols, posting requirements, and qualification standards are

complex and restrictive in nature, and the whole approach to recruitment less proactive and more reactive in nature. In order to face the challenges of the future, a radical departure is needed from the current concepts and practice of recruitment. This departure is not to completely undermine the current practices but to develop new practices in order to hire a new set of people for functions which would be more complex in future, would cut across agencies and would need multi-skilled task professionals.

7.13 In order to fast-track some of the urgent and pending recruitment gaps; the state government may consider a few structural changes in recruitment for the DTVET. These could be;

- **Using the services of the College Service Commission (CSC):** The CSC of West Bengal could be used for recruitment of faculty and instructors for the DTVET. The CSC currently holds recruitment for about 480 colleges in West Bengal. The Commission's core competency is in recruitment of teachers and faculty in higher education. Therefore the Commission may also consider setting up a special cell or department for recruitments for polytechnics and ITIs.
- **Leveraging Staff Service Commission (SSC):** The newly formed Staff Service Commission of West Bengal can consider taking up the large number of pending recruitments in Group B (1452) and Group C (399) of DTVET. Though the SSC would lessen the burden of Public Service Commission to a large extent, but, it is to be noted that the Staff Service Commission's mandate cuts across all departments in the GOWB, and may not fast track the process for Technical Education to the extent that is needed currently.
- **Separate TVET Commission:** Apart from the VTCs, there are presently about 160 institutions, under the Technical Education Department, which might grow to about 250-300 institutions over the next 5 years. These growth estimates are based on the Department's own capacity to grow. However, if a state-wide demand assessment survey and study is conducted, the growth numbers might be substantially higher, and may justify the need for establishing a separate TVET Service Commission. With the current vacancy gaps and growth numbers, a separate commission may not be required in the immediate term, but may become a requirement in the longer term.
- **Competitive recruitment for Councils:** In order to build the capacities of the Councils to handle the complex tasks of course designing, curricula framing, examinations, training, and quality assurance, it is advisable that key staff like the Secretaries, Registrars, and Assistant/Deputy Registrars should also be selected through a competitive process by the College Service Commission. In addition, the Council should also create permanent academic positions at the headquarters rather than depending on external experts. Competitive recruitment should also happen for these positions. This would not only develop long term resources within the Council but also build capacities of the Council to respond to rapid developments in the technical education field.
- **Contractual staffing:** Many departments in GOWB including the Directorate of Technical Education sometimes appoint contractual staff to take care of immediate needs. Some departments renew the contracts and eventually regularize the staff with the PSC's permission. The Directorate itself in principle does not encourage this practice and there has been only one instance where a few contractual staff were regularized through a formal PSC process. In all other cases, the contractual staff in the Directorate has been replaced by regular staff as and when recruitment has taken place.
- **Creating an academic talent pool:** The Directorates and Councils can also consider creating a talent pool of academic faculty, primarily retired faculty or part-time faculty from the private sector, in order to access their services for specific modules for short durations, or in situations where recruitment is delayed, or when the regular faculty is on leave or attending training. Such a pool, if found effective, can slowly graduate into an institutional pool+ for support to all technical institutions in the state.

Governance and Accountability in Training Institutions

7.14 The site of service delivery in the TVET sector is the training institution. Management practices followed in these institutions are therefore critical for performance. Equally, strong governance and accountability mechanisms at the system level are those that translate into incentives for performance at the institution level.

Management Practices

7.15 Public training institutions are generally headed by a Principal, who is supported by administrative staff and sometimes by a Vice-Principal. In the private sector, the head of the institution is either the owner or an appointee of the owner or a board. In either of the two cases, there are positive incentives to perform – in the first case, the owner is a residual claimant of revenues, and in the second, the head of the institution as the agent of an owner or a board has performance incentives aligned with those of the owner/board.

7.16 While there is some provision for in-service training, though non-systemic and largely ad-hoc, there is no provision for providing management training to heads of institutions in the public sector. The typical head of institution in such a case is just at the top of an administrative hierarchy at the institution level, and not necessarily a leader.

7.16 Operational practices within a public training institution are governed by rules and norms established by the apex institutions to which they are affiliated (central or state). Consequently, performance improvements at the institution level are slow and infrequent. Instructors with various designations and credentials determined by the AICTE for Polytechnics and NCVT or SCVT for ITIs, carry out training delivery according to the curricula set by them. This is true of both public and private institutions, though the latter have the flexibility to adapt their curriculum and pedagogy to suit the needs of their end users, either students or industries that hire them.

7.17 Better performance at the institution level, especially for public training institutions, cannot be expected without giving them decision-making power over how they go about achieving goals. Without a certain level of institutional autonomy, it is difficult to expect these institutions to use their resources optimally. Conversely, to ensure that the interests of the state and the institutions are aligned towards better performance, accountability mechanisms such as performance measurement and reward need to be combined with autonomy. Another gap in the institutional structure of public sector training institutions is lack of linkages with industry and employers who are the ultimate end-users of their graduates. There is some evidence that allowing the participation of industry and the private sector in the management of these institutions can improve these linkages, and help the training institution improve along several dimensions – more demand-driven courses, curricula that are aligned with industry needs, training of students and instructors in industry, and support with infrastructure, equipment and placement.

Human Resource Management and Performance Incentives

7.18 The organizational structure of training institutions, especially those in the public sector, resembles that of a bureaucracy. Institutions have limited or no autonomy in making administrative, financial, academic and management related decisions at the institution level. Like in other states of India, in West Bengal too, the heads of public training institutions report directly to their directorates, councils or departments.

7.19 There are no systemic incentives that attract institutional level improvements that can lead to better quality of training, more cost-efficiency or a combination of the two. For example, courses that are outdated or those that are not in much demand continue to be supported by public resources. In West Bengal, not a single course has been discontinued in the past 5 years in public Polytechnics or ITIs. Mostly, when innovative

initiatives are recorded or reported in public training institutions, they are usually due to the efforts of the head of the institution who is a self-motivated individual.

7.20 Private institutions on the other hand make choices determined by market based incentives which positively impacts outcomes. Internal efficiency is higher for private training institutions than for public ones because of a better match of trades on offer to those desired by students – the ratio of enrollment to capacity is near 100% in the former, but can vary from 70-90% in the latter (The World Bank, 2012). Drop-out rates also tend to be lower in private training institutions. On the other hand, private training institutions' optimal choices can, at least in the short-to-medium run, be adverse for the system. For example, more than 70% of private ITIs in West Bengal offer electrician and fitter trades; graduates of these trades have lower employment rates due to their oversupply. Though over time, the market tends to correct these deviations, though the time taken may be longer due to information gaps in the system.

7.21 Like in government bureaucracies, promotion in public training institutions is on the basis of tenure, and not performance. Nor does any system exist either at the institution level or at the state level to identify good performers and reward them or develop them further. Conversely, non-performers also do not face any censure by the institution or the system. There is some evidence that private training institutions reward a mix of higher level of educational credentials and tenure, through both promotion/higher designation and salary increases (The World Bank, 2012).

Striking the right balance

7.22 While, it may be the case that West Bengal has the right amount of centralization for governance of the TVET sector in the state, it may have too much centralization when it comes to allowing local level autonomy, adaptability and control with respect to flexibility of course content, pedagogy and service delivery of TVET courses. Rigidity in this regard leads to more skill gaps and mismatch than less, and makes the system much less cost-effective than it need be. Reforms therefore need to consider greater coordination and information generation and sharing between the center and the training institutions to support local level autonomy and control, for better service delivery.

Chapter 8: Quality Assurance

Introduction

8.1 We have already noted the presence of a small TVET system in West Bengal, which is largely focused on the informal sector (due to sheer numbers associated with VTCs), and mostly lacks inclusiveness. The system faces many challenges and is currently unable to support economic development through a demand-led skills development approach. System and institution level inefficiencies combined with low resources, adversely impact the effectiveness of the system meant to deliver contemporary workplace skills.

8.2 The roles of the Councils discussed in the previous chapter in terms of quality are still evolving. It will continue to do so till the National Skills Qualification Framework (NSQF) is developed and then implemented nationally, and Sector Skills Councils start to influence the standards of TVET courses. Many important areas for quality assurance such as curriculum, teacher training, short courses and national occupational standards are, or will be, developed at the national level, creating potential mis-matches in quality assurance and implementation in the states where different priorities may exist.

8.3 Training centers, especially those based in rural areas but also urban ones, often lack a close connection to industry and are unable to secure the services of highly qualified teachers with industry experience. Other centers located in both urban and rural environments have limited access to modern equipment. A small pool however may have good access to industry and well qualified teaching staff, creating variable quality within the system.

Rationale for a TVET Quality Framework

8.4 A TVET quality framework improves the outcomes of TVET, eventually leading to an improvement in the status of TVET overall, as students are employed in work related to their course of study, and employers experience graduates with relevant skills.

8.5 A TVET Quality Assurance Framework can be applied at both the system and TVET provider levels and can therefore be used to assess the effectiveness of TVET as a whole. A TVET Quality Assurance Framework places particular emphasis on the improvement and evaluation of the outputs and outcomes of TVET in terms of increasing employability, improving the match between demand and supply, and promoting better access to lifelong learning, in particular for disadvantaged people²¹.

8.6 In general, TVET Quality Assurance Frameworks aim to:

- Improve the consistency and industry relevance of TVET graduates.
- Protect learners from inferior and non-relevant TVET.

²¹ European Commission, Fundamentals of a 'Common Quality Assurance Framework' (CQAF) for VET in Europe; Lifelong Learning: Education and Training policies.

- Provide a structure for continuous improvement of the overall TVET system in West Bengal.
- Lift the quality of all TVET training providers, no matter how limited the resources, as an inclusive rather than exclusive framework, to assist training providers to work within the quality framework rather than setting benchmarks that will exclude training providers.
- Provide greater transparency and consistency across the entire TVET system as it provides a common framework and tools for the system as a whole to improve, monitor and evaluate the management, provision and outcomes of TVET.

8.7 The diversity in the facilities and capacity of training providers is an important factor to be considered when developing a TVET quality framework. Any proposed quality framework needs to be inclusive rather than exclusive, supporting all TVET organizations to improve and achieve quality outcomes. Offering a staged approach through continuous improvement will benefit all TVET organizations to commence the process of quality improvement regardless of their current capacity. Commitment to continuous quality improvement is the cornerstone of a quality TVET system which does not necessarily require state-of-the-art facilities and equipment. Development of the quality assurance framework will be a dynamic process as organizations move to greater levels of quality, with the emphasis changing, based on government training reforms and industry needs. Therefore, quality is not a static process, and quality assurance is not an end in itself.

8.8 The ISO 9000 and 29990 series of standards are not by themselves an approach to quality, but a system of certification that requires certain quality processes to be implemented²². The Quality Management System standards created by ISO are for certifying the processes and systems of an organization, not the improvement processes of outcomes or services. This is where a TVET quality assurance framework provides additional quality indicators relevant to TVET. However, it is important to recognize that ISO standards can form a valuable part of a TVET Quality Assurance Framework. This requires a re-conceptualization of traditional quality assurance systems for TVET, with a more attainable model that recognizes incremental progression. Such quality frameworks exist in a wide range of countries with established TVET systems and the ISO standards may be incorporated as one of the framework options in these systems. The European Quality Assurance Reference Framework for Vocational Education and Training is one example. It outlines general principles for quality assurance in TVET which can be applied at the regulator level and at the provider level.

8.9 A major quality indicator for TVET in most contemporary systems is industry relevance, that is, the programs offered should be in response to an identified industry skills need and developed with input from employers or industry bodies. This ensures that TVET training provides the required skills to the necessary standard to perform competently in the workplace. Along with this TVET should provide students with an easy transition into employment or further education or training. Within the West Bengal TVET system there are very few quality indicators and minimal monitoring, follow-up or evaluation of the outcomes of the system. The use of clearly-defined and transparent quality indicators offers a structure for the West Bengal TVET system to work towards quality outcomes and industry relevance.

²² Blom & Meyers (2003). Quality indicators in vocational education and training. International perspectives, NCVET. Retrieved from <http://www.ncver.edu.au/research/proj/nr0026.pdf>

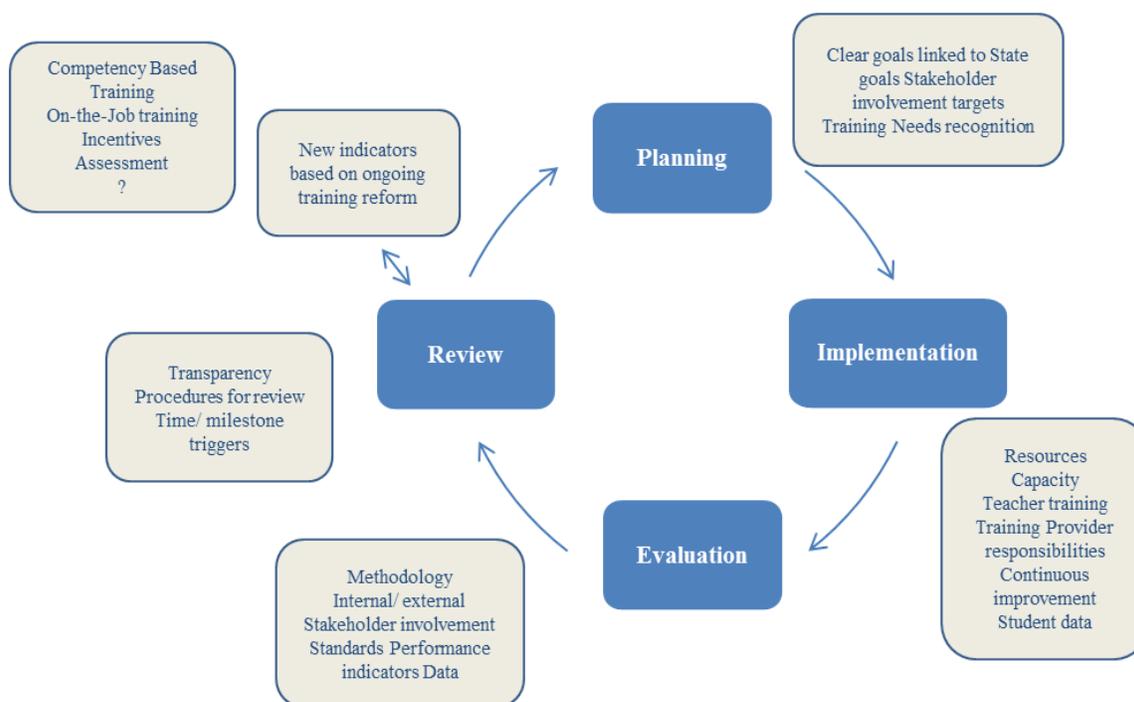
8.10 Consistency in outcomes is another important factor in improving perceptions of TVET and a quality system helps achieve this. Achieving consistency across the entire TVET system requires consistency across all policy and planning activities. Additionally, private training providers and other government ministries involved in training should be encouraged to commit to the principle of continuously improving the quality of their training outcomes.

A TVET Quality Framework Model for West Bengal

8.11 The model presented here drew on the example of the European Quality Assurance Reference Framework methodology and frameworks used in other countries. It provides a good practice approach to quality assurance in TVET.

8.12 The TVET Quality Assurance Framework uses the four stages of a quality cycle and seeks to build these phases into the short-term, medium and long-term roadmap activities. The additional stage of reflecting on training reform is included in recognition of the ongoing changes that will occur within a flexible modern TVET system.

Figure 8.1: Four stages of the quality cycle: A three-year cycle for West Bengal



Planning

8.13 Planning involves establishing clear and measurable goals with regard to policy, procedures and human resources. A process of identifying these goals, key principles and developing output and input standards linked to these objectives to support the implementation and monitoring of quality assurance.

8.14 In an effective and efficient TVET system all components of the policy framework are coherent and work to reinforce each other. Contemporary TVET policy moves the emphasis from a supply- (student enrolments) side to a demand-side (industry skills needs) focus. Well-formulated policy has many common features, including; being evidence- or research-based, reinforcing good practice, stakeholder ownership, being socially inclusive, has a holistic consideration of students (youth, mature age, existing workers, etc.) and widely agreed terminology.

8.15 An example of an incoherent policy is in country X where competency-based training and assessment initiatives have recently been implemented. The policy on competency-based assessment places greater emphasis on examinations than it does on the demonstration/ evidence of competent performance. This policy also places greater emphasis on assessors holding higher degrees than it does on having knowledge and experience of work-ready competence. Both of these policy requirements are at odds with the principles of competency-based training and assessment, and there is a mis-match between industry expectations of graduates and the skills of graduates.

8.16 Developing quality indicators to shape policy design will support consistency and coherence across the TVET system, ensuring good decisions in planning and implementation of policy. The first quality indicator relates to the planning element.

Implementation

8.17 During the implementation phase it is just as important to ensure that implementation is coherent, with the goals and key principles of the TVET system and its related components, as it is during the planning phase. This ensures that government policy is implemented in a manner that supports the goals and principles intended.

8.18 Ensuring the consistent implementation of policy can be achieved in many different ways, such as through legislation, incentives, implementation guidelines, templates, preparing to rollout initiatives by training the relevant staff and developing capacity by training relevant personnel. Whichever strategy is chosen, there must be clear information available to all relevant stakeholders on the intention, the procedural steps and the necessary tasks to be undertaken to achieve the intended outcomes. Implementation strategies help prepare relevant staff for introducing the policy initiative, thus reducing resistance to change and developing the confidence of those carrying out the implementation.

Evaluation

8.19 This phase is about designing evaluation mechanisms including data collection, benchmarking, and determining the frequency and scope of the evaluation. The design needs to incorporate existing reporting mechanisms, to reduce the workload of reporting, so that the evidence of the findings can be discussed and given due consideration. This phase involves data collection and the analysis and development of findings for further action or improvement. Consideration of the findings against the goals of the TVET system can identify coherence or divergence from the intended goals.

Review

8.20 Review and self-assessment are important aspects of continuous improvement. Quality assurance is an ongoing process of constant review, external evaluation, analysis of the feedback and adjustment for improvement based on that feedback.

Quality Indicators

8.21 Quality criteria is ideally determined by stakeholders of the TVET system to identify what are the most important features of the system requiring monitoring and improvement. The following quality indicators were developed for West Bengal based on areas of importance identified during the consultations.

- Enhanced coordination, competence and managerial efficiency of the TVET system.
- Improved participation in the TVET quality assurance system by TVET training providers and administrators.
- Harmonization between the supply and demand for TVET graduates.
- Strengthened initial and continuing training for teachers, instructors and trainers.
- Better access to TVET.
- Stronger public and private partnerships.
- Integrated linkages between education sectors.
- Improved physical infrastructure, equipment and resources.

Stakeholders' involvement

8.22 In contemporary TVET systems many different stakeholders work together to achieve successful outcomes, such as schools, colleges and employers to provide meaningful TVET in Schools' programs; or the government, training providers and employers to achieve government's Scheduled Caste and Scheduled Tribe training and employment targets. Stakeholders from NGOs and private training providers can offer different perspectives which broaden and enrich training provision. One of the major stakeholders in the process is industry.

8.23 Consistent effective stakeholder engagement requires long-term processes and relationship building. Detailed quality processes for industry consultation ensure that consultations are effective in identifying a whole range of industry perspective on skills development needs. Industry involvement in all aspects of a TVET system should be auditable from a quality perspective ensuring consistency and effectiveness of advice. Feedback from the consultations indicates that the current approach is not achieving the results it could have been. This appears to be due to a number of factors, such as:

- Bringing industry late into the process when decisions about priority areas for industry involvement have already been determined, thus reducing industry's sense of ownership in the process, or their agreement that those priority areas are relevant to them.
- Asking industry to attend meetings only when the government requires their advice, thereby reducing industry's role as an equal partner and their ability to initiate directions for skills formation.

- Requesting industry representatives to be available for extended periods of time (over a whole day or several days), consequently reducing industry’s ability to be involved in TVET processes.
- Having a small number of enterprise representatives attending training institutions and Committee meetings, which has the unintended consequence of making private enterprise a minor voice.²³

8.24 It’s important to develop a policy framework for quality assurance and support the TVET managers and training providers with technical assistance and the financial resources to implement the policy with continuous monitoring and evaluation. A detailed Quality Assurance Framework with short-term, medium- term and long-term quality objectives with indicators is provided in Annexure 6.

8.25 The modality of the TVET Quality Assurance Framework proposed for West Bengal acknowledges that implementing quality improvement is an incremental process. The proposed implementation approach seeks to develop and reinforce good workplace practices at the individual, institution and system levels and will draw on stakeholder involvement. Unlike other TVET Quality Assurance Frameworks, this framework does not cover standards for registration of training and assessment organizations and a Qualifications Framework, as these are set at the National level. It is envisaged that as TVET reforms are implemented a state registration process may be adopted.

8.26 Initially, the framework contains a large number of detailed quality indicators to assist in developing robust foundations for quality. As implementation of the framework commences, along with proposed training reforms, the number of quality indicators will reflect the GOWB’s priorities for further strengthening of the TVET system.

8.27 Framework activities have three distinct stages, in the short-term it is about strengthening self-evaluation and developing local networks. In the medium term the focus is on strengthening the external monitoring mechanism of the system. The long-term focus is on strengthening the key performance measures so that the TVET system can be benchmarked against other TVET systems.

Voluntary TVET Quality Assurance Framework

8.28 In the early phases of implementation a voluntary framework allows organizations to commence the process of improving their quality without being penalized if they cannot meet all of the quality requirements. A voluntary framework allows policy makers to advance implementation of the framework gradually, based on feedback and assessing the impact, and then make adjustments as necessary.

An Inclusive framework

8.29 Most indicators offer a scale for TVET organizations to incrementally work towards, allowing organizations to demonstrate their efforts to improve training provision. An inclusive framework helps to lift the training provision of all providers by not being overly ambitious about where organizations start in the quality assurance process. There could be three levels of quality training provision – A, B and C, with C being reserved for those commencing on the quality assurance path and could be time limited, or assigned to those training organizations delivering livelihood skills.

²³ Smith, B., (2012). A National Quality Framework for TVET: Sri Lanka. Asian Development Bank.

Chapter 9: Strategic Reform of TVET in West Bengal

Introduction

9.1 The overarching goal for the TVET sector in West Bengal is to establish a system that is effective, efficient, dynamic and flexible, capable of providing the different kinds of skills demanded by the labor market, and aligned with the growth and development objectives of the state. A parallel goal is to expand access to TVET to underserved areas and population groups.

9.2 This chapter pulls together the data and analysis presented in the preceding chapters and sets out a reform roadmap for the TVET sector in West Bengal. The road-map is structured using five key goals. A phase-wise time-based implementation of reform measures will allow the state to build implementation capacity as it goes along and takes corrective measures based on experience. Table 9.1 lists steps that the state can undertake in the short-term (1-2 years), medium term (3-5 years) and long-term (5+ years) to achieve these goals.

Reform Priorities

9.3 The five dimensions of the TVET sector selected to serve as thematic goals for reform in West Bengal are: (i) governance and accountability, (ii) human resources, (iii) financing and provision for access, quality and efficiency, (iv) quality and outcomes, and (v) research and development and monitoring and evaluation. These goals are directed towards maximization of gains for a sector that has suffered from relative neglect vis-à-vis policy and investment for many years.

Goal 1: Improving Governance and Accountability

9.4 The TVET system is a complex one, influenced as it is by many internal and external factors. Outcomes of any TVET system are uncertain as even the best system has to play catch-up with a moving target due to the time taken to develop skills, and the dynamic nature of the labor market. A policy vacuum narrows the set of outcomes further, adds to the cost of operation and reduces system efficiency. Alternatively, a state level policy of skills development and employment coupled with the establishment of a state skills mission that can guide policy implementation can lend coherence to the system, and reduce costly coordination failures.

9.5 Unlike other states (and even at the center), almost all formal TVET in West Bengal is administered by one government department, the Department of Technical Education and Training (DTET) and its associated directorate and councils. Thus, West Bengal suffers from less structural fragmentation compared to other states. Conversely, smooth governance of the system is hampered due to repetition of functions and lack of coordination between the council and the directorates. This problem is compounded by unfilled capacity gaps in each institution. Strategically, the state therefore, has the opportunity of building the structure's capacities,

rationalizing their functioning and coordination, and introducing clearer lines of monitoring, feedback and accountability.

9.6 A policy and planning unit established in the directorate can serve as an institutional mechanism for joint planning between the directorate and councils to avoid duplication of tasks and promote coordination. This unit will also be responsible for producing annual and medium term plan documents for the sector, indicating the cost of implementing these plans, sources of finance and agreed outcomes.

9.7 West Bengal has already initiated its plans to decentralize governance of TVET through the establishment of six regional skills training and employment centers. These should be completed quickly as they will be critical nodes for connecting the state to the field.

Goal 2: Improving Human Resources Policy in TVET

9.8 As has been discussed in Chapter 7, the TVET system in West Bengal faces severe staff shortages, both at the system level, and at the level of the training institutions. Moreover, the current recruitment system leads to long delays in filling up positions. In the short-term then, the first priority of the state will be to correct the understaffing in key managerial and administrative positions. This can be done through hiring experts from the market, either on a temporary or permanent basis. Additionally, a pool of reserve personnel from among those who have retired and who can work either on a part time or full time basis can be created to fill positions at short notice. Such a pool can also ease the issue of faculty shortage in institutions, and allow existing faculty to participate in training and qualifications upgradation.

9.9 A more sustainable solution for the problem of unfilled vacancies in polytechnics and ITIs can be to establish a state TVET service commission exclusively for TVET, or use the services of the existing College Service Commission in the state Public Service Commission (PSC) for the purpose.

9.10 Both the availability of teachers in adequate numbers and their quality are critical inputs in the production of TVET outcomes. Pre-employment training may be the only training a majority of teachers in the system undergo. The current system also does not present any incentives to its personnel, academic and non-academic to acquire better skills – promotion policies, in general, are based on number of years in service. A professional and career development policy enabled by the establishment of TVET HR development fund can make the reform in teacher quality feasible and sustainable.

Goal 3: Financing TVET Quality and Efficiency

9.11 As has been documented in the previous chapters, the small TVET sector in West Bengal is also concentrated in its more urbanized and economically advanced southern and western districts. TVET presence in other districts is very small, and almost entirely public. Expanding access to these areas and groups opens up the possibility of using innovative financing mechanisms including appropriate partnerships with the private sector (so as to complement and not replace private finance), demand-side financing (scholarships, subsidies, vouchers and student loans) for the short and long term, and leveraging of resources available through a variety of central government departments and schemes. Seventeen departments of the state and central governments

have funds for undertaking vocational training. A state training fund can effectively channel these funds in a coordinated and cost-effective manner.

9.12 The state also needs to examine the factors that determine private sector provision of TVET. West Bengal is one of the few states where public polytechnics and ITIs outnumber private institutions. The absence of private provision increases the burden on the state, and fiscal constraints perforce limit the extent to which the state can undertake and sustain this burden. Also, the use of current fiscal resources needs to be reviewed. The biggest ticket item in the TVET budget is salary of teachers, leaving little room for development budgeting, planning and implementation. This problem can be resolved to some extent by making the budget to the training institution available as a partial block grant giving the institutions autonomy in the use of funds and other aspects of decision-making and making them accountable to performance/outcomes.

Goal 4: Improving TVET delivery and outcomes

9.13 There is no apparent system of quality assurance in West Bengal, either at the institution or system level. Curricula remains outdated for years because of a lack of corrective mechanisms in the system. Additionally, there is little connection between curricula, teacher competency to deliver the curricula and training outcomes. A quality assurance committee at the state level can help create a culture for quality, and coordinate quality assurance activities at the institution level. The latter can include the development of training quality indicators to be measured and recorded for each institution annually. This can be made the basis of annual training quality awards to select institutions that achieve outstanding performance.

9.14 To activate the PCD and HR fund for teachers in the short-term, the state can undertake a training needs analysis of teachers (and even administrators) using a structure that will eventually become a part of the quality assurance system in the medium and long terms – a committee consisting of system representatives, external experts and industry representatives. For institution level development training institutions should be allocated the task of defining their teacher quantity and quality needs.

9.15 Both public and private training institutions should be enabled to offer teacher training at various levels. This will allow greater choice, competition and availability. For example, the HRD can be administered at least partly through the use of vouchers for teacher training.

Goal 5: Improving System Research and Development and Monitoring and Evaluation

9.16 In a robust TVET system the need for information is very strong. Information failures can lead to skill gaps, mismatches and compromises the efficiency of the system. Information is needed to connect the demand and supply sides of the training market. Feedback mechanisms can provide the system with data to take corrective measures. Cost-benefit analyses can allow policymakers to weed out unsuccessful programs and use scarce fiscal resources for those activities that have net benefits.

9.17 In the short-term, studies to examine demand and supply of training can be commissioned. These appropriately designed can serve as baselines for the system. Over time, the state can institutionalize these

activities through the establishment of an institute (for example, akin to the National Labor Institute) which will act as a think tank for the government in all TVET-related work.

Table 9.1: Road-map for strategic reform of the TVET Sector in West Bengal			
Goal	Short-term (1-2 Years)	Medium-term (3-5 Years)	Long-term (5+ Years)
Goal 1: Improving Governance and Accountability	<p>Draft State Skills and Employment Policy</p> <p>Establish State Skills and Employment Mission</p> <ul style="list-style-type: none"> ▪ To coordinate all TVET related activities across departments and with industries/employers ▪ Provide policy advice on systemic reforms ▪ Undertake monitoring and evaluation ▪ Promote innovations <p>Strengthen the existing Councils</p> <ul style="list-style-type: none"> ▪ More representation from industries (at least 30-40%) ▪ Structural alignment between Departments and Councils for integrated planning and around functions ▪ Form Committees and Boards with qualified and experienced professionals for curricular development, quality assurance, examination and certification, and teacher professional development ▪ Establish the proposed 6 regional skills, training and employment centers towards decentralized governance and system management <p>Performance Based Funding</p> <ul style="list-style-type: none"> ▪ Introduce performance-based funding of training 	<p>State Skills and Employment Policy adopted</p> <p>State Skills Mission fully operational</p> <p>Strengthen the existing Councils</p> <ul style="list-style-type: none"> ▪ Establish Policy and Planning Unit (PPU) in the Directorate for integrated planning and monitoring and evaluation ▪ Formation of State Council of Vocational Training 	<p>Monitor and update State Skills and Employment Policy</p>

	<p>institutions through a partial block grant modality</p> <ul style="list-style-type: none"> ▪ Pilot performance contracts for government aided private training institutions <p>Institutional Autonomy</p> <ul style="list-style-type: none"> ▪ Establish joint management with significant industry participation in training institutions ▪ Provide financial, academic, administrative and managerial autonomy to training institutions 		
<p>Goal 2: Improving Human Resources in TVET</p>	<p>Fill-up existing vacant administrative positions in the Councils and Directorates</p> <p>Create a talent pool of academic faculty primarily from retired/part-time/private sector for specialized training or in situations where there is no faculty due to delayed recruitment or absence</p> <p>Develop a Professional and Career Development Policy (PCD) for TVET managerial and academic personnel</p> <p>Review current teacher recruitment and management policy</p>	<p>Establish a separate state TVET service commission/Use existing College Service Commission in the state PSC for recruitment of Polytechnic and ITI personnel</p> <p>Full implementation of the PCDP Policy for TVET</p> <p>Establish a TVET Human Resource Development Fund in the Directorate for in-service programs, continuing education, exchange, deputation and advanced research</p> <p>Link revised teacher recruitment and management policy to PCD policy</p>	

<p>Goal 3: Financing TVET Quality and Efficiency</p>	<p>Formulate PPP policy for TVET</p> <p>Undertake strategy formulation for expanding access to underserved areas and growing industrial sectors</p> <p>Increase capacity of current infrastructure to train through introduction of multiple shifts using PPP modalities</p> <p>Improve girls' enrollment in TVET through appropriate scholarships, subsidies, hostel facilities and job placement assistance</p> <p>Introduce, where appropriate, innovative financing modalities such as cost-sharing with employers, targeted subsidies, vouchers, student loans in longer term formal training, and in further education of teachers</p> <p>Expand allocation from the state budget for TVET according to plans developed by the Policy and Planning Unit (including gap financing)</p> <p>Undertake in-depth evaluation of VET at secondary level</p> <p>Training for the Informal Sector</p> <ul style="list-style-type: none"> ▪ Reach out to inactive youth through specifically tailored programs ▪ Evaluation of a sample of ALMPs for the informal sector run by government and non-government providers 	<p>Enable and incentivize more private sector provision of TVET</p> <p>Reform based provision to meet demand for skills in the formal and informal sector by leveraging available financing through various central schemes, Ministries, private sector (CSR)</p> <p>Conduct a feasibility study for a State Training Fund</p> <p>Based on the findings of the evaluation redesign the VET at Secondary level with strong linkage with labor market needs and pilot the redesigned strategy</p>	<p>Establish the State Training Fund</p> <p>Based on the lessons from the pilot, decide to scale-up appropriately or otherwise</p>
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<p>Goal 4: Improving Delivery Quality and TVET outcomes</p>	<p>Introduce apprenticeships/internships for developing work-readiness of formal and informal sector trainees and workers</p> <p>Establish a TVET Quality Assurance Committee drawing personnel from the Councils, Department and External Experts and Industry Representatives</p> <p>Establish Curricula Development Committee as an integrated function of the 2 Councils</p> <p>Develop Training Quality Indicators (TQI)</p> <p>Introduce Training Quality Awards for Training Institutions based on TQI</p> <p>Conduct Training Needs Analysis for teachers</p> <p>Identify and remove redundant courses and plan to retrain and retain the teachers</p> <p>Build capacity of public and private training providers</p>	<p>Develop and adopt a Quality Assurance Framework</p> <p>Implement teacher training according to needs analysis and using the PCD framework</p> <p>Enable public and private training institutions and providers to be eligible to offer different levels of TVET teacher training</p>	
<p>Goal 5: Improving Research and Development (R & D) and Monitoring and Evaluation (M & E)</p>	<p>Conduct labor and training market studies</p> <ul style="list-style-type: none"> ▪ Employment surveys ▪ Household surveys ▪ Tracer Studies ▪ Cost-benefit analysis of various training schemes 	<p>Institutionalize R & D and M & E through the establishment of a state level institute</p> <p>Operationalize state, regional and sub-regional offices towards collection of labor market information</p>	

Cost of Reform

9.18 The foregoing has set out an ambitious agenda for reform. Which set or sub-set of reforms can be implemented will depend on both the political will and the availability of resources. The state will need to determine the sources and size of finances available so that a prioritized set of reforms can be appropriately cost out. The decision-making process should clearly identify the costs and benefits of alternative reform packages that can be implemented using available resources, and select the one that offers the highest expected returns vis-à-vis the state's developmental goals. Costs must include capital, developmental and recurring costs. Sources of finance can be the state budget, other government funds available, external aid, cost-sharing schemes and private funds.

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Annexure-1

An. 1.1 West Bengal is located in the eastern region of India with diverse geography. It was created as a constituent state of the Indian Union on 15 August 1947 as a result of the partition of the undivided British Indian province of Bengal into West Bengal and East Pakistan. West Bengal has three international borders, Nepal in the north-west, Bhutan in north and Bangladesh in the East. Assam, Jharkhand and Orissa are the Indian states sharing boundaries with West Bengal. The high peaks of the Himalayas are in the north of the state with the Bay of Bengal in the south. In between is the Ganges delta. The region of Bengal is one of the most densely populated regions on earth, with a population density exceeding 900/km². Depending on the soil and climatic variations West Bengal can be divided into six broad divisions:

- The hill region in the north
- The terai and Teesta alluvial region of North Bengal
- The laterectic, red and gravely undulating region in the west
- The coastal alluvial region in the south
- The gangetic alluvial region in the west
- The Vindhya alluvial region in the centre

An. 1.2 There are nineteen districts in the state - 24 Parganas (N), 24 Parganas (S), Bankura, Bardhaman, Birbhum, Coochbehar, Dakshin Dinajpur, Darjeeling, Hooghly, Howrah, Jalpaiguri, Kolkata, Malda, Murshidabad, Nadia, Paschim Mednipur, Purba Medinipur, Purulia and Uttar Dinajpur.

An. 1.3 West Bengal has a rich and glorious cultural heritage. People from various sects, tribes and religious backgrounds live in the state and follow different rituals and customs, thus enriching the culture of West Bengal. The cultural diversity of the state is reflected through the various languages and dialects.

Demography

An. 1.4 According to the Census 2011, West Bengal is the fourth most populated state in India. The population of West Bengal has been increasing, especially over the past decade. About 72% of the population in the state lives in rural areas. Some of the basic demographic features of the state are given below:

	As per 2011 census
Total Population	91,347,736
Male	46,927,389
Female	44,420,347
Decadal growth of population	13.93%
Sex Ratio	947:1000 males
Scheduled Caste Population*	18,452,555 (23%)
Scheduled Tribe Population*	44,06,794 (5.50%)
Muslims (largest minority)	28.6%

*The figure is from 2001 census.

An. 1.5 The majority of the population of West Bengal are Bengalis. Biharis, Punjabis, Marwaris and Muslims are among the minorities who are scattered all over the state. Various tribal communities and Sherpas and ethnic Tibetans can be traced in the bordering areas of Sikkim. In the Darjeeling district people of Nepalese origin can be found who are commonly known as Gurkhas. Tribal Adivasis, namely Santals and Kol live in the western districts of the state.

The district-wise SC ST population of the state is given below:

District	Overall SC/ST Population	SC Population	ST Population
Jalpaiguri	56%	37%	19%
Cooch Behar	51%	50%	1%
Dakshin Dinajpur	45%	29%	16%
Bankura	41%	31%	10%
Purulia	40%	20%	20%
Birbhum	37%	30%	7%
24-Parganas(S)	33%	32%	1%
Burdwan	33%	27%	6%
Uttar Dinajpur	33%	28%	5%
West Midnapore	33%	18%	15%
Nadia	32%	30%	2%
Darjeeling	29%	16%	13%
Hooghly	28%	24%	4%
Malda	24%	17%	7%
24-Parganas(N)	23%	21%	2%
East Midnapore	15%	14%	1%
Howrah	15%	15%	0%
Murshidabad	13%	12%	1%
Kolkata	6%	6%	0%
State Average	28.52%	23.02%	5%

An. 1.6 West Bengal is one of the most densely populated states in the country. In 2001 the population density was around 904 persons per square kilometer, making it the most densely populated state in the country. More than 60 % of total land area has been used in agriculture and the share of land use in the non-agricultural sector accounts to 20 %; the other 20 % is either fallow or barren or forested. In many districts, more than 70 percent of land area is used in agriculture. Historical and socio-economic factors have determined the high density of population in the state. Historically the state has attracted migration to the rich alluvial plains from the neighboring states, and since partition has seen a continuous stream of migration across the Indo-Bangladesh border.

Human Development

An. 1.7 West Bengal presents a mixed picture of human development. The picture is more complicated due to district wise variation in the state. The overall literacy rate is higher than all India which is about 74%. The percentage of literacy in West Bengal is given below:

Year	Total	Male	Female
2001	68.64	77.02	59.61
2011	77.08	82.67	71.16

An. 1.8 There is a considerable gap in the literacy levels of different socio-economic groups in the state. Children of agricultural laborers are at the bottom of literacy levels. Among social groups, the ST population is less literate as compared to the rest of the population in the state. There is also a difference in access to education of various religious groups, with minority groups having less access to education.

An. 1.9 Health and nutritional aspects are two crucial links of human development. Health indicators suggest a very mixed performance. Infant mortality and child mortality is low compared to the rest of the country. This has happened despite less developed health infrastructure in the state. Nutrition indicators are rather poor with high rates of anemia and iron deficiency, especially among women and young children.

An. 1.10 West Bengal has been successful in bringing down birth and death rates as compared to other states in the country.

Year	Birth Rate		Death Rate		Infant Mortality	
	West Bengal	India	West Bengal	India	West Bengal	India
1990	28.2	30.2	8.4	9.7	63	80
2001	20.5	25.4	6.8	8.4	51	66

An. 1.11 Life expectancy in the state is better than the national average, though in some of the districts, like Coochbehar, Malda, Birbhum and Murshidabad, it is very low.

An. 1.12 The nutritional status of children under three years is better in West Bengal as compared to rest of the country. West Bengal has a lower percentage of severely malnourished children than the rest of the country. However the nutritional status of women in the state is much lower than the national level.

An. 1.13 Social security schemes are under-developed in West Bengal, though the state government has tried to introduce a number of social security measures including unemployment allowance and pensions for old and physically handicapped people.

Economy

An. 1.14 West Bengal is one of the middle income states. Agriculture is the chief occupation of the people of the state. It contributed around 18.7% to the state's gross domestic state product (GSDP) in 2009–10. Agricultural output from West Bengal has a good mix of both food and cash crops. Rice, Potato, Jute and Tea are the major food and commercial crops grown in the state. Agricultural production in the state has achieved a high yield per hectare in comparison to the national average, owing to increasing consumption of NPK fertilizers - especially in the districts of Burdwan, Hooghly, Murshidabad and Paschim Medinipur. The majority of the state population consists of cultivators and agricultural laborers.

An. 1.15 Forest Produce collection is an important activity in the districts of South 24 Parganas, Jalpaiguri, Paschim Medinipur, Bankura, Darjeeling and Purulia. Timber and Firewood are key products supporting allied

handicraft industries in the tribal regions of the state. However, due to deforestation and usage of land for industrial activities, forest produce output has been declining over the years.

An. 1.16 Horticulture is one of the emerging sectors in West Bengal with opportunities of parallel cropping being explored across the regions. As per 2010-11 estimates, the state has around 1,178 thousand hectares under horticulture cultivation. Vegetable cultivation accounts for around 80% of the total land used for horticulture growth, followed by Fruits. Over the last five years, there has been very minimal growth in the area under horticulture crop cultivation. This is attributed primarily to limited awareness levels about the benefits of these crops, indicating a need to promote horticulture through suitable training among small and marginal farming communities.

An. 1.17 Industry and services play an increasingly significant role in the economy of the state. West Bengal is well known for its position among one of the leading industrialized states of India. There are up to 10,000 registered factories in the state. Kolkata is noted as one of the major centers for industries including the jute industry. There are numerous steel plants in the state apart from the alloy steel plant at Durgapur. The state's share of total industrial output in India was 9.8% in 1980–81, declining to 5% by 1997. However, the service sector has grown at a rate higher than the national rate.

An. 1.18 There is a sharp rural urban divide in terms of consumption in West Bengal, with urban per capita consumption being much higher as compared to the rural areas. In the 1980s and 1990s the state has experienced rapid growth as compared to the decades after independence. This growth is mainly in the agricultural sector. The growth in the industrial sector has been less impressive compared to that of agriculture, though there has been some growth in the 1990s. The unorganized manufacturing sector has exhibited great dynamism. There has been an increase in manufacturing in the informal sector, especially in the rural areas.

An. 1.19 A significant part of the state is economically backward, namely, large parts of six northern districts of Cooch Behar, Darjeeling, Jalpaiguri, Malda, North Dinajpur and South Dinajpur; the three western districts of Purulia, Bankura, Birbhum, and the Sundarbans area. Years after independence, West Bengal was still dependent on the central government for meeting its demands for food; food production remained stagnant and the Green Revolution bypassed the state. However, there has been a significant spurt in food production since the 1980s, and the state now has a surplus of grains. The state's total financial debt stood at Rs.1,918.35 billion (US\$34.91 billion) as of 2011.

An. 1.20 The high degree of occupational dependence on agriculture, especially in terms of agricultural labor, and its rapidly declining income share, is an indication of a higher incidence of poverty in the countryside. However, the incidence of poverty measured by the head count ratio (HCR) declined both in rural and urban West Bengal in keeping with the national trend during the past two decades. The poverty ratio on a head count basis estimated by the Planning Commission, Government of India, was higher in rural West Bengal than the all India average up to the early 1990s. But the monthly per capita cereal consumption in real terms was significantly higher in the former decade compared to the latter during the same period. In urban areas of the state, the poverty ratio was lower than the national average and was reflected in the higher monthly per capita cereal consumption expenditure compared to the national level.

	Rural		Urban	
	1993-94	2003-04	1993-94	2003-04
Head Count Ratio				
West Bengal	40.8	28.5	22.41	15.4
India	37.27	28.7	32.36	25.9
Monthly per capita consumption of cereals in Kg				
West Bengal	13.59	13.18	11.17	10.39
India	12.72	12.12	10.42	9.94
Gini Coefficient of MPCE				
West Bengal	25.4	27.4	33.9	38.3
India	28.6	30.5	34.4	37.6

Source: Planning Commission GoI, NSSO.

An. 1.21 The rate of employment generation in the state has been lower than the rate of expansion in population and is substantially lower than the rate of income growth. As a result, the pattern of job creation has shifted towards more casual, marginal and part-time insecure contracts and self employment.

People's Participation

An. 1.22 Re-organization of the system of local governance is one of the most important changes in West Bengal which took place in 1977, long before the 73rd and 74th Amendment of the Constitution in 1992. Democratic elections have been held regularly in the state every five years. A large share of the fiscal resources of the state is also given to the local bodies. Through this West Bengal has created history in the process of people's participation. The composition of panchayats has reflected the caste, class, occupation and gender of the local communities. There has been substantial representation of the poor and the marginalized in the local bodies. The panchayats have played a positive role in development in general, as well as transformation of human development indicators.

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Annexure-2

Figure Annex. 2.1

Share of youth population (%) with any training and non-formal training

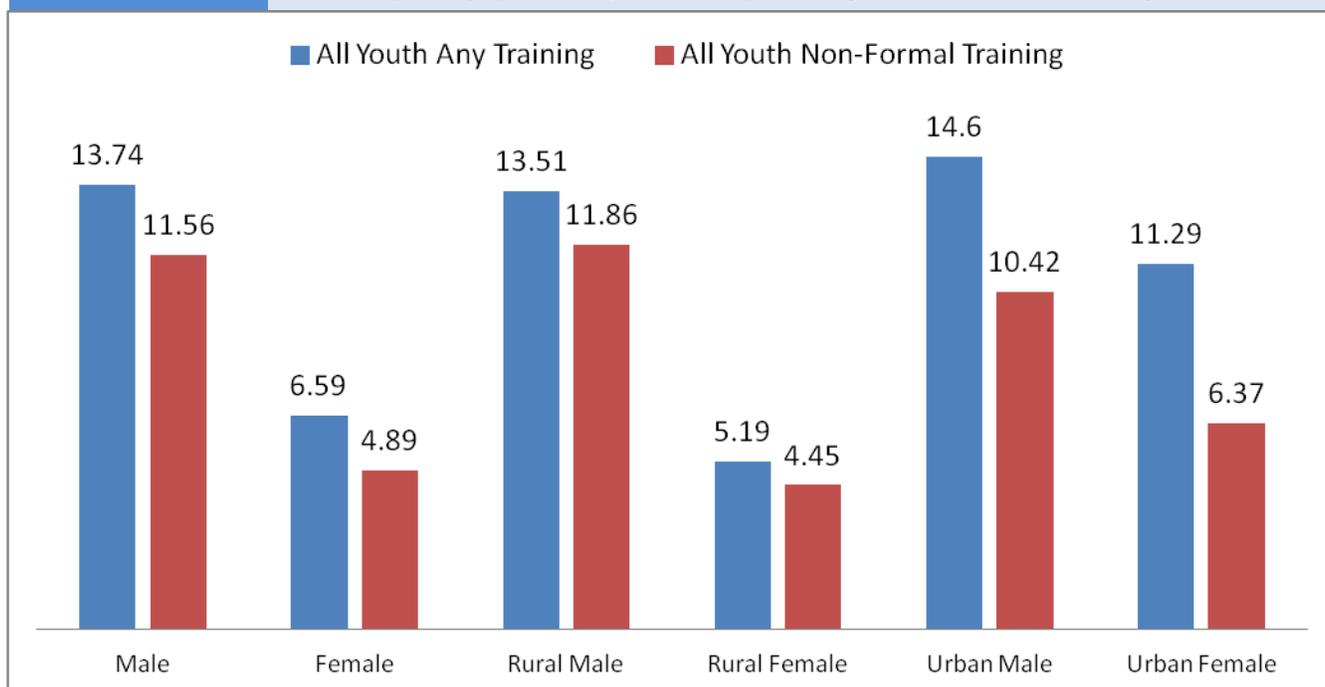
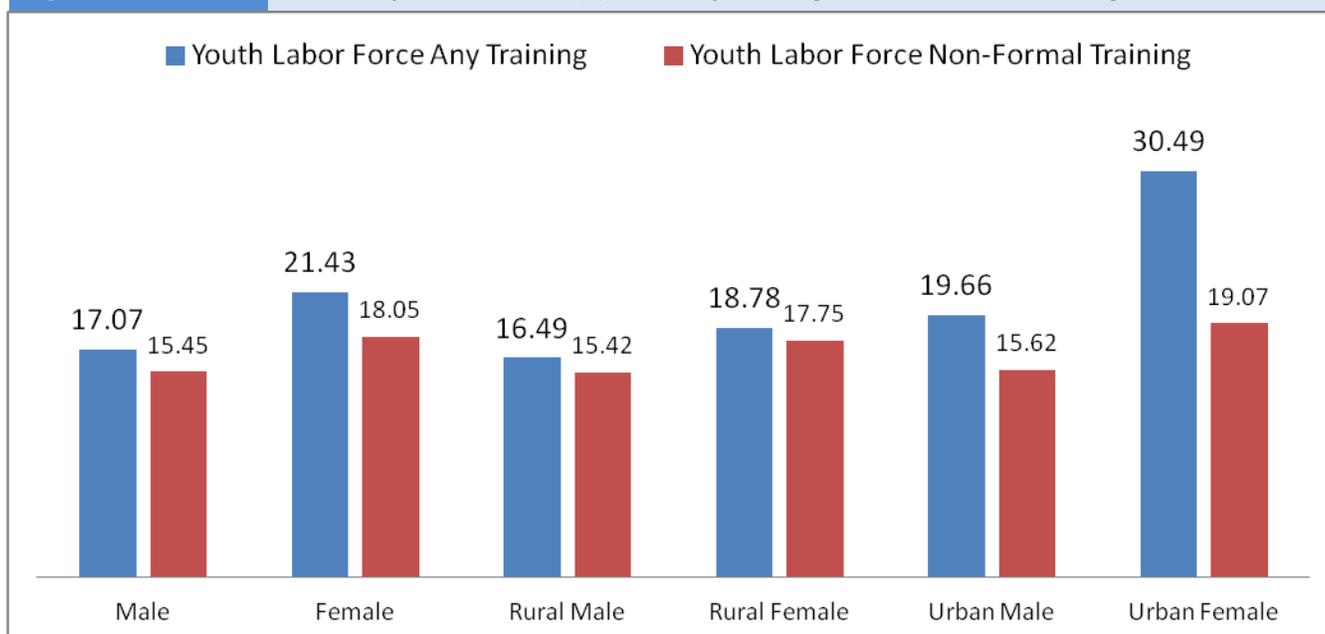
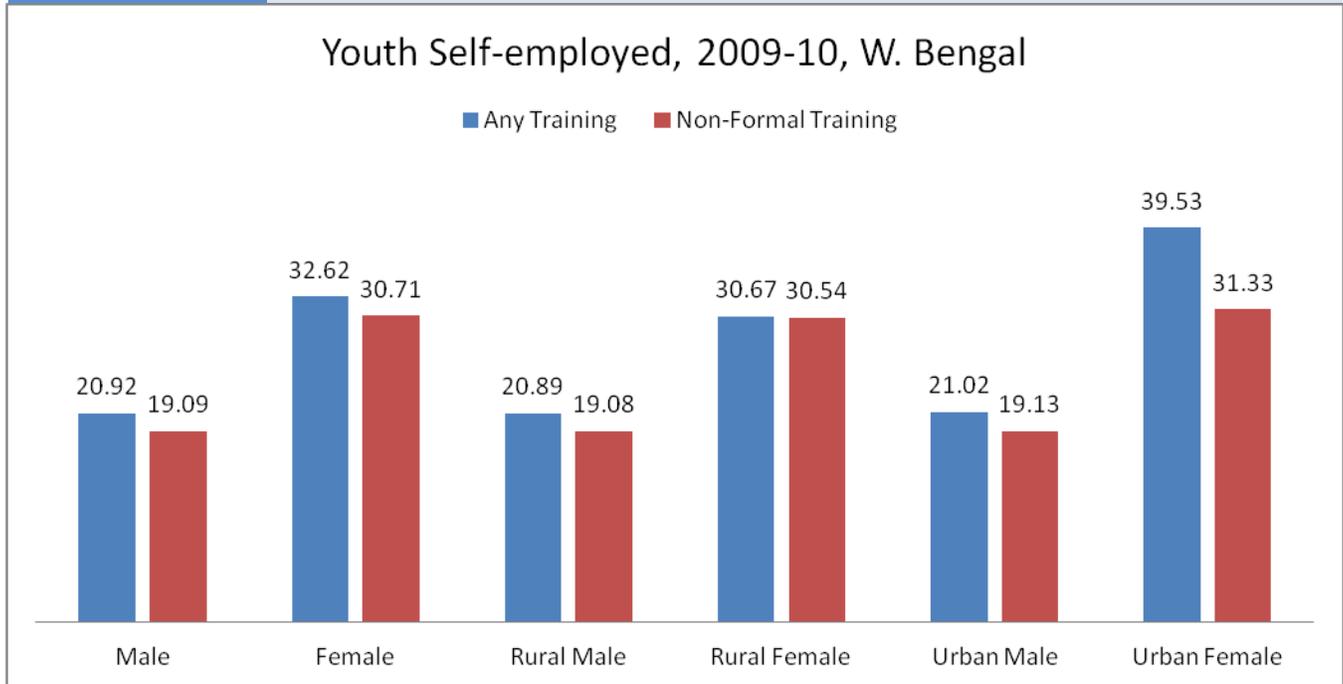


Figure Annex. 2.2

Share of youth workers (%) with any training and non-formal training





Annexure-3

Table An. 3.1: Change in employment, 2004-05 and 2009-10										
Sector	Casual		Regular		Self-employed		Casual	Regular	Self-employed	Net Change
	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10				
Agriculture, Hunting and related service activities	6234681	8173398	453692	256709	5250886	4468537	1938717	-196983	-782349	959384
Construction	998994	1281593	43535	210814	317942	496408	282599	167279	178466	628345
Education	12854	11464	533673	662843	304761	265363	-1390	129170	-39399	88381
Electricity, Gas and Water Supply	5252	881	55744	51777	0	2080	-4370	-3967	2080	-6258
Financial Intermediation	4938	12317	161707	111083	93276	129003	7379	-50624	35727	-7518
Fishing	71880	103053	7871	23392	217272	174644	31173	15521	-42628	4066
Health and Social Work	27623	2182	132492	224741	86495	52877	-25441	92249	-33618	33190
Hotels and Restaurants	57996	28504	78891	79607	218479	335876	-29492	715	117396	88620
Manufacturing	968702	1261603	944309	1243296	2221441	2725626	292900	298987	504185	1096072
Mining and Quarrying	31022	132111	96274	58991	0	3523	101089	-37283	3523	67329
Other Community, Social and Personal Services	60170	180585	78607	95496	280279	280478	120415	16889	199	137503
PAD and CSS	9815	17603	570971	608843	0	0	7788	37873	0	45661
Undifferentiated Production	94936	135899	438114	414522	0	0	40963	-23591	0	17371
Real Estate, Renting and Business Activities	27822	24114	127319	129736	189617	138086	-3708	2417	-51531	-52822
Transport, Storage & Communications	290425	278602	437706	523559	926711	1165367	-11823	85854	238656	312687
Wholesale and Retail Trade	240055	201066	361594	430418	2756106	3191057	-38990	68824	434951	464785
Total	9136106	11847747	4521643	5130172	12862152	13432109	2711641	608528	569957	3890126

Table An. 3.2:		Projected employment growth by district					
Sl. No.	Category of District	District	Per Capita GDDP at current prices (in Rs.)	Work Participation Rate (%)	Employment potential in services sector	Employment potential in manufacturing sector	Key MSME sector
1.	High growth ²⁴	Murshidabad	24,463	34.18	Sericulture and animal husbandry		High employment potential (sectors not mentioned)
2.		South 24 Parganas	28,638	32.47	Pisciculture, animal husbandry	Iron & steel, rubber & plastics, jute/textile	
3.		North 24 Parganas	33,554	33.45	Pisciculture, animal husbandry, IT/ITES	Iron & steel, rubber & plastics, jute/textile	
4.		Bardhaman	38,228	35.55	Construction	Iron & steel, agro-based and chemical	High training requirements for rice processing mills, brick kilns
5.		Paschim Medinipur	24,100	39.03	Animal husbandry	Auto engineering, iron & steel, chemical, agro-based industries	
6.	Medium growth	Maldah	23,445	40.75	Construction, retail, sericulture, pisciculture and animal husbandry		
7.		Purba Medinipur	44,879	39.03	Construction	Port-based industries, petro & petro chemical, chemical and steel	Cashew nut processing, sea shell, horn products
8.		Uttar Dinajpur	21,098	38.31	Pisciculture		
9.		Howrah	34,288	33.67	Retail workforce, construction	Agro based, engineering/auto, transportation	
10.		Nadia	26,078	35.09	Animal husbandry, pisciculture	Auto engineering	
11.		Birbhum	22,967				Brass & metal, agro processing

²⁴ Category of districts is based on incremental supply of workforce estimated for 2012-22 in the KPMG report “District wise skill gap study for the state of West Bengal”. District wise incremental supply estimates were arrived based on Planning Commission estimates from the 2001 population, birth rate, death rate and life expectancy normalized against population corrections in 2011.

12.		Hooghly	32,343	36.88	Animal husbandry, agro processing, construction	Jute & textile, chemical industries	HDPE rope, brass and bell metal, silk printing
13.		Jalpaiguri	26,343	38.31	Construction, retail	Agri-allied activities, forest-based livelihood opportunities	
14.		Bankura	23,960	44.71	Construction	Emerging iron & steel, rubber and plastic industries	
15.		Purulia	21,083	44.45	Emerging industrial growth, employment generation in unorganized/self-employment streams		
16.	Low growth	Cooch Behar	28,416	38.99	Pisciculture, animal husbandry		
17.		Darjeeling	33,606	35.39	Horticulture & floriculture, key tourism destination	Industrial growth constrained to tea processing units	
18.		Dakshin Dinajpur	21,640	40.76		Industrial growth constrained to flour mills, rice mills, jute & textiles	Bamboo- craft making units
19.		Kolkata	60,286	37.56	Transportation, retail, healthcare, banking and financial services, construction,	Jute, auto engineering	Foundry & metal processing, zari works & textiles

Annexure-4

Table An. 4.1 State-wise total labor force and increase in labor force and training capacity (%)*						
Sl. No.	State	Share in total labor force 2006-07	Share in increase in labor force (2006/07-2016/17)	Share in youth labor force (15-29 years) 2006-07	Share in increase in youth labor force (15-29 years) 2006/07-2016/17	Share in seating capacity in public and private ITIs
1.	Andhra Pradesh	8.6	5.8	8.8	2.3	12.1
2.	Assam	2.3	3.3	2.3	4.8	0.6
3.	Bihar	6.4	7.1	6.3	15.4	3.1
4.	Gujarat	5.3	5.7	5.5	3.1	8.2
5.	Haryana	2.1	3.1	2.3	2.8	2.9
6.	Karnataka	5.7	4.6	5.6	-3	9.8
7.	Kerala	3.1	1.2	2.7	-2.4	6.7
8.	MP	6	7	6.2	9.6	3.5
9.	Maharashtra	10.3	9.7	10	3.6	11.3
10.	Odisha	3.8	3.3	3.8	3.4	8.3
11.	Punjab	2.4	2.1	2.5	-4	3.3
12.	Rajasthan	5.8	7.6	6.3	12.7	5.7
13.	Tamil Nadu	6.6	1.9	5.9	-8.9	9
14.	Uttar Pradesh	14.4	19	14.7	31.7	7
15.	West Bengal	7	5.6	7	5	1.5
16.	Jharkhand	2.5	3.3	2.4	6.4	2.2
17.	Chhattisgarh	2.3	2.2	2.2	3.3	1.3
18.	Uttarakhand	.9	1	.9	.9	0.9
19.	Other NE states	1.2	2	1.2	2	0.5
20.	Others	3.3	4.4	3.4	4.9	2
Total- South & West (1+4+6+7+9+13)		39.6	28.9	38.5	-2.6	57.1
Total- East & Centre (2+3+8+10+14+15+16+17+19)		46	52.9	46.2	81.6	28.1
All states		100	100	100	100	100

*As on 31.12.2008

Source: Based on Commission's projections

Annexure-5

Table An. 5.1 Public Private Partnerships: comparative analysis				
	Cases	PPP aspect	Policy support	Key takeaways
1	Kalimpong Multi-skill School, Kalimpong	<ul style="list-style-type: none"> ▶ The initiative utilizes the existing assets of state government ▶ Private sector provides the training services 	<ul style="list-style-type: none"> ▶ This initiative is not under any policy and hence can be considered as an ad-hoc initiative 	<ul style="list-style-type: none"> ▶ The concept of identifying and leveraging existing assets of the state government to reduce the cost of delivery
2	Security Guard Training School, Purulia	<ul style="list-style-type: none"> ▶ The initiative utilizes the vacant land belonging to armed forces ▶ It does not rely on the need for permanent buildings, thereby lowering the cost of delivery significantly ▶ The GoWB subsidizes the cost of training by reimbursing the cost partially 	<ul style="list-style-type: none"> ▶ This initiative is not under any policy and hence can be considered as an ad-hoc initiative 	<ul style="list-style-type: none"> ▶ The concept of utilizing temporary structures for delivery of training
3	ILPA Infrastructure Development Foundation	<ul style="list-style-type: none"> ▶ The private sector / industry association proactively took part in coordinating the initiative ▶ The industry association utilized the funds available under different schemes to impart training ▶ The provisioning of services was entirely the responsibility of the private sector / industry association 	<ul style="list-style-type: none"> ▶ This initiative is not under any policy and hence can be considered as an ad-hoc initiative 	<ul style="list-style-type: none"> ▶ The initiative highlights the fact that there can be scope for industry association, representative bodies can also contribute actively to the TVET system. ▶ It also highlights the fact that there is a need for formalizing industry association involvement in TVET
4	Government of Gujarat – Skills Voucher Scheme	<ul style="list-style-type: none"> ▶ The GoG has introduced an enabling framework for efficient utilization of available funds to stimulate supply-side in the TVET system 	<ul style="list-style-type: none"> ▶ This initiative is formulated under the mandate of GSDM, thus has policy and institutional support 	<ul style="list-style-type: none"> ▶ The scheme needs to be reviewed in the context of West Bengal and can be implemented after suitable modifications, to cater to the needs of the state
5	Government of Rajasthan – Technical Institutes in lagging area scheme	<ul style="list-style-type: none"> ▶ The GoR provides land and in some cases also contributes towards cost of buildings ▶ The private sector provides training services with assessment and certification as per the statutory body norms 	<ul style="list-style-type: none"> ▶ This initiative is under the state government scheme and thus has policy and institutional support 	<ul style="list-style-type: none"> ▶ The framework for setting up of TVET facility in remote areas
6	Government of Karnataka – Up-grading employment exchanges on PPP	<ul style="list-style-type: none"> ▶ The GoK provides the assets of existing employment exchanges along with the staff ▶ The private sector is responsible for providing all the services of employment exchange and also impart training if needed to match 	<ul style="list-style-type: none"> ▶ The initiative is not under any policy but part of the objectives set out for the KVTSDC ▶ Thus the initiative has certain degree 	<ul style="list-style-type: none"> ▶ The framework for demand driven approach for TVET system

		<p>the skill of candidate to the demand in labor market</p> <ul style="list-style-type: none"> ▶ The GoK reimburses the cost of training and placement services partially 	<p>of institutional support</p>	
7	Government of Punjab – Setting up of polytechnics on PPP	<ul style="list-style-type: none"> ▶ The GoP provides the land required for the initiative in selected locations ▶ The private sector provides the other infrastructure, training services ▶ To enhance revenue streams and make the provision of TVET facility attractive to private sector, the private sector is allowed to create and leverage the asset of technical institutions for other educational courses 	<ul style="list-style-type: none"> ▶ The initiative is not under any policy but part of the objectives set out for Department of Technical Education and Training, GoP ▶ Thus the initiative has certain degree of institutional support 	<ul style="list-style-type: none"> ▶ The mechanism for capturing the upside of market forces for demand of educational services
8	S-lon Lanka Co. Ltd. – trade-testing program	<ul style="list-style-type: none"> ▶ The private sector participant mobilizes candidates and bears the cost of training, trade-testing certification ▶ The public sector provides training services 	<ul style="list-style-type: none"> ▶ This initiative is not under any policy and hence can be considered as an ad-hoc initiative 	<ul style="list-style-type: none"> ▶ This partnership highlights the fact that effective partnership can be forged between industry player and public sector entity ▶ Partnerships like this need policy support to make them replicable and scalable
9	Multichemi International – Efficient delivery of beauty courses	<ul style="list-style-type: none"> ▶ The private sector provides the training services for beauty courses conducted by the public sector ▶ The public sector provides for infrastructure and mobilizes the candidates for the courses 	<ul style="list-style-type: none"> ▶ This initiative is not under any policy and hence can be considered as an ad-hoc initiative 	<ul style="list-style-type: none"> ▶ This partnership highlights the fact that effective partnerships can be forged between industry player and public sector entity ▶ Partnership like this need policy support to make them replicable and scalable

Annexure-6

Quality Indicators, Measures and Actions

1. *Quality Indicator: Enhanced coordination, competence and managerial efficiency of the TVET system*

The three Directorates would seek to implement this indicator through a capacity-building initiative. The TVET Quality Assurance Committee for West Bengal would monitor progress.

Desired outcome: development of quality policy and administrative processes to support the implementation of a demand driven TVET system, coordination of training provision, and the efficient utilization of resources within the TVET system.

Measure: The Directors, Additional Directors and Deputy Directors of the Directorates receive training on contemporary public sector management.

New and updated TVET policies support the coordinated implementation of a demand driven TVET system.

Percentage of budget expended on new initiatives to support quality assurance and continuous quality improvement within the TVET system.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. **The Directorates** to establish the TVET Quality Assurance Committee to develop/ oversee:
 - a. Base line data for each of the 8 quality indicators is identified for evaluation and review purposes.
 - b. Strategies and workshops to develop a quality assurance culture are developed and implemented on an ongoing basis.
 - c. Monitoring and reporting mechanisms are established to monitor Directorate, Council and training provider progress in quality improvements.
2. State level policy and planning initiatives work to support the objectives and priorities of the TVET system by ensuring:
 - a. The overall objectives for TVET in West Bengal are developed through stakeholder consultation.
 - b. There are clear roles and responsibilities for the different parts of the TVET system (Directorates, Councils and training organizations) which effectively and efficiently support the achievement of the overall TVET system objectives.;
 - c. Strategies are developed and implemented to increase industry understanding of the value and benefits of TVET for industry.
 - d. Professional development of senior Ministry staff and middle-level public servants in public sector performance based management and quality.

- e. Self-evaluation tools are developed to determine Ministry-level progress against the 8 quality indicators.
- f. Processes are established to monitor and report on internal improvement processes at the Ministry-level and the training provider-level.

Medium and long-term actions are suggested in the full TVET Quality Assurance Roadmap.

2. *Quality Indicator: Improved participation in the TVET quality assurance system by TVET training providers and administrators*

Desired outcome: TVET training organizations introduce and apply internal quality assurance systems, participate in local training organization networks on quality assurance and have a clearly defined strategy and budget for continuous improvement.

Measure: Percentage of training providers, out of 100 percent, can demonstrate evidence of participating in quality assurance activities.

Percentage of TVET courses gaining recognition as quality TVET courses from the West Bengal TVET Quality Assurance Committee.

Percentage of training organizations, out of 100 percent, seeking recognition as a quality TVET training provider from the West Bengal TVET Quality Assurance Committee.

Percentage of TVET organizations, out of 100 percent, that have introduced an internal quality assurance system.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. The Councils implement policy and planning initiatives designed to support organizational data collection:
 - a. Ongoing professional development of teachers, instructors and trainers are implemented for training providers and assessment bodies to improve the quality of their provision.
 - b. Adequate resources are assigned to quality improvement processes at the Council and local training provider level to support implementation for all 8 quality indicators.
2. Voluntary quality assurance guidelines are developed by the Councils with stakeholder input to assist with consistent implementation at the local level, and for internal use at the provider levels:
 - a. Workshops and information sessions are held for stakeholders on the principles, benefits and purpose of the TVET Quality Assurance Framework.
 - b. Assessment moderation for consistent assessment of students is planned.
 - c. Self-assessment activities and tools are developed for teachers, trainers, instructors and Principals to self-assess progress against the 8 quality indicators.
 - d. Workshops provide templates and tools for consistency.

3. Training and assessment providers establish local networks of trainers/ assessors and local businesses at the district level.
4. Self-evaluation tools, to evaluate progress against the quality indicators, are distributed and training on their use and importance is provided to Principals/Heads of Institutions.
5. TVET Quality Training Awards are implemented in a range of categories to recognize good practice in provision, in teaching, in innovation, students, industry partnerships. etc.

Medium and long-term actions for this indicator are contained in the 10 year roadmap.

3. *Quality indicator: Harmonisation between the supply and demand for TVET graduates*

Desired outcome: A close alignment of West Bengal’s economic priorities and TVET training provision, supported through the use of current, reliable and valid data to inform resource allocation. Robust systems for collecting labor market data, research, and monitoring and evaluation are established to inform system-wide training provision coordination and professional practice.

Measure: Percentage of students, out of 100 percent, gaining employment in the same industry in which they were trained.

Percentage decrease in attrition rates.

Percentage of employers indicating that the skills of graduates are relevant to their jobs.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. Graduates of TVET programs are surveyed by training organizations after 6 months of leaving the course to determine whether the course assisted them to gain employment and how useful the skills developed during the training program are to the workplace.
2. Response rates are analyzed by training providers for improvements such as briefing students before they graduate on the importance of completing the survey.
3. Surveys are sent to employers by training providers to identify how relevant the skills are to the workplace.
4. Current curricula is reviewed with industry to assist the Councils to identify any gaps or redundant subject matter and rewritten in an outcomes based approach, where occupational standards do not exist, or in a CBT format if occupational standards do exist.
5. Processes to develop occupational standards that meet local industry training needs at the state level are implemented in close consultation with the relevant Sector Skills Council.
6. Labor Market Information System requirements are investigated and options identified.
7. Industry reference groups are convened by industry associations to identify, at the state level, skills that are required in the different curricula areas.

8. Workplace simulations are designed by the Councils for different courses and piloted by training providers in classroom/ workshop training.
9. Industrial placement is formalized by the Councils to include structured on-the-job training in sectors where industry is available locally.
10. Options for integrating generic soft skills required for work in industry such as, English, problem solving, numeracy, communication skills, team work, etc. are incorporated into existing courses by the Councils.
11. Progress on creating a closer match between TVET supply and demand are reported to the Councils and reviewed and analyzed for improvement with recommendations reviewed by the TVET Quality Assurance Committee.

Medium and long-term actions for this indicator are contained in the 10 year roadmap.

4. *Quality indicator: Strengthened initial and continuing training for teachers, trainers and instructors*

Medium and long-term actions for this indicator are contained in the following 10 year roadmap.

Desired outcome: Development of highly-skilled teachers, instructors, trainers and workshop managers working across the system with clear career pathways and corresponding qualification pathways with available courses. Initial teacher training that provides depth in current pedagogical methodologies, including competency-based training and assessment. A system of on-going professional development that develops contemporary pedagogy skills as well as industry-specific technical and process skills (such as Lean processes, etc.) along with an appreciation of workplace conditions and demands.

Measures: Percentage of budgeted funds expended on on-going teacher professional development.

Percentage of student teachers who receive training in contemporary pedagogy, competency based training and assessment and industry specific skills.

Percentage of teachers, instructors and trainers gaining recognition as quality TVET teachers, instructors and trainers.

Percentage of training organizations with professional development strategies.

Results of 3 yearly impact analysis demonstrates new methodologies and training reforms are applied in classroom and workshops and are having an impact on the quality of learning and teaching processes.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. Teacher, trainer and instructor priorities are identified by the Councils and a range of training methodologies and technologies, such as small group training in districts, mentoring, distributed learning technologies, are used to deliver training to teachers, instructors and trainers:
 - a. Training needs analysis of teachers, instructors and trainers is undertaken based on the priorities identified by the Councils

- b. The rollout of teacher, instructor and trainer training in the delivery of competency-based training and assessment is planned by the Councils according with the expected rollout of CBT in different industry sectors.
2. Institutions that are considered to be delivering quality training or having innovative approaches are identified to become possible demonstration institutions to offer professional development to other training institutes.

5. *Quality indicator: Better access to TVET*

Measures and targets for this indicator are contained in the following 10 year roadmap.

Desired outcome: increased participation in TVET training programs, including for women, Scheduled Castes, Scheduled Tribes and other under-represented groups. An improved match between training programs and the aptitude and career goals of people entering specific training programs. An increase in the number of existing workers participating in TVET.

Measures: Percentage increase in the number of students undertaking a TVET in schools' training program.

Percentage increase in the number of women entering TVET courses.

Percentage increase in the number of Scheduled Caste and Scheduled Tribes entering TVET courses.

Percentage increase in the number of other underrepresented groups entering TVET courses.

Percentage increase in existing worker participation.

Percentage increase in new priority industry training programs.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. The Councils increase the range of training programs to cover new priority industries and occupations that may be more attractive to under-represented groups and which meet an identified industry need.
2. The Councils and training providers develop strategies to increase the number of women, Scheduled Castes and Scheduled Tribes, and other socially and economically disadvantaged sections in the community participating in TVET programs.
3. A review of entrance exams is undertaken by the Councils and used to determine the relevance and level of exam content.
4. The Councils to research and determine an acceptable amount of time that a student can be absent, before the absence has a negative effect on the quality of their study, and set cut-off points for entrance into subjects and compulsory student attendance levels.
5. Research mechanisms to improve the relevance of school based TVET programs and establish stronger pathways between schools and TVET providers.
 - a. Develop formal linkages with the Department of School Education so that current information on TVET courses and careers is available to school career advisors.

6. Councils review and revise policy to allow part-time courses to be conducted up to diploma level to support existing and part-time workers, women with children and other groups under-represented in the TVET system.

6. *Quality Indicator: Stronger public and private partnerships*

Measures and targets for this indicator are contained in the following 10 year roadmap.

Desired outcome: Industry organizations and employers play a greater role in developing the content of TVET courses, identifying skill needs, participating in TVET direction setting and coordination. Employers support the development of quality student outcomes by participating in formal, structured industrial placements for TVET students. Industry bodies provide TVET teachers access to industry and technology updates, industry seminars, tradeshows etc. Industry partners in the management and provision of TVET programs.

Measures: Percentage increase in documented attendance of industry representatives on training organization and Committee boards.

Percentage of industry bodies receiving awareness-raising training on contemporary TVET systems.

Percentage increase in participation in formal student industrial placements.

Percentage increase in the number of teachers participating in industry-organized industry updates/ forecasts/ information sessions/ industry networks

Percentage increase in the number of training organizations run in partnership with industry.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. The TVET Quality Assurance Council through the Directorates provides capacity-development activities for industry associations and influential industry leaders on the benefits and the future directions of TVET.
2. The Directorates and Councils undertake consultations with industry to determine policy and planning frameworks that support industry engagement, such as, a formal agreement that any student industrial placement will not create an obligation for employment.
3. The Councils develop and pilot new formal apprenticeships with on-the-job learning resources and training for both teachers supervising the apprenticeship and the workplace supervisor training the apprentice on-the-job.
4. The TVET Quality Assurance Council to identify industry champions to promote TVET to industry and identify messages and high profile events where the champions can project TVET in a positive manner.
5. The TVET Quality Assurance Council to identify, in partnership with industry, important activities that can be undertaken by TVET stakeholders to promote skills development in industry.
6. Undertake a study tour with GOWB TVET representatives and influential industry representatives to study contemporary TVET systems which have good industry-TVET relationships.

7. *Quality Indicator: Integrated linkages between education sectors*

Measures and targets for this indicator are contained in the following 10 year roadmap.

Desired outcome: The movement of students between the school sector, TVET and higher education incorporates recognition of lower level qualifications through advanced standing or priority enrolment. Formal qualification pathways exist that reflect actual career pathways, and a modular qualification approach provides recognition and advance standing for short courses and existing workers. Greater sharing of information between the three educational sectors.

Measure: Percentage of students gaining advanced standing at different educational levels.

Percentage of short courses that gain recognition for advance standing in longer TVET courses.

Development of modular qualification pathways that reflect local industry needs.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. School based TVET programs are reviewed to ensure that the training provides meaningful outcomes that are either employment outcomes or articulate into TVET programs.
2. The Councils in consultation with industry, identify pathways that reflect natural career path progressions in industry and determine qualification matches.
3. The Councils update curricula pathways to meet workplace needs, and identify articulation options and advance standing requirements, including advance standing for existing workers.

8. *Quality Indicator: Improved physical infrastructure, equipment and resources*

Measures and targets for this indicator are contained in the following 10 year roadmap.

Desired outcome: The development of additional training institutions to support greater access to TVET courses and to reduce the student/ teacher ratio. To plan the location of TVET training organization to best serve the needs of industry and the community. To develop training facilities capable of delivering training to meet the current and future needs of industry with equipment that reflects current workplace usage.

Measures: Percentage increase in the expenditure of funds on course resources and course consumables.

New equipment reflects the equipment used by industry or equipment that is projected to meet industry training needs.

Percentage increase in the number of facilities being upgraded to meet industry trading needs and to support quality teaching and learning processes.

Percentage of government-run TVET training facilities using audio/ video conferencing technology

Percentage increase in TVET training organizations co-located with industry.

Actions

Short-term (3 to 4 years) actions to support quality improvements under this indicator are:

1. The Directorates identify processes for ITIs and Polytechnics to have responsibility for the up keep of their buildings and other infrastructure.
2. Training institutions undertake occupational health and safety audits and determine a plan of action identifying priorities to upgrade facilities and equipment according to health and safety requirements.
3. The Directorates ensure that facilities for female staff and students are equally available, including hostel accommodation for female students.
4. The Directorates review transport arrangements for training institution staff to visit local industry; and
5. The Directorates undertake a systematic review of resource and maintenance requirements to adequately resource each course to identify any shortfall in funding and develop a strategy to address the shortfall.