



# Technical Assistance Report

---

Project Number: 40644  
July 2007

## People's Republic of China: Shanxi Development Strategy for Technical and Vocational Education and Training

## CURRENCY EQUIVALENTS

(as of 6 June 2007)

Currency Unit	–	yuan (CNY)
CNY1.00	=	\$0.13
\$1.00	=	CNY7.64

## ABBREVIATIONS

ADB	–	Asian Development Bank
BOE	–	Bureau of Education
BOF	–	Bureau of Finance
EA	–	executing agency
FYP	–	Five Year Program
PRC	–	People's Republic of China
TA	–	technical assistance
TVET	–	technical and vocational education and training

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Targeting Classification</b>	–	General intervention
<b>Sector</b>	–	Education
<b>Subsectors</b>	–	Technical education, vocational training, and skills development
<b>Themes</b>	–	Inclusive social development, capacity development, sustainable economic growth
<b>Subthemes</b>	–	Human development, institutional development, promoting economic efficiency and enabling markets

## NOTE

In this report, "\$" refers to US dollars.

<b>Vice President</b>	C. Lawrence Greenwood, Jr., Operations Group 2
<b>Director General</b>	H. Satish Rao, East Asia Department (EARD)
<b>Director</b>	R. Wihtol, Social Sectors Division, EARD
<b>Team leader</b>	L. Wu, Principal Social Sector Economist, EARD
<b>Team member</b>	C. Spohr, Social Sector Economist, EARD

## I. INTRODUCTION

1. During country programming for the People's Republic of China (PRC) in November–December 2006, the technical assistance (TA) Shanxi Development Strategy for Technical and Vocational Education and Training was included in the 2007 nonlending program at the request of the Government.<sup>1</sup> In May 2007, the Asian Development Bank (ADB) fielded the Fact-Finding Mission for the TA. The Shanxi provincial government emphasized the importance of technical and vocational education and training (TVET) and developing the skills of its workers as a key component of its strategy for adjusting the province's economic and industrial structures, transforming its economic development pattern, ensuring its sustainability in terms of resources, energy, and environment. Accordingly, the Mission and the Government agreed that the TA should develop a strategy for TVET, which will be based on and serve the broader strategy for social and economic development of the province in the next 5–10 years and beyond. Understanding was reached between the Mission and the Government on the impact, outcome, output, costs and financing, implementation arrangements, and outline terms of reference for consulting services of the TA. The design and monitoring framework is in Appendix 1.

## II. ISSUES

2. The provincial government of Shanxi unveiled its 11th Five-Year Program (FYP) in 2006 with the overall objective to improve the quality of people's life and build a harmonious society. Central to reaching this objective are the acceleration of industrialization and building of a new socialist countryside through continued economic and industrial restructuring, and coordinated rural and urban development.

3. The restructuring aims at transforming Shanxi's economy into PRC's new energy and industrial base. Specifically, it will (i) modernize the traditional priority industries of coal mining, coke, electricity, and metallurgy; (ii) develop high value-added and high-technology industries of processing, materials, and equipment manufacturing; and (iii) strengthen the development of tourism and other service industries. Restructuring will contribute significantly to diversifying Shanxi's industrial structure and fundamentally transforming its economic growth pattern into one based on environment-friendly and sustainable development. Shanxi's per capita gross domestic product (GDP) remains lower than the national average, and 52 of the province's 119 counties are classified as poor, including 35 ranked as national poor counties. A key policy of the 11th FYP is raising the livelihood of the rural population, facilitating coordinated urbanization, and transferring surplus rural labor to nonagricultural sectors.

4. **New and Emerging Skill Needs.** The ongoing economic structural change and development of new industries will generate increasing demands for new skills and skilled workers. There is an urgent need to assess this future demand in terms of different skills, their sectoral distribution, and their potential magnitudes. In particular, demand for skills that stem from implementing the 11th FYP should be assessed, including (i) modernizing the four traditional industries of coal mining, coke, electricity, and metallurgy; and (ii) developing new industries of coal chemical industry, industrial equipment manufacturing, industrial materials, and tourism. Over 80% of TVET students come from rural areas, and rural areas are expected to continue to be the main source of students and job seekers in the future. It is important to assess how to further enhance TVET's role in facilitating coordinated rural to urban migration, including providing training to migrant workers. At the same time, TVET schools in the county/city centers not only serve educational purposes, but are also part of the larger social, cultural, and economic fabric of the county/city. TVET's role in building the new socialist

---

<sup>1</sup> The TA first appeared in *ADB Business Opportunities* on 21 April 2007.

countryside also requires review. A comprehensive understanding of these factors is fundamental to developing a TVET strategy.

5. TVET in Shanxi province has seen significant improvement in recent years. However, there is still much to be desired for the existing TVET system to meet market demand, especially in anticipation of rapid changes in demand for skills stemming from the economic transformation in the coming decade. The TVET system will need to produce both more and better graduates, and strengthen its efficiency with continuing reform. TVET development is uneven, with almost all quality TVET institutions located in cities and urban centers. A number of underlying factors contribute to TVET's weak impact and uneven development. They are discussed below.

6. **Weak Labor Market Links.** Ensuring that graduates have the skills needed by the labor market is key to the success of any TVET system, and responsiveness to the labor market including the flexibility to adjust quickly to changes in market demand is particularly important to Shanxi, given the anticipated significant changes in skills requirements in the coming years. Many schools continue to focus on academic achievements of their students, rather than imparting skills and practical experience. Labor market information flow is segmented, and existing networks need to be integrated for more effective use. As elsewhere in the PRC, there are examples of good practices in Shanxi, including “half-time study, half-time work” and “training by order”, which enable close cooperation between schools and enterprises. However, it is unclear whether these arrangements are viable only in specific industries or are due to specific school/firm relationships. It is important to (i) assess key constraints on labor market linkages; (ii) evaluate existing good practices to identify successful methods and mechanisms; (iii) review and consider approaches and practices of other countries; and (iv) review the role of private sector participation in TVET, and means and mechanisms to strengthen public private partnerships. Drawing on best practices in the PRC and abroad can yield valuable lessons to enhance the overall quality and relevance of TVET.

7. **Insufficient Capacity and Teaching and Learning Conditions.** According to recent statistics, the average area of a TVET school in Shanxi is 9,450 square meters (m<sup>2</sup>), which is far less than the national standard of 15,000 m<sup>2</sup>; and laboratory and practice equipment per TVET school averages less than half of the national average in terms of value. These conditions are significantly worse in TVET schools in rural areas and remote regions. Overcrowding and lack of equipment have affected the quality of learning and teaching, and are among the top constraints on schools to increase enrollment.

8. The quality of teachers is a key determinant of the overall quality of TVET. Unlike their counterparts in general educational institutions, teachers in TVET need to have working experience in their respective sectors as well as academic credentials. While there are institutions where a high percentage of teachers have both academic credentials and professional experience, in most institutions in Shanxi this percentage is much below the indicative target of 30% set nationally. Many teachers lack practical knowledge of their sectors and actual practice in enterprises. There are also administrative obstacles to directly recruiting teachers with special industry experience and expertise from enterprises. Without close cooperation with enterprises, it is often difficult for TVET teachers to improve teaching through practical training in enterprises. Adequate incentives to qualified teachers is also an area to be reviewed.

9. A priority of Shanxi province as well as of the central Government is to establish well-equipped training and practice centers, to be shared among TVET institutions, as an effective means to improve teaching and learning in TVET. There is a need to develop (i) mechanisms

for the effective sharing of these centers in Shanxi both technically and administratively among schools dispersed geographically, and (ii) mechanisms that support the financial sustainability of these centers.

10. **Need to Deepen TVET Sector Reform.** The key to further sector reform is the continued transformation of a TVET system that focuses on classroom teaching and theoretical knowledge to one that imparts practical knowledge and hands-on experience to students. At present, many schools continue to use outdated teaching materials. To be labor-market-oriented will require schools to overcome rigid models of teaching and learning, and to flexibly adjust their curriculum, course setting, teaching contents and methods according to changing labor market demand. All that, in turn, will call for strengthened coordination and cooperation between schools and employers.

11. Innovative mechanisms currently practiced in Shanxi include (i) allowing students to alternate between working and studying by semester; and (ii) giving students more flexibility to plan work/study through a credit system. It is important to assess the impacts of those and other mechanisms on enhancing the focus of teaching and learning on imparting practical knowledge and hands-on experience to students. Wider application of proven mechanisms will contribute significantly to raising the overall effectiveness of the sector in meeting market needs for skills. School management is also an area in need of strengthening. Modern education management skills will be particularly important for school directors in the context of rapid economic restructuring and development in Shanxi. Systematically developing the managerial and financial skills of school directors will be an important component of sector reform.

12. **Need to Strengthen TVET Financing.** Although both the central and provincial governments have been allocating increasing resources for TVET, underfunding remains a key constraint on the TVET system to expand its capacity and improve teaching and learning conditions. Tuition rates are determined and capped by the government price bureau, and schools face difficulties in borrowing from banks. As land and school buildings cannot legally be used as collateral (even for privately owned TVET schools), schools' creditworthiness suffers and banks consider lending to schools as too risky. A small number of schools have taken bank loans but on unattractive terms that often involve nonstandard, market-distorting practices and conditions. There is a need for a comprehensive assessment of policies and practices for improving schools' access to the capital market as a means for resource mobilization.

13. Given decentralized financing arrangements and due to uneven regional economic development, actual resources available for TVET schools from local governments differ widely across prefectures and counties in Shanxi. With this fiscal arrangement, it is important to assess and develop effective mechanisms for enhancing provincial fiscal transfers to balance the uneven resources actually reaching TVET. More recently, the provincial government decided that at least 30% of urban education tax revenue and a part of enterprise training funds can be used for TVET (the tax was originally designed to support financing for compulsory education). Given TVET's increasing social and economic significance, additional sources of financing should be actively explored.

14. Given decentralized TVET administration and financing, ADB has focused on supporting TVET sector reform and development at the provincial level in the PRC. Technical assistance was provided to Guangdong and Hunan provinces in 2006 for preparing TVET development plans of the provinces, including mechanisms for interprovincial cooperation on training for

migrant workers.<sup>2</sup> The proposed TA will build on the results of the earlier TA, and both are expected to generate technical outputs that may have wider application in the PRC. Coordination is ongoing between ADB and other development partners including the Australian Agency for International Development (AusAid)—which is supporting a TVET project in Chongqing—and World Bank.

### III. THE TECHNICAL ASSISTANCE

#### A. Impact and Outcome

15. The impact of the TA is the transformation of the TVET system in Shanxi into a demand- and employment-driven and competence-based system in support of Shanxi's medium- and long-term social and economic development. The outcome of the TA is the consideration by higher authorities of the provincial and central governments of key TA policy recommendations for improving the TVET system in Shanxi.

#### B. Methodology and Key Activities

16. The output of the TA will be a main TA report, which will be supported by five sub-reports, namely, (i) New and Emerging Skills Needs for Social and Economic Development in Shanxi, which will address issues raised in para. 4; (ii) Strengthening TVET's Labor Market Linkages which will address issues raised in para. 6; (iii) Strengthening TVET Capacity and Quality, which will address issues raised in paras. 7–9; (iv) Deepening TVET Reform and Innovation, which will address issues raised in paras. 10–11; and (v) Strengthening TVET Financing, which will address issues raised in paras. 12–13. The main TA report will be based on the analysis and recommendations of the five subreports, and integrate them into one coherent report. Measures and mechanisms identified for implementation will be costed and prioritized. Shanxi's experiences and lessons learned may be useful to other provinces in the PRC, which are undergoing similar social and economic changes. Key TA recommendations will be developed further into knowledge products for wider dissemination to the general public as well as to stakeholders, through a variety of media including websites, printed materials, and at conferences.

17. Five workshops and one conference will be held during TA implementation to share TA findings and build consensus on key issues and recommendations among major stakeholders. The workshops are tentatively planned to be held at regular intervals beginning with the TA inception workshop. A conference with national and international participants will be held toward the end of TA implementation to disseminate findings, exchange experiences and information on TVET development, and provide inputs for finalizing the TA outputs.

18. The TA will combine desk research with fieldwork and surveys. The study on future provincial needs for skilled workers may also require modeling and forecasting. Fieldwork will be important for most subreports. An external study visit will be conducted. Participants will include key officials from relevant provincial government agencies and other stakeholders. The study visit will offer an opportunity for (i) learning from international best practices first-hand, and (ii) exchanging experiences and lessons learned from other countries.

---

<sup>2</sup> ADB. 2006. *Technical Assistance to the People's Republic of China for Technical and Vocational Education and Training Development*. Manila.

### **C. Cost and Financing**

19. The total cost of the TA is estimated at \$1,200,000 equivalent, of which \$600,000 will be financed on a grant basis by ADB's TA funding program. The Government's contribution, estimated at \$600,000 equivalent, will cover remuneration of counterpart staff, and part of the cost of workshops and conference, fieldwork and surveying, related travel, the external study visit, office space, meeting venues, and administrative and logistical support. The cost estimates and financing plan are in Appendix 2.

### **D. Implementation Arrangements**

20. The TA will be implemented over 12 months from October 2007 to September 2008. The provincial Bureau of Finance (BOF) and Bureau of Education (BOE) will be the Executing Agency (EA) and Implementing Agency (IA) of the TA, respectively. BOF and BOE will be responsible for coordination and providing information and other conditions necessary for the consultants to complete their tasks successfully. The Director of the International Division of BOF will be the provincial government's focal point for communication and coordination of TA implementation. A provincial leading group for the TA will be established by end-June 2007, to provide overall guidance and interagency coordination, and ensure effective and timely TA implementation. The leading group will be chaired by a member of the provincial government, and members will include directors general or deputy directors general of BOF, BOE, and Bureau of Labor and Social Security.

21. A team of international and national consultants will be engaged for a total of 56 person-months of consulting services in the fields of sector planning and strategy, economic analysis and labor market forecasting, labor market linkages and mechanisms, TVET sector reform and development, private sector participation, TVET financing and resource mobilization, and rural to urban migration and TVET. The international consultants will have field and other working experience in multilateral or bilateral financed projects on TVET reform and development in the PRC. ADB will engage the consultants in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time). A firm will be selected based on the quality- and cost-based selection method (80% on quality and 20% on cost), using a simplified technical proposal. Consultant reports will be prepared in English and Chinese. Outline terms of reference for the consultants are in Appendix 3. In addition to preparing reports and other responsibilities outlined therein, the consultants will support planning and, as needed, implementation of fieldwork and the study visit, which will be organized by BOF and BOE, subject to ADB approval. Office equipment financed under the TA will be procured in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time). The equipment will be turned over to BOF after TA implementation. ADB will establish an advance payment facility with BOF to facilitate implementation of the TA in line with ADB's *Guidelines for Disbursement of Technical Assistance Grants*.

## **IV. THE PRESIDENT'S DECISION**

22. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$600,000 on a grant basis to the Government of the People's Republic of China for Shanxi Development Strategy for Technical and Vocational Education and Training, and hereby reports this action to the Board.

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b></p> <p>The TVET system in Shanxi transformed into a demand- and employment-driven and competence-based system in support of Shanxi's medium- and long-term social and economic development</p>	<p>Total TVET enrollment at the tertiary level increases from 0.21 million in 2006 to 0.28 million by 2010.</p> <p>Total TVET enrollment at senior secondary level increases from 0.50 million in 2006 to 0.75 million by 2010.</p> <p>Placement rates of TVET graduates exceed 90% in 2010.</p> <p>Employers' satisfaction (by industry/sector) with TVET graduates increases by 30% (baseline data to be collected).</p> <p>Shanxi provincial government approves TA recommendations in 2009.</p>	<p>Central and provincial government statistics yearbooks</p> <p>Other official statistics</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>TVET continues to be policy and reform priority of the Shanxi government.</li> <li>Central and Shanxi provincial governments adopt key TA recommendations.</li> </ul> <p><b>Risk</b></p> <ul style="list-style-type: none"> <li>Resources allocated to pilot and/or replicate TA outcomes in Shanxi and other provinces are inadequate.</li> </ul>
<p><b>Outcome</b></p> <p>Consideration by higher authorities of the provincial and central governments of key TA policy recommendations for improving TVET system in Shanxi</p>	<p>Main policy recommendations are submitted by March/April 2008 to the provincial and central governments for consideration.</p>	<p>Technical assistance completion report</p> <p>Government feedback on TA implementation (including at final tripartite meeting)</p>	<p><b>Assumption</b></p> <ul style="list-style-type: none"> <li>TA key recommendations will be supported by the central Government as well as Shanxi provincial government.</li> </ul> <p><b>Risk</b></p> <p>Shanxi provincial government's policy direction or priority on TVET development may change.</p>
<p><b>Outputs</b></p> <p>Key policy recommendations formulated and proposed on measures and mechanisms for improving TVET for Shanxi province</p>	<p>Specific recommendations for TVET development in Shanxi province developed at TA completion include those on</p> <p>(i) skills needs and TVET development for Shanxi medium- and long-term social and economic development, (ii) strengthening TVET linkages with labor market, (iii) improving TVET capacity and teaching and learning conditions, (iv) further deepening TVET sector reform and innovation, and (v) strengthening TVET financing.</p>	<p>Inception report with detailed work plan and implementation schedule</p> <p>Midterm report</p> <p>Draft final report</p> <p>Finalized main report and five subreports</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>Cooperation from and coordination among relevant provincial government agencies are effective.</li> <li>Information needed for analysis required of the TA is available on time.</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>Provincial officials' (participating in the TA) lack of experience with ADB procedures and requirements.</li> <li>Some stakeholders do not participate in TA activities.</li> </ul>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
	<p>Workshops and conference are held according to schedule.</p> <p>TA recommendations are disseminated through websites and other public media.</p>		
<p><b>Activities with Milestones</b></p> <p><b>1. Review and analysis of issues</b></p> <p>1.1 Prepare TA inception report and hold TA inception within month 1, including detailed outlines and methodologies of the five subreports, fieldwork and surveys needed, and a detailed TA implementation schedule with the work schedule of each consultant</p> <p>1.2 Conduct work on five subreports during month 2 to month 10</p> <p>1.3 Present initial findings from the subreports at midterm review and workshops, including (i) comprehensive analysis and assessment of issues, (ii) identifying constraints and opportunities for TVET development, and (iii) initial recommendations for improving TVET system</p> <p>1.4 Systematically introduce international experience by TA midterm review</p> <p>1.5 Prepare draft TA final report by end of month 10</p> <p>1.6 Revise and submit TA final report as well as all subreports by end of month 11 after consulting with ADB, BOF, BOE, and MOF, with final analysis, assessment, constraints, and recommendations for improving TVET systems</p> <p><b>2. Preparation, conduct, and analysis of results of fieldwork and surveys</b></p> <p>2.1 Design fieldwork and surveys as specified in the inception report by end of month 2</p> <p>2.2 Conduct fieldwork and survey and analyze results during months 3–8</p> <p>2.3 Incorporate results in subreports and present them at workshops</p> <p><b>3. Organization and facilitation of workshops</b></p> <p>3.1 Prepare and hold one workshop each after TA inception, at midterm, and prior to the national conference</p> <p>3.2 Hold other issue-oriented workshop(s) as appropriate</p> <p>3.3 Prepare and submit a workshop report for each workshop held</p> <p><b>4. Organization and conduct of the study visit</b></p> <p>4.1 Organize the study visit specifying selection of host country and organizations, timing of the visit, participants, and purposes and contents including resource speakers and other key activities of the visit</p> <p>4.2 Conduct the study visit according to the time specified in the inception report</p> <p>4.3 Prepare and submit a report on the visit including any follow-up activities</p> <p><b>5. Organization and facilitation of the final conference for dissemination of main TA findings and public consultation</b></p> <p>5.1 Prepare the conference, including identifying national and international participants and speakers</p> <p>5.2 Hold the conference before the end of month 11</p> <p>5.3 Prepare and submit conference report by middle of month 12, including recommendations for improving the draft final TA report, public dissemination, and any other follow-up activities</p>			<p><b>Inputs</b></p> <p><b>ADB - \$600,000</b></p> <ul style="list-style-type: none"> <li>• Consulting Services - \$400,000</li> <li>• Fieldwork and Survey - \$40,000</li> <li>• Workshops and Conference - \$40,000</li> <li>• Study Visit - \$60,000</li> <li>• Office Equipment - \$20,000</li> <li>• Translation - \$10,000</li> <li>• Contingencies – 30,000</li> </ul> <p><b>Government - \$600,000</b></p> <ul style="list-style-type: none"> <li>• Office and Transport - \$150,000</li> <li>• Counterpart Staff - \$210,000</li> <li>• Fieldwork and Survey - \$30,000</li> <li>• Workshops and Conference - \$40,000</li> <li>• Study Visit - \$100,000</li> <li>• Others - \$70,000</li> </ul>

ADB = Asian Development Bank, BOE = Bureau of Education, BOF = Bureau of Finance, MOF = Ministry of Finance, TA = technical assistance, TVET = technical and vocational education and training

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

<b>Item</b>	<b>Total Cost</b>
<b>A. Asian Development Bank (ADB) Financing<sup>a</sup></b>	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	150.0
ii. National Consultants	200.0
b. International and Local Travel	40.0
c. Reports Preparation and Communication	10.0
2. Fieldwork	40.0
3. Workshops and Conference	40.0
4. Study Visit	55.0
5. Office Equipment <sup>b</sup>	20.0
6. Translation	10.0
7. Contract Negotiations	5.0
8. Contingencies	30.0
<b>Subtotal (A)</b>	<b>600.0</b>
<b>B. Government Financing</b>	
1. Office Accommodation and Transport	150.0
2. Remuneration and Per Diem of Counterpart Staff	200.0
3. Fieldwork	30.0
4. Workshops and Conference	40.0
5. Reports and Translation	10.0
6. Study Visit	100.0
7. Others	70.0
<b>Subtotal (B)</b>	<b>600.0</b>
<b>Total</b>	<b>1,200.0</b>

<sup>a</sup> Financed by ADB's technical assistance funding program.

<sup>b</sup> Office equipment necessary for TA implementation may include laptop computers, printers, facsimile machines, other office consumables, subject to ADB's prior agreement.

Note: Unless otherwise agreed to by the Executing Agency (EA), TA funds for budget lines A2–A6 will be administered by the EA, subject to ADB's prior approval of a costed work plan for A2–A6, and a portion of A8.

Source: ADB estimates.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. The technical assistance (TA) will require 56 person-months of services of two international and six national consultants, to be provided intermittently over a period of 12 months from October 2007 to September 2008. The international consultant on technical and vocational education and training (TVET) sector planning and strategy will be the team leader. The national TVET sector planning and strategy consultant will be the deputy team leader, and will act as team leader during the team leader's absence. The Asian Development Bank (ADB) will engage the consultants through a firm on the basis of the quality and cost-based selection method, using the simplified technical proposal, in accordance with the *Guidelines on the Use of Consultants* (2007, as amended from time to time). All consultant reports will be prepared in English and Chinese. The responsibilities of the consultants are outlined below.

### A. International Consultants

2. **TVET Sector Planning and Strategy Consultant and Team Leader** (5 person-months). The consultant should have first-hand experience, including field experience, in TVET projects funded by development partners in the People's Republic of China (PRC). The consultant will undertake the following tasks.

- (i) Be responsible for the overall implementation of the TA, including ensuring the timely delivery and quality of all TA activities, deliverables and outputs, and adequate consultation with key stakeholders. The consultant will coordinate closely with the deputy team leader to ensure TA implementation, especially when the team leader is not in the field.
- (ii) Be responsible for submitting to the Bureau of Finance, Bureau of Education, and ADB an inception report within 1 month of TA implementation. The report should include (a) a clear delineation of responsibilities among team members and national and local government counterparts in all TA activities; (b) a work plan detailing each team member's inputs, deliverables, and delivery dates; (c) an outline of each of the five subreports and the main TA report and their delivery schedule; and (d) the design and plans for fieldwork and surveys.
- (iii) Be responsible for subreport 2 on strengthening labor market linkages, including (a) reviewing present practices for school/enterprise cooperation; (b) identifying and assessing major policy, administrative, financial, information, and other constraints; (c) relating to international best practices and experience and those in the PRC; and (d) identifying causes for sustainable best models, recommending measures for their wider application, and overcoming major obstacles.
- (iv) Be responsible for introducing international best practice and experience as a chapter to be incorporated in the TA report, and to be presented at the midterm workshop.
- (v) Assess the private sector's role in TVET and policies and mechanisms, and promote its participation in making the TVET system more responsive to market demand.
- (vi) Assess the current implementation and impact of the national skills certification system and recommend ways to strengthen its effectiveness.

- (vii) Participate in the design of all analytical work of the TA. Support the EA and IA in preparing a detailed design and developing related materials (e.g., drafting surveys, study materials, etc.) for the field study and study visit.
- (viii) Be responsible for coordinating activities and contents of all subreports during TA implementation, as these reports are closely related analytically.
- (ix) Be responsible for integrating subreports into the main TA report, and develop key assessments, analyses, and recommendations into knowledge products.
- (x) Be responsible for all communication and coordination with the EA and IA for effective and timely implementation of the TA.

3. **Education Economist and TVET Consultant** (3 person-months). The consultant will have background and experience in assessing needed skills on the basis of labor market forecasts in a sectoral and macro setting. The consultant will undertake these tasks.

- (i) Be responsible for all economic analysis required of the subreport on skill development needs and TVET structure, scale, regional location, including the assessment and forecasting of needs for skills and skill mix stemming from (a) the provincial economic and industrial restructuring of traditional industries and development of new industries, (b) the potential inflow of migrant workers into urban areas, and (c) impact of rural urban development on TVET
- (ii) Design and conduct, as necessary, macro and sectoral modeling for labor market forecasts as part of the analytical work for subreport 1.
- (iii) Lead in developing and conducting all fieldwork and survey activities relating to (i) above.
- (iv) Participate in preparing subreport 1 and other related activities including preparing and delivering enhancements, as appropriate and necessary, presentations in workshops and the conference.
- (v) Provide quality control on economic and financial analyses to be conducted in other subreports.
- (vi) Undertake other relevant activities as assigned by the team leader.

## **B. National Consultants**

4. **TVET Sector Planning and Strategy Consultant and Deputy Team Leader** (10 person-months). The consultant will be a recognized expert in Shanxi province on education sector planning and strategy, as well as such issues in TVET. The consultant will undertake these tasks.

- (i) Assist the team leader in all aspects of work to ensure timely delivery and the quality of all TA activities, deliverables and output, and adequate consultation with key stakeholders.

- (ii) Be responsible for preparing a comprehensive assessment of the policy, institutional, administrative, and financial aspects of the TVET system in Shanxi as necessary background for several of the subreports. The assessment should pay special attention to the policy environment for private sector participation in TVET and major constraints it faces.
- (iii) Be responsible for providing a comprehensive assessment of the impact of the 11th Five-Year Program (FYP) on the TVET system, including (a) economic restructuring and its impact, and (b) structural changes in the labor market caused by the development of new industries.
- (iv) Be responsible for assessing the role of TVET in rural areas, including (a) raising agricultural productivity, (b) poverty reduction impact, and (c) in the broader social, cultural, and economic fabric. The analysis should take a broad macro and sectoral perspective, but needs to give special attention to poor counties and remote regions.
- (v) Be responsible for preparing subreport 1 by integrating analysis conducted by the international education economist for subreport 1 as well as analyses in (ii) –(iv).
- (vi) Be responsible for assessing a policy and regulatory framework for TVET at tertiary level, and recommend ways to improve the policy environment for TVET development at tertiary level.
- (vii) Be responsible for any fieldwork and survey necessary for the analysis above.
- (viii) Be responsible for preparing and making relevant presentations at the workshops and conference.
- (ix) Assume the responsibility of the team leader when the team leader is not in the field.

**5. TVET Capacity and Teaching/Learning Conditions Consultant** (8 person-months).  
The consultant will undertake these tasks.

- (i) Assume the main responsibility for preparing subreport 3 on TVET capacity and teaching/learning conditions, including (a) reviewing present status, (b) assessing capacity constraints and other teaching and learning conditions with supporting data and statistics, (c) identifying and assessing the negative impact on TVET's ability to meet market demand for skills in terms of both quality and quantity of graduates, and (d) proposing recommendations for improvement with costed and prioritized schedule for implementation.
- (ii) Conduct similar analysis on teacher quality and teacher development strategy to meet the future needs of the TVET system.
- (iii) Be responsible for all fieldwork and survey relating to the preparation of sub-report 3, including the design and conduct of the survey.
- (iv) Coordinate with those conducting activities for other subreports as appropriate.

- (v) Prepare materials for and make presentations at the workshops and conference.
- (vi) Undertake other relevant work as assigned by the team leader.

6. **TVET Financing Consultant and Economist** (10 person-months). The consultant will undertake these tasks.

- (i) Be responsible for the analysis and assessment of proper institutional, administrative and financing backgrounds in the provincial and national context for all economic and financial analyses required of the TA.
- (ii) Participate in the design, conduct, and analysis of fieldwork and survey relating to all economic and financial analyses.
- (iii) Lead in preparing subreport 5 on enhancing TVET financing, including research design, analysis, and relevant fieldwork and survey if needed.
- (iv) Assist the international education economist in preparing subreport 1 on skills development needs, especially in assessing and quantifying future needs derived from the broad social and economic development of Shanxi in the medium and long term.
- (v) Assist the team leader and the international education economist in providing quality control of all TA work related to economic and financial analyses.
- (vi) Undertake other relevant tasks as assigned by the team leader.

7. **TVET Sector Reform Consultant** (8 person-months). The consultant will undertake these tasks.

- (i) Be responsible for preparing subreport 4 on deepening TVET sector reform. The report should include several components, including (a) assessing progress made in shifting from a focus on classroom teaching to one on practical knowledge and hands-on experience; (b) assessing existing mechanisms used in promoting such practices with respect to their impact, and the potential for wider applications; (c) identifying key constraints both to teaching (curriculum, course setting and contents) and to cooperation between school and enterprises, which hinder further progress in shifting focus to imparting market-needed skills to students; and (d) making recommendations for improvement.
- (ii) Assess the school management system including the role of school directors. Identify key constraints and challenges for TVET at the school level. Make recommendations for improving school management, including building the capacity for school management system and practices.
- (iii) Conduct a similar analysis for TVET at the tertiary level and make appropriate recommendations for improvement.
- (iv) Be responsible for assessing training needs for migrant workers. Assess best practice for providing skills training for migrant workers. Recommend ways and mechanisms for active participation of migrant workers in TVET.

- (v) Be responsible for any fieldwork and survey necessary for the study, including its design and conduct.
- (vi) Coordinate closely with those conducting studies for subreports on closely related issues.
- (vii) Prepare and make presentations in the workshops and conference, and undertake other related work as assigned by the team leader.
- (viii) Ensure that environmental awareness and gender equality considerations are properly accounted for, especially in work relating to curriculum and migrant workers.

**8. TVET Development Policies, Strategies, and Reforms Consultant** (6 person-months). The consultant will undertake these tasks.

- (i) Be responsible for preparing a comprehensive report on national TVET reform and development plans over the medium and long term, clearly spelling out the overall policy framework for TVET development, identifying goals and targets, and resource and other constraints on reaching them.
- (ii) Be responsible for ensuring that all TA work to be implemented in the provinces will be consistent with national policies, goals, and targets, including those with respect to environmental awareness and gender equality considerations; and providing expert opinion and expertise on TA work with national ramifications, including cost recovery in TVET, private sector participation, and other TVET sector issues.
- (iii) Assist the team leader in coordinating and integrating all analytical work of the TA, with particular focus on and inputs into subreports 3–5 (details and division of labor will be decided during the inception stage).
- (iv) Assist the team leader in reviewing and finalizing the main report including all sub-reports, and developing key TA recommendations into knowledge products.
- (v) Be responsible for preparing and presenting relevant report and materials at the workshops and conference, and coordinating with central Government agencies on participation in these activities.
- (vi) Coordinate and assist in all analytical work of the TA, and undertake other tasks as assigned by the team leader.

**9. Labor Market Linkages Consultant** (8 person-months). The consultant will undertake these tasks.

- (i) Assist the team leader in preparing subreport 2 on strengthening labor market linkages.
- (ii) Be responsible for preparing a background report introducing (a) current best practices in Shanxi and in other provinces; (b) policy, administrative, and other settings for these best practices; and (c) initial assessment of best practices and key determinants.

- (iii) Provide background analysis of current practices of the national skills certification system and its impact on the TVET system.
- (iv) Prepare an assessment of the labor market information system, with special attention to (a) job market information flow to schools, and (b) coordination of labor market information flows among different government agencies. Identify systemic, administrative, and other constraints to labor market information flows.
- (v) Assess both hardware and policy support for establishing integrated labor market information networks and recommend mechanisms for facilitating information-sharing among stakeholders as well as among government agencies.
- (vi) Assist the team leader in designing and conducting all fieldwork and survey needed for the preparation of subreport 2. Closely coordinate with those conducting studies under different subreports.
- (vii) Prepare and make presentations at the workshops and conference. Undertake other relevant work as assigned by the team leader.