



Supplementary Appendix

2008 Development Effectiveness Review

**REVIEW OF OUTCOMES REPORTED
IN THE ASIAN DEVELOPMENT BANK'S
2008 PROJECT AND PROGRAM COMPLETION
REPORTS**

July 2009

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 29 June 2009)

CNY 1.00	=	\$0.1463
\$1.00	=	CNY 6.83
D1.00	=	\$0.0000561
\$1.00	=	D17,802.0
KN1.00	=	\$.0001
\$1.00	=	KN8,527.5
NRS1.00	=	\$0.01228
\$1.00	=	NRs81.40
Rp1.00	=	\$0.0129
\$1.00	=	Rp76.95
Rs1.00	=	\$0.0207
\$1.00	=	Rs48.09

ABBREVIATIONS

ADB	–	Asian Development Bank
AIDS	–	acquired immunodeficiency syndrome
ASEAN	–	Association of Southeast Asian Nations
BEA	–	Bhutan Electricity Authority
BPC	–	Bhutan Power Corporation
CBS	–	Center for Banking Studies (Cambodia)
DHC	–	District Heating Company (Ulaanbaatar)
EDC	–	Electricité du Cambodge
FMGP	–	Financial Non-Bank Markets and Governance Program (Pakistan)
FSPL	–	Financial Sector Program Loan
GDP	–	gross domestic product
GEB	–	Gujarat Electricity Board
GLR	–	Ganzhou-Longyan Railway
GMS	–	Greater Mekong Subregion
HIV	–	human immunodeficiency virus
IPP	–	independent power producer
IT	–	information technology
Lao PDR	–	Lao People's Democratic Republic
MIME	–	Ministry of Industry, Mines, and Energy (Cambodia)
MOEF	–	Ministry of Environment and Forest
MPERC	–	Madhya Pradesh Electricity Regulatory Commission
MPSEB	–	Madhya Pradesh State Electricity Board
NHA	–	National Highway Authority
O&M	–	operation and maintenance
PCR	–	project or program completion report
PFI	–	participating financial institution
PMU	–	project management unit
PRC	–	People's Republic of China
RMDC	–	Rural Microfinance Development Centre Limited (Nepal)
SEB	–	state electricity board

SECP	–	Securities and Exchange Commission of Pakistan
SERC	–	state electricity regulatory commission
SHG	–	self-help group
STN	–	shallow tube wells
TA	–	technical assistance
WSS	–	water supply and sanitation

WEIGHTS AND MEASURES

km	–	kilometer
kV	–	kilovolt
KWh	–	kilowatt hour
MW	–	megawatt

GLOSSARY

geog	–	a cluster of neighboring villages within a district that are grouped together for administrative purposes
raion	–	district
upazila	–	lowest administrative unit in Bangladesh, earlier known as <i>thana</i>

NOTE

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

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I. INTRODUCTION

1. This appendix reviews selected outcomes of recently completed loan projects and programs undertaken by the Asian Development Bank (ADB) since 1993. The outcomes are divided into main or generic outcomes, and intermediate outcomes. Generic outcomes are typical for the sector in which they are produced. For example, education projects that result in increased enrollment rates; power projects that make possible higher use of electricity by businesses; microfinance projects that encourage productive investment by small business; travel time and transport expense saved as a result of roads projects; and water supply projects that improve public health. Many intermediate outcomes are means to the more generic outcomes. They have been outlined in various strategic framework documents,¹ including Strategy 2020, such as (i) improved governance as a result of a project improving public expenditure accounting, (ii) improved management capacity as a result of training provided, (iii) more gender equity, (iv) strengthened policies and institutions, and (v) an increased role of the private sector in public sector services. The analysis is based on the 68 project completion reports (PCRs) issued in 2008 by operations departments for projects in education, finance, energy, transportation and water supply, sanitation and waste management—and on the multisector, agriculture, and natural resources sectors that included components in these five areas. The analysis provides an overview of the typical performance of ADB supported projects in core operational areas.

II. SECTOR REVIEW

A. Education

2. The generic outcomes reviewed here are better and more widely used education opportunities, especially for the poor; and improved quality of education and more benefits from education opportunities. Some of the intermediate outcomes are

- (i) improved capacity for education services,
- (ii) well-developed education institutions or organizations,
- (iii) increased gender equity through education and empowerment of women,
- (iv) strengthened policies and institutional context for education,
- (v) improved education governance, and
- (vi) an expanded and improved role of the private sector in education.

3. This section also treats as outcomes the direct effects of reducing poverty through projects in education. The discussion here does not imply that this document views reducing poverty as the main effect of the projects on poverty reduction. However, education projects do have both direct effects on the poor and indirect effects on national economic growth and poverty reduction.

1. Projects Reviewed

4. In 2008, ADB issued PCRs for eight projects in education, seven of which were project loans and one of which was a sector development program loan. The projects spent almost \$620 million. ADB also issued four PCRs for multisector projects with education components;

¹ ADB. 2001. *Moving the Poverty Reduction Agenda Forward in Asia and the Pacific. The Long-Term Strategic Framework of the Asian Development Bank (2001–2015)*. Manila.

three were program loans. The total expenditure was \$1.35 billion. Although no costs specific to education are available for Pakistan's Sindh Devolved Social Services Program II, education was a major component. Table 1 presents the details of the projects. ADB's loan contribution to the aggregate project expenditure (\$1.92 billion) was \$441.3 million or 23%.

Table 1: Education-Related Projects and Programs with Project Completion Reports Issued in 2008

Fund	Country	Loan	Closing Date	Rating	Project Expenditure (\$ Million)	Education Component Expenditure (\$ Million)
ADF	BAN	Secondary Education Sector Improvement Project	25-Apr-07	S	74.00	
OCR	INO	Technological and Professional Skills Development Sector Project	21-Apr-08	S	217.04	
ADF	LAO	Basic Education (Girls) Project	28-Jan-08	S	34.60	
ADF	PNG	Employment-Oriented Skills Development Project	25-Sep-08	PS	27.62	
ADF	SRI	Secondary Education Modernization Project	5-Oct-07	S	70.19	
ADF	SRI	Skills Development Project	23-Jul-07	S	39.19	
OCR	UZB	Education Sector Development Program	15-Jun-07	S	70.00	
ADF	VIE	Teacher Training Project*	28-Nov-08	S	28.28	
ADF	VIE	Vocational and Technical Education Project	23-Oct-08	S	86.29	
Subtotal					647.21	
Multisector projects with Education Components						
OCR	KGZ	Emergency Rehabilitation Project	8-Jan-08	S	5.38	0.770
OCR	PAK	Sindh Devolved Social Services Program II	23-Aug-07	PS	103.23	NA
00	VIE	Support the Implementation of the Poverty Reduction Program III	22-May-07	S	613.10	0.184
00	VIE	Poverty Reduction Program II	5-Jul-06	S	587.00	0.400
Subtotal					1308.72	1.35
Total					1,955.93	1.35

BAN = Bangladesh, INO = Indonesia, KGZ = Kyrgyz Republic, LAO = Lao People's Democratic Republic, NA = not available, PAK = Pakistan, PNG = Papua New Guinea, PS = partly successful, S = successful, SRI = Sri Lanka, UZB = Uzbekistan, VIE = Viet Nam.
 * PCR issued in December 2008 and circulated in 2009.
 Source: ADB.

2. Project Completion Report Success Ratings

5. Education projects are rated as successful, highly relevant, effective, efficient, and sustainable. Operations departments rated 10 of the 12 education and multisector projects with education components as successful, and two as partly successful (Table 1). The 83% success rate is higher than that achieved in many other sectors.

6. Among the successful projects, the two that were assessed as highly effective were the Secondary Education Sector Improvement Project in Bangladesh, where the project achieved outcomes of improved efficiency, quality, equity, and capacity building; and Basic Education (Girls) Project in Lao People's Democratic Republic (Lao PDR), which increased the enrollment of girls by over 22,000 and the enrollment of boys by 25,000.

7. Sri Lanka's Secondary Education Modernization Project was among the six projects rated as efficient. This project established computer learning centers, most of which generated revenue from after-school activities. The project also significantly improved internal efficiencies by providing a better classroom and school environment, and external efficiencies by providing a quality education that enabled students to achieve higher education levels and learning achievements. Less efficient were the, the Employment-Oriented Skills Development Project (Papua New Guinea), and the Education Sector Development Program (Uzbekistan). Due to delays in implementation that reduced efficiency for the Employment-Oriented Skills Development Project, the project period had to be extended by more than 2 years. Other factors

that reduced project efficiency were (i) the major change in implementation arrangements, (ii) frequent changes in implementing agency and project implementation unit personnel, (iii) disagreements and slow decision making, and (iv) logistical bottlenecks. Further, the original training program targets were unrealistically high. In Uzbekistan, the release of the first tranche was delayed and the closing date had to be extended by a year. Delays in compliance with conditions for the release of the first tranche compromised the optimum outcomes.

8. Among the partly successful projects, the Employment-Oriented Skills Development Project in Papua New Guinea achieved only one of its performance targets, a 40% participation rate of females in the competency-based skills training. The project did not effectively provide quality informal competency-based skills training. The project's target was to train 40,000 participants; however, it trained only 10,000. Male youth participation, which was targeted at 40%, was between 10% and 15%. Only 20% to 30% of trainees increased their income after training, less than the target of 75%. Several factors contributed to the project being unable to meet its targets, among them issues with project management and coordination. The Sindh Devolved Social Services Program (Pakistan) was only partly successful due to diverted funds, lack of consultation, and political ambivalence on decentralization within the provincial bureaucracy. The intended outcome of the program was to improve decentralized social services in local governments, which would result in increased school enrollment, health coverage, and water supply and sanitation services. The outcome was to be accomplished through improved governance and financing of social services. Based on the results of the Pakistani social and living standard measurement survey, there has been no marked change in the social indicators during the project review period. The program was also rated as "less likely to be sustainable". Although the conditional grants introduced under the loan were considered as a model for other donor-funded grant mechanisms, the program required further improvement and continued support to become sustainable.

2. Generic and Intermediate Outcomes

9. **Better and More Widely Used Education Opportunities Provided.** All 12 completed projects provided better and more widely used education opportunities, primarily focused on the poor. Operations departments reported that 11 projects met their targets, and one did not.

10. The Basic Education (Girls) Project in the Lao PDR gave girls from ethnic communities more access to primary schools. Despite logistical problems, it constructed more than the specified number of multigrade, and completed 512 five-classroom primary schools. The project improved curricula and provided more than the predicted number of pre- and in-service trained teachers and supporting educational staff.

11. Indonesia's Technological and Professional Skills Development Project provided \$18 million to finance scholarships for 20,000 students from low-income families enrolled in higher education institutions, and provided equitable access to higher education by awarding scholarships to 19,762 students from low-income families. This increasing attention for outcomes of higher education is an integral part of Strategy 2020.

12. Other projects centered on provision of school infrastructure, i.e. buildings, equipment, furniture, and materials. The Bangladesh Secondary Education Sector Improvement Project, completed in 2007, established 59 new secondary schools. Because of problems with the timely availability of land, this total was fewer than the target of 115. The project also constructed several additional classrooms in 111 overcrowded schools. The project reconstructed 20 schools damaged during the 1988 flood, and repaired 96 of the 120 flood-damaged schools that

had been proposed for repairs. The project also constructed 52 district education offices, an education complex at Dhaka, five zonal education offices, and new training facilities, and rehabilitated nine secondary education development centers. By reallocating \$1.8 million to procure new equipment and rehabilitate buildings, the Technological and Professional Skills Development project in Indonesia supported four higher education institutions that had been severely affected by the 2006 Yogyakarta earthquake. Kyrgyz's Emergency Rehabilitation Project constructed four schools, thus enabling continued access to education. All of these projects led to increased schooling opportunities for children and adults.

13. Quality of Education Improved and More Benefits from Education Opportunities Provided. Eleven projects recorded an improved quality of education and more benefits from the educational opportunities provided as an expected outcome, and achieved this goal. Initiatives included teaching grants; provision of new study programs in basic sciences, engineering, agriculture, law, management, and accounting; and improvement in the quality of textbooks. In Bangladesh, the project developed a school-based assessment system for grades 6–9. The system emphasized the importance of student-centered learning methods, and teachers provided students with regular feedback on their progress. The system included the development of intellectual skills that extend beyond simply the recall of knowledge, and personal and social skills. The system was effective in improving the quality of secondary education, and was distributed nationwide for courses in Bangla, English, mathematics, science, and social science.

14. Capacity for Education Services Developed. Eight projects included specific activities directed at capacity development. Operations departments reported that except for three cases, the projects met their targets for this area. Sri Lanka's Secondary Education Modernization project strengthened its capacity in education services such as counseling. However, the project did not translate and distribute to the schools a new career guidance manual. Nonetheless, capacity development activities under this project contributed to enhanced capacity of central agencies.

15. Project designs included various capacity-building exercises such as teacher training, training-of-trainers courses, and increasing access to, and equity in, higher education—which was highly relevant to the developing member countries' objective of improving national educational standards. For instance, in Bangladesh, the project trained 61,468 teachers from 14,000 secondary schools in implementing a school-based assessment system.

16. The Lao PDR's Basic Education (Girls) Project exceeded its targets for both pre- and in-service training of teachers. Some problems with language, logistics, and unfamiliarity with new pedagogical approaches required longer training periods. Although most appointed staff remained, it was unlikely that the cost and time of maintaining training at project levels could be sustained.

17. Institutions and/or Organizations Developed. Seven of the 12 projects targeted this outcome. In Uzbekistan, a policy loan assisted the government in revising the functions and responsibilities of administrative and management staff at central, regional, and district levels. Management, administrative, and to a lesser extent financial responsibilities, have been delegated to *raions*² and schools. As part of the staff redeployment policy, administrators reviewed teachers' workloads and increased compulsory classroom teaching hours. In addition,

² Districts.

administrators required teachers to work with parents, families, and communities in after-school activities. The reorganization reduced the number of ministry staff (about 20% in the Ministry of Public Education and 25% in the Ministry of Higher and Secondary Specialized Education). Administrators used the budget savings to develop financial incentives for staff and improve school conditions. Under the Sindh Devolved Social Services Program, Pakistan's Department of Education developed a draft Sindh education plan and medium-term development plan. The plans specified its post-devolution role and responsibilities, and provided a strategic vision for education. The Department of Education established a reforms support unit to act as an education think tank for the Sindh provincial government. The unit has played an important role in education reforms, including the strengthening of the Sindh education management information system, improving monitoring and evaluation, and implementing recommendations from the 2004 Sindh education roundtable.

18. **Gender Equity and Empowering Women Advanced.** Providing equal opportunities for all, including women and the disadvantaged, is a key outcome in ADB projects. ADB views education projects as a key tool to advance this outcome. Eight of the 12 projects reviewed met specifically defined targets in providing equal opportunities for women and girls. One project achieved this outcome even though it was not originally a target. Another project exceeded the target it set. Two projects did not have equal opportunities as an intended outcome.

19. Sri Lanka's Secondary Education Modernization Project achieved positive gender equity by providing computer centers in rural areas, thereby narrowing the urban-rural and gender digital divides. In Bangladesh, the large Secondary Education Sector Improvement Project exceeded its targets by expanding equitable access for female secondary students in grades 6–10 in the 53 disadvantaged *upazilas*³ by providing stipends⁴ for 4,408,219 person-years of education, compared to 765,000 person-years targeted. Female student participation rates for grades 6–10 students were 47% in 2005, compared to 46% in 1998.

20. **Policies Strengthened.** Eight projects successfully strengthened policies and the institutional context. One project did not meet this target, and three did not have this as a targeted outcome. The key achievements of the Papua New Guinea Employment-Oriented Skills Development Project were

- (i) enactment of the 2004 Informal Sector Development and Control Act to legalize operations of the informal sector;
- (ii) development of the Integrated Community Development Policy;
- (iii) endorsement of the National Youth Policy, which established “youth” as a special group of people in the development process; and
- (iv) establishment of the National Education Plan in compliance with the government’s Medium-Term Development Strategy.

21. Another project that was successful in this area was the Bangladesh Secondary Education Sector Improvement Project, which facilitated the work of a Secondary Teacher Education Task Force established by the Government of Bangladesh. The task force made recommendations for 48 reforms and improvements relating to improving teacher competency in classroom instruction. The improvements were consistent with the reformed secondary education system. The focus was on reforming teacher education policy, and on the development of pre-service teacher education programs in teacher-training colleges, higher

³ Lowest administrative unit in Bangladesh, earlier known as *thana*.

⁴ The stipends include tuition, examination and other fees, and purchase of textbooks and learning materials.

secondary teacher-training institutes, and in-service training programs. Policy initiatives and major secondary teacher education reforms included a new competency-based bachelor of education program, an upgraded teacher education faculty, and new staffing models for increased faculty size and enhanced opportunities within the teacher-training colleges and higher secondary teacher training institutes. The project also conducted research to develop a decentralized management model. The research identified appropriate frameworks, policies, and systems for decentralization. However, due to litigation protesting the decentralization, government-approved phased decentralization has yet to be implemented.

22. The Sri Lanka Secondary Education Modernization Project was less successful in strengthening policies. The project supported legislation for the devolution of education administration to provincial authorities and general education reforms introduced in 1997. However, political pressure stemming from concern over possible attempts to privatize education caused implementation delays.

23. **Governance Improved.** Governance-related targets and approaches in ADB operations refer to improving levels of accountability and transparency in operations, stakeholder participation, and predictability in planning and budgeting. Eight projects had satisfactory governance outcomes, mainly due to their extensive consultations with government counterparts, which ensured effective communication and increased their direct participation in decision making. Two projects that were intended to achieve a governance outcome were only partly successful. Two projects did not target this outcome. In the Lao PDR's Basic Education (Girls) Project, community involvement continued throughout the project. After the project was completed, many communities continued to provide financial support to needy families by creating their own funds or alternative forms of practical support. In Uzbekistan's Education Sector Development Program, there was significant progress in improving governance and quality in schools. This progress was accomplished by establishing school trustee councils, strengthening parent committees, and encouraging increased community involvement in schools.

24. **Role of the Private Sector Expanded and Improved.** The goal of seven of the 12 projects reviewed was to increase the private sector's role in education. Of these seven, four were successful, and three were partly so. The Government of Uzbekistan considers private sector participation in noncompulsory education an important supplement to the provision of traditional public education. Uzbekistan favors involving private providers in noncompulsory education areas, particularly preschool and kindergartens. There are currently 102 private education institutions, ranging from preschool to training and retraining institutions in Uzbekistan. There are also five international universities that provide education services in collaboration with local partners. The policy loan provided international technical support in 2007 for public-private partnership policy studies. The study reported on the strengths and weaknesses of providing privately funded education services in Uzbekistan. The study's policy recommendations are currently under review by the government. However, progress in this component is slow, as the government plans to act in a phased manner. In Bangladesh, an ADB project privatized the publication of 19 out of the 33 textbooks for primary schools. In Viet Nam, partnering with local industries and the private sector is an innovative feature of the project design. The production units that have been established in most of the schools are generating sizeable revenues. Marketing plans were formulated to assist schools in their campaign to be more self-reliant.

25. In Sri Lanka's Skills Development Project, in close consultation with the private sector, ADB helped develop new national policies in education. As a result, education opportunities are better geared to private-sector needs. However, due to lack of interest by the private partners and also government policies, the project discontinued initiating a pilot project to involve 25 private firms in managing computer learning centers. A more practical aspect of public-private partnership is the establishment of several partnership agreements with information technology (IT) companies or private establishments for software delivery and training teachers in computer skills. The private companies have successfully taught basic computer skills to teachers.

26. In Sri Lanka's Secondary Education Modernization Project, private participation failed due to lack of interest. The project design of the Technological and Professional Skills Development Project in Indonesia did not incorporate a clear strategy, although the project objectives included strengthening the government's policy on public-private partnerships in the higher education system.

27. **Poverty Reduced.** All 12 projects had poverty reduction as the ultimate goal. Nine reported that they had accomplished poverty reduction mainly through skills development and employment promotion. Sri Lanka's Skills Development project targeted project investments in learning resource utilization centers, career guidance, and counseling centers. IT centers provided support to the districts and provinces with the greatest need.

Table 2: Education Sector Typical Outcomes and Outcome categories

Outcomes	SRI	VIE	BAN	LAO	PNG	INO	SRI	VIE	UZB	KGZ	VIE	
	Secondary Education Modernization Project	Teacher Training Project*	Secondary Education Sector Improvement Project	Basic Education (Girls) Project	Employment Oriented Skills Development Project	Technological and Professional Skills Development	Skills Development Project	Vocational and Technical Education Project	Education Sector Development Program	Emergency Rehabilitation Project	Support To Implementation Of The Poverty Reduction Program I	
1 Better and more widely used education opportunities,	++	++	++	+++	+	++	++	++	++	++	++	
2 Improved quality of education (opportunities); more benefits from education opportunities provided	++	++	++	++	++	++	++	++	++	++	(-)	++
3 Capacity for education services developed	++	++	++	++	+	++	++	++	++	++	(-)	(-)
4 Institutional or organizational development achieved	(-)	++	++	(-)	+	++	++	++	++	++	(-)	++
5 Gender equity advanced and women empowered	(+)	+	+++	++	++	++	++	++	++	++	(-)	++
6 Policy and institutional obstacles in sector removed	+	++	++	NAP	++	++	++	++	++	++	(-)	++
7 Governance improved	++	(+)	+	++	++	++	++	++	(-)	++	(-)	+
8 Private sector role expanded/improved	+	NAP	++	NAP	NAP	+	++	++	++	++	(-)	(-)
9 Safeguards enforced for those involuntarily affected by construction of infrastructure	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	(-)	(-)
10 Poverty reduced	++	++	++	++	(-)	++	++	++	++	(-)	++	++
11 EIIRs above 12%	+++	+++	NOI	NOI	NOI	NOI	NOI	NOI	NOI	NOI	NAP	NAP
12 FIRRs above WAC	NOI	NOI	NOI	NOI	NOI	NOI	NOI	NOI	NOI	NOI	NAP	NAP

* PCR issued in December 2008 and circulated in 2009.

Legend: ++ = Yes, intended and matched targets; + = Yes, intended but did not match targets; +++ = Yes, intended, and exceeded targets, (+) = Yes, not intended, - = No, although intended, NAP = not applicable; NOI = No information.

Source: ADB

B. Finance

1. Background

28. The operations departments reviewed nine completed projects in the finance sector, four multisector projects with finance components, and one agriculture project with a finance component. These are projects that have been implemented since 1998. The nine completed projects were estimated to cost \$1.1 billion; actual spending amounted to about \$900 million. The nine exclude four multisector projects with finance sector components, to which was allocated about \$60 million to microfinance operations. Three of the nine finance-sector projects were program loans, and the remaining four were project loans. ADB's financial contribution to the various projects was equivalent to 55% of the total cost. Operations departments rated 1 of the 14 as highly successful, six as successful, and 7 partly successful (Table 3).

Fund	Country	Loan	Closing Date	Rating	Project Expenditure (\$ Million)	Finance Component Expenditure (\$ Million)
ADF	BAN	Rural Livelihood Project	22-Nov-07	PS	51.61	
ADF	CAM	Financial Sector Program Loan (Cluster)	13-Dec-02	HS	11.20	
ADF	CAM	Financial Sector Program Loan (Subprogram II)	31-Aug-05	HS	10.58	
ADF	CAM	Financial Sector Program Loan (Subprogram III)	31-Oct-07	HS	180.00	
OCR	IND	Housing Finance	18-Mar-02	S	87.40	
OCR	INO	Industrial Competitiveness of SME Development Program	31-Dec-04	PS	150.00	
ADF	KGZ	Rural Financial Institutions Project	27-Mar-07	PS	19.50	
ADF	PAK	Strengthening Pension, Insurance & Saving Systems	24-Jan-08	PS	9.99	
OCR	PAK	Financial (Non-Bank) Markets & Governance Program	17-May-07	PS	2.18	
ADF	PAK	Strengthening Regulations, Enforcement and Governance of Nonbank Financial Markets	10-Sep-07	PS	2.18	
ADF	PAK	Microfinance Sector Development Program	30-Jun-03	PS	70.90	
ADF	PAK	Microfinance Sector Development Project	22-Apr-08	PS	115.10	
ADF	VIE	Rural Enterprise Finance Project	7-Oct-08	S	167.95	
		Subtotal			878.60	0.00
Multisector Projects with Finance Components						
OCR	IND	Urban and Environmental Infrastructure Facility	29-May-06	U	27.35	NA
OCR	INO	Rural Income Generation	14-Nov-08	S	85.70	35.60
ADF	NEP	Rural Microfinance Project	15-Aug-07	S	30.10	21.83
ADF	VIE	Poverty Reduction Program II	5-Jul-06	S	587.00	NA
		Subtotal			730.15	57.43
Agriculture Project with Finance Components						
ADF	SRI	Second Perennial Crops Development Project	10-Apr-07	S	31.38	24.52
		Subtotal			31.38	24.52
		Total			1,640.13	81.95

BAN = Bangladesh, CAM = Cambodia, HS = highly successful, IND = India, INO = Indonesia, KGZ = Kyrgyz Republic, NA = not available, NEP = Nepal, PAK = Pakistan, PS = partly successful, S = successful, SRI = Sri Lanka, VIE = Viet Nam.
Source: ADB.

29. Among the projects reviewed in 2008, the highlight was the highly successful Financial Sector Program Loan Cluster (Cambodia), comprising two subprograms. This project's primary goal was to develop a sound, market-based financial system to support resource mobilization and sustainable economic growth. Notable among the outcomes were successful institutional and policy reforms, improvements in governance, and reduced avenues for money laundering.

2. Generic and Intermediate Outcomes of the Projects

30. This section reviews 10 types of general and intermediate outcomes often pursued in the finance sector, most of which are highlighted in Strategy 2020:

- (i) an expanded finance sector and/or more benefits received from increased, improved finance sector options;

- (ii) capital market developed;
- (iii) a larger role for private sector in financing infrastructure;
- (iv) an increasingly inclusive financial sector;
- (v) a regional finance sector developed;
- (vi) improved management capacity in the financial sector;
- (vii) reduced options for money laundering;
- (viii) more gender equity and empowerment of women;
- (ix) fewer policy and institutional obstacles in the sector; and
- (x) improved governance.

31. **Finance Sector Expansion.** Actions to expand the finance sector among the extended program loans included the creation of microfinance banks, development of the banking system, development of a foundation for insurance, promulgation of laws to underpin commercial and financial activities, advancement of accounting and auditing practices towards international standards and best practices, and the establishment of supporting institutions and accompanying development of human resource capacity.

32. The Viet Nam Rural Enterprise Finance Project was one of the more successful projects reported in 2008. The rural and agribusiness credit component comprised three subcomponents: (i) subloans for the medium- and long-term investment and semipermanent working capital needs of about 3,700 rural businesses in the household and enterprise sectors, with a targeted average subloan size of \$7,500; (ii) subloans for the medium- and long-term investment and semipermanent working capital of about 11,200 microbusinesses, with a targeted average subloan size of \$2,500; and (iii) subloans for the income-generating activities of 18,500 low-income households, with a targeted average subloan size of \$750. The project chose beneficiaries in accordance with the criteria in the project's loan agreement and the implementation guidelines. Under each subcomponent, because the actual subloan size was much smaller than anticipated the number of beneficiaries substantially exceeded the targets.⁵ The significant difference between the planned and actual subloan sizes resulted from a successful effort to increase the number of beneficiaries and to ensure that the repayment rate was high. The household and cooperative credit component comprised subloans for the business operations of about 31,000 low-income households, with a targeted average subloan size of \$750; and subloans of \$2,500–\$4,000 to finance 7,500 micro- and small enterprises. The number of beneficiaries for these subcomponents also greatly exceeded the targets.⁶ The loan size was substantially reduced, resulting in more microenterprise and low-income household beneficiaries and a high repayment rate. The nature and scope of the socioeconomic benefits identified at appraisal remained unchanged. However, the actual socioeconomic impacts were more extensive.

⁵ Under subcomponent (i), some 52,083 rural businesses received subloans (compared with 3,700 targeted at appraisal); under subcomponent (ii), 57,712 micro businesses benefited (compared with an appraisal estimate of 11,200); and 30,967 low-income households were the beneficiaries of subcomponent (iii), compared with the 18,500 that were targeted. The majority (80%) of subloans was below \$500, 15% were between \$501 and \$3,000, and only 6% were of over \$3,000. Average subloan sizes for subcomponents (i), (ii), and (iii) were \$1,035, \$804, and \$809, respectively.

⁶ Some 87,875 low-income households received subloans under subcomponent (i) and 61,062 micro- and small enterprises benefited from subcomponent (ii). The actual size of subloans under this component was also much smaller than originally anticipated: 60% of the subloans were below \$500, 36% were between \$501 and \$3,000, and only 6% were over \$3,000. Actual average subloan sizes for subcomponents (i) and (ii) were \$540 and \$750, respectively.

33. Bangladesh's Rural Livelihood Project reached over half a million primary society members. The field survey of selected primary societies indicated that microcredit helped landless and poor households to engage in new microenterprises or expand existing ones. However, about one third of these primary societies have gone dormant. Further, microcredit has not translated into an improvement in sustainable livelihood for the majority of primary society members. Many primary societies are already inactive and no longer provide credit to their members.

34. The goal of Indonesia's Industrial Competitiveness of Small and Medium-Sized Enterprises Development Program was to improve the business environment. The commission that was established under the program showed independence and has made progress in increasing competition in a number of key areas.

35. The Rural Financial Institutions Project in the Kyrgyz Republic increased the demand for labor and thus provided job opportunities for the very poor. Although most credit union borrowers are not among the very poor, they made good use of loan proceeds to expand businesses, buy additional livestock, or cultivate additional land. Credit union borrowers indicated that each loan for agricultural or business purposes created three jobs. The project met its numerical objective of 2,890 credit unions serving all regions. Nevertheless, there are questions about the sustainability of many of these institutions and about how many are actually credit unions. Although the project exceeded its target number of credit unions, gross formation had been much higher, with over 200 credit unions having subsequently closed.

36. Pakistan's Financial Nonbank Markets and Governance Program focused its reforms on continued rationalization of the tax treatment for financial instruments. The program initially made good progress, but after the first tranche, the momentum in several areas did not continue. For example, to address the high cost of issuing corporate debt, the program acted to reduce stamp duties on corporate paper to internationally competitive rates. However, this action required provincial government support, which did not materialize. Under a follow-on capital market development program (Second Generation of Capital Market Reform Program), the provincial government in the Islamabad Capital Territory reduced stamp duties on corporate bonds.

37. The Rural Income Generation Project (Indonesia) was a multisector project with finance component. The project facilitated the preparation of 161,529 group business plans in the original 12 provinces, against a target of 120,680. The total credit received by the self-help groups (SHGs) amounted to Rp1.326 trillion, against a target of Rp360 billion. The total loans outstanding amounted to Rp218.365 billion for 33,409 plans and total loan principal payments reached about Rp1.108 trillion (128,120 plans). Compared with the overall credit disbursed from the start of the project, the total amount of credit arrears as of December 2005 was 5.24%, representing about 13% of the total approved group business plans. The project directly benefited about 650,000 poor families or 3 million people—81% of the target—through capacity building, savings mobilization, and access to credit. Poverty incidence was reduced in 10 of 12 target provinces. In these provinces, the proportion of poor SHG members' households decreased from 23% in 2002 to 16% in 2005. The number of SHG members with monthly incomes of less than Rp500,000 decreased from 14% in 2002 to 2% in 2005, while those with monthly incomes greater than Rp500,000 increased from 30% to 43%. The initial and subsequent loans extended to group members until 2005, as well as profit shares in the form of dividends, have allowed them to accumulate capital that could be used to invest or reinvest in income-generating activities. About 27% of the 58,118 SHGs invested their loans in the trading

of non-agricultural products, 23% in livestock production, 18% in trading of agricultural products and/or inputs, 6% in food processing, and 5% in agricultural crop production. The project has inculcated the habit of saving among the poor in project villages. As of December 2005, 31,859 SHGs had savings deposits in banks while 26,100 SHGs had group savings.

38. Two agriculture projects had finance components. Nepal's Rural Microfinance Project provided a line of credit on an annual incremental basis to Rural Microfinance Development Centre Limited (RMDC), which enabled the RMDC to give loans to the implementing agencies for financing the farm and nonfarm income-generating activities of individual sub-borrowers. RMDC established a revolving fund, the Rural Microfinance Development Fund of \$20.2 million (including \$16.5 million of ADB financing) to lend to the implementing agencies. As of January 2008, RMDC had disbursed a total of \$36.4 million, of which it recovered \$17.5 million. The original loan to RMDC was sufficient to disburse about 1,200,000 subloans to about 400,000 existing and new subborrowers from 58 implementing agencies. As of December 2007 RMDC's loan recovery rate on subloans was 100%. The project provided access to rural microfinance, primarily to poor women, enabling them to pursue self-employment via microenterprise activities, and thus generate income. According to the PCR, the project is likely to reach its goal of (i) improving the socioeconomic status of poor rural women; and (ii) of creating employment opportunities for these women by improving their access to financial services and thus promoting microenterprise development. The project's indirect benefits included the social and economic empowerment of the poor, disadvantaged communities, and women by forming and strengthening savings and credit groups and their federation into a center. The project also improved the capacity and financial positions of partner organizations. At appraisal, the project estimated that its key quantifiable benefits would be (i) an increase in annual per capita income of beneficiaries from \$86 to about \$200; (ii) creation of about 270,000 jobs in microenterprises, about 80% of which were for women; and (iii) increased access to loans for about 270,000 beneficiaries through about 448,000 loans. The project estimates that on average, the per capita monthly household income of its beneficiaries rose from \$61 to \$228.

39. Under the credit component of Sri Lanka's Second Perennial Crops Development, the project's major activity was providing farmers with low-cost credit to conduct such subprojects as (i) perennial crop field development, including intercropping with short- and medium-term crops, and livestock development in association with perennial crops; (ii) nursery operations; (iii) post-harvest processing and agroprocessing; and (iv) market development by wholesalers and exporters. During the first 2 years of the project, the progress of the credit component was slowed because of (i) the inadequate agricultural knowledge of the credit officers at some branches of the participating financial institutions (PFIs), especially concerning the suitability of crops suggested in the development plans, and the costs and returns of these crops; (ii) the PFIs' inadequate knowledge of the program and the operating instructions for the credit scheme; and (iii) the reluctance of credit officers at some PFIs to appraise and approve agricultural and small loans, and to accept relaxed collateral requirements for these loans. After conducting seminars for the PFIs' credit officers and presenting awareness programs for potential borrowers, in its third year demand for the credit line increased. By the end of the project, the \$24.1 million credit line from the loan proceeds had been fully utilized, and even exceeded by \$430,000, in making a total of 4,586 subloans. Of these, 3,805 subloans were for crop cultivation. The project created a revolving fund that used credit repayments to make further loans to the same activities. This fund began operating in 2006. At the time of the project completion review mission, 1,127 borrowers had already applied for new loans. Taking into account currency depreciation, the cumulative value of the credit line was 158% of the original credit line. The achievement was even greater. When the project was first appraised, ADB

expected 10,000 sub-borrowers to change 20,000 hectares into perennial crops and to use intercropping with short- and medium-term crops. The total number of subborrowers under the credit line was 4,586, showing an achievement rate of 46%. The total extent of land developed under perennial crops was 7,200 hectares, for an achievement rate of 36%. Nevertheless, these achievement rates utilized the full amount of the credit line. This reflects the facts that ADB approved bigger subloans and more subprojects for value addition and nurseries than anticipated at appraisal. ADB estimated that the project would generate 40,000 tons of high-value crops from 1999 to 2010. Various forms of the extension services reached more than the targeted 10,000 farmers. Improved inputs in credit, extension services, research activities, and farm trials, mainly to small and medium-size farms, resulted in increased production of perennial crops. Because financial institutions in remote rural areas were either nonexistent or distant, most of the credit was utilized by two western districts near Colombo, which limited the main project impact to those areas. Through its credit component, the project was able to change the participating financial institutions' perception that providing credit to the rural sector would entail high transaction costs and low recovery rates. Participating financial institutions also benefited from the expansion of their credit markets.

40. Development of Capital Markets. Pakistan's Financial Non-Bank Markets and Governance Program (FMGP), the Strengthening Pension Insurance and Savings Systems Project, and the Strengthening Regulations, Enforcement, and Governance Nonbank Financial Markets Project were the only projects in Pakistan to report development of capital markets as an outcome in 2008. The projects increased the supply of investment products by focusing on new capital market issues, introducing new financial instruments, and increasing secondary market activity and liquidity. To improve the supply of equity issues through privatization, the Privatisation Commission has successfully floated the shares of 10 state-owned enterprises in five industries: oil and gas, power, manufacturing, banking, and transport. Thus, the commission exceeded the target of three sectors. As a result, market capitalization increased by about 35%.

41. To raise the professionalism of market participants, the FMGP established the Pakistan Institute of Corporate Capital Markets and recruited a chief executive. The institute conducts various licensing examinations for certifications for different segments of the capital market. The institute also provides a platform for research and development, exchange of ideas, and consulting services on capital market issues. However, the FMGP was rated as only partly successful, because its focus was too broad and because it did not successfully implement a number of key actions, primarily in the area of contractual savings and institutional investors.

42. Increased Role for the Private Sector. Five of the projects reviewed achieved this outcome. Indonesia's Industrial Competitiveness of Small and Medium-Sized Enterprises Development Program introduced private sector competition in production and distribution. Pakistan's Microfinance Sector Development project compiled a loan covenant requiring the privatization of Habib Bank Ltd. In Viet Nam's Rural Enterprise Finance Project, which closed in November 2006, some 52,083 rural businesses received subloans (compared with 3,700 targeted at appraisal); 57,712 microbusinesses benefited (compared with an appraisal estimate of 11,200); and 30,967 low-income households were the beneficiaries of the rural and agribusiness subcomponent compared with the 18,500 that were targeted. The Viet Nam Bank for Agriculture and Rural Development reduced subloan sizes resulting in more microenterprise and low-income household beneficiaries, and a high repayment rate.

43. Indonesia's Rural Income Generation, one of the multisector projects with finance components, fared well. The project's objective was to reduce poverty reduction by creating new

income-generating activities that utilized microfinance services. The microfinance services component provided microfinance services to self-help groups.

44. India's Urban and Environmental Infrastructure Facility had a technical assistance (TA) grant for strengthening microfinance institutions (MFIs) for urban infrastructure finance. The TA comprised three parts: (i) integrating MFIs with urban infrastructure development; (ii) building capacities of selected MFIs for financing urban infrastructure projects; and (iii) pilot projects. The outputs of the loan were subprojects in urban infrastructure. The TA's progress was considered significant. Based on the TA findings, the project prepared a brief that proposed solutions, including (i) lines of credit to financial institutions, (ii) a project support facility for strengthening institutions and developing bankable projects for private sector participation, and (iii) a standby guarantee facility for attracting alternative long-term finance from the domestic market.

45. Viet Nam's Poverty Reduction Program complied with a loan covenants to enact a regulatory framework for the operation and supervision of microfinance institutions. In March 2005, the government approved a decree that issued regulations on the organization and operation of microfinance institutions. The decree provides a regulatory framework for the operation and supervision of microfinance institutions. An ADB TA helped in drafting the decree.

46. **Regional Finance Sector Supported.** Strategy 2020 states that ADB will continue to support cross-border bond transactions. ADB will facilitate the creation of a harmonized regulatory framework, a common credit guarantee mechanism, and a regional clearing and settlement system for the emerging regional bond market. However, none of the completed finance sector projects reviewed in 2008 pursued this as an outcome.

47. **Management Capacity Developed.** Of the seven projects that had this target, four achieved a positive outcome. An outstanding case is Cambodia's Financial Sector Program Loan Cluster (FSPL I). There are five categories of program outputs under FSPL I

- (i) development of the banking system;
- (ii) a foundation for insurance development;
- (iii) promulgation of laws necessary to support commercial and financial activities;
- (iv) advancing accounting, and auditing practices towards international standards and best practices; and
- (v) establishing supporting institutions and developing human resource capacity.

48. In 2004, only 10 locally qualified accountants were practicing. However, with the legal and institutional frame work in place, subsequent updates under subprogram 2 of the project introduced an initiative to improve accounting and auditing capacity. Under this initiative, a government-funded scholarship scheme would assist at least 70 candidates per year to train as certified public accountants. From 2004 to 2005, these scholarships were restricted to government civil servants. A significant number of students dropped out of the 3.5-year program for various reasons. In 2006, the scholarships were opened to the general public, with selection based on merit. Since 2006, passing rates have greatly improved. The government has agreed to continue the accounting scholarships until the number of locally qualified accountants and auditors is adequate. Under subprogram 1, the National Bank of Cambodia established a Center for Banking Studies (CBS). The CBS introduced an associate degree program, an entry-level training program for new staff, and a management training program. By the end of 2006, CBS had trained 798 students from 13 separate admissions groups. The CBS recently revised and upgraded these courses to meet the challenges facing the banking system.

49. In Pakistan, to raise the professionalism of market participants the FMGP established the Pakistan Institute of Corporate Capital Markets. The institute conducts various licensing examinations that lead to certifications for different segments of the capital market. It also provides a platform for research and development, the exchange of ideas, and consulting services on capital market issues. The Securities and Exchange Commission of Pakistan (SECP) also held seminars and workshops to support enhanced corporate governance for directors, senior management, market participants, and investors. SECP has also worked closely with the stock exchanges and other training providers in Pakistan that promote capital market development and investor education. Other market institutions in Pakistan are also providing training in accounting, financial analysis, and margin finance.

50. The Nepal Rural Microfinance Project developed RMDC as an operationally and financially self-sufficient institution. RMDC has been able to continue its operations and expand outreach. The increasing number of implementing agencies to which RMDC provided loans, and the larger loan size have provided RMDC with increased interest income from loans. The increased income has contributed positively by enabling RMDC to emerge as an efficient and sustainable wholesale institution in Nepal's microfinance sector.

51. The Bangladesh Rural Livelihood Project had a less successful outcome. Over 330,000 primary society members received training on cooperative management, bookkeeping, other business-specific skills, and income generation. However, because the training programs provided only a narrow range of skill sets, the impact of the skills and income generation training was only moderate. The cooperative management and bookkeeping training had little impact, so many primary societies are still not keeping their books correctly. The microfinance program had no uniform accounting system, internal audit unit, management information system, credit operation manuals, adequate human resource policies, or staff training.

52. In India's Urban and Environment Infrastructure Facility, the local governments lacked the capacity to prepare commercially viable projects. This lacuna created an immediate impediment to mobilizing financial resources. The project included a risk-sharing facility and TA whose mandate was to launch a project development company to enhance municipal governments' capacity to prepare viable projects. However, due to insufficient preparation, both of these components were dropped.

53. **Reduced Money-Laundering Opportunities.** Cambodia's Financial Sector Program Loan Cluster and one multisector project, Viet Nam's Poverty Reduction Program II, both targeted measures intended to reduce money laundering. Six of the policy actions under Cambodia's subprogram 1 focused on strengthening the National Bank of Cambodia's prudential supervision of banks. One action included adopting two anti-money laundering regulations, titled "Know your customer" and "Reporting suspicious transactions." These reform actions helped strengthen the bank's surveillance and supervision capability and promoted the soundness of Cambodia's financial system. One of the policy actions in Viet Nam that was supported by ADB was an anti-money laundering decree. This policy action also included a framework to increase the effectiveness of anticorruption actions by building institutional capacity and developing the human resources area of the State Inspectorate. The Government approved Decree 74/2005/ND-CP on anti-money laundering regime on 7 June 2005. An ADB TA assisted the State Bank of Viet Nam in drafting the decree.

54. **Increased Gender Equity.** Six projects achieved a greater degree of gender equity and empowered more women. In one (Pakistan's Microfinance Sector Development Project), the attempts in this area were not that successful. Indonesia's multisector project, Rural Income

Generation, was successful. It facilitated economic and social empowerment of poor women by (i) providing access to financial capital from formal credit institutions, (ii) group formation, and (iii) capacity building in livelihood development. The total SHG membership was 646,681—255,709 men (40%) and 390,972 women (60%). 18,197 SHGs (31%) consisted wholly of women, 32,705 (56%) had a mixed membership, and the remaining 7,216 (12%) consisted of men only. Women-only groups generally demonstrated good credit standing and repayment records, compared with men-only and mixed-gender groups. Women were trained informally on the job, and in the process, became good financial managers and marketing officers. Often, they were the treasurers and the secretaries of the groups. Women reported that the project had addressed their immediate needs for economic survival and economic independence, enhanced their status in the community, and increased their self confidence.

55. In the Kyrgyz Republic project, credit unions directly employed about 1,500 people, the majority of whom were women. Women also comprised 57% of credit union borrowers, accounting for 49% of the total value of loans outstanding at the end of 2006. These data suggest that women borrow to establish or expand somewhat smaller-scale enterprises than do men, indicating that credit unions are playing an important role in empowering women in poorer households. These data indicate significantly increased participation by women over that observed in the 1997 pilot credit unions, where 77% of the members were men.

56. By completion, in the Bangladesh Rural Livelihood Project, which comprised 80% of the 16,000 primary societies, approximately 500,000 members were women. In Viet Nam's Rural Enterprise Project, a majority (58%) of the Viet Nam Bank for Agriculture and Rural Development's sub-borrowers and 40% of the People's Credit Funds' subborrowers were women.

57. For Pakistan's Microfinance Sector Development Program, an average of only 25% of the lead microfinance bank's (Khushhali Bank) sub-borrowers were women, compared to a target of 40%. Further, the percentage of women borrowers declined between 2001 and 2007. The Khushhali Bank changed its gender targeting policy in 2003, after which only those women who actually used loan funds could qualify for lending. This policy was made to prevent women from serving as surrogate borrowers for loan funds that were actually utilized by their male relatives. Loans were made to women who owned assets or had a bank balance (not necessarily as collateral) registered in their name. The Khushhali Bank reiterated that although the number of its women borrowers fell short of its target, the bank was certain that its numbers represented actual women borrowers who were using the funds specifically for businesses owned or managed by women. The bank's preference for transparency in reporting actual loans to women, rather than opting for surrogacy, reflects its commitment to using microfinance as a way to reduce poverty among women. However, due to the absence of available trainers, the project was not able to realize its community management training and leadership skills training for women.

58. The Rural Microfinance Project in Nepal provided access to rural microfinance, primarily to poor women. Microfinancing enabled women to pursue microenterprise activities, and to generate self-employment and income. Therefore, the project has attained its outcomes of improving the socioeconomic status of poor rural women and creating employment opportunities. The project built social capital by requiring women's groups and cooperative members to follow a set of carefully constructed rules that promoted mutual assistance and accountability. The rules covered writing by-laws, electing office bearers, and reviewing loan proposals.

59. **Policy and Institutional Strengthening in the Finance Sector.** Nine projects pursued this target. However, only five achieved the intended outcomes. In the Kyrgyz Republic, despite having prepared the credit union legislation and having submitted it to parliament in 1997, the project did not succeed in getting the legislation enacted until 1999. When the legislation was finally enacted, it did not expressly provide for deposit-taking or an apex institution. Serious weaknesses remained, including a lack of an adequate legal and regulatory framework and the absence of a provision for deposit-taking by credit unions. In the finance component of India's Urban Environmental Infrastructure Facility, one of the reasons for the differences between the intended and actual distribution of subloans was the slow pace of enabling the institutional and policy reforms. Institutional strengthening of the finance sector also failed in Viet Nam's Rural Enterprise Finance Project. The project planned to achieve the following goals:

- (i) new mechanisms to provide incentives to credit officers for good performance;
- (ii) a risk premium scheme to recover the cost of making subloans to borrowers with collateral shortages;
- (iii) a new training and technology fund;
- (iv) construction of a central training institute; and
- (v) comprehensive training curriculum development and course design, and general institutional strengthening.

60. The project could not complete two subcomponents. Due to the unexpected increase in land prices and a long delay in resettlement procedures, the project could not acquire the land necessary for the construction of the central training institute.

61. **Improved Governance.** Governance in the sector was improved for almost all projects. Pakistan's FMGP made progress in improving the governance of the SECP, which recruited 63 new staff with expertise in accounting, law, and information technology. The SECP established a new unit for monitoring and inspecting nonbank financial institutions. The unit comprised 27 authorized positions, of which 23 were new positions. The SECP also introduced a unique identification number for every person who holds shares and trades on the market. Identification numbers provide a powerful tool for detecting market abuse. SECP's monitoring of trading in real time, which uses state-of-the-art technology and prohibits insider trading, has also been strengthened. However, by December 2008, vacancies on the SECP's board continued to undermine its governance reforms. Nevertheless, corporate governance standards for market participants improved. The SECP adopted a new Code of Corporate Governance and applied it to both listed companies and nonlisted financial institutions, including development finance institutions and nonlisted insurance companies.

62. Indonesia's Rural Income Generation Project adopted participatory approaches. Further, the project emphasized the provision of direct support to build and formalize ways in which the poor could engage in sustainable livelihoods and thus attain self-reliance. However, during the first half of the project's implementation, the project established SHGs based primarily on credit demand, rather than on affinity and common interests of the members. As a result, many of these SHGs became inactive. To address this problem, the project implemented an empowerment plan that focused on improving the quality of the validated SHGs. These measures significantly improved the performance of the executing agencies in achieving both the quantitative and qualitative targets. Despite the project's shortcomings, the government considers it as one of the most successful national projects to use the participatory approach. The resulting skills in participatory strategies and the bottom-up approach to planning and implementation are deemed as transferable across development investment programs.

63. Indonesia's Industrial Competitiveness of Small and Medium-Sized Enterprise Development Program facilitated trade through improved customs procedures. The program achieved greater transparency and efficiency by upgrading the existing electronic data interchange program; and by devising and implementing a strategy for expanding integration with importers, shipping companies, banks, etc. The program (i) reduced customs intervention on trade and limited the discretion of customs officials; (ii) adopted a maximum limit of 10% for the examination of import shipments, based on intelligence data targeting analyses and random selections; (iii) set performance standards and required that reports on performance be prepared weekly.

64. **Poverty Reduced.** Viet Nam's Rural Enterprise Finance Project supported the government's efforts to reduce poverty and promote investment in private rural businesses. The project exceeded its appraisal targets. By completion, 118,838 low-income households had received subloans to improve household income, compared with the target of 49,500. Subloans to improve business profit were received by 170,857 microbusinesses and small enterprises, compared with a target of 22,400, and \$32.4 million of private investment was mobilized, compared with the appraisal target of \$20.3 million. A socioeconomic survey also indicated that the project enabled the beneficiaries to expand their production or business, and that the increased expenditure stimulated demand in the local economy, thus augmenting poverty reduction effects. Twenty-five percent of the respondents used the subloan profits to reinvest in their business, 21% used it for investing in new businesses, 15% for supporting their children's education, 18% for savings, 12% for building a house, and 9% for other purposes. By making credit available to farmers to invest in rural business activities, the project assisted in diversifying and restructuring this group, and in strengthening the links between agriculture and nonfarm businesses.

65. Pakistan's Microfinance Sector Development Project demonstrated positive impacts in both welfare and employment. Agriculture showed the highest impact. Most outcome variables, such as assets, inputs, and sales, were higher for those who had more access to the program. The Project also generated employment opportunities in all sectors. This positive impact was facilitated by the start-up of household enterprises. Microfinance borrowers demonstrated significantly higher sales and profits than did nonparticipants. Socially, the poorest bottom quintile of the study's sample, including the women in this group, benefited significantly. Microlending for education and health purposes (preventive medicine, immunization, and family planning) improved women's health and income-generating capabilities.

66. Viet Nam's Poverty Reduction Program II has been highly effective in achieving the program goals of reduced poverty and sustained economic growth. Since 1994 when it first began to introduce market reforms and reintegrate into the global economy, Viet Nam's Poverty Reduction Program II has had an impressive record of sustained growth. With average annual growth rates of 6%–7%, the number of people living in extreme poverty decreased from 58.1% in 1993 to 19.5% in 2004, an average decline of 3.5% per year. Viet Nam has also had a credible record of macroeconomic management.

67. Indonesia's Rural Income Generation Project directly benefited about 650,000 poor families totaling three million people. Thus, the project reached 81% of its target of 800,000 poor families through capacity building, savings mobilization, and access to credit. The project also reduced poverty in ten of 12 target provinces. In these provinces, the proportion of poor SHG members' households decreased from 22.5% in 2002 to 15.7% in 2005. The number of SHG

members with monthly incomes of less than Rp500,000 decreased sharply from 13.9% in 2002 to 1.5% in 2005, while those with monthly incomes greater than Rp500,000 increased from 30.1% to 43.1%.

Table 4: Finance Sector Typical Outcomes and Outcome Categories

Outcomes		KGZ	CAM	PAK	BAN	PAK	PAK	VIE	IND	INO	INO	IND	VIE
		Rural Financial Institutions Project	Financial Sector Program Loan Cluster	Financial Nonbank Markets and Governance Program	Rural Livelihood Project	Microfinance Sector Development Program	Microfinance Sector Development Project	Rural Enterprise Finance Project	Housing Finance II	Industrial Competitiveness of SME Dev Prog	Rural Income Generation	Urban and Environmental Infrastructure Facility	Poverty Reduction Program I
1	Finance sector expanded; more benefit from increased and improved finance sector options	++	++	+	+	+	++	+++	++	++	++	-	(-)
2	Capital market developed	(-)	(-)	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
3	Larger role for private sector in financing infrastructure	(-)	+	+++	(-)	(-)	++	+++	(-)	++	(-)	(-)	(-)
4	Increasingly inclusive financial sector	++	(-)	(-)	++	++	+	+++	++	(-)	++	(-)	(-)
5	Regional finance sector developed	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
6	Management capacity of financial sector improved	(-)	++	++	+	+	+	++	(-)	(-)	(-)	(-)	(-)
7	Money laundering options reduced	(-)	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	++
8	Gender equity advanced and women empowered	++	(-)	(-)	++	+	+	++	++	(-)	+++	(-)	(-)
9	Policy and institutional obstacles in sector removed	+	++	+	(-)	++	+	+	++	++	(-)	-	++
10	Governance improved	+	++	++	++	++	+	++	(-)	++	++	(-)	++

Legend: ++ = Yes, intended and matched targets; + = Yes, intended but did not match targets; +++ = Yes, intended, and exceeded targets, (+) = Yes, not intended, - = No, although intended, '(-) = No, not applicable; NOI = No information.

Source: ADB

C. Energy

1. Background and Project Methods

68. Operations departments issued seven PCRs in 2008 for projects in the energy sector. PCRs for the multisector and agriculture projects also showed some energy outputs. ADB estimated that the eight energy projects would cost about \$1.82 billion, but the amount spent was about \$1.30 billion. ADB's contribution was \$1.29 billion, or 98% of actual project expenditure. The projects were implemented from 1994 to 2004. Operations departments rated seven of the nine energy and multisector projects with energy components as successful, one highly successful, and one partly successful (Table 5). This result constitutes an above average success rate. This section reviews the outcomes in 12 areas:

- (i) higher and/or wiser use of energy by people and businesses, and more benefits from the energy made available;
- (ii) greater efficiency in energy development;
- (iii) improved sustainability of energy options (notably operations and maintenance arrangements);
- (iv) developed energy management capacity;
- (v) policy and institutional development in energy;
- (vi) improved governance;
- (vii) expanded and/or improved role of the private partners;
- (viii) protection of those involuntarily affected by construction of infrastructure (including indigenous peoples);
- (ix) advanced gender equity and empowerment of women;
- (x) reduced or avoided carbon dioxide emissions;
- (xi) improved energy efficiency; and
- (xii) support for clean energy.

Table 5. Energy-Related Projects and Programs with Project Completion Reports Issued in 2008

Fund	Country	Loan	Closing Date	Rating	Project Expenditure (\$ Million)	Energy Component Expenditure (\$ Million)
ADF	BHU	Rural Electrification and Network Expansion	19-Dec-06	HS	13.30	
ADF	CAM	Provincial Power Supply Project	5-Apr-07	S	24.98	
OCR	IND	Gujarat Power Sector Development Program	10-Dec-03	S	150.24	
OCR	IND	Power Transmission Improvement Sector Project	10-Aug-07	S	390.40	
OCR	IND	Madhya Pradesh Power Sector Development Program	28-Nov-03	S	260.05	
OCR	INO	Power XXIII Project	18-Dec-06	PS	420.40	
ADF	MON	Ulaan Baatar Heat Efficiency Project	1-Mar-07	S	48.12	
		Subtotal			1,307.49	
Multisector Project with Energy Components						
OCR	KGZ	Emergency Rehabilitation Project	8-Jan-08	S	5.38	0.77
		Subtotal			5.38	0.77
Agriculture Project with Energy Components						
ADF	PAK	Bahawalpur Rural Development Project	12-Oct-07	S	48.20	6.50
		Subtotal			48.20	6.50
		Total			1,361.07	7.27

BHU = Bhutan, CAM = Cambodia, HS = highly satisfactory, IND = India, INO = Indonesia, KGZ = Kyrgyz Republic, MON = Mongolia, PAK = Pakistan, PHI = Philippines, PS = partly successful = S = successful.

Source: ADB

2. Outcomes

69. **Higher and/or Wiser Use of Energy by People and Businesses, and More Benefits from Energy Made Available.** All projects reviewed generally met their main intended outcomes.

70. Indonesia's large Power XXIII Project expanded and diversified the country's power generation capacity by adding 229 megawatts (MW) of hydropower capacity. In 1992, thermal power represented 43% of the capacity on the countrywide network. However, this capacity had decreased to 31% by 2005, in part because of the contribution made by the Musi and Tanggari II Hydropower Scheme plants. The project also reinforced the 150 kilovolt (kV) transmission networks in the southern part of Sumatra. In southern Sumatra, the system average interruption duration index improved, decreasing from 17 hours per customer in 1998 to 12 in 2005.

71. The three large energy projects in India also met their objectives and had positive outcomes. Two program loans successfully carried out policy reforms that ultimately resulted in higher use of energy by a larger number of people, and more benefits from energy. The Gujarat Power Sector Development Program improved its financial health and internal efficiencies by implementing various reform measures, including operational efficiency improvement measures and investments made in the state power sector. As a result, the state power sector has been able to book an after-tax profit of Rs2.2 billion in FY2007 compared to a net deficit of Rs6.22 billion in FY2002. The distribution companies have taken several measures to reduce the transmission and distribution losses. Important steps in this effort include (i) increased vigilance for the prevention of theft; (ii) improved metering, billing, and collection systems; and (iii) strengthened and modernized transmission and distribution networks. As a result, transmission and distribution losses decreased from 34% in FY2002 to 22% in FY2008. The completion of project components also helped the state government (i) to transmit and distribute 54,083 million kilowatt hours (kWh) of energy during FY2007 compared to 30,232 million kWh of energy during FY2002, and meet peak demand of about 9,197 MW in FY2008 compared to peak demand of 6,700 MW in FY2002; and (ii) to improve operational efficiencies. The project components are being operated and maintained at high levels of efficiency.

72. The Madhya Pradesh Power Sector Development Program enabled the state (i) to transmit and distribute 32,600 million kWh of energy during FY2007 compared to 27,088 million kWh of energy during FY2002, and to meet peak demand of about 6,107 MW in FY2007 compared to the peak demand of 4,632 MW in FY2002; and (ii) to improve the collection efficiencies from less than 80% in FY2002 to about 91% in FY2007, due to improved metering and a computerized billing and collection system. The project components are being operated and maintained at high levels of efficiency. The project has not only achieved the physical targets established at appraisal, but also enhanced its physical targets through the timely utilization of loan savings for additional works under the project scope. Because of ADB's support and other measures in improving operations, the revenue gap between the average cost of power supply and the rate of realization has decreased. The revenue gap, which was about Rs1.88 per kWh in FY2002, has decreased to Rs0.93 per kWh in FY2005.

73. India's Power Transmission Improvement Sector Project resulted in increased power, fewer supply interruptions, and less load shedding in the southern and western regions. The additional power supply increased industrial productivity and job creation in manufacturing. The project also involved the construction of two new substations. In addition to providing employment for local residents during the construction of the substations and transmission lines,

the executing agency Powergrid also employed 57 persons full-time through contractors. These employees were hired as security guards, housekeeping staff, horticulturists, drivers, and guest house maintenance staff. As part of its social responsibility, Powergrid constructed a culvert 32 meters long and eight meters wide across the Ker river that improved connectivity between Ker village and other parts of Goa, and reduced the travel distance for village commuters.

74. Smaller projects also did well. Bhutan's Rural Electrification Network Expansion exceeded its targets by 15%, providing access to electricity to 9,206 new rural consumers in every project village included in the appraisal design. The cost per connection was \$1,447, 11% below the original estimate.

75. Mongolia's Ulaanbaatar Heat Efficiency Project improved the quality of life for the people of Ulaanbaatar, provided additional heat and hot water for new consumers, and achieved energy conservation by rehabilitating and modernizing the main and secondary heating systems. About 2,000 new customers were supplied with adequate and reliable heat in 2007.

76. In Cambodia, as a result of the power supply's improved availability and reliability, the Provincial Power Supply Project all the project's provincial towns reported increased economic activity. Typically, three or four electric welding fabricators, which are small businesses that manufacture security grids for doors and windows, have been established in each project town. The project has also established a similar number of air conditioned tourist hotels, ice factories, and other businesses. In Svay Rieng a new university is about to open, and another garment factory is being built. The improved power supply has also boosted business confidence in the town.

77. In the Kyrgyz Republic, the power distribution line subprojects of the multisector project benefited up to 2,300 households, thus contributing to restoring economic and social activities in the areas affected by the 2003 severe landslides and floods brought about by heavy rains. Pakistan's Bahawalpur Rural Development Project, which had an initial target of 150 villages, electrified 428 villages and settlements—168 villages in Bahawalpur district, 110 villages in Bahawalnagar district, and 150 villages in Rahim Yar Khan district. This component was cofinanced by the Islamic Development Bank. The Multan Electric Power Company performed a subproject electrification in two main phases, the first from 1999–2001 and the second from 2003 to 2007. The project management unit rejected 78 village applications for rural electrification because the households concerned were either scattered or were fewer than 25. No villages appear to have been rejected for failing to meet the poverty criteria. It appears that poverty targeting for this component was not carried out effectively. The project management unit (PMU) coordinated with the Multan Electric Power Company to ensure that the project would not cover villages that had an opportunity to be electrified from government or other sources of funds. Thus, the PMU deduced that the villages ultimately electrified through the Project did meet the poverty criteria. One of the main benefits from electrification cited by communities was the increase in the level of household comfort brought about by electric fans, refrigerators, and kitchen appliances. Electric lighting made it possible for some women to work longer hours outside the home during the day, and to do their household chores in the evening. Other benefits included extended hours for children's studies, extended use of productive machines such as fodder-cutting machines, and increased security in the villages. Communities visited for the PCR showed a high level of appreciation for the subprojects, as many settlements had been waiting a long time for electrification.

78. **Greater Efficiency in Energy Development.** Except for the multisector project with energy component, all eight energy sector projects set out to achieve greater efficiency in energy development. For India's Madhya Pradesh Power Sector Development Program, the central and state governments are still pursuing:

- (i) capacity expansion,
- (ii) reforms,
- (iii) provision of a transmission and distribution infrastructure that optimally utilizes existing installed capacities,
- (iv) improved operation efficiencies,
- (v) tariff (bulk and retail) setting on commercial terms by an independent regulator, and
- (vi) private sector participation.

79. To achieve these objectives, the government enacted a comprehensive Electricity Act in 2003. Thus, although actual outcomes are yet to materialize, plans are being implemented to complete these objectives. Other projects have met this outcome through feasibility studies, increasing capacities, and optimizing transmission and distribution systems.

80. **Sustainability of Energy Options Improved.** Seven out of the nine projects set targets for this outcome, and generally met them. The Kyrgyz Republic's Emergency Rehabilitation Project aimed to restore economic and social activities in the areas affected by the natural disasters in 2003, rather than improving the sustainability of its energy options.

81. India's Power Transmission Improvement Project is expected to remain financially sustainable. The project has developed commercial contracts with project beneficiaries to provide transmission system and letters of credit for the monthly billing of the beneficiaries. According to government forecasts, power shortages and constraints in the power delivery system will continue. Thus, there will be adequate demand for transmitting power from existing stations and for transferring power from regions with a surplus to regions with a deficit, thereby ensuring the optimum utilization of the transmission systems established under the project. The project has adopted technical standards and quality systems and procured and installed material and equipment that are superior and are unlikely to become obsolete. Powergrid also has in-house capacity to operate and maintain the subprojects effectively and efficiently.

82. The sustainability of Bhutan's Rural Rehabilitation and Expansion Network is rated "likely," although the project will have to rely indefinitely on ongoing subsidies. The power sector in Bhutan is inherently profitable, given the revenues received from sales of electricity to India. Further, it is government policy to ensure that sufficient funds are diverted to Bhutan Power Corporation (BPC) to sustain its rural electrification program. The sector's revenues from electricity sales to India have increased substantially with the recent commissioning of the 1,020 MW Tala hydropower plant. BPC recorded its first net profit in FY2006 after 3 years of operation, and the transmission wheeling revenues from the Tala plant should enable it to further improve its profitability. Assisted by an ADB-funded TA, BPC prepared an operation and maintenance (O&M) and asset replacement strategy and budget with appropriate performance indicators that measure the adequacy of the O&M activities and their cost-effectiveness and efficiency.

83. The sustainability of Cambodia's Provincial Power Supply Project is considered likely. The Svay Rieng and Kampot distribution systems were connected to the grid in Viet Nam, and the Banteay Meanchey and Battambang distribution networks were connected to the Thailand grid. Connection of Takeo to the national grid is likely in 2009, as part of the Greater Mekong Subregion (GMS) Transmission Project. Connecting to the national grid means that the generation components of the project in Banteay Meanchey, Kampot, and Takeo will take a secondary role by providing standby generation. The installations are somewhat overdesigned for this role, but, since the grid connections are not secure and thus unreliable, the generators provide a valuable backup to the power supply.

84. ADB's operations department believes that because of the increased demand forecast and room for improving the operational efficiencies at transmission and distribution levels, the Madhya Pradesh Power Sector Development Program in India will continue to be relevant in future. The Madhya Pradesh Electricity Regulatory Commission (MPERC) is directing its state power utilities to improve infrastructure and operational efficiencies to meet the growing demand and to enhance the sector viability. The commission expects the power sector in Madhya Pradesh to grow at the rate of 7% per annum, ensuring the full utilization of the investments made under the loan. Due to policy reforms implemented since ADB's intervention and the investments made, the sector is expected to break even by FY2012.

85. Mongolia's Ulaanbaatar Heat Efficiency Project was rated as likely to be sustainable. Although the financial status of Ulaanbaatar's District Heating Company (DHC), the principal owner of the assets, was weak, the government supported DHC through subsidies. Given Ulaanbaatar's harsh climate, the government will continue to support the DHC to ensure a reliable heat supply. DHC management expects the heating tariff to rise gradually so that it can operate at full cost recovery. The DHC has the institutional capability and expertise to operate the facilities, and under the project it has received training to further develop its capacity.

86. **Energy Management Capacity Developed.** Only four of the eight projects reviewed targeted this outcome, and achieved it largely by staff training. For instance, Cambodia's Provincial Power Supply Project provided training for provincial staff from Electricité du Cambodge (EDC) and the Ministry of Industry, Mines and Energy (MIME), and computers and software programs for eight EDC provincial offices. EDC recruited a financial management advisor who conducted on-the-job training for the staff of EDC's finance and accounting department in various aspects of financial management, including financial planning and forecasting, accounting, and cost control. The project financed construction of a dormitory building at the EDC Training Center for trainees from EDC and MIME provincial offices. The ADB-funded Phase II of training included power utility management and system planning. The project also funded hydrological equipment and training on hydrological data collection and interpretation, as envisaged at appraisal.

87. Bhutan's Rural Electrification Project encountered some difficulties, because the founding chief executive officer resigned soon after the completion of the attached ADB-funded technical assistance. Two subsequent appointees to the position also resigned.

88. **Policy and Institutional Strengthening.** Four projects targeted and achieved this outcome. India's Gujarat Power Sector Development Program responded to many serious constraints in the policy regulatory framework, political interference, and physical infrastructure for power transmission and distribution. The Gujarat government began a two-pronged strategy of policy reforms and physical investments in the sector, particularly to strengthen the

transmission and distribution segments. The approval of the 2003 Electricity Act has already been referred to. The project was designed to augment the transmission and distribution capacities in Gujarat to meet the increased demand for power and improve operational efficiencies, and focused particularly on the reduction of transmission and distribution losses. As a result, transmission and distribution losses have been reduced from 34% in FY2002 to 22% in FY2008.

89. In Bhutan, a second TA grant provided for the institutional strengthening of the Bhutan Electricity Authority (BEA) through development of an institutional structure, preparation of draft regulations and standards, and staff training. Although the Bhutan Electricity Act allows the BEA to be independent of the government, it is currently a functionally separate and financially autonomous entity within the Department of Energy. It is run by a separate commission and is funded from license fees received from regulated entities. Currently, this structure is appropriate, since the regulated entities are both government-owned and the domestic power sector relies on government subsidies. However, a case could be made for private partner or consumer representation on the commission. The government recognizes that the current structure would not be appropriate if the private sector were to become involved in hydropower generation. Hence, to clear the way for private sector involvement, the government is currently targeting complete separation of BEA from the department in 2009.

90. In India, two other projects successfully removed institutional obstacles. The PCR mission for the Power Transmission Improvement Sector project observed that the following objectives of the project had been realized, which were considered to be important steps in the development of the power sector in India:

- (i) bulk power transmission is being carried out on a commercial basis;
- (ii) the Central Electricity Regulatory Commission was constituted in 1998 and fixed transmission charges, ensuring a 14% return on equity in investments;
- (iii) the Electricity Act of 2003 made it mandatory for all state electricity boards (SEBs) to unbundle and restructure; and
- (iv) of the 23 SEBs, 13 have unbundled and corporatized and two have privatized distribution; at the time the PCR was issued, the remaining eight states were in the process of formulating schemes for reorganization of their SEBs;
- (v) twenty-three states have constituted state electricity regulatory commissions (SERCs);
- (vi) about 7,000 MW of independent power producers (IPP) plants are now in operation and several more are in various stages of implementation; and
- (vii) the Power for All by 2012 program launched by the government in 2002 envisages the addition of 100,000 MW of generation capacity and a corresponding augmentation of transmission and distribution infrastructure by 2012 to ensure access to electricity for the entire population of the country.

91. India's Madhya Pradesh Sector Development Program supported the state government policy reform initiatives in the power sector, facilitated the unbundling of the Madhya Pradesh State Electricity Board (MPSEB), and provided funding for part of the adjustment costs that were required during the reforms period. The program also assisted the Madhya Pradesh Electricity Regulatory Commission in strengthening the institutional capacity in order to establish the regulatory regime in the state. Although the state government prepared a financial restructuring plan, the state cabinet has yet to approve it. Nevertheless, the state government has informed the project completion review mission that its policies for the sector are being

guided by the plan. As of the PCR date (June 2008) the government was expecting the plan to be approved by the end of the second quarter of 2008.

92. **Governance Improved.** PCRs reported that 3 projects had improved governance. The Madhya Pradesh Power Sector Development Program's unbundled a functional basis into a generation company, a transmission company, three distribution companies, and a power trading company. This action has helped governance through improved accountability and transparency.

93. Bhutan's Rural Electrification and Network Expansion Project had a high level of participation of villagers in its project design. In developing the Ninth Five-Year Plan, by using an extensive structured process that involved consultation with district, *geog*⁷ and village leaders, the government identified 15,000 rural households that were eligible for electrification. This consultation was consistent with the objective of decentralizing decision making to support good governance, one of the government's strategic priorities in implementing its national poverty reduction strategy.

94. India's Gujarat Power Sector Development Program succeeded in enacting the Gujarat Electricity Industry Act, 2003. Doing so established a fully functional regulatory regime in the state, unbundled the Gujarat Electricity Board and facilitated the smooth transition to a new setup, and improved sector governance by establishing independent boards in each of the unbundled entities. Framing rules and regulations under the tariff principles laid down by the Gujarat Electricity Regulatory Commission has also ensured that all power utilities will perform a timely preparation and filing of annual revenue requirements. By 2008 the commission had revised retail tariffs four times.

95. **Private Sector Role in the Energy Expanded.** Four of the nine projects reviewed targeted expanding the role of the private sector in energy. Three achieved this goal, and one was partly successful. India's Gujarat Power Sector Development Program listed private participation as one of its objectives, and the completion report indicated this outcome had been achieved. The Gujarat Electricity Regulatory Commission, which was established under the 2003 Electricity Act, took several steps towards rationalizing the tariff, improving revenue realization, and creating an environment that would attract private investment in the state.

96. The Government of Bhutan has targeted separating the Bhutan Electricity Authority from the Department of Energy. Doing so will clear the way for private sector involvement. The Rural Electrification Network Expansion in Bhutan had two TA grants attached to this loan, both of which were rated as successful. One grant provided for an investigation into the potential benefits and feasibility of merging the three separate hydropower corporations. As a consequence of this TA, in January 2008 the government established the Druk Green Power Corporation, which is responsible for all government-owned hydropower generation projects in Bhutan. With ADB's assistance, the government prepared a hydropower policy to provide for the involvement of private partners in hydropower generation. If the government decides to proceed with a public-private partnership for new hydropower generation, then the investment will be made through Druk Green Power Corporation.

⁷ A cluster of neighboring villages within a district that are grouped together for administrative purposes.

97. **Safeguards Enforced for those Involuntarily Affected by Construction of Infrastructure (including Indigenous Peoples).** Except for one, none of the energy projects reviewed had major resettlement or indigenous issues that created adverse impacts.

98. Part C of Indonesia's Power XXIII Project was found to have adverse impacts that required mitigation during implementation. The major impacts anticipated during project preparation were resettlement, land clearing and disposal of rocks, soil and waste materials, forest protection and reduction in river flow. There were considerable delays in implementing Part C as negotiations for the right-of-way for the transmission lines were extremely slow. Nevertheless, ADB's safeguard covenants were complied with. In the case of the Musi river hydropower plant, serious delays due to the financial crisis at the time led to unforeseen encroachments of people along the river bank downstream. This in turn led the electricity company to design changes to the power to ensure the discharge would be not higher than 15m³/second in order to safeguard the people along the river banks. This meant that the hydropower plant could no longer operate at the initially designed level. ADB fielded an Environmental Mitigation Case Study Mission in May 1999 to review and report on the mitigation measures implemented for the three main parts of the project. It recommended the following: (i) all loan review missions should include a section on the environmental aspects of a project, (ii) environmental aspects of all Category A projects should be reviewed at least once a year, (iii) an environmental specialist should participate in loan review missions to the extent possible.

99. Component A of India's Madhya Pradesh Power Sector Development Program required the construction of 257 new 33/11 kV substations for which land had to be acquired. Of these 257 substations, 255 were constructed on land owned either by the state government or by local bodies, such as the Indore Development Authority. These lands were transferred to MPSEB for nominal payments. Landowners also donated land. These sites were also free from encroachments. The remaining two sites were privately owned; MPSEB acquired these two sites from the owners by paying compensation in accordance with market rates for comparable land. During construction, MPSEB paid Rs55,820,200 as compensation for crop losses and damage to trees. Component C of the project required the construction of nine new 220 kV substations and 38 new 132 kV substations, for which land had to be acquired. Of these 47 sites, 45 were state-government owned and were transferred to MPSEB for nominal payments. These sites were also free from encroachments. The remaining two sites were privately owned and were mostly agricultural or semi-agricultural land. MPSEB acquired this land by compensating the farmers in accordance with market rates for comparable land. Because the MPSEB will improve the power supply situation in their localities, resulting in better irrigation facilities and living conditions, the landowners were more than willing to sell the land to MPSEB.

100. For Gujarat's Power Sector Development Program, the Gujarat Electricity Board (GEB) has taken special care in selecting the power line routes to avoid human relocation and threats to the survival of vulnerable communities and common property resources. The GEB also provided adequate compensation for damages, if any, to crops, trees, buildings, and other structures during construction. Not a single building and/or structure was damaged during the execution of the project. All sites were also free from inhabitants or encroachments.

101. For Cambodia's Provincial Power Supply Project, in August 2000, ADB prepared and approved a resettlement plan. A loan covenant required that the resettlement plan be fully implemented and verified prior to issuance of bid documents. ADB recruited an independent monitoring agency to monitor the implementation of the resettlement plan. The agency

submitted a monitoring report submitted to ADB in May 2006, confirming that the resettlement necessitated by the project had been completed in accordance with the procedures and conditions of the resettlement plan. No indigenous peoples and/or ethnic minority issues arose during project implementation. The cost estimated at appraisal for land acquisition and compensation was \$200,000, and the actual cost was \$190,935.

102. For India's Power Transmission Improvement Sector Project, the Forest Conservation Act required prior approval by the Ministry of Environment and Forests (MOEF) for all transmission lines that infringed on ecologically sensitive areas. The project obtained timely approval from the MOEF for all subprojects that infringed on forest lands. In selecting the transmission line route, the project avoided forests as far as possible. Where it was not possible, the routing in a forest area was conducted in consultation with the appropriate forest authorities to minimize damage and ensure that the impact of the transmission lines on wildlife would be nil. Over the 2,942 circuit kilometers of transmission lines built under the project, 617 hectares of forest area were affected, for which the government paid Rs475 million to the state forest departments for compensatory afforestation, as mandated by the government rules. The transmission routes avoided wetlands and unstable areas, and were chosen to avoid the relocation of people and threats to common property resources. Powergrid informed the review that it also took the necessary engineering and biological measures to prevent soil erosion along the routes. The impact of the project on agricultural land along the transmission line route was restricted to the construction phase. Compensation was determined by the district authorities and paid to the affected persons. Powergrid has paid Rs116.92 million in compensation for loss of crops during construction and losses due to damage to trees. To minimize crop loss, where possible the construction activities were performed during the off-season.

103. In Bhutan, the Bhutan Power Commission asserted that there were no problems with private owners relating to resettlement or land acquisition for rights-of-way under the project.

104. **Gender Equity Advanced and Women Empowered.** Since all categories of electricity consumers—domestic, agricultural, industrial, and commercial—derived benefits from the projects, all projects were gender neutral. Electric lighting provided by the Bahawalpur Rural Development Project in Pakistan made it possible for women to work longer hours outside the home during the day and to delay doing household chores to the evening.

105. **Carbon Dioxide Emissions Reduced.** India's Gujarat Power Sector Development Program specified the reduction of carbon dioxide emissions as a target. The review mentions that the program met this objective, although the review does not mention any specific ways in which this was done. One of India's Madhya Pradesh Power Sector Development Program objectives was to promote higher efficiency and low-carbon power sources.

106. **Energy Efficiency Promoted.** This refers to efforts directed at using less energy to provide the same level of service. Four projects promoted energy efficiency. For India's Power Transmission Improvement Sector Project, both central and state governments pursued capacity expansion, reforms, the provision of a transmission infrastructure that optimally utilizes existing installed capacities, the setting of bulk and retail tariffs on commercial terms by independent regulators, and private sector participation. To enactment of the Electricity Act in 2003 helped achieve these objectives. The project was aimed at making the transmission sector more efficient. This goal was relevant at both appraisal and completion. The project will continue to be relevant in the future because of the rapid expansion of the power sector, including the

need for bulk transmission of power and greater interregional power exchanges. The subprojects will also continue to facilitate the future implementation of the open access policy under the Electricity Act.

107. India's Madhya Pradesh Sector Development Program helped to nearly eliminate the illegal tapping of power lines. The existing low voltage lines have been replaced by 11 kV lines. The program estimates that commercial losses have been reduced from 25% to 8%, and actual losses recorded in the feeders has decreased from 40%–45% to 12%–18%. Based on the benefits accrued under this pilot scheme, the program is now implementing a similar system across the state, part of which is being financed under an ADB facility.

108. In Mongolia, the project's main objective was to meet the basic heating needs of Ulaanbaatar and to improve energy efficiency. Ulaanbaatar is one of the coldest capital cities and heat is an essential need for the people. Since the country has limited energy resources, it is necessary to encourage supply and end-user efficiency, thus ensuring the reliability and adequacy of Ulaanbaatar's heat supply. The project has addressed this objective by replacing old distribution pumps. It did not succeed in introducing a new billing system based on heat consumption, nor the collection of data to monitor individual consumer's heat use. Although billing is not based on consumption, the residents are able to control the heat supply during cold weather and shut it off when the weather is warm. Thus, the project has achieved some measure of efficiency in the utilization of the heat.

109. Bhutan's Power XXIII Project developed plans to improve the country's supply efficiency and intensify energy conservation efforts throughout the country. However, the project was unable to achieve these outcomes, as portions of the project were canceled before they could be fully implemented.

110. **Clean Energy Supported.** This goal was explicitly stated as a planned outcome in two of the projects reviewed. Mongolia's Ulaanbaatar Heat Efficiency project had a positive environmental impact, because the alternative to rehabilitating the district heating system would have been to construct new heat-only boilers or individual residential heating that would have resulted in greater emissions. The Bhutan project increased its clean and renewable hydropower capacity.

Table 6: Energy Sector Typical Outcomes and Outcome Categories

Outcomes		INO	BHU	IND	CAM	IND	MON	IND	KGZ	PAK
		Power XXIII Project	Rural Electrification and Network Expansion	Gujarat Power Sector Dev Program	Provincial Power Supply Project	Power Transmission Improvement Sector Project	Ulaan Baatar Heat Efficiency Project	Madhya Pradesh Power Sector Dev Prog	Emergency Rehabilitation Project	Bahawalpur Rural Dev Project
ENERGY										
1	Higher/wiser use of energy by population and business; more benefit from energy made available	++	+++	++	++	++	++	++	++	++
2	Greater efficiency in energy development	++	+++	++	++	++	++	+	(-)	(-)
3	Sustainability of energy options improved (notably O&M arrangements)	++	++	++	++	++	++	++	(-)	(-)
4	Energy management capacity developed	+	(-)	(-)	++	NOI	++	++	(-)	(-)
5	Policy & institutional obstacles in sector removed	(-)	++	++	(-)	++	(-)	++	(-)	(-)
6	Governance improved	(-)	++	++	(-)	(-)	(-)	++	(-)	(-)
7	Private sector role expanded/improved	(-)	+	++	++	++	(-)	(-)	(-)	(-)
8	Safeguards enforced for those involuntarily affected by construction of infrastructure (incl. indigenous peoples)	++	++	++	++	++	++	++	++	(-)
9	Gender equity advanced and women empowered	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	++
10	Carbon dioxide emissions reduced	(-)	(-)	++	(-)	(-)	(-)	(-)	(-)	(-)
11	Energy efficiency promoted	+	(-)	++	NOI	++	++	++	(-)	(-)
12	Clean energy supported	(-)	++	(-)	(-)	(-)	++	NOI	(-)	(-)

Legend: ++ = Yes, intended and matched targets; + = Yes, intended but did not match targets; +++ = Yes, intended, and exceeded targets, (+) = Yes, not intended, - = No, although intended, '(-) = No, not intended; NAP = not applicable; NOI = No information.

Source: ADB

D. Transport

1. Background

111. PCRs issued in 2008 show that recently completed ADB-supported projects with transport outputs have been almost uniformly successful. All of the 16 transport sector projects, four multisector projects, and two agriculture projects that included transport outputs obtained a rating no lower than successful, and one was given a rating of highly successful. Of the \$2.8 billion envisaged for these projects, the projects actually about \$3.4 billion, which indicates good project design, planning, and implementation. ADB's contribution was 40% of total financing. Except for two in the railway sector and one in ports development, the projects reviewed in 2008 dealt with the road sector. There were two regional projects among the 17 (Table 7).

Fund	Country	Loan	Closing Date	Rating	Project Expenditure (\$ Million)	Transport Component Expenditure (\$ Million)
ADF	CAM/VIE	GMS Phom Penh to HCMC Highway Project	20-Jul-06	S	45.25	
OCR	FIJ	Ports Development Project	3-Sep-02	S	36.23	
OCR	IND	National Highways Project	10-Feb-03	S	32.80	
OCR	INO	Road Rehabilitation Sector Project	21-Dec-07	S	261.04	
ADF	KGZ	Third Road Rehabilitation	10-Dec-07	S	57.10	
ADF	LAO/VIE	GMS East West Corridor Project	22-Feb-08	S	40.78	
ADF	LAO	Rural Access Roads Project	9-Apr-08	S	27.48	
OCR	PAK	Road Sector Development Program	30-Jun-07	S	50.70	
OCR	PRC	Chongqing-Guizhou Roads Dev-Chongzun Expressway	22-Oct-07	S	333.00	
OCR	PRC	Guangxi Roads Dev Proj	12-Mar-08	S	465.30	
OCR	PRC	Ganzhou-Longyan Railway Project	16-Jan-08	HS	781.40	
OCR	PRC	Chongqing-Guizhou Roads Development Project	29-Jan-08	S	809.00	
OCR	PRC	Shanxi Road Dev II Project	6-Mar-08	S	278.00	
ADF	RMI	Outer Island Transport Infrastructure Project	23-Jan-07	U	0.50	
ADF	TAJ	Road Rehabilitation Project	21-Mar-07	S	27.52	
OCR	UZB	Railway Modernization Project	30-Mar-07	S	131.10	
		Subtotal			3,377.20	
Multisector Projects with Transport Components						
04	BAN	Emergency Flood Damage Rehabilitation Project	13-Dec-07	HS	204.48	56.66
OCR	IND	Gujarat Earthquake Rehabilitation Project	6-Nov-07	S	390.60	42.62
OCR	KGZ	Emergency Rehabilitation Project	8-Jan-08	S	5.38	0.770
ADF	LAO	Vientiane Urban Infrastructure Services	2-Apr-08	S	43.67	2.13
		Subtotal			644.13	102.18
Agriculture Projects with Transport Components						
ADF	NEP	Community Groundwater Irrigation Sector Project	21-Jan-08	S	17.94	4.3
ADF	PAK	Bahawalpur Rural Development Project	12-Oct-07	S	48.20	6.50
		Subtotal			66.14	10.80
		Total			4,087.47	112.98

BAN = Bangladesh, CAM = Cambodia, HS = highly successful, IND = India, INO, Indonesia, KGZ = Kyrgyz Republic, LAO = Lao People's Democratic Republic, NEP = Nepal, PAK = Pakistan, PRC, People's Republic of China, S = successful, UZB = Uzbekistan, VIE = Viet Nam
Source: ADB.

112. The People's Republic of China's (the PRC) Ganzhou Longyan Railway Project was rated as highly successful, and was approved for a total project cost of \$781 million. The project

- (i) provided an economical option for transporting freight and passengers in the project area,
- (ii) stimulated industrial development, natural resources exploration, and tourist industry development in the project area,
- (iii) facilitated the process of relocating labor-intensive industries from the coastal to inland region, and
- (iv) reduced network transportation costs by relieving congestion in the national railway network and neighboring highways while enabling intermodal shipment.

113. The project was completed in December 2006. There was significant growth in 2007 in both freight (25% increase) and passenger (48% increase) traffic on the new railway. Long-distance travel demand continued to increase, which demonstrated the railway's competitive advantages. The railway's hard seat services provided affordable access for rural people to the cities of Ganzhou and Longyan. It also provided connections to such long-distance destinations as Quanzhou, and thus offered access to important areas of employment. In the freight market, the railway company had obvious competitive advantages in shipping bulk materials. Demand is growing in the project area for transportation of mineral ores, construction material, cement, fertilizer, and timber. Local traffic, originating, and terminating traffic are still underdeveloped, however. About 85% of the initial freight traffic has been transit traffic.

2. Outcomes

114. The project targeted as its main outcomes the facilitation of transport, reduction in transport costs and time, better connection to markets, and benefits gained from expanded/improved transport options. The project pursued subsidiary and intermediate outcomes of

- (i) greater efficiency in transport development;
- (ii) improved sustainability transport options (notably, O&M arrangements);
- (iii) more developed transport management capacity;
- (iv) removal of policy and institutional obstacles in the sector;
- (v) improved governance;
- (vi) increased gender equity and empowerment of women;
- (vii) protection of those involuntarily affected, and especially the poor and the indigenous peoples among these;
- (viii) improved regional connectivity;
- (ix) expansion in the role of the private sector;
- (x) better environmental management; and
- (xi) more liveable cities and rural areas.

115. **Transport Facilitation.** All transport sector projects and multisector projects with transport components targeted and achieved their objectives.

116. Uzbekistan's Railway Modernization Project improved transportation efficiency on an existing route, but did not provide the planned new access to rural areas, sites with mineral deposits, or tourism centers. The project's ultimate impact is not clear yet, but will depend on the degree to which cost reductions will be passed on to railway users and lower the price of commodities transported by rail. So far, among agricultural produce only cotton and grain is transported by train; other produce is still predominantly transported by trucks. Tourists, who mainly travel in relatively large groups, visit the ancient cities by bus rather than by train.

117. The Kyrgyz Republic's Third Road Rehabilitation Project rehabilitated 125 km of road. Thus, it successfully contributed to per capita income growth and to reducing the number of poor in the project area. The project created more frequent use of freight and passenger services by residents of the project area, and thus improved their access to social services. Traffic grew steadily by approximately 45% per year. Travel times have been reduced by between 25% and 30% for cars and trucks, and vehicle operating speeds have increased by 12%.

118. Lao PDR's Rural Access Road Project supported ongoing programs to reduce opium production. The project accomplished this goal by providing feeder roads and roads that linked

settlements in opium-growing areas to the main national and provincial roads. By doing so, the project encouraged the production of alternative cash lower transport costs.

119. In the PRC, the Ganzhou-Longyan Railway (GLR) traverses the less developed area in southern Jiangxi and western Fujian provinces and plays an important role in reducing poverty in the region. It provides railway infrastructure in that mountainous region, enabling economical transport of raw materials, agriculture products, and industrial goods. GLR is stimulating the development of natural resources exploration and processing industries, and it is creating employment opportunities for local people. Affordable railway services are stimulating mobility of the local labor. Development of link roads and stations is extending the railways' poverty reduction impacts. GLR connects the prosperous coastal area in the east and the inland area in the west, thus stimulating movement of commodities and people between the two regions. Its connection with the north-south railway artery (Jing-Jiu Railway) has relieved capacity constraints in congested parts of the railway network while significantly reducing transportation costs and travel time. The project pursued application of new technologies to improve efficiency. It also strengthened the executing agency's marketing and business development capacity which is critical to GLR's operating on a commercial basis.

120. The Chongqing-Guizhou Roads Development (Leichong Expressway) in the PRC contributed to expanding the expressway in Chongqing municipality from 320 km in 2001 to 778 km in 2006 and connecting villages and counties with all-weather roads in Chongqing. By 2006, about 85% of the administrative villages had at least class IV roads. From 2001 to 2005, Chongqing experienced a gross domestic product (GDP) growth rate of 11% per year. The project area's economic growth rate was 15%, which was higher than the average municipality growth rate. This confirmed the economic impacts of the project. Significant impacts also occurred in investment, rapid urbanization, and the boom in the service and secondary industries. Accelerated economic development and the rapid transformation of the industrial structure in the project area led to improved living standards for residents and contributed to poverty reduction. The transport network in Chongqing municipality, particularly the high-grade highways, has improved significantly since 1998. Road density in Chongqing is 121 km per 100 km², about four times higher than the country's average. Chongqing is ranked as one of the top five provinces and municipalities in the PRC with high road accessibility. From 2002 to 2006, rural roads covering 23,000 km were built or improved. By the end of 2006, the total rural-road mileage had reached 95,429 km. All townships were connected with roads, except for 59 townships that continued to have difficulty in accessing all-weather roads. A network of local roads supplemented the expressway. This network included 122 km of local roads upgraded under the project, and was integrated with the rural roads system. According to Chongqing's rural road development plan, transport services will be extended to all villages by 2012. Convenient transport infrastructure has enabled faster and wider dissemination of project benefits, and fostered sustainable economic development in the project influence areas. The expressway and the feeder roads partly funded by ADB have contributed to social development in the project area by providing better and faster access to schools, hospitals, and other social services. The construction of the expressway generated about 1 million work-days of employment for local labor. The local roads utilized 36,000 work-days of rural labor. The operation of the expressway created 150 positions for local labor in Qijiang county. The project has greatly facilitated external investments, and has promoted industrial development and comprehensive economic development in the transport corridor, particularly in Qijiang county.

121. The Guanxi Roads Development Project expressway in the PRC has cut travel time from Nanning to Youyiguan from more than 5 hours to less than 2 hours, and reduced the actual

travel distance by 45 km. Traders from Pingxiang can now do business in Nanning and be back home on the same day, instead of a day or so later. The link and local roads enable the poor who live in the project area to seek employment elsewhere, and also allow easier access to market and public services. The industrial zones have attracted new industry into the project area. The project has stimulated the local economy and enhanced cross-border trade.

122. India's National Highways Project provided benefits to road users by significantly reducing vehicle operating costs. The project conservatively estimated that costs were lowered by about 30% for passenger cars and about 35% for trucks and buses. Travel times along the improved roads, although not measured at appraisal, have been significantly lessened. The road improvements have reduced trip times on the project roads by 30%–50%. The intended outcome of the project was augmented by incorporating additional works for the widening two sections of NH5 from two to four lanes, and for the 17 km bypass around Eluru town (contract V, which covers Vijayawada to Eluru). The project did not undertake benefit monitoring and evaluation, and so could not estimate the industrial employment brought about by the project and the construction-related local employment generated. However, observation of the project areas and discussions with local residents along the project roads indicated that economic activity increased significantly and that several new small businesses had been established.

123. In the Lao PDR, the Rural Access Road Project Improvement provided the isolated villagers in the project areas with access to markets, education, and health facilities, and opportunities for transport service, road maintenance, and other off-farm jobs. The project also supported ongoing programs aimed at reducing opium production by providing feeder roads and roads to link settlements in opium-growing areas with the main national and provincial roads, thus encouraging the production of alternative cash crops. The project resulted in increased agricultural production and thereby reduced poverty by increasing the earnings of low-income groups. Mobility for people living in areas of the project's roads increased significantly, as evidenced by the large volume of motor cycle traffic on the roads. Public transport fares also fell significantly. For example, a journey that cost KN130,000 prior to the opening of the Khock Khao Do-Na Sack road (C2) now costs KN30,000.

124. Tajikistan's Road Rehabilitation Project rehabilitated 104 km of the main road and 91 km of the rural roads, which significantly improved the transport conditions in the southwest of Tajikistan. Between 2001 and 2006, freight traffic volume in Khatlon increased by about 30% per year, and freight turnover by 43% yearly. In 2006, total traffic on the project road increased by 25%. Cars now travel at an average speed of about 80 km per hour on the rehabilitated sections, compared with 50 km per hour on unrehabilitated sections. From 2001 to 2006, private-car ownership grew by an average of 11% each year, and by 36% in 2006. Privately owned vehicles in the project area have increased to 88% of the total traffic. Product transportation losses to farmers have been reduced from 5% to 4%. Because transport expenses have been reduced from 8% to 6% of the product price, more farmers and businesses have been able to access markets. The road building generated many job opportunities both during and after construction. The road improvements also stimulated the development of small businesses along the project road and in the project area. The number of small businesses increased by about 20% in 2006.

125. Of the regional projects, the GMS Phnom Penh to Ho Chi Minh City Highway Project road and the border facilities provided physical infrastructure that realized the project goal of facilitating trade. The increase in the transborder activities at Bavet/Moc Bai, measured by persons and vehicles crossing the border and by import and export values, started increasing in

2003–2004, soon after the completion of the main civil works contract. The total value of trade through the Bavet/Moc Bai border post increased by about 41% per annum from 2003 to 2006. From 2003 to 2006, the number of people crossing the border increased at an average annual rate of 53% and the number of vehicles crossing the border increased at an average annual rate of 38%. However, cross-border movement has not reached its full potential, and there is not yet through movement of trade traffic between Cambodia, Thailand, and Viet Nam. In September 2006, as a pilot study, 40 vehicles crossed the border between Cambodia and Viet Nam. At present, the majority of freight vehicles stop at the border and transfer their goods onto local vehicles which then continue into the other country. In Cambodia, the level of development along RN1 has increased. From 2000 to 2006, there was significant ribbon development, including residences, buildings, and shops. At the Bavet border post, the increases in passenger and goods traffic from Viet Nam has led to development, including several casinos and hotels on the Cambodian side of the border. These facilities attract large numbers of tourists. The number of ancillary services, such as restaurants and gas stations, increased along the road. An industrial park close to Bavet has also opened, and provides employment opportunities for the local residents. In Viet Nam, the urban sections of the project close to Ho Chi Minh City have particularly benefited from the road improvements. However, benefits are now being observed in other project areas. New industrial areas that offer employment opportunities have been built near the project roads in Viet Nam. One of these industrial areas employs over 10,000 people and is planning to expand its activities in a new site. No indigenous peoples and/or ethnic minority issues arose during project implementation.

126. The GMS East West Corridor Project connecting the Lao PDR and Viet Nam substantially achieved the outcomes envisaged at appraisal. These include:

- (i) promoting regional economic integration, evidenced by increased movement of people and goods along the corridor;
- (ii) reducing vehicle operating costs and travel times;
- (iii) stimulating economic activity, investment, and trade; and
- (iv) improving access to both economic opportunities and social and commercial services for people living along the corridor.

127. Traffic on the National Highway Road No. 9 has increased since 2000, especially on the improved western half of the road. The project has also significantly increased cross-border passenger movement. There is now a significant and fast-growing flow of Thai tourists to Viet Nam, some of whom also spend time in the Lao PDR. In both countries, the socioeconomic impact has been wholly positive. Economic activity has increased within the corridor, as has the roadside population. On the Lao PDR side, annual investment in agriculture and forestry, industry, and services in Savannakhet Province has increased since the project's inception. The value of foreign investment approvals reached \$422 million in 2006, compared to \$107 million for 1996–2003. Investments cover a wide range of sectors. The Australian mining company Oxiana indicated that the decision to develop its gold and copper mine near Sepon was heavily influenced by the planned road improvement. Special incentives are offered to investors in the Border Trade Zone close to Daen Savanh, and in the poorer districts. In Viet Nam, industrial estates have been developed at Lao Bao and Dong Ha, and more are planned at Cam Lo and Dak Rong districts and Cua Viet port. Most the 23 industrial units that are operating started since 2002–2003. Local officials cite the improvement of the project road as the key factor in attracting development. Coffee growers receive better prices for their beans because traders can access their farms more easily, resulting in a more competitive market. Coffee growers have typically increased their annual earnings by D3 million (\$200). Bus services in both

countries have improved and increased in number with the road improvements. People living and/or working along the corridor perceive this growth as a major benefit.

128. In Pakistan, two agriculture projects with transport components also successfully facilitated transport. Pakistan's Bahawalpur Rural Development Project's rural roads component upgraded 574 km of 126 individual roads, against a planned 400 km. This project upgraded 268 km of 89 link roads, 246 km of 36 farm-to-market roads, and widened 60 km of the main road between Yazman Town and Ahmadpur East Town from one lane to two. The largest number of upgraded roads were in Bahawalpur district (46), followed by Bahawalnagar district (43), and Rahim Yar Khan district (37). The main road is located in Bahawalpur district. Communities formed organizations only for link roads. Requests from communities for an additional 93 roads were rejected because of problems with land acquisition (20 roads), the need to fell a large number of trees (7 roads), or insufficient number of poor households living in the subproject area (the selection criteria required 66% of households to be poor). Systematic analysis of poverty level of households is not available. Documentation to show consistent application of the selection criteria and systematic poverty targeting across all target villages is limited. Farmers interviewed during the project completion review mission field visits reported both tangible and intangible benefits from the road construction. The project did not perform an impact evaluation for the main road. A key aspect of the component that has not been accomplished is road maintenance. Neither routine nor periodic maintenance has been performed. For rural roads, the project reported that the primary financial benefit was a substantial saving in vehicle operating costs, which ranged from 45% to 50% for various types of vehicles.

129. Nepal's Community Groundwater Project improved 300 km of farm-to-market roads against a target of 840 km. The main reason for the shortfall was that a subproject area was eligible for road improvement only after it had installed 50 shallow tube wells (STWs) for the production of cash crops or cereals. Because of initial delays in project implementation, only 80 of 300 subprojects were able to install 50 STWs by the end of the project. In addition, the demand for rural roads was much lower than anticipated during project design in 1997, because many donor-supported projects had already improved rural roads. District and village development committees utilized nearly 60% of their annual grant received from the Ministry of Local Development for construction and improvement of rural roads. Consequently, this component utilized only \$2.7 million of the original allocation of \$8.8 million. In response to demand from local communities, the project constructed a causeway and five vented culverts in different subproject areas where rural roads had already been improved. These improvements provided year-round connectivity of the subproject areas to markets. The project also constructed 35 river crossings and provided hume pipes to water users' associations to drain logged water from agricultural lands. All of this construction enhanced road conditions in subproject areas and established year-round connectivity to markets. Project implementation generated an estimated 2,830 person-years of employment and 3,170 person-years of on-farm employment in 2007. Establishing and developing the capacity of water user groups, water user associations, and district water user associations, and their assumption of full O&M responsibility of STWs and farm-to-market roads has considerably reduced the government's costs of financing development of surface irrigation in the subproject areas and their routine O&M. This expenditure would otherwise absorb a significant amount of the annual budget allocated for irrigation. The project also promoted the involvement of women and disadvantaged groups in STW development and management. Doing so strengthened women's roles in local development and resource management, and enhanced their social status.

130. **More Efficient Transport.** All six projects that targeted this goal achieved it. Uzbekistan's Railway Modernization Project improved the railway's operational efficiency, which was reflected in reduced travel times, and maintenance and transport costs. Pakistan's Road Sector Development Program established a system that efficiently utilized the road-sector revenues for road development and maintenance. In the Lao PDR, the multisector loan, Vientiane Urban Infrastructure and Services, created a traffic operation center, and installed traffic lights at 26 programmed intersections.

131. Pakistan's Road Sector Development Program helped the National Highway Authority (NHA) to move toward becoming a commercial road agency. The NHA initiated a system to efficiently utilize the road-sector revenues for road development and maintenance. NHA supplemented government budget resources through off-budget initiatives, such as road tolls, and by adopting standard operating procedures for the road maintenance fund created within NHA. Two thirds of the projects considered for implementation by NHA were roads with high economic returns and adequate funding. Higher allocations were planned for road maintenance to achieve higher financial returns. The NHA established a road asset management system that has been updated and integrated in consultation with stakeholders. Operating on a fee-for-service basis. improved economy and efficiency in operations.

132. In Tajikistan, an advisory TA (\$500,000, Japan Special Fund) was designed and implemented in conjunction with the Road Rehabilitation Project in Tajikistan. The TA consultants reviewed and commented on many aspects of the transport sector policy of the government, including cost recovery mechanisms, budget allocation, commercialization of transport operations, sector development planning, feasibility study guidelines, and human resources development. The consultants also conducted seminars and case studies on the main principles of transport planning and project programming, and on methods of project costing and financing.

133. **More Gender Equity.** The Kyrgyz Republic's Third Road Rehabilitation, and the PRC's Chongqing-Guizhou Roads Development-Chongzun Expressway, Ganzhou Longyan Railway Project, and Shanxi Road Development Project followed and complied with ADB's Policy on Gender and Development during project implementation. Project leaders took all actions necessary to encourage women living in the project areas to participate in planning and implementing the project, including construction work. During project implementation, gender-disaggregated data in the resettlement plan and the monitoring and evaluation system monitored the effects on women. Under the Shanxi Road Development Project, the Rural Credit Corporation and the Agricultural Bank provided small loans to 58 affected villages and 35 poor villages. The loans assisted in small-scale development of industry for purchasing small processing machines and building aquaculture areas and vegetable greenhouses. The average loan per household was about CNY55,000. During 2004–2007, the project made loans to almost 100,000 households, a quarter of which were poor. The main aim was to assist women. Almost half of the loans went to households headed by women; a large number of local men have left the area to find work elsewhere.

134. Tajikistan's Road Rehabilitation Project encouraged more women to participate in entrepreneurial activities by providing safer business travel.

135. The GMS Phnom Penh-Ho Chi Minh City Highway Project reviewed the records of 750 of the 1,029 affected households from 23 communes. Women headed 222 of these households.

The residents' main occupations were farming, trading, and employment in private and government offices. Affected persons were also paid five other entitlements:

- (i) a disturbance allowance (\$19,400 for 485 buildings);
- (ii) a shifting allowance (\$10,200 to 255 affected persons);
- (iii) special assistance to households headed by women (\$1,600 to 80 out of a total of 222 affected);
- (iv) compensation for vulnerable households (\$660 to 33 affected persons), and
- (v) compensation for those below the poverty line (\$800 to 40 affected persons).

136. The Nepal Community Groundwater Irrigation Sector Project's social impacts were encouraging. The project provided access to year-round irrigation to marginal and small farmers, among them women. These persons had not benefited from pre-existing sources of irrigation due to their small landholdings. Out of a total of almost 40,000 farmers directly associated with the project's water users' groups, about 60% were female and 33% came from disadvantaged groups. The executive committees of water users' associations comprised 20% women and 16% representatives from disadvantaged groups. About 21% of the 28,590 training participants were women. These activities helped women to play active roles in planning, implementing, and managing shallow tubewells, farm-to-market roads, and agriculture programs. Taking such roles improved their confidence in local resource management and strengthened their social status.

137. Improved Sustainability of Transport Options and Transport Management Capacity. Four of the 22 transport projects worked on sustainability issues, and 10 of the 22 on management capacity. The Lao PDR's Vientiane Urban Infrastructure and Services trained operators to handle equipment and software. In 2006, the project conducted a training course for all transport managers, including the Vientiane traffic police. In January 2008, Pakistan's NHA structure underwent a change. The NHA built institutional capacity, established a financial management system, and developed the expertise to ensure proper accountability and efficiency.

138. India's National Highways Project created the National Highways Authority of India in February 1995. The authority has since strengthened its institutional, project management, and contract management capabilities and has implemented projects valued at more than \$1 billion yearly. The associated TA projects helped build capacity at the national and state levels for road safety, environment management for road projects, and technical standards for highway concrete structures. In the PRC, the Shanxi Road Development Project II founded the Shanxi Hou-yu Expressway Construction Company Limited in October 2001. The company was responsible for coordinating and monitoring all activities for the project's expressway component. After completion, the company was put in charge of O&M. The Guanxi Roads Development Project also helped establish an expressway company. The training provided under the project enabled the company to adopt modern management techniques in operating and managing the expressway, and to develop a future restructuring plan. In Tajikistan's Road Rehabilitation Project, the government has improved its institutional capacity to manage transport projects and to operate and maintain roads efficiently. The government has accomplished this improvement through the capacity-building programs and training, both international and in-country, under the project. In addition, the advisory TA supported training for Ministry of Transport and Communications staff and local communities in modern road maintenance management. The project implementation unit gained substantial experience in managing investment transport projects.

139. In Pakistan, community organizations were responsible for the O&M of road shoulders in the Bahawalpur Rural Development Project. In Nepal, the improved farm-to-market roads were functional and annual maintenance was performed by the water users' associations. In some instances, the associations collected tolls. Village development committees provided funds from their annual grant from the central government to repair roads. Further, the government has retained some key project staff and allocated NRs50 million annually for 3 years (FY2008–FY2010) to consolidate the community institutions, agriculture technologies, and infrastructures that have been created during the project implementation period. Although small in scale, the government has been replicating the project approach in new areas.

140. **Policy and Institutional Strengthening.** Pakistan's Road Sector Development Loan lists this outcome as achieved. The government developed a national transport policy framework. The government also enacted a National Highway Safety Ordinance, which created a National Highways and Motorway Police responsible for traffic management along motorways and the national highway. The enforcement has reduced traffic violations and accidents, and has contributed to the axle load control. The axle load awareness program was initiated during August 2000–February 2001 and continued after August 2002. Legislation for the national highway network has been in force since January 2003. The institutional reform and the corporate strengthening program of NHA under Pakistan's Road Sector Development Program is ongoing. The NHA developed financial management and administrative manuals that conformed to the revised standard operating procedures. The NHA revised its code to establish enhanced efficiency, transparency, and accountability. It also revised standard operating procedures. It recruited financial management experts to supplement the chartered accountants and other financial management professionals who were already on staff.

141. Uzbekistan's Railway Modernization Project and its associated TA, which were to have continued the institutional and policy reforms begun earlier under ADB's first railway project, was not as successful in this endeavor, because the scope of the TA was too broad relative to the resources available. However, the project made limited progress on the introduction of a modern accounting system, the downsizing of assets, and the implementation of a public service obligation system.

142. Although the Indonesia Road Rehabilitation Project road traffic and transport policy component produced relevant outputs, the project did not have the intended impact on the implementation of accident blackspot remedial works, and the installation of two weighbridges.

143. The Kyrgyz Republic's Third Road Rehabilitation Project successfully supported the transition to a market economy. The project helped develop an efficient policy and regulatory framework and promoted competition and private participation in transport facilities and services. The rehabilitated road facilitated year-round travel between the northern and southern parts of the country. A TA, along with community participation, helped develop a system of secondary road maintenance. However, the system remains unimplemented. The scope was amended to cancel activities aimed at improving the competitiveness of markets for transport services. A TA funded by the European Union and implemented in 2003–2005 confirmed that transport services were already highly competitive, freight services deregulated, and passenger services lightly regulated.

144. In Tajikistan, the advisory TA under the Road Rehabilitation Project met all of its targets, providing recommendations for addressing the policy and institutional constraints, introducing

modern planning tools, and training Ministry of Transport and Communication staff in various aspects of modern transport planning and management.

145. The objective of the GMS Phnom Penh to Ho Chi Minh Highway was to encourage traffic and trade flows between Cambodia and Viet Nam, so the project paid particular attention to reducing the bureaucratic constraints to cross-border trade. The governments of Cambodia and Viet Nam negotiated and signed a framework agreement for regulating and easing the movement of people, goods, and vehicles across their common border. In November 1999, three of the six GMS countries, the Lao PDR, Thailand, and Viet Nam, signed the GMS Cross-Border Transport Agreement. The remaining three countries, Cambodia, the PRC, and Myanmar, signed in November 2001. Of its 20 annexes and protocols, 16 have already been signed by the six member countries. At the eighth meeting of the GMS Transport Forum in Phnom Penh in August 2004, the countries agreed to test the agreement at key border-crossing points, one of which was the Cambodia- Viet Nam border-crossing at Bavet/Moc Bai. The implementation of the Bilateral Road Transport Agreement between Cambodia and Viet Nam was launched at Bavet/Moc Bai in September 2006.

146. **Improved Governance.** In the PRC's Chongqing-Guizhou Roads Project, the expressway company maintained an audit unit within the Chongqing Expressway Development Company during the construction and operation of the Project. The Chongqing Expressway Development Company provided an international consultant, who was recruited as the team leader-assistant chief supervision engineer. The consultant was given all the necessary powers to review and certify contract variation orders and contractors' monthly payments, before their approval by the chief supervision engineer.

147. **Safeguards Upheld.** Except for the Pakistan Road Sector Development Program and the multisector loans, all transport projects complied with the environmental and social safeguard standards that had been set:

- (i) air quality along the expressway met air quality standards;
- (ii) the negative impact of land acquisition and resettlement was successfully mitigated in all cases;
- (iii) proper signs on HIV/AIDS and safety were posted at worksites; and
- (iv) noise barriers were installed for the PRC's Guangxi Road Development Project.

148. The PRC's Ganzhou Longyan Expressway Project installed wheel bearing heat detectors that lowered the risk of derailment in mountainous areas. The expressway's route avoided forested lands and nature preserves. The wastewater treatment facilities and solar and electricity heated boilers installed in stations reduced the negative environmental impact during the operation period. The affected people were satisfied with the compensation received, and their incomes were restored. Uzbekistan's railway project did not have any adverse impact on the environment. The project performed track rehabilitation on the existing right-of-way. In Tajikistan, the Road Rehabilitation Project did not involve any involuntary resettlement.

149. The GMS East West Corridor, which services the Lao PDR and Viet Nam, was classified as environmental category B because it involved the improvement and rehabilitation of an existing road with minimal changes to the road's alignment. An initial environmental examination concluded that environmental impacts could be kept within acceptable limits by implementing already identified mitigation measures. Initially, there was some oil seepage from at least one of the contractor's camps, which was contained by building a pit. On completion, villagers observed and reported some cleanup problems that were easily remedied. In some cases,

borrow pits became fishponds, turning a problem into a benefit. Although 29 hectares of forest were identified as likely to be affected, no trees were felled. Overall, the project did not observe any serious adverse impacts. Although the contractors agreed to implement the specified environmental protection measures in Viet Nam, they did not fulfill their obligations. When the work was completed, the contractors left debris, waste construction materials, and remnants of demolished structures on roadsides and in waterways. This waste has since been cleared. To mitigate the increased risk of the spread of diseases, contractors working on the main road in both countries were obliged to carry out awareness programs. In the Lao PDR, awareness programs were accomplished by cooperating with the Savannakhet Provincial Health Department. Roadside interviews confirmed that awareness training had taken place. In Viet Nam, the project paid the Quang Tri Health Service \$20,000 to take actions such as health checks and education for construction workers, chemical spraying at construction camps, and distributing condoms to protect the most vulnerable individuals. These and other similar actions were also implemented in the other road and railways projects.

150. In Pakistan, the rural roads component of the Pakistan Bahawalpur Rural Development Project needed land to widen the roads by building two meters of shoulder on each side of the existing road. The land was generally obtained through donations. There were some disputes, which were either resolved at the community or local government level, or taken to the courts. All the cases brought to the courts were dismissed and road construction proceeded. The PMU reported having rejected applications for 20 roads due to land acquisition problems.

151. **Increased Regional Connectivity.** Country-specific projects other than the GMS East West Corridor and GMS Phnom Penh to HCMC Highway also had regional connectivity outcomes. The expressway in the PRC's Guangxi Roads Development Project, which is an essential part of the GMS economic corridor, has enabled the Guangxi government to establish three joint Guangxi-Association of Southeast Asian Nations (ASEAN) industrial zones to attract investments from ASEAN countries, and made it possible for the Wantong Logistic Center at Pingxiang to process cross-border trade with Viet Nam. Uzbekistan's Railway Modernization Project has made regional transport more efficient. The project's regional relevance also increased by the construction of the Kazakhstan-Turkmenistan-Iran railway line. This railway will come on line by 2012, and will carry some of the international transit traffic currently moving on the project's railway line, which is the remainder of the section between Chengeldy and Samarkand. In southwest Tajikistan, the project road constructed under the Road Rehabilitation Project is part of the Asian Highway Network that connects Tajikistan with the South Asian countries and the PRC. Most of the main roads in Tajikistan that were built before 1970 were inadequately maintained and had sustained damage from civil conflict and natural disasters. In the early 2000s, about 80% of the national road network was in poor or very bad condition. The deteriorated state of the road network severely affected international traffic and regional development. The improvements made on the project road have significantly changed the transport condition in the project area. The improvements will continue to benefit international transportation and regional development in Tajikistan. Along with foreign trade development in this area, international road freight traffic, including transit traffic, in Tajikistan has increased sharply, from 45,700 tons in 1999 to 432,000 tons in 2006 for an average annual growth rate of 36.67%. The total number of vehicles (entry-exit, and transit) increased from 9,376 to 41,744. Transit traffic's share of the total national traffic grew from 9% to 35%.

152. **Expanded Role of the Private Sector.** Among the projects reviewed, only the Kyrgyz Republic's Road Rehabilitation Project explicitly included expanding the role of the private sector. The project supported the transition to a market economy by helping to develop an

efficient policy and regulatory framework, and by promoting competition and private participation in the provision and operation of transport facilities and services.

153. **Environmental Management.** The PRC's Shangxi Road Development Project introduced the Blue Sky and Clean Water environment program. To implement this plan, the Yuncheng Environmental Protection Bureau prepared a vehicle emission control plan in 2007. The regular testing of vehicle emissions is now in place, along with enforcement measures. Four private vehicle-emission testing centers have operated in Yuncheng prefecture since September 2007, and one center for both vehicle emission testing and vehicle inspection is under construction. For the PRC's Guangxi Roads Development Project, air quality along the expressway has met air quality standards, and noise barriers were installed.

154. **Livable Cities and Rural Areas.** In the Lao PDR, the traffic management subcomponent under the Vientiane Urban Infrastructure and Services greatly improved the flow of traffic, and installing streetlights had a positive effect on the aesthetics and visual surroundings of the area. The PRC's Chongqing-Guizhou Roads Dev-Chongzun Expressway Project contributed to economic development and improved living standards in the project areas by

- (i) shortening travel time, which has changed people's travel habits;
- (ii) increasing economic, social, and cultural exchanges between local people and outsiders;
- iii) boosting investment in the industry and service sectors;
- (iv) developing many new tourist attractions and providing shorter tourist routes to neighboring provinces;
- (v) expanding the service sector, including transportation, accommodation, restaurants, and commercial and retail centers;
- (vi) accelerating urbanization; and
- (vii) integrating the local road network better by constructing county roads under the project.

155. The project also included safety measures, such as continuous metal guardrails in the median strip, planting hedges and flowering plants, erecting reflectorized road signs, installing emergency telephones, and building pedestrian bridges and underpasses.

156. In the Kyrgyz Republic, the Third Road Rehabilitation Project had one negative outcome. In 1998, the total number of accidents on the Bishkek–Osh road was 513, 97 of which resulted in fatalities. In 2004, the number of accidents increased to 862 incidents and 203 fatalities. A traffic accident survey showed that 18% of accidents were caused by excessive speed, 49% were caused by otherwise improper or impaired driving, and 14% were caused by pedestrian behavior, including ignoring traffic regulations. Therefore, the increase in accidents was due mainly to factors other than the improved road condition.

157. For the GMS Phnom Penh HCMC Highway Project, before the road improvements were completed in 2002, there were 323 accidents on the national highway. In 2005, there were only 124 accidents. Similar reductions have been achieved on other parts of the highway, where traffic accidents just before the completion of the road improvements in 2003 totaled 95. At the end of 2005, the number of accidents had been reduced to 42.

158. All the multisector projects reviewed, especially the emergency rehabilitation projects had "livable cities and rural areas" as an outcome, and all achieved it. Under Bangladesh's

Emergency Flood Damage Project, rehabilitation of the railways enabled train services to and from the affected areas to return to normal. The restoration and rehabilitation of road and bridge subprojects gave isolated villages access to markets and social services in nearby urban centers. Access was particularly important for agrobased industries, which were the main economic activity in the majority of the areas affected by the floods. India's Gujarat Earthquake Rehabilitation Project experienced the same outcomes. The Gujarat Roads and Building Department rehabilitated and upgraded about 3,600 km of major district roads and village access roads in 12 districts, by the making it possible for people living in the earthquake-affected areas to resume their normal lives with better quality infrastructure and housing built to resist multiple hazards. Basic infrastructure services, such as drinking water, electricity, sewerage, sanitation and public buildings, became more widely available and far superior in quality to the situation before the earthquake of 26 January 2001.

159. **Poverty Reduction.** Poverty reduction was the overall ultimate aim of almost all projects in the transport sector. The Chongqing Guizhou Road Development Project in the PRC included upgrading of five local roads totaling 122 km to develop the local economy and promote poverty reduction. The five roads were simultaneously upgraded and put in good condition. Over 50,000 local residents, including the poor, benefited from convenient local transport conditions. During upgrading of the local roads, local labor supplied about 36,000 work-days. Among the local laborers, more than 10% were poor and unskilled. The upgraded roads reduced transport time and the cost of reaching markets, employment, education, health centers, and other social services. With better transport conditions, higher priced but difficult-to-preserve fruit products became a popular output of farmers and gave them additional cash income. With the rapid socioeconomic growth brought about by the expressway in the project impact zones, and the increased fiscal revenue of the local governments, both the standard of living and income of local people were significantly improved, particularly for the poor. The statistics show that from 2001 to 2006, the rural per capita income of farmers increased by 52% in Qijiang county and by 46% in Chongqing municipality. The construction of the expressway generated 7.9 million work-days for local labor, with a total remuneration of CNY390 million. Local residents were also compensated for numerous services to the contractors. Consequently, the project contributed to poverty reduction in Qijiang county, particularly in the townships along the expressway. The number of poverty villages along the alignment was reduced significantly from 18 in 2002 to 10 in 2007. Meanwhile, poverty incidence in the county decreased from 58,562 poor people in 2002 to 45,364 in 2007.

160. The Lao PDR Rural Access Roads project contributed to poverty reduction and increased household income primarily through increasing the marketability of agriculture products such as rice and corn. The project created access to existing and new markets, and provided additional and improved access to health care facilities and schools. The project increased the frequency of bus service and reduced travel times, resulting in savings to the residents of the project area. Electricity and communication services have been provided in the project areas. Residents relocated voluntarily from remote villages to be near the new project roads and are involved in the periodic road maintenance. The feeder roads reduced isolation, improved the quality of life, and eliminated opium poppy production in those areas. The provincial annual economic growth rate increased from about 4.5% before the project to about 8.3% in 2005–2007.

161. In the Lao PDR, the GMS East-West Transport Corridor Project helped reduce poverty in Savannakhet Province from 31% in 2001 to 17% in 2006, reducing poverty in 13,000 households. Most poverty is in the districts traversed by the project road.

162. In the PRC, the Ganzhou Longyan Railway project had a significant impact on economic development and poverty reduction in the region. From 2000 to 2006, the per capita gross domestic product in the counties and cities along the alignment increased by 151% and the fiscal revenues of local governments increased by 330%. The incidence of poverty in the project region diminished significantly. The number of people living in poverty within the eight counties and districts along the alignment decreased from 270,456 in 2000 to 213,430 in 2006, even though the defining level of most of the poverty lines had been raised. During the 2000-2006 period, the per capita income of farmers rose between 32% and 53% in those counties and cities. These impacts were attributed to the railway. Its construction directly contributed to the poverty reduction in project areas by providing employment opportunities of 85,710 person-months for unskilled laborers, of which 55,710 person-months went to local laborers. A total of 39,000 person-months went to laborers from poor households, and CNY23.4 million was disbursed to local poor households during construction. In addition, local procurement of about CNY500 million worth of construction materials and supplies for GLR construction provided employment opportunities of about 83,000 person-months for local laborers.

Table 8: Transport Sector Typical Outcomes and Outcome Categories

Outcomes	PAK	PRC	PRC	PRC	UZB	IND	IND	KGZ	LAO/VIE	LAO	PRC	PRC	VIE/LAO	TAJ	FIJ	RMI	LAO	BAN	IND	KGZ	PAK	NEP
	Road Sector Dev Program	Chongqing-Guizhou Roads Dev-Chongzun Expressway	Guangxi Roads Dev Proj	Ganzhou-Longyan Railway Project	Railway Modernization Project	National Highways Project	Road Rehabilitation Sector Project	Third Road Rehabilitation	GMS East West Corridor Project	Rural Access Roads Project	Chongqing-Guizhou Roads Development	Shanxi Road Dev II Project	GMS Phom Penh to HCMC Highway Project	Road Rehabilitation Project	Fiji Ports Development Project	Outer Islands Transport Infrastructure Project	Vientiane Urban Infrastructure and Services	Emergency Flood Damage	Gujarat Earthquake Rehabilitation Project	Emergency Rehabilitation Project	Bahawalpur Rural Dev Project	Community Groundwater Irrigation Sector Project
1 Transport facilitated; transport costs reduced; more benefit from expanded / improved transport options (better connection to markets)	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	-	++	++	++	++	++	++
2 Greater efficiency in transport development	++	(-)	(-)	++	++	(-)	(-)	++	(-)	(-)	(-)	(-)	(-)	++	++	-	++	(-)	(-)	(-)	(-)	(-)
3 Sustainability transport options improved (notably O&M arrangements)	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	++	(-)	(-)	(-)	(-)	++	++
4 Gender equity advanced and women empowered	NOI	++	NOI	++	NOI	NOI	NOI	NOI	NOI	NOI	NOI	++	++	++	(-)	(-)	NOI	NOI	NOI	++	(-)	++
5 Transport management capacity developed	++	(-)	++	++	(-)	++	++	(-)	(-)	(-)	++	++	++	++	(-)	+	++	(-)	(-)	(-)	(-)	(-)
6 Policy and institutional obstacles in sector removed	++	(-)	(-)	(-)	-	(-)	+	++	(-)	(-)	(-)	(-)	(-)	++	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)
7 Governance improved	++	(-)	++	(-)	(-)	++	(-)	++	(-)	(-)	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
8 Safeguards enforced for those involuntarily affected and especially the poor and the indigenous peoples	NOI	++	++	++	++	++	++	++	++	++	++	++	++	++	NOI	++	(-)	(-)	(-)	(-)	++	NOI
9 Regional connectivity improved	(-)	(-)	++	(-)	++	(-)	(-)	(-)	++	(-)	(-)	(-)	++	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
10 Private sector role expanded/improved	(-)	(-)	(-)	(-)	(-)	(-)	(-)	++	(-)	(-)	(-)	NOI	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
11 Better environmental management	++	(-)	++	(-)	(-)	(-)	(-)	(-)	+	(-)	(-)	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
12 Cities made more livable, rural areas made more livable	++	++	++	++	NOI	NOI	(-)	+	++	NOI	NOI	++	++	NOI	NAP	NAP	++	++	++	++	NOI	NOI

Legend: ++ = Yes, intended and matched targets; + = Yes, intended but did not match targets; +++ = Yes, intended, and exceeded targets, (+) = Yes, not intended, - = No, although intended, '(-)' = No, not intended; NAP = not applicable; NOI = No information.

Source: ADB.

E. Water

1. Generic and Intermediate Outcomes of ADB Projects

163. Among the 68 completed projects and programs reviewed in 2008, 19 have pursued water related outcomes (Table 9). ADB helped achieve outcomes in this sector through projects specializing in water supply and sanitation (WSS) services, agriculture and natural resource oriented projects, and multisector projects, which are generally more integrated rural or urban in nature or address emergency situations, with water components. These operations achieved the main sector outcomes of (i) greater use of water supply and sanitation options provided for WSS-oriented projects, and the related benefits from these such as improved public health; and (ii) improved water and flood management for other water oriented projects, and the related benefits such as higher production and productivity, and greater safety. The operations also achieved the intermediate outcomes of

- (i) improved sustainability of the water and sanitation options;
- (ii) advanced gender equity and empowered women;
- (iii) improved sector management capacity;
- (iv) policy and institutional development of the sector,
- (v) good governance in the operations and in the sector;
- (vi) an expanded or improved role of the private sector in water management,
- (vii) no ill effects for those involuntarily affected by construction of infrastructure; and
- (viii) an improved environment; better environmental management.

Table 9: Water-Related Projects and Programs with Project Completion Reports Issued in 2008

Fund	Country	Loan	Closing Date	Rating	Project Expenditure (\$ Million)	Water Component Expenditure (\$ Million)
Water Supply, Sanitation and Waste Management						
ADF	CAM	Provincial Towns Improvement	17-May-07	S	46.13	
ADF	KIR	Sanitation, Public Health & Environment Improvement	9-Apr-08	PS	12.49	
ADF	LAO	Water Supply And Sanitation Sector	29-Jul-08	PS	23.43	
ADF	PAK	Punjab Community Water Supply & Sanitation Sector	6-Dec-07	HS	78.18	
		Subtotal			160.23	
Multisector with Water Components						
ADF	BAN	Emergency Flood Damage Rehabilitation	13-Dec-07	HS	204.28	28.95
OCR	IND	Gujarat Earthquake Rehabilitation And Reconstruction	6-Nov-07	S	39.61	146.12
OCR	IND	Urban & Environmental Infrastructure Facility	29-May-06	U	27.35	7.30
OCR	INO	Metropolitan Medan Urban Development	2-Apr-07	PS	141.66	52.00
ADF	LAO	Vientiane Urban Infrastructure And Services	2-Apr-08	S	43.67	9.15
OCR	PAK	Sindh Devolved Social Services Program (DSSP)	23-Aug-07	PS	103.23	
ADF	PAK	Sindh Devolved Social Services Program (DSSP)	23-Aug-07	PS	107.73	
OCR	PRC	Tianjin Wastewater Treatment & Water Resources Protection	5-Sep-07	S	337.33	337.33
ADF	VIE	Poverty Reduction Program II	5-Jul-06	S	587.00	
ADF	VIE	Ho Chi Minh City Environmental Improvement	31-Jan-08	U	5.08	2.65
ADF	VIE	Support The Implementation Of The Poverty Reduction Program III	22-May-07	S	613.10	
		Subtotal			2,210.04	583.50
Agriculture and Natural Resource Management with Water Components						
ADF	BAN	Sunderbans Biodiversity Conservation Project	19-Dec-07	U		0.00
OCR/ADF	INO	Coastal Community Development and Fisheries Resources	21-Apr-98	S		12.70
OCR	INO	Central Sulawesi Int'gratd Area Dev & Cnservtn	16-Jun-06	S	30.87	
ADF	NEP	Community Groundwater Irrigation Sector	21-Jan-08	S	17.94	3.10
ADF	PAK	Bahawalpur Rural Development	12-Oct-07	S	48.20	12.40
		Subtotal			97.01	28.20
		Total			2,467.28	611.70
BAN = Bangladesh, HS = highly successful, IND = India, INO = Indonesia, KGZ = Kyrgyz Republic, LAO = Lao People's Democratic Republic, PAK = Pakistan, PHI = Philippines, PRC = People's Republic of China, PS = partly successful, S = successful, SRI = Sri Lanka, U = unsuccessful, VIE = Viet Nam.						
Source: ADB.						

164. The 19 ADB-supported projects reviewed spent around \$2.4 billion to achieve the water outcomes, of which \$584 million was spent on water components of integrated multisector projects. ADB financed 64% of the aggregate cost of the projects. Around three quarters of the loans were project loans, 17% were program loans, 7% were sector development program loans, and 3% were development finance institution loans.

2. Main Sector Outcomes

165. The success ratings of the projects with water outcomes were in the midrange of the ratings for ADB sectors. ADB rated 12 of the reviewed operations as successful or highly successful, but noted that four were only partly successful, and rated two as unsuccessful.

166. **Highly Successful.** ADB rated the 2005 Emergency Flood Damage Rehabilitation Project in Bangladesh and the Punjab Community Water Supply and Sanitation Sector Project in Pakistan, both of which were completed in 2007, as highly successful. The emergency project improved people's living conditions by rehabilitating flood management and drainage systems. The embankment protection works held up well in 2007 when there was another countrywide flood disaster. The project in Punjab connected 161,000 households in rural areas to a piped water supply. This project benefited about 2.6 million people, compared to its original target of 2.3 million, by constructing more than its target of about 500 new subprojects. It also rehabilitated additional 250 subprojects.

167. **Successful.** The Central Sulawesi Integrated Area Development and Conservation Project, which closed in 2006, reached more beneficiaries than were originally targeted. By financing village water supply and sanitation systems, farmer-managed irrigation systems, and drainage facilities, the project benefited the local communities in many ways, including reducing the prevalence of schistosomiasis in two endemic areas. At completion, 63 completed water supply systems in 75 villages were performing well, while 12 systems required repairs. About 11,750 sanitary latrines were installed, with higher coverage in schistosomiasis endemic villages.

168. The Vientiane Urban Infrastructure and Services Project, which was completed in 2008, had a major impact on the city. The infrastructure built exceeded the targets set, roads by 24.3% and drainage works by 10%. The project eliminated most incessant flooding, thus contributing to public health improvement. Better drainage, combined with aesthetically constructed brick walkways, street lighting, and road improvements, improved Vientiane's economic growth and livability. The solid waste management subcomponent widened the coverage of waste collection services from the original target of about 15,000 households to almost 70,000 households at completion.

169. The Pakistan Bahawalpur Rural Development Project, which closed in 2007, achieved more than its target in some areas. This project improved 684 watercourses and established as many water users' associations, compared to the original target of 480. Farmers reported increases in yields, and were able to switch to higher-value crops such as sugarcane as a result of the investment. In improving the watercourse, to ensure good construction quality the project adopted an innovative approach.⁸ This approach has since been adopted for the National Program of Improvement of Watercourses in Pakistan. The project increased cropping intensity between 7%

⁸ The disbursement of funds for watercourse improvement took place through installments tied to assessments of ongoing construction quality. The PMU retained 10% of the total watercourse improvement cost until final certification of satisfactory construction by field teams. This system is considered to have adequately addressed the problems of poor construction quality in previous on-farm water management projects.

and 11%; boosted yields of major crops between 10% and 16%; and decreased water losses between 28% and 32%.

170. The Nepal Community Groundwater Irrigation Sector Project, completed in 2008, expanded the year-round irrigated area by 54,350 ha, but remained, at 93%, somewhat below the target. Nevertheless, the project increased cropping intensity by 79%, higher than the target of 50%; and increased the average crop yield by 62%, higher than the appraisal expectations of an increase between 25% and 50%. Annual total farm output rose by 279,892 tonnes, 26% more than the target of 221,300 tonnes. These benefits led to increasing the households' average annual net income by NRs18,315, almost three times the target of NRs6,550.

171. Other successful projects with positive water outcomes were a rural development project in Pakistan, an earthquake rehabilitation project in Gujarat, a wastewater treatment and water resources protection project in the PRC, a fisheries resource in Indonesia, and a provincial towns improvement project in Cambodia.

172. **Partly Successful.** Five other projects were somewhat below their potential in reaching their outcomes. In Indonesia, the Metropolitan Medan Urban Development Project, which was completed in 2007, had setbacks due to (i) the devaluation of the Indonesian rupiah following the Asian financial crisis in 1997, and (ii) skyrocketing land acquisition costs. Nonetheless, the outcomes of this project were significant, and the costs incurred were lower. In Pakistan, the large Sindh Devolved Social Services Program, which closed in 2007, did not achieve its full impact. Its impact was reduced by the perceived ambivalence of the provincial bureaucracy towards the federally instigated decentralization of social services. The provincial line departments were uncertain about their new role, and resisted the loss of administrative control. In the Lao PDR, the Lao Water Supply and Sanitation Sector Project, which was completed in 2008, was implemented in 12 small towns and parts of Vientiane. The project achieved most of its physical targets, but was unable to improve the financial condition of the water organizations. In the Philippines, the Metro Manila Air Quality Improvement Sector Development Program experienced problems and thus spent less than 30% of the anticipated cost. Many physical infrastructure components were canceled. Part of the problem was due to five changes of the secretary of the executing agency over 8 years.

173. In Kiribati, the Sanitation, Public Health and Environment Improvement Project, which closed in 2008, was rated as less successful. The project rehabilitated and expanded the water supply system, and improved the collection, storage, treatment, and distribution of water. Although the project connected 3,200 households to a constant-flow water system, only 2,400 remain in operation. The project did not achieve its goal of 24-hour water supply. The water supply organization is still subsidized by the Government, and some urgently needed sanitation interventions were not implemented.

174. **Unsuccessful.** ADB rated three projects as unsuccessful. Two of these were multisector projects for which only a small part of the available funds could be spent over the time designated for them, and one was an agriculture and natural resources project. The two multisector projects failed to correctly assess the commitment of the executing agencies. In India, the Urban and Environmental Infrastructure Facility, which was completed in 2006, was unable to spend more than one third of the funds available, and even less on the priority sectors of WSS, drainage and sewerage, and solid waste management. The underspending was mainly due to a change in focus of the executing agency ICICI Bank. The bank, which had funded commercial urban infrastructure projects, switched over to retail and commercial banking. Consequently, the agency could not come

up with sufficient eligible subprojects. The disbursed funds mainly benefited industrial waste management and air pollution control, rather than the original target of urban infrastructure.

175. In Viet Nam, the Ho Chi Minh City Environmental Improvement Project, which was completed in 2008, spent only a fraction of the available funds due to weak preparation. Its weaknesses included lack of understanding of the project among beneficiaries and key stakeholders, weak ownership by the executing agencies, poor assessment of the institutional arrangements, and underestimating the capacity of the implementing agencies. In addition, the inadequate investigation of site conditions made it necessary to redesign the canal improvements and relocate a designated landfill site. Hence, many activities were canceled and the intended outcomes were not achieved.

176. In Bangladesh, the Sundarbans Biodiversity Conservation Project's scope and implementing and financing arrangements were complex and could not be achieved within the time frame of a single project. The project began to lose relevance at the onset as a result of fundamental changes in institutional arrangements, and subsequent delays and abortion of key project activities.

3. Intermediate Development Outcomes

177. **Gender Equity.** The gender equity benefits of WSS projects include improved public health through increased availability of clean water and sanitation options, and reduced drudgery of obtaining and treating water, tasks typically assigned to women. PCRs noted specific gender activities or anticipated benefits on gender in 10 of the 19 water related projects, and reported that targets had been met in nine of these cases. In five other cases, the PCRs reported no specific details on the impact of special measures.

178. In Pakistan, the Punjab Community Water Supply and Sanitation Sector Project introduced a microcredit program to ensure that women used the time to increase their incomes. Over 17,600 women benefited from accessing microcredit for income-generating opportunities, which included handicrafts, embroidery, weaving carpets and rugs, raising livestock and poultry, and other productive activities. Supported by the Lao PDR's Women's Union, the Vientiane Urban Development Project empowered women by ensuring their increased participation in neighborhood committees and community programs that developed and maintained community infrastructure. In the Gujarat Earthquake Rehabilitation and Reconstruction Project, completed in 2007, new multihazard-resistant houses, built after extensive consultations with beneficiaries, were registered under a joint husband-and-wife ownership. Compared to the situation before the earthquake, houses were larger, and the proportion of houses with separate toilets doubled to 64%. Over 14,000 women benefited from livelihood creation and restoration programs, covering both conventional occupations such as handicrafts, and innovative activities, such as growing aloe vera, an important component of some cosmetic and herbal medicines. In 2004, as part of Pakistan's Sindh Devolved Social Services Program, a federal ministerial committee prepared a gender reform action plan. The plan focused on increasing political participation by women, institutional restructuring, and increasing women's employment in the public sector. The plan required local governments to increase gender equity, giving priority to gender issues in annual plans and including women councilors on budget, accounts, and sector committees. A third-party validation reported that women's representation on these committees was well above the stipulated 20% in all districts. However, the PCR in 2008 recommended that the action plan increase women's representation at senior levels in district governments and the town administrations.

179. **Capacity Development.** Twelve of the 19 projects targeted developing management capacity by training or introduction of tools and systems, with mixed results. In Pakistan, the Punjab Community Water Supply and Sanitation Sector Project trained many new town municipal administrations in WSS management, provided a useful management information system, upgraded three water testing laboratories, and formed and trained 752 community based organizations. In Bangladesh, a TA under The Flood Rehabilitation Project successfully produced an early warning system for emergency events. Under the Gujarat Earthquake Project, over 29,600 masons and 6,500 engineers were trained in multihazard-resistant housing construction and reconstruction. An accompanying TA also built disaster management and training capacity within Gujarat. In Viet Nam, the Vientiane Urban Infrastructure Project did improve financial management capacity through skills training programs, but needed longer-term support to sustain the momentum. The project developed an asset register, but staff was unable to develop a capital works and operation and maintenance plan over the project period. There was also a shortage of local staff to update and implement municipal plans.

180. **Policy and Institutional Strengthening.** Ten of the 19 projects targeted policy/institutional strengthening, either through organizational change or policy development. Three cases had some success, five others had partial success, and two did not achieve the target. In Viet Nam, the Poverty Reduction Program pursued policy development in the water sector, but was unable to achieve many of its goals. The PCR found that institutional conflicts impeded integrated river basin planning but were not resolved because institutional responsibilities were insufficiently clarified. The participation of irrigation users was either insufficient or lacking. However, greater participation was expected following a new decree. In Viet Nam, the Vientiane Urban Infrastructure and Services Project supported a large reform agenda to help decentralize urban governance, support local government, and enable adequate cost recovery for infrastructure investments and O&M. However, the agenda met with implementation difficulties, due particularly to insufficient ownership and support from district heads. These difficulties resulted from the inadequate project design having not fully considered management capacity, the local government structure, and the reasonable phasing and timing of the reforms. However, the project facilitated the passage of the Law on Local Administration in 2003, and several ministerial decrees, and enabled further dialogue regarding the need to improve the urban services management in Vientiane.

181. **Good Governance.** In 13 cases some projects pursued good governance outcomes. Six projects some success, six others had partial success, and one no success. Often, projects such as the Punjab Community Water Supply and Sanitation Sector Project reported a considerable amount of stakeholder participation. PCRs were less explicit about improvements in accountability, transparency, and predictability. The exception was the Viet Nam Poverty Reduction Program, which reported some progress in these areas. In two cases, the PCRs gave insufficient information to draw any conclusions. Also in Viet Nam, the Ho Chi Minh Environmental Improvement Project was unsuccessful, because inadequate stakeholder consultation and participation in designing the project caused insufficient understanding of its benefits among beneficiaries and key stakeholders, and weak project ownership by the executing and implementing agencies.

182. **Private Sector Development.** Seven projects targeted increasing private participation. Four projects had some success, three had less. In India's Gujarat Earthquake Project, the O&M of water treatment plants and pumping stations in some rural areas was contracted out to private companies and the facilities were being well maintained. In Indonesia, the 1997–1998 Asian financial crisis affected the progress of the Medan project. The project had planned to fund large water treatment plants under private build-operate-transfer arrangements, but only two could be financed, and at a more limited capacity. The financial crisis caused the cancellation of several investments, such as

housing complexes and a proposed airport. Most of the planned water capacity was projected to serve these investments. In India, the Urban and Environmental Infrastructure Project successfully contracted out secondary waste transportation to two private operators, thus demonstrating the success of urban infrastructure commercialization. The incineration plant, which was a component of the original project, was subsequently excluded from the subproject and was contracted to a private operator. However, the ICICI Bank found that most urban local bodies were unacceptable credit risks. The few that were acceptable found other sources of domestic funds. In Viet Nam, the Vientiane project successfully contracted out solid waste collection to many private contractors. In Nepal, the Community Groundwater Irrigation Project promoted and sustained the environment of zero subsidization of shallow tube wells. Private contractors undertook this investment area at low costs to farmers.

183. **Social Safeguards.** Twelve projects instituted safeguards to avoid or mitigate the negative effects of public infrastructure projects on certain individuals or groups. When involuntary resettlement was necessary to accommodate infrastructure development, the project prepared resettlement plans, which sometimes involved indigenous peoples. In most cases, the plans were implemented successfully. In Viet Nam's unsuccessful Ho Chi Minh City Environmental Improvement Project, the implementation of the plan experienced lengthy delays due to the limited capacity of the project management unit and the consultants in safeguard compliance, and to the time required by government departments to approve the feasibility studies. Eventually the loan component for the contentious landfills was cancelled, and government itself developed the landfills. In Indonesia, the Metropolitan Medan Urban Development Project, which preceded ADB's involuntary resettlement policy, land acquisition and resettlement was difficult. However, although payment was sometimes late, the affected persons were generally compensated in accordance with the principles defined in the plans.

184. **Environmental Sustainability.** Eleven projects targeted environment outcomes. Nine were successful, but two had issues. Even in India's unsuccessful Urban and Environmental Infrastructure Project, all the subprojects had positive environmental impacts. The industrial subprojects for solid waste management led to a healthier environment by reducing pollutant emissions. Two sugar producers used the solid waste from the manufacturing process to generate power as a renewable resource. A cement manufacturer used the loan proceeds to build a new unit with cement manufactured from the fly ash generated from a nearby power plant. In Indonesia, the Central Sulawesi Integrated Area Development Project helped stop further encroachment of the park area. The Kiribati Sanitation, Public Health and Environment Improvement Project, which was completed in 2008, was unable to prevent human settlement in four declared water reserve areas.

185. **Public Health Impacts.** Twelve projects targeted public health improvement. Nine were successful, but three were less so. In two cases the PCR did not provide information on its achievement. In Viet Nam, the Vientiane Department of Health noted that after the reduction in flooding events, there were drastic reductions in cases of intestinal worms as well as waterborne diseases such as typhoid, dysentery, diarrhea, and dengue fever. The yearly incidence of dengue fever in Vientiane declined from 2,700 cases in 2003 to 95 in 2007. The new access roads to isolated villages led to increased solid waste collection, thus improving the hygiene conditions. In Kiribati, the annual incidence of waterborne diseases dropped from 500 to 320 reported cases per 1,000 population. In Indonesia, the two schistosomiasis control stations in Central Sulawesi reported a steady decline from 4% to less than 0.5% in one cluster.

186. **Poverty Reduction Impacts.** At least 16 projects reported that their impact on poverty reduction or employment generation was mostly positive, although in a few cases the impact was

not optimal. In Bangladesh, the construction activities under the Emergency Flood Damage Rehabilitation Project reported a positive impact on the employment of local labor surpluses in the flood-affected area. In India, the Gujarat Earthquake Rehabilitation and Reconstruction Project also improved access to employment both directly and indirectly, by, for example, providing 47,000 farmers with input kits and assisting them to build farm structures and irrigation assets such as tube wells and pumps. In Indonesia, the Central Sulawesi Project improved socioeconomic conditions of the target communities. Household access to potable water in the priority villages exceeded the provincial average of 67%. The wide gap of poverty incidence between the province and the project area fell over the project period. In 2005, the incidence of poverty in the project area was 30%, compared to the provincial average of 22%. In Nepal, the Nepal Community Groundwater Irrigation Project increased the beneficiary households' average annual net income by NRs18,315, significantly more than its target of NRs6,550. In the Lao PDR, the Lao Water Supply and Sanitation Sector Project did not achieve its intended poverty reduction impact. The deferred payment system for water supply connections devised to help poor households was not fully utilized, thus limiting the accessibility of the services to the poor.

Table 10: Water Sector Typical Outcomes and Outcome Categories

Outcomes	BAN	IND	INO	VIE	IND	LAO	PAK	PRC	VIE	VIE	PAK	CAM	LAO	KIR	INO	PAK	NEP	INO
	Emergency Flood Damage Rehabilitation Project	Gujarat Earthquake Rehabilitation And Reconstructio	Metropolitan Medan Urban Development Project	Poverty Reduction Program II	Urban & Environmental Infrastructure Facility Project	Vientiane Urban Infrastructure And Services Project	Sindh Devolved Social Services Program	Tianjin Wastewater Treatment & Water Resources	Ho Chi Minh City Environmental Improvement	Support The Implementation Of The Poverty Reduction	Punjab Community Water Supply & Sanitation	Provincial Towns Improvement Project	Water Supply And Sanitation Sector Project	Sanitation, Public Health & Environment Improvement	Central Sulawesi Int'grad Area Dev & Cnservtn	Bahawalpur Rural Development Project	Community Groundwater Irrigation Sector Project	Coastal Community Development and Fisheries Resources
1 Higher use of water supply and sanitation options, more benefit from more/better water supply and sanitation options	(-)	++	+	++	+	+++	+	++	-	(-)	+++	+	+	+	+++	(-)	(-)	++
2 More benefit from water management, reduced risk of flooding	++	(-)	+	(-)	(-)	++	(-)	++	+	(-)	(-)	(-)	NOI	(-)	+	+++	+	++
3 Greater efficiency in water sector development	(-)	(-)	(-)	+	(-)	NOI	NOI	NOI	NOI	++	(-)	(-)	NOI	-	NOI	NOI	NOI	(-)
4 Sustainability of water options improved (notably O&M)	(-)	++	++	+	+	+	+	++	-	(-)	++	+	+	+	++	+	++	(-)
5 Gender equity advanced and women empowered	(-)	++	NOI	++	(-)	++	++	++	-	++	+++	NOI	NOI	++	NOI	NOI	++	(-)
6 Water sector management capacity developed (improve systems & staff)	++	++	+	(-)	(-)	+	+	+	-	(-)	++	++	NOI	+	++	+	++	(-)
7 Policy & institutional obstacles in sector removed / policy and institutional set ups developed	(-)	(-)	(-)	+	+	+	+	(-)	(-)	++	(-)	-	-	+	(-)	(-)	++	++
8 Governance improved	(-)	++	+	+	(-)	++	+	++	-	+	++	NOI	NOI	+	++	+	++	(-)
9 Private sector role expanded/improved	(-)	++	+	(-)	++	++	(-)	+	(-)	(-)	(-)	(-)	(-)	+	(-)	(-)	++	(-)
10 Safeguards enforced for those involuntarily affected by works	++	++	+	(-)	++	++	(-)	++	-	(-)	NAP	++	++	(-)	++	(-)	NOI	++
11 Improved environment; better environmental management	++	++	++	+	+	++	++	++	+	++	++	++	++	+	++	(-)	++	++
12 Water-related disasters better prevented or handled	++	++	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
13 Cities made more livable	++	+++	+	(-)	+	++	(-)	++	+	(-)	(-)	NOI	+	+	(-)	(-)	(-)	(-)
14 Environmental / health awareness improved	(-)	(-)	(-)	(-)	(-)	++	(-)	(-)	-	(-)	+++	NOI	++	+	++	(-)	(-)	(-)
15 Public health improved	(-)	++	++	++	+	++	NOI	++	+	(-)	+++	NOI	++	++	++	(-)	(-)	(-)
16 Poverty reduced	(+)	++	++	++	-	++	+	++	(-)	+++	+++	NOI	+	++	++	+	++	++
17 EIIRs above 12%	+++	NOI	+	(-)	-	+++	NOI	+++	NOI	NOI	+++	+	+	-	++	++	+++	NOI
18 FIRR above WAC	NOI	NOI	NOI	(-)	NOI	(-)	NOI	+	NOI	NOI	NOI	+	NOI	-	NOI	(-)	++	NOI

Legend: ++ = Yes, intended and matched targets; + = Yes, intended but did not match targets; +++ = Yes, intended, and exceeded targets, (+) = Yes, not intended, - = No, although intended, '(-) = No, not intended; NAP = not applicable; NOI = No information.

Source: ADB

Table 11: Summary of Reviewed Projects that Achieved Targeted Outputs and Outcomes

Outcomes	Infrastructure						Education						Finance					
	No. of Projects			Percent of Achievement to:		% of Targeted to Total	No. of Projects			Percent of Achievement to:		% of Targeted to Total	No. of Projects			Percent of Achievement to:		% of Targeted to Total
	Matched and Exceeded Targets	Total Targeted	Total Projects	Targeted	Total		Matched and Exceeded Targets	Total Targeted	Total Projects	Targeted	Total		Matched and Exceeded Targets	Total Targeted	Total Projects	Targeted	Total	
A. General Outcomes																		
1 Main outcomes achieved	37	44	49	84%	76%	90%	12	13	13	92%	92%	100%	9	14	14	64%	64%	100%
2 Gender equity advanced and women empowered	17	18	49	94%	35%	37%	8	10	13	80%	62%	77%	6	8	14	75%	43%	57%
3 Institutional and management capacity developed																		
- Policy and institutional obstacles removed	11	20	49	55%	22%	41%	8	9	13	89%	62%	69%	5	10	14	50%	36%	71%
- Institutional or organizational developments achieved	19	28	49	68%	39%	57%	8	9	13	89%	62%	69%	4	7	14	57%	29%	50%
4 Governance improved	14	26	49	54%	29%	53%	8	11	13	73%	62%	85%	8	10	14	80%	57%	71%
5 Private sector role expanded/improved	8	12	49	67%	16%	24%	4	7	13	57%	31%	54%	4	5	14	80%	29%	36%
6 Safeguards enforced for those involuntarily affected by construction of infrastructure	32	34	49	94%	65%	69%	0	0	13	0%	0%	0%	0	0	14	0%	0%	0%
7 Sustainability options improved (notably O&M arrangements)	17	26	49	65%	35%	53%												
B. Education Sector-Specific Outcomes																		
1 Better and more widely used education opportunities, especially for the poor							12	13	13	92%	92%	100%						
2 Improved quality of education (opportunities); more benefits from education opportunities provided							12	12	13	100%	92%	92%						
3 Capacity for education services developed							8	9	13	89%	62%	69%						
C. Energy Sector-Specific Outcomes																		
1 Higher/wiser use of energy by population and business; more benefit from energy made available	9	9	9	100%	100%	100%												
2 Greater efficiency in energy development	6	7	9	86%	67%	78%												
3 Carbon dioxide emissions reduced	1	1	9	100%	11%	11%												
4 Energy efficiency promoted	4	4	9	100%	44%	44%												
5 Clean energy supported	2	2	9	100%	22%	22%												
D. Finance Sector-Specific Outcomes																		
1 Finance sector expanded; more benefit from increased and improved finance sector options													9	14	14	64%	64%	100%
2 Capital market developed													1	1	14	100%	7%	7%
3 Increasingly inclusive financial sector													8	9	14	89%	57%	64%
4 Regional finance sector developed													0	0	14	0%	0%	0%
5 Money laundering options reduced													2	2	14	100%	14%	14%
E. Transport Sector-Specific Outcomes																		
1 Transport facilitated; transport costs reduced; more benefit from expanded / improved transport options (better connection to markets)	21	22	22	95%	95%	100%												
2 Greater efficiency in transport development	7	8	22	88%	32%	36%												
3 Regional connectivity improved	5	5	22	100%	23%	23%												
4 Better environmental management	3	4	22	75%	14%	18%												
5 Cities made more livable, rural areas made more livable	11	12	22	92%	50%	55%												
F. Water Sector-Specific Outcomes																		
1 Higher use of water supply and sanitation options, more benefit from more/better water supply and sanitation options	7	13	18	54%	39%	72%												
2 More benefit from water management, reduced risk of flooding	5	9	18	56%	28%	50%												
3 Greater efficiency in water sector development	1	1	18	100%	6%	6%												
4 Improved environment; better environmental management	13	17	18	76%	72%	94%												
5 Water-related disasters better prevented or handled	2	2	18	100%	11%	11%												
6 Cities made more livable	4	9	18	44%	22%	50%												
7 Environmental / health awareness improved	4	6	18	67%	22%	33%												
8 Public health improved	9	11	18	82%	50%	61%												

Note: Includes multisector and agriculture projects with energy, transport, water, education and/or finance components.

Source: Project completion reports from 2008. A total of 68 projects were reviewed.