



# Technical Assistance Report

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Project Number: 39201  
December 2005

## Technical Assistance Establishment of Regional Knowledge Hubs

## ABBREVIATIONS

ADB	–	Asian Development Bank
ADBI	–	Asian Development Bank Institute
CoP	–	community of practice
DMC	–	developing member country
GDP	–	gross domestic product
KPS	–	knowledge products and services
OECD	–	Organisation for Economic Co-operation and Development
RD	–	research department
RSDD	–	Regional and Sustainable Development Department
TA	–	technical assistance

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Targeting Classification</b>	–	General intervention
<b>Sectors</b>	–	Multisector (education, energy, transport and communications)
<b>Themes</b>	–	Sustainable economic growth, regional cooperation, capacity development

## NOTE

In this report, “\$” refers to US dollars.

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## I. INTRODUCTION

1. There is a demand from developing member countries (DMCs) for (i) building knowledge and capacity in new and emerging areas, (ii) supporting quick adoption of new technologies being developed and tried across the region and the globe, and (iii) facilitating knowledge sharing in the region. While some middle-income countries have managed to create pockets of capacity in new and emerging areas—including science and technology—the vast majority of the Asian Development Bank's (ADB's) DMCs have severe capacity deficits in these areas<sup>1</sup>. Even middle-income countries face a wide knowledge gap in some new and emerging technologies that are highly relevant to their future development. Further, regional knowledge exchange is currently not very effective and scattered around the region. The proposed technical assistance (TA) will help build capacity on identified new and emerging development topics in DMCs,<sup>2</sup> thus enhancing the skills and expertise in DMCs and strengthening knowledge sharing in these areas. This TA responds to DMCs' demands and ADB's operational needs. The TA design and monitoring framework is in Appendix 1.

## II. ISSUES

2. Modern economies are characterized by a complex interplay of competition and collaboration between economic actors. The contribution of competition to economic efficiency and productivity is intuitively easier to grasp. But some key determinants of growth in modern economies involve the acquisition of new and emerging technologies. This requires generation and adoption of scientific knowledge and new technologies, the pursuit of innovation, and the development of the necessary human resources. This also requires extensive collaboration and networking with relevant parties across the region and the world. Recent analyses, including the *Organisation for Economic Co-operation and Development (OECD) Growth Study: Some Implications for Statistics*<sup>3</sup> and the United Nations *World Investment Review*<sup>4</sup>, have identified these as powerful factors that drive economic growth. These data show a strong correlation between the percentage of gross domestic product (GDP) spent on research and development and GDP per capita—underscoring the increasing importance of new knowledge and technology for development. There is wide understanding that the Asia-Pacific region needs to become innovative and technologically more advanced if it is to continue the high growth rates seen over the last few decades. The *Asian Development Outlook 2003*<sup>5</sup> identified knowledge as the most important resource in maintaining the Asia and Pacific region's competitiveness, given the rapid rate of change created by globalization and technological innovation.

3. In light of the above, ADB must assume a more proactive role as catalyst<sup>6</sup> of applied knowledge in the region, which is critical for the future development of its DMCs. While new knowledge and technologies are being developed successfully in different countries and regions, a key challenge facing DMCs is to capture and translate this international knowledge into locally useful knowledge. There is a need to develop knowledge hubs in the region to make available and disseminate identified new basic and applied knowledge of relevance to DMCs. These

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<sup>1</sup> Millenium Project 2005. *Report of the Task Force on Science, Technology and Innovation*. New York. Developing countries need support in developing infrastructure to enhance the creation and application of science, technology and innovation.

<sup>2</sup> The TA first appeared in *ADB Business Opportunities* on 8 December 2005.

<sup>3</sup> Organization of Economic Co-operation 2002. *The OECD Growth Study: Some Implications for Statistics*. London.

<sup>4</sup> United Nations Conference on Trade and Development. *World Investment Report 2003*. New York.

<sup>5</sup> ADB 2003. *Asian Development Outlook 2003*, Manila

<sup>6</sup> Knowledge Management for Development. 2005. *KM4D Journal* 1(2) 69-75. Available at <http://www.km4dev.org/journal> and in ADB 2003. *Annual Report 2003*. Manila (p. 33).

knowledge hubs should capture (and participate in creating) knowledge generated elsewhere—nationally or internationally—and develop these further to meet specific local needs. Further, these knowledge hubs should become key reservoirs of relevant expertise and serve as main agents of dissemination of such knowledge in DMCs and the region.

4. These knowledge hubs should aim to mainstream new concepts in innovation, science, technology, management development, and related fields for the region. They should also promote improved exchange of data, information, and knowledge; and increase the capabilities of institutions and organizations in the region. Initiatives have created a wealth of knowledge base and expertise throughout the region. However, the capabilities of regional organizations and institutes in disseminating and sharing their findings are limited. Information is not enriched through regional cooperation, and information and expertise bases largely remain scattered around the region and fail to provide the multiplier effect that could be achieved if it were nurtured with more support for regional knowledge exchange. As the knowledge hub will focus on new development topics, experience and lessons learned from ADB knowledge sharing initiatives such as the Consultative Group on International Agricultural Research (CGIAR) center of excellence will be applied in the establishment of the knowledge hubs.

5. The proposed TA will create such knowledge hubs and have a crosscutting impact on regional knowledge and information exchange, and sharing of knowledge and information in areas demanded by DMCs. The creation of knowledge hubs will help strengthen ties among leading intellectuals and officials around the region, and will aid the long-term development of basic research and technology information exchange around the region. This TA will also support ADB's Knowledge Management Framework<sup>7</sup> (particularly output 5) to expand knowledge sharing, learning, and dissemination of innovations through external relations and networking.

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

#### **A. Impact and Outcome**

6. The TA aims to support regional development by supporting knowledge hubs in selected DMCs as centers of excellence to (i) promote germination or growth of identified knowledge and technologies, (ii) translate or adopt national and international knowledge in these areas for local use, (iii) reduce domestic knowledge and skill gaps in these areas, and (iv) promote exchange of knowledge and information. In particular, the TA will focus on areas that are operationally relevant to ADB such as environment, transport, and energy. Through these knowledge hubs, the TA will (i) introduce the latest knowledge and advanced technologies in identified areas needed in selected DMCs or across the region; and (ii) support the creation of a pool of experts in those areas, which will continue to serve the DMCs concerned and the region. These knowledge hubs will improve ADB's networking in the region and enhance its ability to respond effectively to DMCs' needs by providing reliable and relevant knowledge and information, along with a pool of experts in these new areas.

7. These knowledge hubs will provide decision makers and the development community in Asia and the Pacific with up-to-date knowledge products and services tailored to client or regional needs. The process aims to mobilize resources to (i) improve the creation and dissemination of knowledge about distinct value-adding topics; (ii) provide access to specific information resources; and (iii) establish centers of excellence with particular emphasis on a

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<sup>7</sup> ADB. 2004. *Knowledge Management in ADB*. Manila.

“partnership” approach involving governments, private sector, nongovernment organizations, academic institutions, and other donor agencies. It will promote regional cooperation in the creation and dissemination of knowledge, and recommend regional solutions to meet development challenges.

8. This regional TA will build knowledge and capacity in specific development topics and help increase understanding and awareness in new and emerging sectoral and thematic trends. It will strengthen ADB’s partnerships with development institutions and academia. In particular, knowledge hubs will offer briefings on new and emerging development concepts and issues, and create knowledge products and services in formats suitable for use in the region and in ADB operations. It will foster knowledge communities throughout the Asia-Pacific region and provide learning opportunities on key development topics where ADB’s financial assistance is made available for DMCs. These knowledge hubs will be integrated into ADB’s lending operations and knowledge management activities, and will support and complement its training and course offerings. They will also be linked to ADB’s communities of practice (CoPs) to enhance their access to region-wide operational issues. Overall, these knowledge hubs will support DMCs in their development efforts and enhance ADB’s ability to respond to their needs more effectively.

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

9. The TA will identify about four to six (maximum) organizations and institutions in the region to serve as knowledge hubs for identified and focused development topics relevant to DMCs and ADB operations. Knowledge hubs can be created in one or two specific fields with related sub-hubs established in other countries. Countries identified as knowledge hubs should have the technical skills and capability to undertake the activity. The identification of the development topics, and the organization or institutions to serve as knowledge hubs will be made by ADB through internal consultation among relevant departments and CoPs, the Asian Development Institute (ADBI), and consultations with DMCs and other stakeholders.

10. These knowledge hubs will deal with emerging development concepts and technologies, such as clean development mechanisms, use of compressed natural gas and hybrid technologies in the transport sector, renewable energy, environmental technology, information and communication technology, as well as management techniques. The knowledge hubs will address common development concerns or assist in problem solving in specific sectors or areas. To ensure high synergy and knowledge sharing, these knowledge hubs will be linked with each other—as well as with relevant national organizations—individually. Moreover, to promote regional cooperation and integration, they will collaborate with existing knowledge networks in the region. Further, they will be linked to international academic and research organizations to enhance their access and capacity to learn and adapt the latest international development concepts to regional or local needs and demands. ADB will serve as the nodal point for coordination of the activities of these knowledge hubs located in different DMCs. It is envisioned that knowledge hubs will focus on new and emerging development concepts that will be introduced and integrated as one of the activities of the identified ‘hub’ organization or institution. As a frequent and regular activity of the organization, it is expected that the concept developed out of the knowledge hub can be sustained within the business environment upon completion of this TA. As they develop, the knowledge hubs are envisioned to operate independently as part of an Asian applied knowledge network. The key output of the TA will be recognizable regional or national knowledge hubs on selected development topics of high relevance to DMCs and ADB. The TA’s output will also include knowledge products and

services such as toolkits, methodologies, good practices, dissemination through workshops and publications, and an established network of such organizations and institutions with ADB.

11. The knowledge hubs will undertake research and disseminate new concepts of interest to ADB's clients. They will also facilitate sharing of development related topics within and beyond the Asia-Pacific region. The knowledge hubs will collaborate with development actors and stakeholders in providing new and constantly updated content to its users. Since each knowledge hub will be dedicated to a specific development area or topic, it will build research capacity to create knowledge in the area, liaise with academic institutions, and deliver specific knowledge outputs to satisfy the clients' needs.

12. ADB assistance will include provision of technical support, capacity building of the identified organizations or institutions, and facilitating exchange of information. In this process, ADB will not build a new organization or institution; rather, it will support existing organizations and institutions in the region to build and expand their capacity for knowledge generation, knowledge capture, and research efforts to translate national and international knowledge for local or regional use, and knowledge dissemination in identified areas.

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

13. The TA is estimated to cost \$990,000 to be financed on a grant basis by ADB's TA funding program. The cost estimates and financing plan are in Appendix 2.

### **D. Implementation Arrangements**

14. ADB will be the executing agency of the TA. The Regional and Sustainable Development Department (RSDD) will be the nodal department for implementation of TA activities. RSDD will implement the TA activities, including the identification of the knowledge hubs, in collaboration with the regional departments (RDs) and ADB's CoPs. Overall supervision and guidance for implementation of the TA will be provided by a steering committee led by RSDD, comprising representatives of relevant ADB departments, particularly the RDs.

15. About 30 person-months of international individual consultants, with selected expertise in the identified areas or themes of the knowledge hubs, will be required under this TA, with each knowledge hub requiring about 5–6 months of consultancy work. The international consultants will be responsible for (i) preparing draft agreements with organizations and institutions identified as knowledge hubs under the TA; (ii) providing necessary technical support, undertaking studies, and building capacity (including training of experts in these organizations and institutions); and (iii) reviewing the activities and outputs of these knowledge hubs. In addition, the TA will require 35 person-months of domestic individual consultants to provide research and data analysis support to the knowledge hubs. The outline terms of reference for the consultants are in Appendix 3. The consultants will be engaged by ADB in accordance with the *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for the engagement of domestic consultants.

16. The activities under the TA will include organizing consultation and technical workshops, as appropriate, to disseminate and help mainstream developments and new findings generated from the knowledge hubs. The analytical outputs of the knowledge hubs during TA implementation will be compiled as knowledge products and made available to all DMCs as a publication. The TA will be implemented over 24 months, starting from January 2006 to

December 2007. TA activities will be monitored and reports made available through the ADB website.

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

17. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$990,000 on a grant basis for the Establishment of Regional Knowledge Hubs, and hereby reports this action to the Board.

## DESIGN AND MONITORING FRAMEWORK

<b>Design Summary</b>	<b>Performance Targets/Indicators</b>	<b>Data Sources/Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<p><b>Impact</b> Development of the region by facilitating learning, knowledge dissemination, exchange, and sharing with and among DMCs on new and emerging development issues through the knowledge hubs</p>	<p>Establishment of first 2–3 knowledge hubs by December 2006</p> <p>A total of 4–6 (maximum) knowledge hubs established by December 2007</p>	<p>Website and database</p> <p>Experts from DMCs</p> <p>Progress report</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Willingness and commitment of ADB and ADBI to share KPS with DMCs and partners</li> <li>• Concept of knowledge hubs shared by DMCs and identified institutions</li> <li>• Consistent management support to be a learning organization</li> </ul>
<p><b>Outcome</b> Improvement in applied knowledge and exchange of information on identified new and emerging areas in the region</p> <p>Improvement in the availability of skilled manpower in identified areas in the region</p>	<p>Demand of stakeholders for ADB assistance on selected topics</p> <p>Increased knowledge base</p> <p>Shared understanding of sector/thematic issues</p> <p>Number of institutions</p>	<p>Feedback from DMCs</p> <p>Number of knowledge hubs and nodes created</p> <p>Knowledge products and services</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Adequate infrastructure available in DMCs to support access to information sources</li> <li>• Agreement on development topics for hub</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Buy in from DMCs and institutions to participate</li> <li>• Funding and resources to continue hub after TA completion</li> </ul>
<p><b>Outputs</b></p> <p>1. About 6 knowledge hubs in identified areas in selected DMCs involved in creation, sharing, and dissemination of knowledge in the region on distinct value-adding topics</p> <p>2. Stakeholders have access to up-to-date knowledge products tailored to client or regional needs</p> <p>3. Strengthened partnerships with development institutions and academies</p>	<p>Up-to-date and accessible knowledge base</p> <p>Shared resources and expertise</p> <p>Knowledge products disseminated</p>	<p>Regional TA consultants' reports</p> <p>Number of knowledge products and services</p> <p>Periodic progress reports, and communication from related external experts and institutions</p>	<p><b>Assumption</b></p> <ul style="list-style-type: none"> <li>• Suitable institutions and willingness to participate in knowledge hubs</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Infrastructure and capacity</li> <li>• Insufficient demand for knowledge hubs outputs</li> </ul>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>4. Regional cooperation through the creation and dissemination of knowledge and solutions developed to meet regional development challenges</p> <p>5. Workshops on disseminating knowledge products</p>			
<p><b>Activities with Milestones</b></p> <p>1.1 Consultation with stakeholders and CoPs (March 2006).  1.2 Recruitment of consultants (April 2006).  1.3 Selection of countries/organizations where knowledge hubs will be created (June 2006).  1.4 Establishment of first two knowledge hubs (November 2006).  1.5 Creation of knowledge products and services (January 2007).</p> <p>2.1 Internal consultation with stakeholders and CoPs (March 2006).  2.2 Identification of topics/areas to be tapped under the knowledge hubs (May 2006).  2.3 Selection of countries/organizations where knowledge hubs will be created (June 2006).</p> <p>3.1 Discussion with countries/organizations on the needs of their region, technology available, and best methods (July 2006).  3.2 Preparation of knowledge hubs agreement (October 2006).  3.3 Establishment of first two knowledge hubs (November 2006).  3.4 Establishment of a total of six knowledge hubs (March 2007).</p> <p>4.1 Knowledge hubs will collaborate with existing networks (January 2007).  4.2 Knowledge hubs to undertake research, and exchange new concepts of interest to and within the region (March 2007).</p> <p>5.1 Creation of knowledge products, services, and publications (June 2007).  5.2 Organize knowledge workshops (September 2007).  5.3 Dissemination of knowledge products and services produced by knowledge hubs (October 2007).</p>			<p><b>Inputs</b></p> <p>ADB</p> <ul style="list-style-type: none"> <li>• Consultants: \$590,000 (30 person-months international, 35 person-months domestic)</li> <li>• Travel: \$90,000</li> <li>• Training and seminars: \$150,000</li> <li>• Communication: \$10,000</li> <li>• Printing: \$50,000</li> <li>• Contingency: \$100,000</li> </ul> <p>Private Sector</p> <ul style="list-style-type: none"> <li>• Time for knowledge creation and sharing</li> </ul>

ADB = Asian Development Bank, ADDBI = Asian Development Bank Institute, CoP = community of practice, DMC = developing member country, KPS = knowledge products and services, TA = technical assistance.

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Director General, RSDD

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

<b>Item</b>	<b>Total Cost</b>
<b>Asian Development Bank Financing<sup>a</sup></b>	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	440.0
ii. Domestic Consultants	150.0
b. International and Local Travel	90.0
c. Reports and Communications	10.0
2. Training, Seminars, and Conferences	150.0
3. Miscellaneous Administration, Printing, and Support Costs	50.0
4. Contingencies	100.0
<b>Total</b>	<b>990.0</b>

<sup>a</sup> Financed by the Asian Development Bank's technical assistance funding program.  
Source: Asian Development Bank estimates.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

### A. General

1. The technical assistance (TA) will require inputs from international or domestic consultants of expertise in the identified areas and drawn from a range of experts, institutions, and organizations—including individual consultants, consulting firms, research organizations, government, and the private sector—to provide both analytical and operationally relevant inputs. The consultants should also have expertise in designing frameworks for knowledge sharing and dissemination, and learning and dissemination plans in core development areas.

### B. International Consultants (30 person-months)

2. The consultants will be technical specialists in the identified areas. They will also have expertise in knowledge transfer capturing techniques, and design and develop in-depth knowledge products and services that match the needs identified in the region, developing member countries (DMCs), and the Asian Development Bank (ADB). The consultants need to have a good understanding of relevant subjects and relevant research techniques. The tasks of the consultants will include but not be limited to the following.

- (i) Prepare the draft agreements with organizations and institutions identified to be knowledge hubs under the TA, and undertake necessary preparatory work.
- (ii) Assist the establishment of the knowledge hub in the identified organization or institutions, including (a) identification of specific activities and assessing the suitability of the experts of the knowledge hub for involvement in each of these activities, (b) preparation of detailed cost estimates, (c) preparation of an action plan, and (d) establishment of the institutional and physical arrangements required for this purpose. This will be done in consultation with research departments (RDs), DMCs, and other stakeholders.
- (iii) Provide technical support and capacity building, including (a) compilation of reference materials; (b) establishment of contact with related external agencies; (c) provision of knowledge about new and emerging techniques in relevant areas; (d) provision of necessary training; (e) organizing discussions, seminars, visits, and experimentation, as applicable; (f) direct research; (g) review of the analytical and applied work of the knowledge hubs; (h) guiding the analytical and research activities of the knowledge hub; and (i) preparation and publication of knowledge products.
- (iv) Undertake specific studies or research work, as required, to (a) solve an identified problem, (b) develop new knowledge, or (c) adopt a new knowledge and technology for use in the DMCs and the region.
- (v) The consultants will also support the organization of and conduct seminars and workshops, assist in establishing appropriate contacts with other organization and institutions, coordinate with relevant internal and external parties, review the various draft reports, provide inputs at different stages of TA implementation, and coordinate various activities required for the successful completion of this TA. In this process, the consultants will also undertake other tasks as required by the Regional and Sustainable Development Department (RSDD).

**C. Domestic Consultants (35 person-months)**

3. The main task of the domestic consultants will be to provide high-quality research-based assistance and inputs backed by strong data analysis, where needed. The tasks of the domestic consultants will include (i) review of related documents and literature, (ii) collection of data and information, (iii) research and analysis (both quantitative and qualitative), and (iv) preparation of notes and briefs. Further, the consultants will prepare charts, tables, and ensure that data is accurate. The domestic consultants will also provide technical and administrative support to assist RSDD and the international consultant throughout implementation until completion of the TA. In this process, the domestic consultants will coordinate internally and externally with individuals and organizations concerned. The consultants will also undertake other tasks as required by RSDD.