



# Technical Assistance Report

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Project Number: 41093  
Research and Development Technical Assistance (RDТА)  
December 2008

Rural Information and Communication Technology  
Policy Advocacy, Knowledge Sharing, and Capacity  
Building  
(Financed by the Republic of Korea e-Asia and Knowledge  
Partnership Fund)

Asian Development Bank

## ABBREVIATIONS

ADB	– Asian Development Bank
CRC	– Communications Regulation Commission
ICT	– information and communication technology
ICTA	– ICT Authority
ITU	– International Telecommunication Union
MPTC	– Ministry of Post and Telecommunications of Cambodia
NIDA	– National ICT Development Authority
OBA	– output-based aid
PPP	– public–private partnership
PRC	– People's Republic of China
TA	– technical assistance
TRC	– Telecommunications Regulator of Cambodia
VoIP	– voice over internet protocol
WTO	– World Trade Organization

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Targeting Classification</b>	– Research and development technical assistance (RDTA)
<b>Sectors</b>	– Multisector (law, economic management, and public policy; transport and communications)
<b>Subsectors</b>	– Economic management, transport and communications
<b>Themes</b>	– Sustainable economic growth, and capacity development
<b>Subthemes</b>	– Addressing information and communication technology issues, organizational development

## NOTE

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

<b>Vice-President</b>	U. Schäfer-Preuss, Knowledge Management and Sustainable Development
<b>Director General</b>	X. Yao, Regional and Sustainable Development Department (RSDD)
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## I. INTRODUCTION

1. In August 2007, the Asian Development Bank (ADB) approved the Rural e-Development Initiative (the Initiative)<sup>1</sup> focusing on information and communications technology (ICT) for rural development. Following approval, fact-finding missions were carried out for the pilot countries of Cambodia and Mongolia identified under the Initiative.<sup>2</sup> The proposed technical assistance (TA) was developed, based on findings and agreements of the fact-finding mission, to finance the activities outlined in the initiative paper. It is particularly focused on improving rural ICT policy, as well as the regulatory and legal environment.<sup>3</sup> ADB has also carried out extensive consultations with the International Telecommunication Union (ITU) to design the TA in line with the Asia-Pacific Regional Initiative on Rural Communications–Infrastructure Development, which was adopted at the ITU-organized World Telecommunication Development Conference in Doha in 2006. Under this initiative, ITU has assisted the Asia-Pacific countries in designing, planning, implementing, and monitoring their strategies and programs. Given these mutual interests, ADB and ITU agreed to collaborate in implementing the TA. The design and monitoring framework is in Appendix 1.

## II. ISSUES

2. The international development community has embraced the universal, ubiquitous, equitable and affordable access to ICT as a global mission. In 1997, the United Nations General Assembly declared access to communication as a basic human right. This was supported subsequently by the World Summit on the Information Society in 2003. Despite this global commitment, however, the so-called digital divide and universal access remain huge challenges for developing countries. For example, some economies such as Japan; Republic of Korea; and Hong Kong, China have the highest penetration of broadband and are moving toward next-generation networks while Cambodia has less than 1% internet penetration. According to ITU's World Telecommunication and ICT Indicators Report 2007, lower income and lower middle income economies had average total teledensities of 11.1% and 50.3%, respectively, at the end of 2005. That compares to 137.4% in higher income economies. ITU statistics show that this digital divide across the countries has been shrinking thanks to the rapidly growing mobile telephone penetration in developing countries. Nevertheless, there is a lingering problem of uneven distribution of access and use of ICT across the region and within individual countries. That means the benefits of ICT remain unevenly divided among people of different social and economic groups.

3. Countries that have made impressive developments in their ICT sectors show a common characteristic—the significant improvement in the ICT policy and regulatory environment through introducing competition; liberalizing foreign investment; privatizing incumbent carriers; separating policymaking, regulation, and operation functions; and/or implementing universal service provision. As such, the policy and regulatory environment is one of the most critical factors affecting the development of ICT infrastructure and services in a country. Inasmuch as

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<sup>1</sup> ADB. 2007. *Rural ICT Development Initiative*. Manila. The Initiative identified seven major areas for ADB assistance: (i) policy improvement, (ii) broadband connectivity, (iii) community access through community e-centers and mobile telephone, (iv) development of ICT local contents and e-applications and m-applications, (v) capacity building, (vi) knowledge sharing, and (vii) partnership. The initiative paper is in Supplementary Appendix A.

<sup>2</sup> The mission was carried out from 24 August 2007 to 8 September 2007. These countries were selected because of their pressing challenges in rural ICT development, relatively low viability of rural ICT market development by the private sector, and the wide existence of ADB's rural development operations.

<sup>3</sup> The TA first appeared in the business opportunities section of ADB's website on 30 June 2008. The funding request has been considered under the e-Asia and Knowledge Partnership Fund since September 2007 and was approved on 14 July 2008.

rural areas are perceived as unattractive to private carriers, more economic incentives need to be built into the related policy and regulatory environment to encourage investment in rural ICT development and to ensure universal service provision. Traditionally, universal service has referred to the practice of providing basic telecommunication services to every resident of a country. However, this definition has evolved through the years and across countries. The increasing importance of equal access to knowledge and information for socioeconomic development and the high opportunity cost of not having this access have broadened the scope of universal service to include internet access in some countries. While developed countries tend to provide a range of sophisticated services to every household and expand the scope of universal service to broadband service, developing countries often remain focused on providing public access to basic voice service. In recognition of the different country contexts, the World Trade Organization (WTO) reference paper on basic telecommunications provides the mandate for each country to define the kind of universal service obligation it wishes to maintain.<sup>4</sup> Against this background, the governments of developed and developing countries alike have experimented with various policy and regulatory schemes for rural ICT development and universal service provision.

4. Cambodia and Mongolia have set different paces for sectoral reforms, restructuring of institutions, and market liberalization. Mongolia has achieved partial privatization of the fixed-line incumbent, Mongolia Telecom Company; establishment of an independent regulatory authority, the Communications Regulation Commission (CRC); unbundling of the state-owned telecom network by establishing a new network company, Information and Communication Networking Company; and establishment of a special ICT agency, the ICT Authority (ICTA). On the other hand, reforms have been implemented at a slower pace in Cambodia. The Ministry of Post and Telecommunications of Cambodia (MPTC) was acting as policymaker, regulator, and major telecom operator until 2006, at which time its telecom operation arm became the separate state enterprise Telecom Cambodia. This enterprise was then partially privatized. MPTC's regulatory function was separated out to the Telecommunications Regulator of Cambodia (TRC). In addition, the National ICT Development Authority (NIDA) was established as a special agency responsible for promoting ICT development.

5. To address the rural–urban digital divide issue, Mongolia's CRC has established the Universal Service Obligation Fund to accumulate funds from telecom operators' contributions and use them for providing services to remote areas and to populations without access. The World Bank has provided \$10 million in grant assistance to ICTA and the CRC since June 2006 for (i) expanding rural telecommunication through a least-cost capital subsidy auction mechanism and private sector participation; and (ii) communications regulatory development in the areas, among others, of licensing, spectrum management, and Universal Service Obligation Fund management. Cambodia has also been implementing rural communication projects through TRC and NIDA with support from the World Bank to expand voice service to rural areas. Although these efforts show how improvements in policy and regulatory environments could drive rural ICT development, such efforts are currently limited to voice service. Internet service is significantly lacking in rural areas, and particularly in terms of broadband service.

6. To fully utilize the potential of new technologies for socioeconomic development, it is important to keep up with the fast-paced technology development. ICT policymakers, regulators,

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<sup>4</sup> Source: [http://www.wto.org/english/tratop\\_e/serv\\_e/telecom\\_e/tel23\\_e.htm](http://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm). Within this framework, regulators have played the role of (i) defining universal access, (ii) determining affordability, (iii) implementing and financing universal service and access goals, (iv) verifying universal service obligation costs, (v) reviewing progress, and (vi) ensuring community participation in determining targets.

and operators need to develop innovative policy and regulatory schemes as well as business models compatible with technological advancement. Technological progress in ICT has enabled unprecedented convergence of different types of ICT networks, services, contents, and interfaces. Traditional single-purpose networks established separately for voice, data, and video have been overtaken by a single internet protocol-based network. This makes the introduction of affordable and reliable broadband a critical agenda item, as it will help developing countries to leapfrog from older technologies. Wireless internet technologies are proving to be particularly attractive, as they are much more cost-effective, easier to deploy and maintain, and more adaptable to local environments compared to old, fixed-line technologies. A wireless broadband network increases the availability and affordability of bandwidth for such e-applications as voice over internet protocol (VoIP) service,<sup>5</sup> e-commerce, e-education, e-government, telemedicine, and video conferencing. The implication of broadband is particularly significant in rural areas, because of their many fewer alternatives for such ICT-enabled services.

7. Utilizing such new technological opportunities to provide equal benefits for all requires appropriate policy and regulatory frameworks, such as those that provide economic incentives for broadband investment in rural areas using public-private partnerships (PPPs) and output-based aid (OBA) or performance-based subsidies, allow interconnection of VoIP service in the fixed-line or mobile telecommunication market at least in rural areas,<sup>6</sup> and introduce more flexible licensing policy and spectrum management schemes. Innovative business models offering a wide range of affordable pricing options (e.g., prepaid cards) can also contribute to expanding market coverage to the rural poor. Policy and regulatory reforms and business model development are therefore essential, and associated improvement in the knowledge and capacity of ICT policymakers, regulators, operators, and other key stakeholders is required. Recognizing this, ITU and the World Bank have developed ICT regulation toolkit modules and ITU has published Global Symposium for Regulators' best practice guidelines and discussion papers. Given ICT's rapid technological development, however, the existing toolkits need to be updated and expanded to cover such new areas as rural broadband service provision (which is not now covered).

8. The Asia and Pacific region is becoming a rich source of rural ICT policies, regulations, and practices. Countries like People's Republic of China (PRC), India, Indonesia, Republic of Korea, Malaysia, and Philippines, in particular, have devised a wide range of policy and regulatory schemes and practices. Each has performed impressively in rural ICT development and universal service provision. Although the schemes have their own strengths and weaknesses, as they address the unique circumstances of particular countries, experiences from these countries can be a good source of learning for other developing countries. However, the latest practical examples from the best-performing countries are not easily available and accessible to the rest of the countries that aspire to learn. Acquiring up-to-date knowledge is a crucial step for ICT policymakers, regulators, and operators in order to build their capacity to develop their own policies and business models for rural ICT development and universal service provision. In view of this, there is an urgent need to initiate capturing ICT policy lessons and practices to be used for policy improvement, knowledge sharing, and capacity building for rural ICT development and universal service provision in the Asia and Pacific region.

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<sup>5</sup> VoIP service enables voice communication through the internet with no charge (for computer-to-computer calls) or at lower cost than the traditional public switched telephone network (PSTN) calls (for computer-to-phone calls).

<sup>6</sup> Some countries, including Cambodia, do not allow VoIP service as one of their telecommunication services. They regard it as an internet-based application and thus have no legal and regulatory framework to allow interconnection between the networks of VoIP service providers and telecom operators within a country or with foreign telecom operators. This is mainly to prevent deterioration in revenues to incumbent telecom operators, and particularly those owned by the state.

### III. THE TECHNICAL ASSISTANCE

#### A. Impact and Outcome

9. The TA aims to contribute to improving policy, legal, and regulatory environments to make them more conducive to the rapid deployment of ICT infrastructure and services for rural development. At the completion of the proposed TA, it is envisaged that the TA will enhance the participating countries' capacity in planning, implementing, and monitoring their policies and their legal and regulatory frameworks for rural ICT development with better implementation mechanisms and tools and through knowledge-sharing activities.

#### B. Methodology and Key Activities

10. The proposed TA has three major components: (i) case studies and toolkit development, (ii) policy analysis and improvement, and (iii) knowledge sharing and capacity building.

11. **Component A: Case Studies and Toolkit Development.** Building upon the relevant publications and studies undertaken by the World Bank, ITU, WTO, and other development partners, as well as on academic research, this component will first review the theoretic literature, internationally governing or recommended frameworks (including WTO), and empirical research on the different policy and regulation schemes and practices (both government-driven and market-based approaches) used to encourage rural ICT development and implement universal service provision. Based on such review, it will then develop frameworks of the case studies and outlines of policy toolkits.

12. Second, following the developed frameworks and outlines, the component will conduct case studies on the six countries identified in para. 8, with particular focus on their impact performance in rural ICT development and universal service provision and related success and failure factors. The methodologies to be used include interviews, focus group discussions, surveys, and/or workshops with local stakeholders (including telecommunication and ICT network and service providers, and internet-based companies, nongovernment organizations, research institutes, local governments and authorities, municipalities, and others).

13. Third, based on the literature review and the findings from case studies, policy toolkits will be developed for ICT policymakers and regulators to support their rural ICT development and universe service provision. These will consist of (i) policy design principles and general guidelines, and (ii) a toolkit for ICT policymakers and regulators to develop necessary and appropriate policies and regulations for rural ICT development and universal service provision. Particular attention will be given to rural broadband expansion.

14. **Component B: Policy Analysis and Recommendations in Cambodia and Mongolia.** This component will analyze relevant policies, strategies, and legal and regulatory frameworks related to rural ICT development and universal service provision in Cambodia and Mongolia. Based on this analysis and using the benchmark cases and toolkits to be developed under the component above, this component will develop recommendations for necessary reform strategies and schemes to reinforce the key success elements and lessen (if not eliminate) factors that lead to failure, as well as to encourage the provision of appropriate rural ICT infrastructure and universal services. Based on the assumption that an enabling policy and regulatory environment for universal access and fair competition can promote and accelerate rural ICT development, it is important to involve all relevant stakeholders, including the telecom industry and public sector, in order to determine and take into consideration their needs,

opinions, and requirements when recommending appropriate policies, legislation, and regulations aimed at rural ICT development. As a part of its scope, therefore, this component will conduct public hearings and various activities (e.g., interviews, surveys, focus group discussions, and workshops) to gather inputs from concerned stakeholders.

15. **Component C: Knowledge Sharing and Capacity Building.** This component will provide various platforms for knowledge sharing on the findings, practices, case studies, and other knowledge products among the ICT policymakers, regulators, operators and policy researchers in the Asia and Pacific region. It will use the latest knowledge management techniques and networking technologies, including online communities of practice and websites. In collaboration with national research institutes or universities specialized in ICT policy and regulation research, the developed toolkits and case studies will be transformed into training-the-trainer programs. The training program will be offered to the selected policymakers in Cambodia and Mongolia.

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

16. The estimated total cost of the TA is \$680,000 equivalent, of which \$500,000 will be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund and administered by ADB and \$180,000 will be financed by ITU through its in-kind and cash contribution. The estimate covers the costs of (i) consultant services for (a) the development of knowledge product and toolkit, and (b) policy analysis and recommendations; (ii) costs of implementing the TA, including international and local travel, monitoring and evaluation, reporting, etc.; and (iii) workshops, seminars, and training sessions for policymakers in the Asia and Pacific region. Detailed cost estimates are in Appendix 2.

### **D. Implementation Arrangements**

17. ADB will be the Executing Agency. NIDA and TRC of Cambodia and ICTA and CRC of Mongolia will be the implementing agencies in their respective countries for component B. ICT operators and ICT policy research institutes from the selected countries will be engaged as stakeholders in project activities. ADB will closely collaborate with ITU in implementing the TA and, before implementation, will sign a cooperation agreement or similar document with ITU to define the roles and responsibilities of ADB and ITU. The TA will require a total 36 person-months of consultants with expertise in ICT policy and regulation and in universal service provision. International consulting services of 6 person-months and national consulting services of 30 person-months will be engaged on an individual basis in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time). The outline terms of reference for consultants is in Appendix 3, and those for ITU are in Appendix 4. The proposed TA will be implemented over 18 months, commencing from February 2009.

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

18. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of \$500,000 to be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund for the Rural Information and Communication Technology Policy Advocacy, Knowledge Sharing, and Capacity Building, and hereby reports this action to the Board.

## DESIGN AND MONITORING FRAMEWORK

<b>Design Summary</b>	<b>Performance Targets and/or Indicators</b>	<b>Data Sources and/or Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<p><b>Impact</b> Improved rural information and communication technology (ICT) policy, legal, and regulatory environment</p>	<p>Policy, legal, and regulatory environment of the participating countries made more conducive to rural ICT development and universal service provision</p>	<p>Various ICT indexes published by International Telecommunication Union (ITU) and other organizations</p>	<p><b>Risks</b> Slow progress in improvements in rural infrastructure such as transport and power</p> <p>Lack of public and private interest and support on bridging digital divide between rural and urban areas</p>
<p><b>Outcome</b> Enhanced capacity of ICT policymakers and regulators of the participating countries</p>	<p>Participating countries' ICT regulators and policymakers make more informed decisions on planning, implementing, and monitoring their policies, legal and regulatory frameworks for rural ICT development and universal service provision</p>	<p>ITU statistics and publications</p> <p>Asian Development Bank project completion report</p>	<p><b>Assumption</b> Continuous market-oriented sector reform and improved sector policy for universal services</p>
<p><b>Outputs</b></p> <p>1. Best practices, lessons, and success stories documented in the forms of case studies, guidelines, and toolkits</p> <p>2. Recommendations for improvements in rural ICT policy, regulatory, and legal environments; plus trained ICT policy researchers, regulators, and policymakers from Cambodia and Mongolia</p> <p>3. Networking of ICT regulators, policymakers, operators, and policy researchers in the region established through workshops and website</p>	<p>Quality and number of case studies on various innovative policy, technological, financing, and business models from the selected model countries</p> <p>Quality and number of guideline and toolkits for ICT regulators and ICT policymakers</p> <p>Quality recommendations for rural ICT development and universal service provision in Cambodia and Mongolia</p> <p>At least 15 middle-level ICT policymakers and regulators and 10 ICT operators and policy researchers trained from Cambodia and Mongolia</p> <p>At least 60 government officials and researchers are networked</p> <p>Website that provides online community of practices and case studies, guidelines, and toolkits</p>	<p>Project monitoring and progress reports</p> <p>Consultant reports</p> <p>Asian Development Bank review missions</p> <p>Government policy, legal and regulation statements</p>	<p><b>Assumption</b> Strong inter-agency coordination among different ministries and departments as well as among broader stakeholder group for e-services development</p> <p><b>Risks</b> Technical uncertainties caused by geographic and power constraints in rural areas</p> <p>Lack of general ICT absorptive capacity and specialized technical capacity of government and business</p>

<b>Activities with Milestones</b>	<b>Inputs</b>
<ol style="list-style-type: none"> <li>1. Collect Asia-Pacific countries' data and information on the status of rural ICT development and universal service provision and identify best practices and case study topics particularly from the six model countries (People's Republic of China, India, Indonesia, Republic of Korea, Malaysia, and Philippines) within 2 months after the technical assistance (TA) starts.</li> <li>2. Conduct a comprehensive study on the different policy and regulatory schemes and practices (both government-driven and market-based approaches) within 4 months after the TA starts.</li> <li>3. Review the quality and performance of rural ICT policy and regulation and universal service frameworks and identify ICT policy and regulatory issues and challenges as well as opportunities in Cambodia and Mongolia within 4 months after the TA starts.</li> <li>4. Complete case studies on innovative and successful rural ICT policies, strategies, regulations, and practices, as well as technological, financing, and business models on rural ICT development within 6 months after the TA starts.</li> <li>5. Develop policy design principles, general recommendations, and toolkits to be used for rural ICT development and universal service provision for ICT regulators and ICT policymakers within 8 months after the TA starts.</li> <li>6. Provide ICT policy analysis and recommendations and recommendations with particular focus on broadband for Cambodia and Mongolia within 12 months after the TA starts.</li> <li>7. Design and provide rural ICT policy capacity building programs and organize national training programs within 15 months after the TA starts.</li> <li>8. Network ICT regulators, policymakers, and policy researchers and develop a community-of-practice website within 18 months after the TA starts.</li> <li>9. Organize a regional conference within 18 months after the TA starts.</li> </ol>	<p>Total financing of \$680,000, of which \$500,000 is financed by the Republic of Korea e-Asia and Knowledge Partnership Fund and \$180,000 is financed by ITU</p> <p>A total of 36 person-months of consultants (6 person-months international and 30 person-months national) is required.</p>

ICT = information and communication technology, ITU = International Telecommunication Union, TA = technical assistance.

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

<b>Item</b>	<b>Total Cost</b>
<b>A. Republic of Korea e-Asia and Knowledge Partnership Fund<sup>a</sup></b>	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants (6 person-months)	108.0
ii. National Consultants (30 person-months)	
- consultants in model countries (People's Republic of China, India, Indonesia, Republic of Korea, Malaysia, and Philippines) (18 person-months: 6 persons, 3 months)	72.0
- consultants in pilot countries (Cambodia and Mongolia) (12 person-months: 2 persons, 6 months)	36.0
b. International and Local Travel	79.0
2. Training, Workshops, and Conferences	
a. Regional Conferences (one in Asia, one in the Pacific)	60.0
b. Country Workshop (6 times)	30.0
c. Training Program (Cambodia and Mongolia)	20.0
3. Reports and Publications	5.0
4. Website Development	10.0
5. Administration and Support Costs	30.0
6. Contingencies	50.0
<b>Subtotal (A)</b>	<b>500.0</b>
<b>B. International Telecommunication Union Financing<sup>b</sup></b>	
1. Project Manager (International Telecommunication Union [ITU] Regional Office Asia-Pacific) (18 person-months)	80.0
2. ITU Advisory Support	50.0
3. Unidentified Expert(s) and/or Speaker(s) and International Travel	40.0
4. ITU Administration Costs	10.0
<b>Subtotal (B)</b>	<b>180.0</b>
<b>Total</b>	<b>680.0</b>

<sup>a</sup> Administered by the Asian Development Bank.

<sup>b</sup> Both in-kind and in-cash contributions.

Sources: Asian Development Bank and International Telecommunication Union estimates.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

### A. International Consultant—ICT Policy Specialist (6 person-months)

1. The information and communication technology (ICT) policy specialist will be responsible for the delivery of quality knowledge products, consulting services, and training for component A: case studies and toolkit development; component B: policy analysis and recommendations in Cambodia and Mongolia; and component C: knowledge sharing and capacity building in collaboration with six national ICT specialists from the model countries (People's Republic of China [PRC], India, Indonesia, Republic of Korea, Malaysia, and Philippines) as well as two national ICT specialists from Cambodia and Mongolia.
  
2. The consultant must have an advanced university degree and extensive understanding in subjects related to economics; public policy studies; ICT and telecommunication policy, regulation, and legislation; as well as substantive knowledge and experience in developing policy design principles, guidelines, and toolkits. The consultant should have strong research skills and experience in the areas of ICT and development. The consultant should also have an excellent command of the English language, both written and oral, and proven ability to communicate results. A good knowledge of and experience in Cambodia, PRC, India, Indonesia, Republic of Korea, Malaysia, Mongolia, and Philippines are preferable.
  
3. The consultant's final deliverables are
  - (i) a comprehensive study on the different policy and regulatory schemes and practices (both government-driven and market-based approaches);
  - (ii) case studies on PRC, India, Indonesia, Republic of Korea, Malaysia, and Philippines;
  - (iii) policy design principles, general guidelines, and toolkits for ICT policymakers and regulators to develop necessary and appropriate policies and regulations for rural ICT development and universal service provision;
  - (iv) a review and an analysis on policy, strategy, regulatory, and legal framework for rural ICT development, including broadband access, and universal service provision in Cambodia and Mongolia; and
  - (v) ICT policy recommendations for rural ICT development and universal service provision for Cambodia and Mongolia.
  
4. The consultant will do the following:
  - (i) Component A: case studies and toolkit development
    - (a) With regard to the selected model countries, develop a research framework, methodology, and analytic tools for the assessment on nationwide rural ICT development and universal service provision achievements, including (fixed and mobile) broadband. In the framework, identify indicators for evaluating performance, impacts, and factors influencing the success rate of rural ICT development and universal service provision (with a focus on broadband projects).
    - (b) With regard to the model countries, identify best practices and propose case study topics based on the criteria socioeconomic impact, influence, innovativeness, effectiveness, and efficiency. The topics should equally cover government-driven, market-based, and public-private partnership (PPP) approaches while also including broadband initiatives led by municipalities, nongovernment organizations, and others.

- (c) Develop the framework and outline of the case studies, which should include, but not be limited to (1) economic, demographic, and geographic characteristics, including ICT sector statistics and market overview; (2) national policy, strategy, regulatory, institutional, and legal framework for nationwide and rural ICT development, universal service provision, and other public policies for the provision of such services as electricity, (3) funding mechanisms for rural ICT development and universal service provision, including PPPs; (4) output-based aid (OBA) or performance-based subsidy mechanisms; (5) innovative and low-cost ICT and broadband wire and wireless technologies; (6) incentives and cost sharing among stakeholders, in particular the industry, governments, and local providers for rural ICT development; (7) available ICT applications and local content; (8) a human capacity and demand study for ICT facilities and services in particular areas and/or communities.
  - (d) To conduct the case studies, develop detailed terms of reference for national consultants from the model countries and carry out the case studies with their inputs and collaboration.
  - (e) Put altogether, review, and analyze data and information collected by national consultants and include in the final knowledge products the following: (1) identified issues and challenges that hinder rural ICT development and universal service provision (and especially broadband access) in developing countries; (2) recommended improvements to the existing policy, strategy, regulatory, and legal framework for rural ICT development and universal service provision; (3) comparative analysis of different financing mechanisms for rural ICT development (e.g., competition versus subsidization or such other schemes as tax levies, universal service funds, universal service obligations, PPPs, OBA, pay-or-play, microfinance); (4) performance evaluation, socioeconomic impact analysis, and in particular analysis on productivity gains of the implemented and ongoing projects while taking into account indicators identified in the project; (5) analysis on success and failure factors for those project implementations, including return on investment and financial sustainability; (6) recommended necessary variations of strategies and schemes to reinforce the success conditions and lessen, if not eliminate, failure factors and to encourage broadband connectivity and universal service provision in rural areas; (7) human capacity requirements and the needs of priority ICT services, applications, and content.
  - (f) Building upon the related publications and studies undertaken by ITU, the World Bank, World Trade Organization, and other development partners (which publications include, but are not limited to, the ITU-InfoDev ICT regulation toolkit module on universal access and services plus Global Symposium for Regulators' best practice guidelines and discussion papers), develop policy design principles, guidelines, and a toolkit for ICT regulators and ICT policymakers. The final deliverables of this component will be used in any country, albeit with modifications for different demographics and geographies.
- (ii) Component B: policy analysis and recommendations in Cambodia and Mongolia
    - (a) Develop detailed terms of reference for national consultants from Cambodia and Mongolia.

- (b) Review their national definitions of universal access and rural ICT and the quality and performance of the related policy, strategy, regulatory, institutional, and legal frameworks, including those relevant to PPPs (and the experience of using these).
  - (c) Identify ICT policy, legal, and regulatory issues and challenges that hinder rural ICT development (including of broadband and access to international high-speed internet capacity) and ICT growth, as well as identify opportunities and good practices through interviews, focus group discussions, and workshops with local stakeholders (including those from the industry and public sector).
  - (d) Taking into account particular circumstances in each country as well as using the general guidelines, policy design principles, and toolkit developed under the project, recommend ways to improve existing policy, strategy, regulatory, and legal frameworks for universal access (with a focus on broadband) and provide ICT policy recommendations for rural ICT development and universal service provision.
  - (e) Identify critical factors that affect rural ICT development in the countries and recommend complementary or crosscutting policies, strategies, and schemes for, for example, developing local contents, applications, and human capacity building initiatives to facilitate ICT and broadband development in rural areas.
  - (f) Based on the outcome of the studies and analyses, in consultation with the other in-country and international ICT training and capacity building institutes, design and conduct training programs in each of the countries with a focus on rural ICT policies and regulations while targeting trainers and policymakers in those countries.
- (iii) Component C: knowledge sharing and capacity building
- (a) Recommend knowledge-sharing practices using the latest knowledge management techniques and networking technologies, including online communities of practice and a website targeting policymakers in the Asia and Pacific region.
  - (b) Develop for Asian Development Bank (ADB) and ITU's review the agenda, program, structure, and partnership arrangement plan for the regional conferences for the Asia and Pacific regions to be organized as part of the project.
  - (c) Prepare one or more presentations and present the project outcome (i.e., knowledge products) as well as a panel for group discussion(s) during the regional conferences.
  - (e) Prepare the regional conference report, which will serve as one of the project's knowledge products.
- (iv) Others: Carry out any other duties in his or her specialty as may be assigned to him or her by ADB/ITU.

**B. National Consultants—National ICT Specialists** (6 persons, 3 months each, for a total of 18 person-months; based individually in India, Indonesia, Malaysia, Philippines, PRC, and Republic of Korea)

5. The national ICT specialist will work under the supervision and guidance of the international ICT specialist for component A: knowledge product and toolkit development, and component C: knowledge sharing and capacity building.

6. The consultant must have an advanced university degree in a subject related to economics; public policy studies; ICT and telecommunication policy, regulation, and legislation; as well as substantive knowledge and experience in studying or implementing his or her respective country's ICT policy, regulation, and legislation and in evaluating the performance of ICT development. The consultant should have strong research skills and experience in the areas of ICT and development. The consultant should also have an excellent command of the English language, both written and oral, and proven ability to communicate results. Responsibilities include the following:

- (i) Carry out work specified in the terms of reference that will be developed by the project's international consultant.
- (ii) Under the guidance of the international consultant, plan and undertake the national assessment using the framework, methodologies, and tools defined under the project.
- (iii) Provide the international consultant with local knowledge, input, and up-to-date information regarding the national situations, conditions, policies, and issues with an aim to develop the knowledge products, toolkits on policy design principles and general guidelines, and a policy toolkit for rural ICT development (with a particular focus on broadband access) and universal service provision.
- (iv) Provide all local research studies and survey work under the guidance of the international consultant.
- (v) Help organize and conduct country workshops for undertaking the national case studies.
- (vi) Carry out other tasks as instructed by the international consultant.

**C. National Consultants—National ICT Specialists** (2 persons, 6 months each, for a total of 12 person-months; each based in Cambodia and Mongolia)

7. The national ICT specialists will work under the supervision and guidance of the international ICT policy specialist for component B, policy analysis and recommendations in Cambodia and Mongolia, and for component C in relation to capacity building in Cambodia and Mongolia respectively.

8. The consultant must have a university degree in a subject related to economics; public policy studies; or ICT and telecommunication policy, regulation, and legislation. The consultant should have extensive skills and experience in relation to analytical and research work, workshop and conference design and facilitation, and knowledge sharing and capacity development. The consultant should have an excellent command of the English language, both written and oral, and proven ability to communicate results. Responsibilities include the following:

- (i) Carry out work specified in the terms of reference that will be developed by the project's international consultant.
- (ii) Under the guidance of the international consultant, plan and undertake the national assessment using the framework, methodologies, and tools defined under the project.
- (iii) Provide the international consultant with local knowledge, input, and up-to-date information regarding the national situations, conditions, policies, and issues with an aim to develop the recommendations for improving the respective policy, regulatory, and legal environments.

- (iv) Provide all local research studies and survey work under the guidance of the international consultant.
- (v) Help organize and conduct local workshops and training deemed necessary for undertaking the national assessment.
- (vi) Develop training materials in the local language to be used for training replication.
- (vii) Act as a trainer to transfer knowledge to personnel in the policy making agency and/or other organizations as required by the national counterpart to the project.
- (viii) Carry out other tasks as instructed by the international consultant.

## **OUTLINE TERMS OF REFERENCE FOR INTERNATIONAL TELECOMMUNICATION UNION'S ROLE AND RESPONSIBILITIES**

1. The International Telecommunication Union (ITU) will supervise overall implementation of the technical assistance (TA) together with the Asian Development Bank (ADB) and provide a project manager to oversee all activities during the TA's execution. In view of all phases of project management and processes, the project manager will, in particular,
  - (i) develop a project definition document including a detailed project plan and budgeting;
  - (ii) coordinate and work closely with ADB and country counterparts to identify country needs and requirements;
  - (ii) identify and recruit personnel required to implement the TA activities;
  - (iv) periodically report to TA stakeholders about work progress, issues, and/or risks that could pose a problem to the TA (e.g., scope creep, delay, budget overrun), as well as ensure proper communication management;
  - (v) manage and monitor the TA's scope, budget, timeline, and country expectations; and
  - (vi) ensure TA completion with all outputs delivered in time and within budget.
  
2. ITU will supply advisory support using global experience, information and knowledge resources, and its expertise built upon the related publications and studies undertaken by ITU, the World Bank, World Trade Organization, and other development partners. These publications include, but are not limited to, the ITU-InfoDev information and communication technology regulation toolkit module on universal access and services, as well as Global Symposium for Regulators' best practice guidelines and discussion papers.
  
3. Through coordination and cooperation among ITU's regional office for Asia and the Pacific, ITU headquarters, and ITU experts, ITU will guide international and national consultants recruited under this TA in executing component A: case studies and toolkit development, component B: policy analysis and recommendations in Cambodia and Mongolia, and component C: knowledge sharing and capacity building.
  
4. ITU will review the draft reports and outputs prepared by the TA consultants and give guidance and comments. It will integrate the TA's outputs into its existing toolkit and related knowledge products, including reports, publications, etc.
  
5. ITU will be responsible for (i) organizing two regional conferences on related subjects (one to be held in an Asian country and the other in a Pacific island country), and (ii) conducting national workshops in the six model countries and training programs in the two beneficiary countries in collaboration with ADB and other stakeholders.
  
7. ITU will coordinate with its member administrations and relevant stakeholders in this TA to facilitate all required TA work such as, but not limited to,
  - (i) undertaking case studies in the six model countries and expert assistance to the two beneficiary countries, thereby ensuring coordination and cooperation with local organizations in those countries;
  - (ii) hosting and organizing national workshops, seminars or training to be held in the countries;

- (iii) promoting the outputs of this TA among relevant local organizations, including, for example, government agencies, nongovernment organizations, private operators, and academic and research institutes; and
- (iv) contributing such necessary inputs to the TA as country statistical data, related policies and regulations, as well as reports and work done by other international and national organizations.

8. ITU will contribute such necessary resources as, for example, provision of experts, knowledge sharing, and fellowships from other related projects and/or actions undertaken by ITU and other partners to this TA with the aim of contributing to the Asia-Pacific Regional Initiative on Rural Communication – Infrastructure Development.

9. ITU will invite contributions to the TA from related ITU project teams and study groups on questions concerning rural information and communication technology development (and vice versa).

10. ITU will incorporate the outcome of the TA, along with information from any other related initiatives, into a report of the Asia-Pacific Regional Initiative on Rural Communication – Infrastructure Development to be submitted to the World Telecommunication Development Conference to be held in 2010.