

TAR: PRC 35435

# Technical Assistance to the People's Republic of China for Developing a Result-Based National Monitoring and Evaluation System for Key Projects

April 2005

Asian Development Bank

## **CURRENCY EQUIVALENTS**

(as of 17 February 2005)

Currency Unit	–	yuan (CNY)
CNY1.00	=	\$0.1208
\$1.00	=	CNY8.2765

## **ABBREVIATIONS**

ADB	–	Asian Development Bank
KPIO	–	key project inspectorate office
M&E	–	monitoring and evaluation
NDRC	–	National Development and Reform Commission
PRC	–	People's Republic of China
SDPC	–	State Development Planning Commission
TA	–	technical assistance

## **NOTE**

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

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## I. INTRODUCTION

1. The advisory technical assistance (TA) for Developing a Result-Based National Monitoring and Evaluation System for Key Projects was included in the 2004 country strategy and program for the People's Republic of China (PRC).<sup>1</sup> During the Asian Development Bank's (ADB's) 7–14 December 2004 Fact-Finding Mission, the Government reiterated its request for the TA. The Mission reached agreement on the rationale, goals and objectives, scope, implementation arrangements, cost estimates, and financing arrangements of the TA with concerned agencies, the key project inspectorate office (KPIO) of the National Development and Reform Commission (NDRC) and Ministry of Finance. Appendix 1 provides the design and monitoring framework.

## II. BACKGROUND AND RATIONALE

2. Over the last 25 years, the PRC experienced unprecedented economic growth (averaging 9.5% per year) that lifted hundreds of millions of people out of poverty. This economic growth was driven largely by several factors, including foreign direct investment inflows, increasing domestic private sector development, and massive state investment. The high levels of domestic investment are financed by the PRC's high savings, which were mostly channeled to state-owned banks and state-issued bonds. As of the end of 2003, more than 10,000 projects were financed by state bonds, with about 400 projects added each year. Total state investments amounted to more than CNY4 trillion. Most state investments were directed to large infrastructure projects. Some of this huge investment is at risk due to increasing difficulties and complexities related to administering and implementing such a vast number of projects. Concerns for corruption in public investment projects are rising among government officials, investors and taxpayers, who increasingly demand to see the results of investments.

3. ADB provided two prior TA grants to help develop and strengthen evaluation capacities in the PRC. The first TA<sup>2</sup> was approved in 1997 and completed in 1999. This TA was formulated during the Eighth Five-Year Plan (1991–1995), when about 20% of the PRC's 500 key state projects were incurring financial losses. The Government felt a strong need to conduct evaluations to obtain feedback to improve project planning, implementation, and management. The TA responded to this need by providing training in evaluation methodologies and practices used by development agencies for key government agencies and organizations, including China International Engineering Consulting Corporation, China National Audit Office, State Development Bank, and the then State Development Planning Commission (SDPC). Building on the results achieved under the first TA, ADB provided a second TA.<sup>3</sup> The second TA was approved in 1999 and completed in 2002. It focused on the newly created KPIO under SDPC. KPIO was responsible for inspecting state key investment projects for progress, quality and possible deviations, including corruption. The objective of the second TA was to upgrade KPIO staff capability in project monitoring and evaluation (M&E). The goal was to improve the development effectiveness of the PRC's public sector investment projects. The TA also had a secondary objective: to nurture an M&E culture within KPIOs, which had been primarily focusing on input monitoring. The TA was efficacious in achieving its objectives. In particular, it was recently nominated as a candidate for the 2004 TA Award program jointly initiated by ADB and

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<sup>1</sup> The TA first appeared in the *ADB Business Opportunities* (Internet edition) on 20 April 2004, under the title Strengthening the Key Project Inspectorate.

<sup>2</sup> ADB. 1997. *Technical Assistance for Strengthening of Evaluation Capacity in the People's Republic of China*. Manila (TA 2821-PRC, for \$400,000, approved on 4 July 1997).

<sup>3</sup> ADB. 1999. *Technical Assistance for Project Performance Management and Evaluation Capacity Building*. Manila (TA 3375-PRC, for \$900,000, approved on 27 December 1999).

Ministry of Finance for being timely and relevant, well designed, and having had substantial impact on policies and regulations related to result-based project evaluation and management.

4. Lessons identified in the TA completion reports for those two TA projects included (i) strong ownership and leadership support from the Government are essential to sustain full and effective TA implementation; (ii) appropriate consideration for local languages and understanding of local cultures and traditions are essential to facilitate faster dissemination of information and generate greater acceptance; and (iii) cost-effectiveness was low in the case of the second TA, with respect to the international study tour, and future TA designs should ensure that learning benefits match resources spent.<sup>4</sup>

5. SDPC, restructured and renamed NDRC in 2003, recognized that simply monitoring project inputs does not provide enough policy relevance in terms of assessing the achievement of the country's development goals, including alleviation of poverty in less-developed provinces and sustainable development. Starting in 2002, NDRC took a major initiative, as recommended by the second TA, to develop a computerized project M&E system known as the key project monitoring and evaluation information system. This system will link the project management systems of KPIOs at the national, provincial, and municipal levels and those of project implementation agencies and contractors. The system, which cost about CNY50 million, so far, in initial development, received strong support from the State Council and will form a subsystem of the State Council's macroeconomic information system, currently under development. The system will consist of two types of indicators: implementation (or monitoring) indicators and developmental result (or evaluation) indicators. As illustrated in Appendix 2, the implementation indicators comprise three categories: (i) fund use, (ii) scheduling, and (iii) construction quality. However, little thinking was given to indicators for measuring developmental results during construction and upon operation (para. 11).

6. The primary focus of the M&E system is on fighting corruption and promoting good governance in public investments. The system will support the work of the central KPIO's 80 project inspectors and the 800 project inspectors at the provincial and/or municipal level. These 880 inspectors monitor more than 10,000 state-level key projects<sup>5</sup> and many more at the provincial and municipal levels. The real-time system will help improve the effectiveness of the monitoring by providing early warnings on potential problems related to implementation. At this time, KPIOs are mostly reacting to problems that already occurred and, in most cases, damage that was already incurred. Furthermore, a properly constructed system will serve as a tool for result-based project management and provide feedback for future project design and implementation. Appendix 2 provides more descriptions on how the system will help inspectors and policy makers identify potential corruption at early stages and provide useful policy feedback.

7. The strong ownership of the M&E system by NDRC was made evident by the fact that NDRC took major initiatives and invested a significant amount of its own resources in developing the system. However, NDRC still lacks hands-on experience in developing a result-

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<sup>4</sup> ADB also provided a regional TA, TA 6096 (ADB. 2003. *Technical Assistance for Supporting the Sector Approach and Result-Based Management in Operations*. Manila). The regional TA covered PRC, Kyrgyz Republic, Philippines, and Sri Lanka. Its goal was to improve the capacity to implement sectorwide result-based management processes in these countries. The activities included conducting training programs and pilot case studies that involved applying the result-based management approaches to sector planning and projects. More than 80 KPIO staff members were trained under the TA.

<sup>5</sup> The state-level key projects include (i) projects that receive state funding (regardless of the size of the projects), (ii) infrastructure projects (even without state funding), and (iii) projects that receive foreign funding.

based system, which represents a major methodological and practical challenge. Additional international expertise, especially in the area of selecting and testing result indicators, would be particularly beneficial.

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

#### **A. Impacts and Outcome**

8. As indicated in Appendix 1, the intended impact or goal of the advisory TA is less corruption and better development results from the key projects. The intended outcome or purpose is the provision of detailed and reliable information related to key project implementation and operational results to KPIOs, project executing agencies, and implementation enterprises on a regular and real-time basis. The key outputs of the TA will be (i) a submodule on developmental result indicators (i.e., outcome and impact) in the result-based M&E system for key projects (being developed by NDRC using computerized networks and technologies) and (ii) trained staff members.

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

9. In view of the progress made in overall system development and the weaknesses of the system currently being developed, ADB's assistance will focus on the following areas: (i) reviewing the structure of the M&E system and types (sectors) of national key projects and institutional capacities, with respect to data collection for the indicators; (ii) identifying simple and measurable developmental result indicators for main sectors in consultation with key stakeholders; (iii) testing the indicators on actual projects for selected sectors, to assess usefulness and measurability; (iv) integrating selected indicators into the M&E system; (v) preparing lectures and training manuals covering the development and use of developmental result indicators and data collection and updating; and (vi) conducting domestic training and seminars and international exchanges.

10. Some difficulties will be experienced in devising, testing, and implementing result indicators. These difficulties vary from sector to sector and project to project. The measurement of such indicators is inevitably complex. Many older key projects that will be included in the system may have no clearly defined development objectives or goals, let alone indicators. Inclusion of developmental result indicators in the system requires (i) defining such goals and/or objectives (at least for all new projects and possibly for existing projects); (ii) selecting and testing some simple and measurable indicators; and (iii) collecting information for these indicators before and during project implementation (the baseline or without project scenario) and at project completion or, for a sample of the projects, during ex post evaluation (with project scenario). Project implementation enterprises and executing agencies may not possess the necessary expertise and resources for collecting the information required, and many will view data gathering as an additional cost that does not support project implementation management and operations. Focusing on simplicity and measurability is the key for the system's long-term sustainability. The issue of who (e.g., project executing agencies, project implementation enterprises, construction companies, or KPIOs) is responsible for paying the costs and collecting the information at different phases of project implementation, completion, and operation must be addressed through the TA.

11. The developmental result indicators will cover implementation (e.g., employment creation, income generation, and impact on the environment during construction) and operations. The operational results will be further captured at two levels, namely outcome or

purpose-level indicators and impact or goal-level indicators. Table 1 provides several examples of such indicators.

**Table 1: Examples of Developmental Result Indicators**

<b>Sector</b>	<b>Outcome or Purpose-Level Indicators</b>	<b>Impact or Goal-Level Indicators</b>
Electric Power	Increased power supply, reduced power outages, or more reliable power supply	Increased business opportunities and income due to the cheaper or more reliable supply of electricity
Roads and/or Expressways	Reduction of travel time and costs, increased cargo and passenger traffic	Increased income due to faster, less costly, and more reliable access to markets and supplies
Wastewater Treatment	Increased wastewater treatment level, increased water tariffs, improved water quality	Improved health because of lower incidence of waterborne diseases

Source: Asian Development Bank

12. A set of developmental result indicators will be identified for major sectors covered by the key projects. About 5 Case studies will be conducted for selected key projects to demonstrate how to use sampling and survey approaches, including the rapid appraisal approach based on quick and easy surveys, and existing official survey information for indicator calibration. For impact or goal-level indicators, in addition to the sector-specific indicators shown in the examples in Table 1, a nominal indexing system will be developed, namely, the development goal achievement index. This index measures, on a scale of 0 to 5, the extent to which the various underlying long-term development goals of key projects were or will be achieved. The index development and calibration will involve value judgment based on actual qualitative and quantitative indicators. The main advantage of such an index is that it allows comparisons of the achievement of different development goals by different key projects and over different time periods. To carry out case studies, the consultants will work with 15–20 staff members from KPIOs and the executing agencies or project implementation enterprises of the key projects selected (preferably including some ADB-financed projects) for pilot testing. The consultants will provide hands-on training to and conduct train-the-trainer sessions for participating staff members.

13. Learning a lesson from the earlier TA projects, cost-effectiveness will be a key consideration when conducting domestic training and seminars and international exchanges. The domestic training will comprise training of no less than 100 staff members from selected key project executing agencies; selected project implementation enterprises; and central and provincial KPIOs, including but not confined to those from the 13 provinces selected for the pilot testing of the M&E system. The 15–20 staff members trained through the case studies and the train-the-trainer sessions will play a key role in the training activities by sharing their experiences with the participants. The training will focus on the application of developmental result indicators in monitoring and evaluating key projects using the M&E system. The TA will also finance international exchanges, by inviting international experts to the PRC and/or sending a small number of key personnel involved in developing and applying the M&E system for international training in priority areas of project monitoring and evaluation jointly defined by ADB, consultants, and KPIOs.

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

14. The total cost of the TA is estimated at \$500,000 equivalent, consisting of \$300,000 in foreign exchange cost and \$200,000 equivalent in local currency cost. The TA will be financed on a grant basis by ADB's TA funding program. ADB will provide \$400,000 equivalent to finance the entire foreign exchange cost and part of the local cost of the TA. The Government will finance the remaining \$100,000 equivalent local currency cost, covering office space, counterpart services, translation, and domestic transport (see Appendix 3).

### **D. Implementation Arrangements**

15. The Executing Agency of the TA will be the KPIO of NDRC. A steering committee, consisting of representatives from Ministry of Finance, NDRC, and State Council, will provide policy-level guidance. The KPIO will appoint one of its senior staff members to be the project manager, and this person will head a taskforce comprising focal persons from the participating provincial KPIOs. The consulting team will include three international (8 person-months) and three domestic (11 person-months) consultants with matching expertise. A domestic consultant will act as TA coordinator and assist in monitoring and coordinating TA implementation. The terms of reference for consultants are given in Appendix 4. The consultants will be engaged by ADB as individual consultants in accordance with the *Guidelines on the Use of Consultants by Asian Development Bank and Its Borrowers* and other arrangements satisfactory to ADB for the engagement of domestic consultants. Priority will be given to engaging domestic consultants engaged by the KPIO (i.e., Tsinghua University and Investment Engineering) for developing the M&E system, to ensure the continuity of the work. KPIO will be responsible for providing the required logistical support, including provision of office space, office support facilities, materials, and equipment. If any need arises for procuring additional TA equipment, KPIO will be responsible for procuring the equipment in accordance with *ADB's Guidelines for Procurement* and with prior clearance from ADB. The ownership of the equipment will rest with KPIO at the completion of the TA. KPIO will make domestic travel and meeting arrangements for consultants, translate necessary documents, and provide any other inputs necessary for effective TA implementation.

16. The TA will commence in June 2005 and be completed in December 2006. The project manager, assisted by the TA coordinator and the international result-based project management specialist, will submit to the steering committee and ADB (i) an inception report within 6 weeks of TA commencement, (ii) an interim report for the consideration of the midterm review in April 2006, and (iii) a final report in December 2006. In addition, the project manager will prepare short quarterly progress reports and separate briefing reports for all the major training activities.

## **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 \$400,000 on a grant basis to the Government of the People's Republic of China for Developing a Result-Based National Monitoring and Evaluation System for Key Projects, and hereby reports this action to the Board.

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Indicators and Targets	Data Source and/or Monitoring Mechanisms	Assumptions and Risks
<p><b>Impact</b> Less corruption and better developmental results from the key projects</p>	<p>Losses from corruption in the key projects reduced by 20% within 3 years of the technical assistance (TA) completion (baseline to be determined as a part of the TA)</p> <p>Number of prosecution cases related to corruption in key projects increased by 10%, within 3 years of TA completion (baseline to be determined as a part of the TA)</p> <p>Average project delay reduced by 10%, within 3 years of TA completion (baseline to be determined as a part of the TA)</p> <p>Average cost overrun reduced by 10%, within 3 years of TA completion (baseline to be determined as a part of the TA)</p> <p>Estimated average capacity use of the key projects 2 years after commissioning improves by 10%, within 3 years of TA completion (baseline to be determined as a part of the TA)</p>	<p>Project monitoring and evaluation activities by key projects inspectorate offices (KPIOs), including project completion reports and postevaluation of selected key projects</p> <p>Official statistics and KPIOs' estimates</p> <p>Self-reporting by key project executing agencies through the M&amp;E system</p> <p>Possible TA performance audit report mission</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Strong commitment by KPIOs to use the monitoring and evaluation (M&amp;E) system to improve auditing and inspection for fighting corruption and improving developmental results</li> <li>• Strict and sustained enforcement of anticorruption laws</li> <li>• Significant feedback from the M&amp;E system is used by National Development and Reform Commission (NDRC) for improving macroeconomic policy conditions and new project formulation and implementation</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Anti-corruption program is not successful</li> <li>• Information provided by the system is not used for decision making</li> <li>• The system is not financially sustainable despite proposed charges</li> </ul>
<p><b>Outcome</b> Detailed and reliable information related to key project implementation and operational results available to KPIOs, project executing agencies, and project implementation enterprises on a regular and real-time basis</p>	<p>The result-based M&amp;E system is operational at TA completion and contains regularly updated and accurate data for indicators, such as fund use, scheduling, quality of construction, capacity use and development impact for the key projects included in the system</p>	<p>Regular correspondence between Asian Development Bank (ADB) and KPIO during TA implementation</p> <p>TA completion mission</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Adequate staff and budgetary resources for regular data collection and updating</li> <li>• Stringent data quality control and checking</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Some project executing agencies and implementation enterprises may falsify data and make data input errors</li> </ul>

Design Summary	Performance Indicators and Targets	Data Source and/or Monitoring Mechanisms	Assumptions and Risks
			<ul style="list-style-type: none"> <li>Information for developmental indicators is not collected due to high costs or low priority as perceived by the project implementation agencies</li> </ul>
<p><b>Outputs</b></p> <p>1. Submodule on developmental result indicators in the result-based M&amp;E system for national key projects</p> <p>2. Staff members of project executing agencies, project implementation enterprises, and KPIOs (at all levels) trained in the use of the result-based M&amp;E system, particularly with respect to developmental result indicators and data collection</p>	<p>The submodule completed, tested, and integrated fully into the system by June 2006</p> <p>At least 115 staff members from selected project executing agencies, project implementation enterprises, and the national KPIO and 13 provincial KPIOs participating in the piloting program will be trained by October 2006</p>	<p>Regular correspondence between the project manager, ADB, and consultants</p> <p>TA review missions</p> <p>Inception, interim, and final reports</p> <p>Participation by ADB officers in some training activities</p>	<p><b>Assumption</b></p> <ul style="list-style-type: none"> <li>National KPIO has the mandate and influence to ensure participation by selected project implementation agencies in the pilot program</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>Collection of some data during system testing and development may not be feasible under the current national conditions and institutional setup</li> <li>Provincial/municipal officials do not see sufficient benefits to have the system</li> </ul>
<p><b>Activities with Milestones</b></p> <ol style="list-style-type: none"> <li>1. Reviewing the structure of the M&amp;E system, national key projects types (sectors), and institutional capacities with respect to data collection for the indicators (by July 2005)</li> <li>2. Identifying, in consultation with key stakeholders, simple and measurable developmental result indicators for key sectors (by September 2005).</li> <li>3. Pilot testing the indicators through case studies on actual projects for selected sectors, to assess its usefulness and measurability (by March 2006)</li> <li>4. Integrating the selected indicators into the M&amp;E system (by June 2006)</li> <li>5. Preparing lectures and training manuals covering development and use of result indicators, and data collection and updating (July 2006)</li> <li>6. Conducting domestic training, seminars, and international exchanges (by October 2006)</li> </ol>			<p><b>Inputs</b></p> <ul style="list-style-type: none"> <li>ADB: \$400,000</li> <li>Government: \$100,000</li> <li>ADB staff member support and supervision in inception, review and completion missions: three 2-day missions</li> <li>Two Government high-level oversight steering committee meetings</li> <li>Resident Mission's regular supervision</li> <li>Participation by the staff of the Operations Evaluation Department in conducting training</li> </ul>

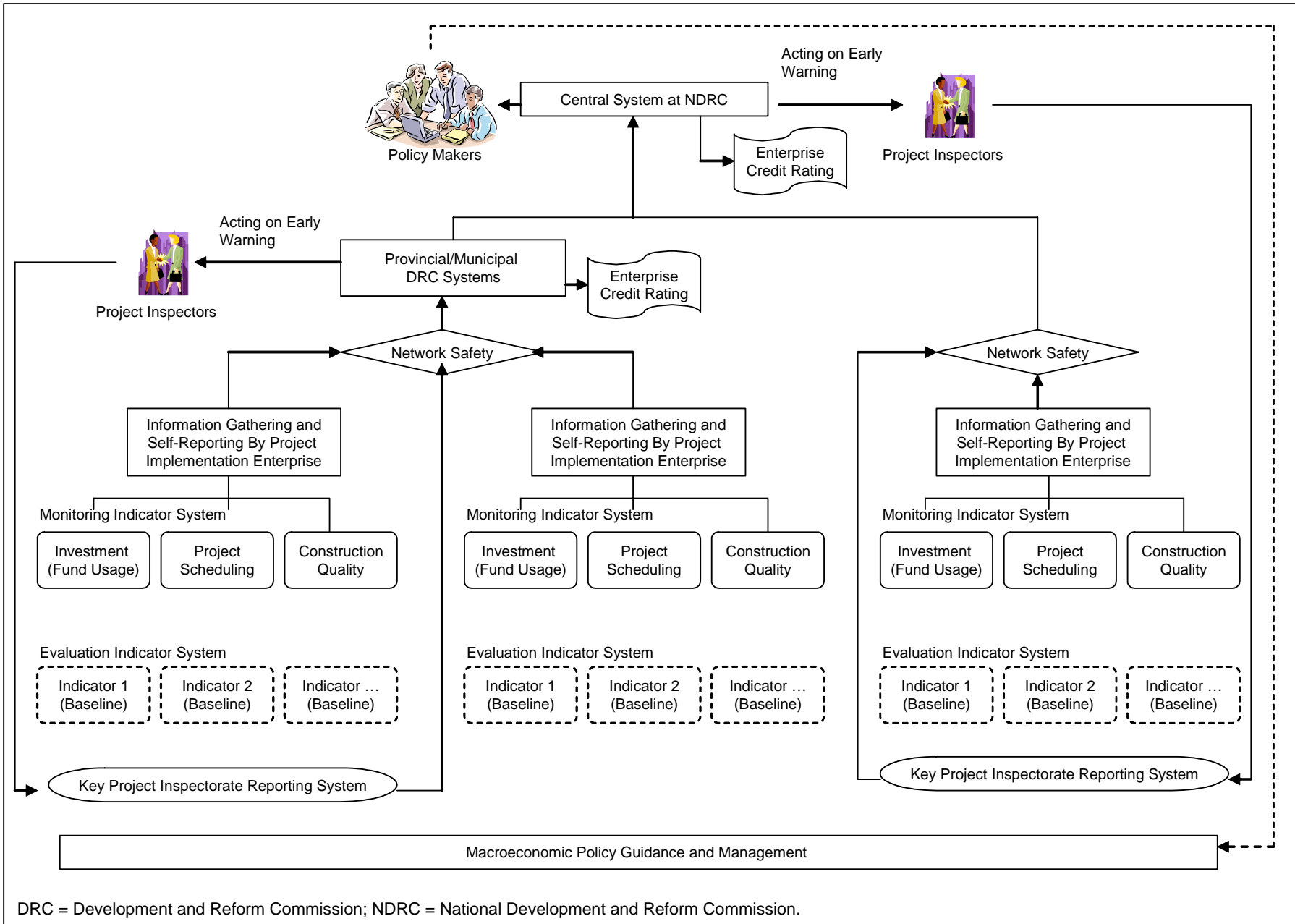
## **DESCRIPTION OF THE RESULT-BASED NATIONAL MONITORING AND EVALUATION SYSTEM FOR KEY PROJECTS**

1. As indicated by Figure A1, the system consists of information systems at three different levels i.e., project site supervision system, provincial and/or municipal information systems (at the provincial and/or municipal development and reform commissions [DRCs]) and the central system (at the National Development and Reform Commission [NDRC]). At the project level, project information is gathered and entered into the system by project implementation enterprises (i.e., self-reporting). Stringent quality control mechanisms will be implemented for data input, to minimize data input errors and data falsification through cross-checking with other data sources. The project-level data will be subject to checking from project supervision entities and project inspectors from provincial and central KPIOs. The information will consist of indicators related to project implementation (i.e., monitoring indicators) and project results, with respect to the achievement of the development objectives and goals of the projects (i.e., evaluation indicators). The monitoring indicators comprise three categories: (i) investment (fund use), (ii) project scheduling, and (iii) construction quality. However, as indicated by the dashed boxes in the flowchart, insufficient consideration was given to devising evaluation indicators related to project results (including before and during project construction [e.g., baseline] and upon completion and operation) or which agency will be responsible for collecting the information required. NDRC recognizes the importance of having evaluation indicators but lacks expertise and experience in developing indicators that are measurable and useful for evaluating the achievement of development goals.

2. Once entered, the project-level monitoring data are automatically uploaded to the information systems at the provincial and/or municipal and central levels through secured data transmission links using either NDRC intranet or internet. The information systems at the provincial and/or municipal and central levels will automatically read data from project-level systems and perform data aggregation, tabulation, and analyses. Based on the implementation and result indicators that will provide early warning for potential problems, such as serious cost overruns or implementation delays or poor construction quality, which may indicate potential corruption and frauds, project inspectors from the central or provincial levels may choose to inspect those potential problem projects to obtain more details as to the causes. The flowchart illustrates three typical projects. The two projects on the sides are potential problem projects that will be inspected by provincial and central KPIOs, respectively. The middle project is satisfactory and thus will not be inspected. Based on feedback and information, NDRC may choose to adjust macroeconomic policies to influence future project formulation, implementation, and performance to achieve better development results. One of the products that the M&E system generates is a credit rating system related to the compliance with contracts and general performance of all enterprises and businesses that participated in the implementation of key projects. The rating will provide useful feedback for future project bidding and procurement.

3. The prototype of the system is near completion and will be tested in 13 provinces chosen as pilots to demonstrate the viability of such a comprehensive information system and secured and uninterrupted data transmission. As substantial costs are involved in developing, operating, and updating the system, NDRC plans to charge all participating project implementation enterprises for the use of the software. This charge will ensure the long-term sustainability of the M&E system.

**Figure A1: Flowchart of the Result-Based National Monitoring and Evaluation System for Key Projects**



DRC = Development and Reform Commission; NDRC = National Development and Reform Commission.

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

Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Asian Development Bank Financing<sup>a</sup></b>			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	176.0	0.0	176.0
ii. Domestic Consultants	0.0	55.0	55.0
b. International and Local Travel	25.0	12.0	37.0
c. Reports and Communications	5.0	0.0	5.0
2. Software, Equipment, and Supplies <sup>b</sup>	15.0	0.0	15.0
3. Training, Seminars, and Consultations <sup>c</sup>	50.0	22.0	72.0
4. Contingencies	29.0	11.0	40.0
<b>Subtotal (A)</b>	<b>300.0</b>	<b>100.0</b>	<b>400.0</b>
<b>B. Government Financing</b>			
1. Office Accommodation and Transport	0.0	50.0	50.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	15.0	15.0
3. Secretarial Support and Communication	0.0	5.0	5.0
4. Others	0.0	30.0	30.0
<b>Subtotal (B)</b>	<b>0.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Total</b>	<b>300.0</b>	<b>200.0</b>	<b>500.0</b>

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

<sup>b</sup> Prior approval from the Asian Development Bank must be sought before procurement of any software and equipment, which must be necessary and used for developing the computerized information system and related training activities.

<sup>c</sup> This includes domestic training and international exchange, and the estimated costs of the two types of training activities are reflected by the local currency and foreign exchange amounts, respectively.

Source: Asian Development Bank estimates.

## OUTLINE TERMS OF REFERENCE

### A. **Result-Based Project Management Specialists** (international, 4 person-months, and domestic, 4 person-months)

1. International and domestic consultants will have sound knowledge of and hands-on experience in project management, as well as experience in developing and using developmental result indicators. The consultants will have working knowledge of the operation and maintenance of several key types of infrastructure projects, including energy (particularly power) projects, road and/or expressway projects, industry projects, and environment improvement projects. The domestic consultant must be able to speak, read, and write in English at an adequate level.

2. The main tasks are to

- (i) Review the structure of the monitoring and evaluation (M&E) system currently being developed and the institutional framework and capacities of the key project executing agencies, project implementation enterprises, and key projects inspectorate offices (KPIOs) at the national and provincial levels, with respect to their general understanding of M&E and data collection capabilities.
- (ii) Cluster all the key projects into sectors that will form the basis for the subsequent development of result indicators. In consultation with the key stakeholders, determine a set of priority sectors that will be the focus of the technical assistance (TA) in terms of indicator development and testing based on pilot projects.
- (iii) Identify a set of simple and measurable sector-specific result indicators for all the sectors clustered under (ii), in consultation with key stakeholders. The result indicators will include implementation result indicators and operation result indicators. The former refers to indicators for socioeconomic and other results during construction (e.g., employment creation, income generation, and impact on the environment). The latter refers to indicators for the results brought out by the operations of the projects upon completion. The results may be captured at two different levels: the outcome or purpose level and the impact or goal level. For example, the outcome indicators for a power project may be reduction of power outages and more reliable power supply, and the impact indicators would include downstream impact from the additional and more reliable electricity supplies (e.g., increased economic opportunities due to the cheaper or more reliable supply of electricity).
- (iv) Devise, based on the sector-specific outcome and impact indicators developed under (iii), a nominal index system tentatively named the development goal achievement index, which is comparable across sectors and can be aggregated to derive an overall measure for comparing the achievement of development goals by the key projects across different sectors and over different time periods.
- (v) Provide guiding inputs to the international and domestic sampling and survey specialists on selecting sectors and specific projects for pilot testing the indicators and design specific methodologies for the sampling and survey specialists to conduct a rapid survey to collect necessary data for the indicators.

- (vi) Provide necessary inputs to the international and domestic information system development specialists, with respect to the integration of the developmental result indicators into the M&E system.
- (vii) Have the international result-based project management specialist prepare, with assistance from the domestic counterpart, lectures and training materials to explain the concepts and principles of result-based project monitoring and evaluation, methodologies for devising result indicators, and use of such indicators and the M&E system for policy and decision making and for improving result-based project management. Use specific case studies and examples from the pilot testing previously mentioned.
- (viii) Make recommendations (based on inputs from other consultants and experience from the indicator development, pilot-testing, and system integration) regarding which agency will be most suitable for collecting the information for the developmental result indicators at different phases of project implementation and operation (e.g., project executing agencies, project implementation enterprises, or KPIOs). Make recommendations with respect to possible institutional changes required within KPIOs to accommodate the need for developmental result indicator monitoring and evaluation using the M&E system. Considerations will be given to staff background and qualifications, resource allocation, and institutional support to meet the new demand for statistical data gathering, socioeconomic impact assessment, project benefit monitoring, and ex post evaluation.
- (ix) Have the international result-based project management specialist and the domestic counterpart conduct joint training on developing and using developmental result indicators at the training sessions to be organized under the TA. The participants of the training will comprise staff members from central and provincial KPIOs (including but not confined to the 13 provinces chosen for the first phase pilot testing of the M&E system), selected key project executing agencies, and project implementation enterprises.
- (x) Have the international result-based project management specialist identify additional foreign expertise or institutions for the planned international exchange program.
- (xi) Have the international result-based project management specialist, with assistance and inputs from all other domestic and international consultants, be responsible for drafting the inception, interim, and final reports.
- (xii) Have the domestic result-based project management specialist, in collaboration with the TA coordinator and other domestic consultants, be responsible for translating the reports into the Chinese language.

**B. Sampling and Survey Specialists** (international, 3 person-months, and domestic, 3 person-months)

3. The international and domestic consultants will have sound knowledge of, and experience in, quasiexperimental and nonexperimental design, basic statistical concepts of

survey research; questionnaire design and data collection techniques (including random sampling, nonrandom quick and easy rapid appraisal, and focus groups); supervision of field work; and subsequent quantitative and qualitative data analysis. In addition, the consultants will have working knowledge in developing and using developmental result indicators for monitoring and project evaluation. The domestic consultant must be able to speak, read, and write in English at an adequate level.

4. The main tasks are to

- (i) Work with the result-based project management specialists in clustering the sectors of the key projects and identifying about 5 priority sectors for indicator development and testing. Provide important inputs to indicator development from the point of view of simplicity, measurability, and sustainability in the long term.
- (ii) Select, for each of the priority sectors identified, one typical project for pilot testing the indicators. The projects selected should include ongoing and recently completed projects.
- (iii) Design, for each pilot key project chosen, a case study for measuring the developmental result indicators identified under (i), using quasiexperimental design for with and without project scenarios and other statistical and surveying techniques, including the rapid appraisal approach. For the selected ongoing projects, the case studies will focus on measuring the implementation result indicators and the baseline (without project) levels for operation result indicators. For the completed projects, the case studies will focus on measuring the operation result indicators, including outcome and impact indicators, through comparing the with and without project scenarios.
- (iv) Work with 15–20 staff members of the project executing agencies, project implementation enterprises, and responsible provincial and central KPIOs of the selected pilot key projects and carry out measurements or estimates for the key indicators using the aforementioned survey techniques. Draw relevant information from existing official survey information (e.g., the Urban and Rural Surveys conducted by the National Statistics Bureau and any results from a recently approved ADB TA on poverty impact monitoring<sup>1</sup>). Conduct necessary statistical analysis to derive the values for the indicators. The consultants will provide hands-on training to the staff members, as well as train-the-trainer sessions at the conclusion of the case studies.
- (v) Estimate the current financial losses due to corruption and the number of prosecution cases related to corruption in the key projects, for the key projects as a whole, through conducting informal interviews and a survey of official information.
- (vi) Provide inputs to the international and domestic information system development specialists in integrating the developmental result indicators into the M&E system.

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<sup>1</sup> ADB. 2004. *Technical Assistance for Developing a Poverty Monitoring System at the Country Level*. Manila (TA 4454-PRC, for \$300,000, approved on 1 December 2004).

- (vii) Have the international sampling and survey specialist, with assistance from the domestic counterpart, prepare lectures and training materials to explain the use of the sampling survey approach (including various tools and techniques for sample frame design, questionnaire design; nonrandom quick and easy rapid appraisal, and various focus groups) for indicator calibration. Use specific case studies and examples from the pilot testing ([iii] and [iv]).
- (viii) Have the international sampling and survey specialist and the domestic counterpart conduct joint training on different sampling and survey methods for indicator calibration at the training sessions to be organized under the TA. The participants will comprise staff members from central and provincial KPIOs (including but not confined to the 13 provinces chosen for the first phase pilot testing of the M&E system) and selected key project executing agencies and project implementation enterprises.
- (ix) Have the international sampling and survey specialist, with assistance and inputs from the domestic counterpart, take responsibility for drafting sections of the inception, interim, and final reports on indicator pilot testing and calibration.
- (x) Have the domestic sampling and survey specialist, in collaboration with the TA coordinator, take responsibility for translating the same sections into the Chinese language.

**C. Information System Development Specialists** (international, 1 person-month, and domestic, 2 person-months)

5. The international and domestic consultants will have sound knowledge of and hands-on experience in project management and computer-based information system development, particularly the Linux-based project information portal. The domestic consultant must be able to speak, read, and write in English at an adequate level.

6. The main tasks are to

- (i) Have the international information system development specialist, with assistance from the domestic counterpart, review the overall structure of the M&E system currently being developed and provide expert opinions on the overall design of the system and the main issues facing integration of developmental result indicators into the system.
- (ii) Have the domestic information system development specialist implement the integration of developmental result indicators into the M&E system, while working with the result-based project management specialists and the sampling and survey specialist, with guiding inputs from the international counterpart.
- (iii) Have the international information system development specialist, with assistance from the domestic counterpart, prepare lectures and training materials on how to use the result-based M&E system, particularly with respect to developmental result indicators.
- (iv) Have the domestic information system development specialist translate the training materials into English and conduct training on system development,

updating, and use at training sessions to be organized under the TA. The participants will comprise staff members from central and provincial KPIOs (including but not confined to the 13 provinces chosen for the first phase pilot testing of the M&E system) and selected key project executing agencies and project implementation enterprises.

- (v) Have the international information system development specialist, with assistance and inputs from the domestic counterpart, take responsibility for drafting the section on system integration in the final report.
- (vi) Have the domestic information system development specialist, in collaboration with the TA coordinator, take responsibility for translating the same section into the Chinese language.

**D. TA Coordinator** (domestic, 2 person-months on intermittent basis)

7. The domestic consultant must be thoroughly familiar with KPIO institutional structure, be well versed with issues related to organizing training and seminars, and have a reasonable understanding of development and application of the M&E system. The domestic consultant must be able to speak, read, and write in English at an adequate level.

8. The main tasks are to

- (i) Assist the project manager of the KPIO in monitoring TA implementation, in terms of time inputs by consultants and outputs to meet the various milestones. Conduct the day-to-day TA administration and coordination, as required, particularly for liaising with the Asian Development Bank and consultants.
- (ii) Provide occasional interpretation and translation services, as required, when international consultants are in the field and other translators are not available.
- (iii) Provide assistance, as required, to the sampling and survey specialists in conducting their case studies, to test the indicators through identifying projects. Provide assistance to the specialists in contacting the project executing agencies and project implementation enterprises, to ensure agency and enterprise provision of the staff member support required for data gathering and surveys.
- (iv) Assist the project manager of the KPIO in making all logistical and other arrangements for the planned training sessions, seminars, and exchange programs, including selection of the locations, determining participants' lists, preparing and sending invitations, and making travel arrangements. Assist in preparing the three tripartite meetings.
- (v) Work with and coordinate domestic consultants to ensure their timely inputs and provide necessary assistance in their translation of the various reports into the Chinese language.

**E. Time and Duration**

9. The TA will commence in June 2005 and is expected to be completed in December 2006.