

**ASIAN DEVELOPMENT BANK**

**TAR: PRC 36518**

**TECHNICAL ASSISTANCE**

**TO THE**

**PEOPLE'S REPUBLIC OF CHINA**

**FOR**

**IMPROVING BASIC EDUCATION**

**IN**

**UNDERDEVELOPED AREAS THROUGH INFORMATION AND**

**COMMUNICATION TECHNOLOGY**

**October 2002**

## CURRENCY EQUIVALENTS

(as of 14 October 2002)

Currency Unit	–	CNY
Y1.00	=	\$0.1208
\$1.00	=	Y 8.2769

## ABBREVIATIONS

ADB	–	Asian Development Bank
ICT	–	information and communication technology
MOE	–	Ministry of Education
NCET	–	National Center for Education Technology
PRC	–	People's Republic of China
TA	–	technical assistance
UCE	–	universal compulsory education

## NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

This report was prepared by Brajesh P. Panth, Education Specialist, and Christopher Spohr, Project Economist, Social Sectors Division (ECSS), East and Central Asia Department.

## I. INTRODUCTION

1. Investments in education and related applications of distance education are an essential part of the “go west” strategy and Government efforts to reduce poverty in the Western Region of the People’s Republic of China (PRC). The Asian Development Bank (ADB) believes that education is essential to provide people with the tools to escape poverty.<sup>1</sup> During the PRC country programming mission in June 2002, the Government requested ways to use distance education and an advisory technical assistance (TA) to support distance education by identifying information and communication technology (ICT) applications in education more effectively. The TA Fact Finding Mission fielded from 28 August to 6 September 2002 reached an understanding with the Government on the objectives, scope, estimated cost, and implementation arrangements for the TA.<sup>2</sup> The TA framework is in Appendix 1.

## II. ISSUES

2. **Status of Basic Education.** Basic education in the PRC comprises primary education, generally of 6 years in duration (some poor localities maintain a 5 year system), and secondary education, consisting of a general education track of 3 years of lower and 3 years of upper secondary schooling, and a vocational track that accounts for roughly half of upper secondary enrollments. Compulsory education includes the primary and lower secondary level (grades 1–9). The Compulsory Education Law, enacted in 1986, stipulates that all children should receive 9 years of education, although in light of regional inequalities, it was recognized in the 1990s that achieving 9 years of compulsory education would have to be done in phases. The PRC has made great progress in achieving near universal 9 year education in the coastal and more industrialized eastern areas, but still faces the daunting task of universalizing lower secondary (and in many poor counties, even 6 years of primary) schooling in the poorer Western Region.<sup>3</sup>

3. Today, the PRC has the largest primary and lower secondary education system in the world. The PRC has been more successful in achieving universal compulsory education (UCE) than other countries at a similar level of economic development. There are over 580,000 primary schools with about 135 million students and almost 6 million teachers, and about 64,400 lower secondary schools with over 58 million students and 3 million teachers. The national achievements are generally impressive — increased enrollment, reduced gender gaps, reduced drop-out rates, and increased proportion of qualified and trained teachers. However, these mask disparities between the eastern and coastal regions and the Western Region, and between rural and urban regions within the Western Region. Although official statistics indicate that 99.1% of children age 6-11 are enrolled in schools, sizeable numbers of children remain unable to attend primary schools or to complete the primary cycle, mostly in poor pockets of the Western Region. Larger numbers fail to enter and complete lower secondary education. Thus, a major challenge is to ensure access to quality UCE, with a particular focus on minorities and girls in the remote regions of the Western Region.

---

<sup>1</sup> One recent study of rural poverty in the PRC found that public investment in education (compared to other investments) is associated with the highest level of poverty reduction in the Western Region. International Food Policy Research Institute, 2002. *Growth, Inequality, and Poverty in Rural China: The Role of Public Investments*. Washington, DC.

<sup>2</sup> The TA first appeared in ADB *Business Opportunities* (internet version) 30 September 2002.

<sup>3</sup> The Western Region consists of 12 province-level administrative entities: Chongqing Municipality, 6 provinces (Gansu, Guizhou, Qinghai, Shaanxi, Sichuan, and Yunnan), and 5 autonomous regions (Guangxi Zhuang Autonomous Region (AR), Inner Mongolia AR, Ningxia Hui AR, Tibet AR, and Xinjiang Uygur AR).

4. Many teachers in the compulsory system lack the qualification and training required to meet the ongoing curriculum reform and the Government's targets for teacher upgrading. Particularly in the Western Region, many teachers need to upgrade their credentials to meet officially required qualification levels and many more require periodic support to update their skills and approaches. While the decentralization policy has led to increased investments in better-off areas of the PRC, it has put tremendous pressures on the poor regions where local resources are limited and the education indicators (teachers; instructional materials; physical inputs; and enrollment, attendance, drop-out and completion rates) lag behind the national average. The quality of basic education and poverty level of households are two major factors associated with student dropouts in basic education. Both these factors are intertwined and reinforce the need to improve education inputs in poorer areas.

5. Progress is needed in qualitative as well as quantitative terms. In addition to formal certification, teachers need to be provided skills and tools to adopt new approaches to nurture pupils' creativity, problem-solving ability, and collaborative learning skills. Empowering teachers to innovate, moving away from exam-focused rote instruction, will require creating support among headmasters and local educational officials, as well as effective networking mechanisms between them. To achieve UCE, special arrangements are needed to redress educational inequities (access, teacher quality, instructional materials, and physical conditions) in the poor areas and among disadvantaged communities. The TA will support applications of distance education and other forms of ICT, and is therefore primarily intended to reduce East-West and urban-rural gaps.

6. **Status of Distance Education and ICT applications in the PRC.** The PRC has a long history of using television-based distance education for teacher training on a large scale, and newer forms of ICT are now changing education and lifelong learning. The potential of distance education and ICT is well recognized by national policymakers and international community. The Beijing Declaration on Education For All in the Nine High-Population Countries, signed in August 2001, underscores the need to prioritize related investments in basic education. If tightly targeted, the renewed emphasis on distance education with the use of newer forms of ICT provides an opportunity to advance UCE, including nonformal education, particularly in the western PRC.

7. When used for applications such as teacher training, ICT is likely to enjoy economies of scale due to the PRC's large population base, while addressing needs created by the PRC's physical size. ICT tools will be especially key to reaching disadvantaged and poor populations dispersed in large areas of the Western Region. This is evident in the PRC's long and successful history of distance education, particularly in training teachers. Combining mature technologies (i.e., radio, television, and print) with newer forms of ICT such as computers and the Internet, ICT applications could provide the much needed flexibility to address local needs.

8. Several initiatives are under way to promote cost-effective use of ICT applications. The National Research Center of Distance Education for Teachers at Beijing Normal University is supporting the development of 30 experimental sites covering most provinces, except Inner Mongolia, Tibet, or Xinjiang. The center is currently developing multimedia materials for 35 courses to support teachers, and plans to expand the number of sites and to provide over 200 courses. A key large-scale initiative is the National Distance Education for Poverty Reduction Project under the National Center for Education Technology (NCET) at the Ministry of Education (MOE). Supported from several sources, NCET is providing equipment, teacher training, and instructional materials to many primary and secondary schools (mostly at the township level) in

several poor counties in all Western Region provinces.<sup>4</sup> Finally, China Central Radio Television University (established in February 1979) has begun to use a digital, multimedia, and interactive platform to build a multiple network system to support teacher training.

9. The Government wants to explore the use of ICT in education in three areas: (i) development of courses focusing on ICT as part of the national school curriculum; (ii) broader use of distance education applications, especially in higher education; and (iii) applications of ICT to reduce poverty, particularly in the Western Region. The Government has expressed great interest in the use of ICT to provide high quality content (i.e., training programs and information resources) to teachers, and has noted that the same tools can also provide practical materials to communities to promote local development.

10. The Government also recognizes that investments in expensive computers and ICT equipment have often not been effectively exploited to improve education, and it increasingly recognizes the need to provide soft components (i.e., educational content and materials, training of teachers to use new ICT tools for innovative teaching, support and feedback mechanisms, etc.) to augment hardware investments. This calls for developing sustainable and often locally-based strategies to mobilize financial and human resources needed, and to ensure that ICT-based approaches are integrated into broader initiatives and change.

11. Experience from different forms of ICT applications in the PRC points to three major and urgent needs: (i) development of educational materials to enhance the use of hardware; (ii) provision of training to teachers in all subjects who haven't been exposed to ICT, to allow them to use ICT effectively; and (iii) provision of hardware to many areas that either do not have the equipment, or need more equipment. There is also a need to support innovative practices to demonstrate how technologies could be used more cost-effectively. The general consensus among Government officials and education experts is that cost-effective distance education and ICT applications should increase equitable access to quality education, particularly in poorer regions. The consensus is also that there is an urgent need to assess and draw lessons from ICT applications being implemented under different programs and supported by different agencies.

12. **Government Priorities.** The PRC has intensified its commitment to improving access to quality education in poor areas in order to achieve UCE. To achieve UCE in poorer localities of the Western Region, the PRC is making renewed efforts to reform the tax system and to strengthen the institutional arrangements at the county level. These reforms are expected to increase resources for compulsory education, reduce the burden of existing fees on households, and develop capacity at the county level necessary to support more equitable access to quality compulsory education. The Government is also revising the school curriculum and has raised the requirements for teacher qualification and teacher training to improve the quality of basic education. Both these reforms require tremendous efforts to upgrade teachers. Distance education and ICT applications are expected to contribute significantly to this process.

13. Promoting distance education and other ICT applications is a major priority of the Government. The Government has emphasized ICT's potential in flexible applications to support teacher training, administrative training, school management improvement, nonformal education, and community training. The Government has stressed the need to ensure sustainable use of technology, given the large capital and recurrent costs associated with newer

---

<sup>4</sup> Substantial financial support has been provided by the Hong Kong-based Li Kashing Foundation, while several planned externally-assisted projects are aligned to varying degrees with the NCET project.

forms of ICT. For instance, major effort is being made to develop more cost-effective computers and simple media viewing equipment for a wider use. If well designed, ICT approaches can consolidate different initiatives.

**14. External Funding in Distance Education and ICT Applications in Basic Education.**

Several funding agencies are supporting or planning to support NCET, which is responsible for the National Distance Education for Poverty Reduction Project. Support is mostly targeted to township-level central primary schools, and includes training of teachers and school principals and content development.

15. Distance education and ICT applications provide new opportunities to address the need for training a large number of teachers, developing instructional materials to address diverse needs of disadvantaged children in the Western Region, and improving the access of disadvantaged children to quality compulsory education. Effective inter institutional linkages and coordination are needed to support research, evaluation, school-level innovation, and educational management. Teachers, students, and communities need training to prepare them to respond to new opportunities and challenges posed by economic restructuring and the PRC's entry into the World Trade Organization. The TA provides an opportunity to pilot test cost-effective applications of ICT as tools to support the Government's priority of improving quality and achieving UCE.

### **III. THE TECHNICAL ASSISTANCE**

#### **A. Purpose and Output**

16. The TA aims to advance policy dialogue on targeted and viable applications of distance education and ICT in the Western Region to improve quality and equity in basic education, emphasizing advances within the 9 year compulsory education system, literacy interventions, and related programs. The two objectives of the TA are to (i) undertake a broad assessment of and identify promising innovations and strategies for the applications of distance education and ICT in education with a particular focus on supporting access to quality UCE among disadvantaged populations including minorities, women, and remote communities; and (ii) support a very modest and targeted pilot testing of promising approaches and technologies with a tight pro-equity focus.

#### **B. Methodology and Key Activities**

17. The TA will comprise two parts. Part I will undertake a rapid assessment of distance education and ICT applications in education in supporting UCE, literacy interventions, and related programs. The rapid assessment will provide a general background on where the PRC stands on ICT applications; what the current situation is in poor areas compared to better off areas; what has been done, including external assistance, to address the needs of disadvantaged communities in particular; what are the major constraints in terms of teaching and learning; and what are the implications of ICT in addressing equitable access to quality basic education, including its potential for upgrading teacher qualification and skills and student learning. Following the rapid assessment and discussions with the MOE, the TA will undertake a focused policy study covering one or two key areas, tentatively: (i) certificate teacher training and teacher-headmaster training via distance education; and (ii) continued upgrading of teachers, including innovative school improvement via ICT-based tools.

18. Part II of the TA will support a modest and highly focused pilot test as defined during part I and in line with the policy study. Pilot site(s) will be identified following the assessment and policy dialogue under part I. The pilot test will support compulsory education in poor areas of the Western Region with demonstrated leadership initiatives for educational improvement. The pilot test will also support an innovative program, avoid duplicating other efforts, and avoid areas with a high concentration of other externally funded activities.

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

19. The cost of the TA is estimated at \$625,000 equivalent, of which \$166,000 is the foreign exchange cost and \$459,000 equivalent is the local currency cost. ADB will finance \$500,000 equivalent, covering the entire foreign exchange cost and \$334,000 equivalent of the local currency cost. The TA will be financed on a grant basis by ADB's TA funding program. The Government will finance the balance of the local currency cost, equivalent to \$125,000 for office, communications, local travel, seminars, workshops, translation, and secretarial and administrative support. The detailed cost estimates and proposed financing arrangements for the TA are in Appendix 2.

### **D. Implementation Arrangements**

20. MOE will be the Executing Agency for the TA. MOE will establish a steering committee under the chairmanship of the director of the Division of International Organizations, with representation from the Department of Basic Education, Department of Minority Nationalities Education, Division of Teacher Training of the Department of Teacher Education, Department of Finance, and NCET. The representative from NCET, which will be the Implementing Agency, will be the secretary of the steering committee. The steering committee may be modified as appropriate following the needs assessment and identification of the pilot site. The steering committee will provide overall guidance and technical inputs to the TA, and help organize workshops in partnership with interested national and international agencies. Research, seminars, and workshops will be undertaken in partnership with other agencies as appropriate and to the extent possible.

21. The TA is planned to be completed over a two-year period (February 2003–February 2005). During the first 3 months (February–April 2003), the TA will undertake a broad assessment of ICT applications in education and develop and propose the pilot test. The pilot test will be implemented during the following 21-month period (May 2003–February 2005). ADB will select and engage the individual consultants in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for the selection and engagement of domestic consultants. A team of consultants will provide a total of 10.5 person-months of consultancy services comprising 4.5 person-months of international and 6 person-months of domestic consultancy services. An international consultant will be identified as the team leader responsible for overseeing the overall consultancy. Outline terms of reference for the consultant services are in Appendix 3.

## **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 \$500,000 on a grant basis to the Government of the People's Republic of China for Improving Basic Education in Underdeveloped Areas Through Information and Communication Technology, and hereby reports this action to the Board.

## TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Performance Targets	Monitoring Mechanisms	Assumptions
<p><b>Goals</b> Advance human development with improved access to quality primary and secondary education, particularly among disadvantaged populations, through targeted and viable applications of distance education and information and communication technology (ICT)</p>	<ul style="list-style-type: none"> <li>• Improved access to quality universal compulsory education (grades 1–9) and secondary education</li> </ul>	<ul style="list-style-type: none"> <li>• National statistics</li> <li>• Education survey</li> <li>• Labor market survey</li> </ul>	<p>The Government continues to increase its effort to ensure universal access to quality compulsory education in the poor areas of the Western Region</p>
<p><b>Purpose</b></p> <ol style="list-style-type: none"> <li>1. A rapid assessment of distance education and ICT applications and identify promising strategies to advance policy dialogue on targeted and viable applications of distance education and ICT to improve quality and equity in targeting of basic education</li> <li>2. Support a highly focused pilot test to demonstrate viable applications of distance education and ICT for compulsory education in poor areas of the Western Region</li> </ol>	<ul style="list-style-type: none"> <li>• distance education and ICT strategies to improve coverage and quality of learning identified</li> <li>• distance education and ICT strategies to improve efficiency and management of compulsory education identified</li> <li>• Promising and viable distance education and ICT applications identified and implemented through a network of partnership</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of ongoing distance education and ICT programs</li> <li>• technical assistance (TA) evaluation report</li> <li>• Annual budget allocation</li> <li>• Ministry of Education annual monitoring</li> <li>• TA reports (inception, midterm, and final)</li> </ul>	<p>The government continues to place high priority to the cost-effective use of distance education and ICT as a major tool to enhance sustainable development of primary and secondary education in poor areas of the Western Region</p>

Design Summary	Performance Targets	Monitoring Mechanisms	Assumptions
<p><b>Outputs</b></p> <p>Rapid assessment</p> <p>Pilot test</p> <p>Policy and strategic implications</p>	<ul style="list-style-type: none"> <li>• Rapid assessment report two months after startup</li> <li>• Policy dialogue</li> <li>• Detailed proposal for the pilot program</li> <li>• Final report with lessons learned and policy and strategic implications drawing from the pilot test and rapid assessment</li> </ul>	<ul style="list-style-type: none"> <li>• TA reports</li> <li>• Consultants' reports</li> <li>• TA monitoring reports</li> </ul>	<p>Government ownership is strong in supporting the rapid assessment and policy dialogue, and in identifying and supporting a carefully designed pilot</p> <p>TA has access to Government officials and good data, and is able to influence policy and strategy</p>
<p><b>Activities and Inputs</b></p> <p>Advisory services for rapid assessment</p> <p>Support for pilot program</p>	<ul style="list-style-type: none"> <li>• International (4.5 person-months) and domestic (6 person-months) of consultant services for rapid assessment, drafting pilot proposal, and evaluation</li> <li>• Studies and surveys</li> <li>• Seminars and workshops</li> <li>• Equipment</li> <li>• In-county training</li> <li>• Training materials, software, and publication</li> <li>• Logistics support</li> </ul>	<ul style="list-style-type: none"> <li>• TA reports</li> <li>• Consultants' reports</li> <li>• TA monitoring reports</li> <li>• Feedback from participants</li> </ul>	<p>Adequate collaboration between consultants and Government counterparts</p> <p>Objective selection and participation of Government officials and trainees</p>

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

Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Asian Development Bank Financing <sup>a</sup></b>			
1. Consulting Services			
a. Remuneration and Per Diem			
i. International Consultants	99.0	0.0	99.0
ii. Domestic Consultants	0.0	30.0	30.0
b. International and Local Travel	15.0	5.0	20.0
c. Reports and Communications	4.0	1.0	5.0
d. Studies/Surveys	0.0	20.0	20.0
e. Seminars and Workshops	0.0	20.0	20.0
f. Translation, Interpretation, Miscellaneous Administration, and Support Costs	0.0	5.0	5.0
2. Pilot Program <sup>b</sup>			
a. Equipment	26.0	0.0	26.0
b. In-Country Training	0.0	100.0	100.0
c. Training Materials, Software, and Publications	0	100.0	100.0
d. Miscellaneous Administration and Support Costs	0	10.0	10.0
	22.0	43.0	65.0
3. Contingencies (15%)			
	<b>166.0</b>	<b>334.0</b>	<b>500.0</b>
<b>Subtotal (A)</b>			
<b>B. Government Financing <sup>c</sup></b>			
1. Office Space, Furniture, and Utilities	0.0	25.0	25.0
2. Communication and Local Travel	0.0	10.0	10.0
3. Counterpart Staff and Support	0.0	60.0	60.0
4. Seminars and Workshops	0.0	10.0	10.0
5. Translation and Interpretation	0.0	10.0	10.0
6. Secretarial and Administration Support	0.0	10.0	10.0
<b>Subtotal (B)</b>	<b>0.0</b>	<b>125.0</b>	<b>125.0</b>
<b>Total</b>	<b>166.0</b>	<b>459.0</b>	<b>625.0</b>

<sup>a</sup> ADB-funded TA program.

<sup>b</sup> To be determined based on outcome of needs assessment. Ministry of Education/ National Center for Education Technology will be responsible for administering the pilot program and managing the studies/surveys and seminars and workshops with inputs from international and domestic consultants.

<sup>c</sup> Final Government contribution to be determined during needs assessment, but not less than indicated here.

Source: Asian Development Bank estimates.

## OUTLINE TERMS OF REFERENCE

1. The technical assistance (TA) envisages a progression from a broad foundational assessment, to more directed policy dialogue, and finally to a highly focused pilot test. Consultants will facilitate this process to ensure the final outputs meet the agreed criteria: (i) consistency and complementarity with Ministry of Education (MOE) macro-level objectives and directions, (ii) treatment of information and communication technology (ICT) as a tool for poverty reduction and education development, and (iii) focus on contributions to poor areas in the Western Region by improving access to quality basic education.<sup>1</sup> Consultants are tasked with the activities outlined below.

2. Written documentation will include provision of regular updates to the Asian Development Bank (ADB), according to a defined schedule. Major reports will be subject to page limits to be agreed upon between the ADB project officer and consultants—to decrease costs and to increase functionality. Consultants will provide final drafts of the following to ADB, MOE, and the National Center for Education Technology (NCET):

- (i) Within 1 week after the inception Workshop, submit an inception report that will include workshop findings and a proposal for the rapid Assessment study, which will cover (i) the general context and background with a focus on the status of education in poor rural areas, (ii) objectives for and constraints to teaching and learning, and (iii) broader implications of ICT use;
- (ii) A second report, including (i) summarized findings from the assessment; (ii) detailed proposal for the focused policy study and subregional policy workshop; and (iii) a preliminary proposal (i.e., geographical and thematic coverage) for 1–2 local pilot programs;
- (iii) A midterm report, including a detailed proposal for the pilot test, indicating specific partnerships and implementation arrangements, outlines for capacity-building programs, and the scope of other required inputs; and
- (iv) A final report, a focused, self-contained paper outlining lessons and policy implications generated from the focused policy study and local pilot tests in the context of broader trends and needs in education in the People's Republic of China (PRC) (focusing on compulsory education in poor areas of the Western Region).

3. The rapid assessment study will survey issues related to education nationwide and at all levels, but will focus on access to and quality of compulsory education in the Western Region, and will cover:

**(i) context and background:**

- (a) an overview of the current status of education in the PRC, with a special focus on poor rural areas in the Western Region; and
- (b) a survey of past, ongoing, and pipeline initiatives by the Government, external agencies, and the private sector in using ICT for education (emphasizing basic education), identifying lessons learned, promising aspects, and possible directions for improvement;

---

<sup>1</sup> Basic education refers to 9 year compulsory schooling plus literacy, basic skills, and other nonformal education for disadvantaged groups (e.g., laid-off workers, poor farmers, and undereducated females and minorities).

**(ii) objectives and constraints:**

- (a) relative priorities for and key constraints on quality in formal education; and
- (b) key objectives and challenges for access to education (including nonformal education) to achieve universal compulsory education goals for children and promote literacy and basic skills for adults, with a special emphasis on eliminating gender, ethnic, urban-rural, and other disparities;

**(iii) broader linkages and implications of ICT-based approaches:**

- (a) the need for integration into broader solutions, including interlinkages between ICT and progress in (i) flexibility in the system (i.e., the need for changes at the grassroots and higher administrative levels to nurture innovation aimed at addressing local needs), (ii) human resource development such as teacher and headmaster training, (iii) access to teaching materials, (iv) access to support mechanisms, and (v) access to information resources for teaching (e.g., reforms and best practices under nationwide modernization/quality improvement efforts), and school management;
- (b) special focus on the use of ICT to improve education through better teaching, including (i) coverage of teachers under existing and planned ICT initiatives, (ii) meeting teacher needs through ICT hardware and especially supportive “soft components” (training, information and content flow, support networks, and monitoring and evaluation);
- (c) key implications of these approaches for equity, achievement of the Millennium Development Goals and the Government’s stated education goals, sustainability, and other remaining challenges; and
- (d) the balance between sustainability and poverty targeting in the use of ICT.

## 4. The focused policy study will include

- (i) an assessment of key challenges and constraints facing primary and lower secondary schools (particularly teachers in those schools) in providing universal access to quality education;
- (ii) an overview of past ICT investments in the Western Region, and the implications of ongoing and proposed ICT interventions for capital and recurrent costs, sustainability, quality, and equity (e.g., resource concentration in key schools, potential “crowding out” of support for conventional education inputs);
- (iii) policy area 1 will include degree/certificate-based and teacher and headmaster training via distance education (detailed terms of reference to be provided); and
- (iv) policy area 2 will include continued teacher upgrading and school-level innovation via ICT-based tools (detailed terms of reference to be provided).

5. The consultants will work closely with MOE-NCET officials. The Government’s support for the TA will include office space, furniture, utilities, communication and local travel, counterpart staff and support, venues and logistics support for seminars and workshops, and secretarial and administration support.

6. As indicated in the outline of specific tasks (paras. 7–10), the consultants will also provide key design inputs for the pilot test. This will likely be implemented by NCET in concert with one or more local partner institutions, with relatively minor guidance from consultants as necessary, and subject to the consultants' final review. Consultant roles and person-month inputs may be adjusted slightly after a more detailed scope and design for the pilot test are agreed on, following delivery of the midterm report.

**A. International Expert in Basic Education Applications of ICT**

(international consultant and team leader, 3 person-months including 60 field days)

7. The consultant will do the following:

- (i) Assume overall responsibility for fulfilling the terms of reference, direction, organization, and administration of the domestic consultants. As team leader, propose to ADB a work schedule detailing activities for each consultant and highlighting primary areas of responsibilities, including any minor variations from this terms of reference.
- (ii) Coordinate with the international consultant for comparative ICT-for-education models in Asia and the domestic consultants in documenting relevant experiences of other countries in ICT use in education, focusing on basic education (more specifically on primary and lower secondary schooling), for presentation at the inception workshop.
- (iii) Working with MOE and NCET, and with ADB concurrence, oversee preparations for the inception workshop (including the focus and target audience). Provide overall coordination for the workshop.
- (iv) In coordination with the domestic consultants, and based on dialogue with a range of relevant Government and nongovernment stakeholders as well as ADB, formulate and carry out the rapid assessment study.
- (v) Based on findings of the assessment and dialogue with MOE and NCET, propose for ADB concurrence a plan for the focused policy study and subregional policy workshop, to promote a focused policy dialogue on improving teaching in basic education in a small subregion of the Western Region.
- (vi) Recommend new areas and approaches where ICT may contribute to key education objectives identified. Provide guidance to the team leader in assisting NCET in designing a highly-focused local pilot test aligned with the two policy areas (para. 4).
- (vii) In liaison with the domestic expert in education evaluation, provide guidance as needed during implementation of the pilot test. Compile inputs from the expert to prepare a post-completion assessment included in the final report.
- (viii) Coordinate the preparation of all reports, and provide MOE and ADB with web-ready, Chinese-language executive summaries of the inception, midterm, and final reports, to disseminate information on principal TA outputs to the Government and other stakeholders.

**B. International Expert in Comparative ICT-for-Education Models in Asia**

(international consultant, 1.5 person-months including 15 field days)

8. The consultant will do the following:

- (i) Working with the domestic consultants to ensure contextual relevance, provide background research to the team leader documenting relevant experiences in the PRC and other countries in ICT use in education, focusing on basic education (especially compulsory schooling).
- (ii) Assist the team leader to prepare for the inception workshop. Be a facilitator and provide additional in-workshop and follow-up inputs as needed. Based on background research and issues presented at the workshop, compile a short paper outlining both areas where ICT has demonstrated potential and key pitfalls and challenges associated with ICT use in education. This should include both positive and negative case studies from within the PRC and other contextually similar countries: i.e., illustrating the use of a range of cost-effective ICTs combined with conventional inputs to address education objectives relevant for poor areas in the PRC's Western Region, but also critiquing inappropriate approaches.
- (iii) In discussion with NCET, the team leader, and the domestic expert in education evaluation, recommend to ADB and the Government a monitoring strategy (including a list of measurable and effective indicators) to measure the target impacts of the local pilot test. Guide the domestic expert in education evaluation in carrying out an independent assessment of costs and efficacy, and compile a web-ready summary report for MOE and ADB.

**C. Domestic Expert in Basic Education Innovation**

(domestic consultant, 3 person-months including 40 field days)

9. The consultant will do the following:

- (i) Assist the team leader in the assessment by providing requested inputs, including an initial background overview of the status of national education, priority needs, the use of ICT in education, and trends and prospects for broader innovation at the school level to national level (e.g., curricular reform). Critically assess the degree to which ICT initiatives have been (a) directed to specific priority education objectives, and (b) integrated within broader change.
- (ii) Liaise and maintain dialogue with other key people involved in education innovation and related ICT initiatives in the Western Region, such as Government agencies (e.g., Ministry of Science and Technology), other funding agencies, and nongovernment organizations.
- (iii) Work with the team leader to assist NCET in designing 1–2 highly-focused local pilot activities aligned with the two policy areas (para 4). Submit for concurrence by the steering committee Chair and ADB, a proposal that will indicate the justification (i.e., specific lessons or new models to be generated by the pilot test) and a detailed plan for implementation, including the target counties and schools, local partners responsible for carrying out specific components, costs, and monitoring/reporting mechanisms.
- (iv) In coordination with the team leader, provide technical advice to the pilot implementing body(ies) at key predetermined stages.

**D. Domestic Expert in Education Evaluation**

(domestic consultant, 3 person-months including 25 field days)

10. The consultant will do the following:

- (i) Work with NCET and the team leader to devise a monitoring strategy to measure the target impacts of the local pilot test, including:
  - (a) a set of measurable and effective indicators, and key areas for qualitative analysis (e.g., capacity and perspectives of teachers, headmasters, local administrators, and community members);
  - (b) a detailed plan for background assessments and follow-up monitoring, including in-field inspection and (as appropriate) hardware/software-based automated tracking of use (e.g., user profile; patterns of information use by teachers, headmasters, pupils, and community members; etc.);
  - (c) a framework for assessing cost-effectiveness; and
  - (d) estimates for the time frame and resources needed to implement this strategy.
- (ii) Periodically during the pilot test, act as a liaison for the team leader, providing concise progress reports and identifying any obstacles encountered. Under the guidance of the team leader, evaluate the pilot tests, and provide inputs for the final assessment covering
  - (a) initial investment and recurrent costs (merging data collected at the local level with figures provided by the team leader);
  - (b) quantitative and qualitative measures of efficacy and innovation in education processes and outcomes; and
  - (c) appropriateness of pilot approaches, and adequacy of hardware and soft component inputs using identified indicators and a set of measurable and effective indicators.