



## Completion Report

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Project Number: 32249  
Loan Number: 2008  
November 2012

# Nepal: Community-Based Water Supply and Sanitation Sector Project

## CURRENCY EQUIVALENTS

Currency Unit – Nepalese rupee/s (NRe/NRs)

	<b>At Appraisal</b>	<b>At Project Completion</b>
	1 September 2003	31 December 2010
NRe1.00	= \$0.0134	\$0.0125
\$1.00	= NRs74.6	NRs80.0

## ABBREVIATIONS

ADB	–	Asian Development Bank
AIEC	–	average incremental economic cost
DDC	–	district development committee
DWCC	–	District water coordination committee
DWSS	–	Department of Water Supply and Sewerage
EIRR	–	economic internal rate of return
IA	–	imprest account
MLD	–	Ministry of Local Development
MPPW	–	Ministry of Physical Planning and Works
NGO	–	nongovernment organization
O&M	–	operation and maintenance
PMU	–	project management unit
SSG	–	sector stakeholder group
VMW	–	Village maintenance worker
WSSDO	–	water supply and sanitation divisional office
WSSUO	–	Water and sanitation support unit office
WUG	–	water user group
WUSC	–	water user and sanitation committee

## NOTE

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

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## BASIC DATA

### A. Loan Identification

1.	Country	Nepal
2.	Loan number	2008
3.	Project title	Community-Based Water Supply and Sanitation Sector Project
4.	Borrower	Government of Nepal
5.	Executing agency	Ministry of Physical Planning and Works
6.	Amount of loan	SDR 17.246 million
7.	Project completion report number	1364

### B. Loan Data

1.	Appraisal	
	– Date started	Not applicable
	– Date completed	Not applicable
2.	Loan negotiations	
	– Date started	20 August 2003
	– Date completed	22 August 2003
3.	Date of Board approval	30 September 2003
4.	Date of loan agreement	9 December 2003
5.	Date of loan effectiveness	
	– In loan agreement	8 March 2004
	– Actual	1 April 2004
	– Number of extensions	1
6.	Closing date	
	– In loan agreement	31 December 2010
	– Actual	15 April 2011
	– Number of extensions	none
7.	Terms of loan	
	– Interest rate	1% per annum during the grace period and 1.5% per annum thereafter
	– Maturity (number of years)	32
	– Grace period (number of years)	8
8.	Disbursements	

#### a. Dates

Initial Disbursement	Final Disbursement	Time Interval
20 December 2004	15 April 2011	82 months
Effective Date	Original Closing Date	Time Interval
1 April 2004	31 December 2010	81 months

## b. Amount (SDR'000)

<b>Category</b>	<b>Original Allocation</b>	<b>Last Revised Allocation</b>	<b>Amount Canceled</b>	<b>Net Amount Available</b>	<b>Amount Disbursed</b>	<b>Undisbursed Balance</b>
Civil Works (water supply)	8,774	5,143	(3,631)	5,143	4,770	373
Equipment and materials (water supply)	2,910	5,187	2,277	5,187	6,874	(1,687)
Sanitation	1,171	1,171	0	1,171	561	610
Community mobilization (NGO contracts)	1,071	1,590	519	1,590	1,388	202
Community mobilization (materials)	14	42	28	42	42	0
Gender, caste, and ethnic minority	22	35	13	35	20	15
Health and hygiene program	783	182	601	182	104	78
International consultants	194	194	0	194	48	146
Domestic consultants	1,006	1,006	0	1,006	902	104
Equipment (institutional strengthening)	50	91	41	91	89	2
Training and materials	517	517	0	517	509	8
Vehicle	187	187	0	187	26	161
Interest during construction	547	547	0	547	217	330
<b>Total</b>	<b>17,246</b>	<b>15,892</b>	<b>(1,354)</b>	<b>15,892</b>	<b>15,550</b>	<b>342</b>

9.	Local costs (financed)	
-	Amount (\$)	11.1
-	Percent of local costs	46.0
-	Percent of total cost	30.0

**C. Project Data**

## 1. Project cost (\$ million)

<b>Cost</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
Foreign exchange cost	12.1	12.8
Local currency cost	23.6	24.1
<b>Total</b>	<b>35.7</b>	<b>36.9</b>

## 2. Financing plan (\$ million)

<b>Cost</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
Implementation costs		
Borrower financed	7.7	7.6
ADB financed	23.3	23.6
Local government and water user	4.0	5.4
<b>Total</b>		
IDC costs		
Borrower financed	0.0	0.0
ADB financed	0.7	0.3
Other external financing	0.0	0.0
<b>Total</b>	<b>35.7</b>	<b>36.9</b>

ADB = Asian Development Bank, IDC = interest during construction.

## 3. Cost breakdown by project component (\$ million)

<b>Component</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
1. Part A – Rural Water Supply and Sanitation Component	27.8	30.9
2. Part B – Institutional Strengthening	3.1	3.1
3. Part C – Incremental Administrative Costs	4.1	2.6
4. Part D – Interest during Construction	0.7	0.3
<b>Total</b>	<b>35.7</b>	<b>36.9</b>

## 4. Project schedule

<b>Item</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
Planning, development, and implementation of:		
Pilot Batch Subprojects	Jan 2004–Jun 2006	Jan 2006–Dec 2010
Batch I Subprojects	Jul 2004–Jun 2007	Jul 2006–Dec 2010
Batch II Subprojects	Jul 2005–Jun 2008	Jul 2007–Dec 2010
Batch III Subprojects	Jul 2006–Jun 2009	Apr 2008–Dec 2010
Batch IV Subprojects	Jul 2007–Dec 2009	Apr 2008–Dec 2010
Date of awarding project management consultant	Sep 2004	5 Dec 2005
Date of awarding monitoring and evaluation consultant	Sep 2005	28 Jun 2006
Other milestones		
First loan cancellation of \$2.0 million		5 Oct 2006
Second loan cancellation of \$0.5 million		11 Apr 2011

## 5. Project performance report ratings

Implementation Period	Ratings	
	Development Objectives	Implementation Progress
From 29 September to 31 December 2003	Satisfactory	Satisfactory
From 1 January 2004 to 31 December 2004	Satisfactory	Satisfactory
From 1 January 2005 to 31 December 2005	Satisfactory	Satisfactory
From 1 January 2006 to 31 December 2006	Satisfactory	Satisfactory
From 1 January 2007 to 31 December 2007	Satisfactory	Satisfactory
From 1 January 2008 to 31 December 2008	Satisfactory	Satisfactory
From 1 January 2009 to 31 December 2009	Satisfactory	Satisfactory
From 1 January 2010 to 31 December 2010	Satisfactory	Satisfactory

## D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members
Inception	1–4 Mar 2004	2	8	a, e
Review 1	26–30 Nov 2005	2	10	a, b
Review 2	16–30 Jun 2006	3	30	a, e, f
Review 3	23 Dec 2006–5 Jan 2007	3	30	a, c, e
Review 4	24 Jun–5 Jul 2007	3	21	a, d, e
Midterm review	12–25 Dec 2007	3	30	a, e, g
Review 5	28 Apr–9 May 2008	2	10	a, e
Review 6	18–26 Aug 2008	4	28	a, e, f, g
Review 7	22 May–5 Jun 2009	4	40	a, e, f, g
Review 8	21 Oct–4 Nov 2009	2	20	a, e
Review 9	25 Apr–6 May 2010	2	18	a, e
Review 10	4–14 Jan 2011	3	18	a, e, f
Project completion review	22 Dec 2011–10 Jan 2012	2	30	a, e, g

a = mission leader, b = project officer, c = procurement officer, d = social and environment officer, e = associate project analyst, f = associate disbursement analyst, g = social development officer (gender).

## I. PROJECT DESCRIPTION

1. Recognizing the strong need for improving water supply, sanitation, and community health services in Nepal, and particularly in the more remote and poorer rural areas, the Government of Nepal in 2000 had requested Asian Development Bank (ADB) to continue providing assistance to the rural sector for the construction and rehabilitation of rural water supply, sanitation facilities, and associated health services. Accordingly, ADB approved technical assistance of \$750,000 in March 2002 to prepare the Community-Based Water Supply and Sanitation Sector Project (the project).<sup>1</sup> Loan fact-finding was completed in June 2003. Based on feasibility study findings, discussions with the government, and consultations with development partners, a project was formulated. ADB's sector loan modality was selected as the most appropriate method of financing the project.

2. On 30 September 2003, ADB approved a loan of SDR17.246 million for the Community-Based Water Supply and Sanitation Sector Project.<sup>2</sup> In accordance with the project framework (Appendix 1), the project was expected to enhance human development through sustainable improvement of the water supply and sanitation sector. This was to be achieved by measurable improvement in national water and sanitation availability for all residents of remote areas; improved sanitation, hygiene, and health practices in local communities; and reduction in incidence of waterborne disease and child mortality due to diarrheal diseases. The expected outcomes of the project was improved water supply and sanitation services in the project area, particularly caste and socially excluded groups, through a community-based approach to support government's poverty reduction and decentralization program.

3. The Ministry of Physical Planning and Works (MPPW) was the executing agency. MPPW delegated its authority to the Department of Water Supply and Sewerage (DWSS) to execute the project. A project management unit (PMU) was established under DWSS at the central level for overall project management, monitoring, supervision, and coordination of all project activities. The project covered 21 districts and the district development committee (DDC) of each participating district was the implementation agency (IA) at district level. The project was considered substantially completed on 31 December 2010.

4. The project had two components:

- (i) **Rural Water Supply and Sanitation.** This component consisted of (i) community mobilization and capacity building for sustainability; (ii) construction of community water supply and sanitation facilities; (iii) an awareness program on health, hygiene, and sanitation; and (iv) a gender, caste, and ethnic minority program.
- (ii) **Institutional Strengthening.** This component was comprised of (i) strengthening DDC capacity to provide water supply and sanitation, and (ii) supporting the decentralization policy and DWSS.

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<sup>1</sup> ADB. 2002. *Technical Assistance to the Kingdom of Nepal for the Community Based Water Supply and Sanitation Project*. Manila.

<sup>2</sup> ADB. 2003. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Kingdom of Nepal for the Community-Based Water Supply and Sanitation Sector Project*. Manila.



## II. EVALUATION OF DESIGN AND IMPLEMENTATION

### A. Relevance of Design and Formulation

5. At approval, the project's design was consistent with the government's strategy in the Tenth National Development Plan, 2002–2007, which emphasized the need to improve water supply, sanitation, and community health services in Nepal while increasing coverage efficiently and equitably to accelerate broad-based economic growth to meet the needs of the poor and disadvantaged groups. The National Rural Water Supply and Sanitation Sector Strategy and Action Plan, which was being formulated at the time of the project's preparation and was adopted by the government in 2004, incorporated the salient features of the sector plan, particularly with respect to increasing the service coverage and participatory and community-based approaches to planning, implementation, and operation and maintenance (O&M) of water supply and sanitation systems. The ongoing 3-year interim plan (2010–2013) of the government emphasizes improving public health and increasing living standards of the people by providing safe and sustainable drinking water and sanitation facilities.<sup>3</sup> It emphasizes the need to promote local participation and ownership in designing and implementing projects.

6. ADB's country strategy and program update for the social sectors emphasized the development of adequate infrastructure and services in rural areas at the time of project approval.<sup>4</sup> In line with ADB's country strategy and program update (2003–2005), the project was designed to remain engaged in supporting development activities in a conflict-affected area and emphasized strong community participation through local government at district level. Selection of the project districts followed the prioritization set by the Gender Development Index, which was based on the Human Development Index, water supply and sanitation coverage, incidence of diarrhea and other waterborne diseases, presence of caste and ethnic minorities, and remoteness from developed areas. A demand-driven approach was used in water supply and sanitation subproject selection based on subproject selection criteria. The project covered 19 historically underdeveloped hill and mountain districts and two Terai districts. Within the participating districts, selection of scattered subproject sites resulted in widely dispersed communities and partner nongovernment organizations (NGOs), and thus corresponding higher costs of logistics and other activities.

7. Overall, project preparation and formulation were partly adequate. Grouping of selected districts into five batches did not consider the geographical remoteness and accessibility of the selected districts.<sup>5</sup> This has constrained the monitoring and supervision of field-level activities by the project management. The project's institutional arrangements did not consider the roles and responsibilities of DWSS regional directorates and include provisions for follow-up support by DDC technical offices. The project framework indicators lacked quantitative baselines and expected targets. The project scope and its rural component were relevant to achieve the intended project outcome and impacts because these were based on a community-based and demand-driven participatory approach. However, there was a lack of clarity in the project design with regard to institutional strengthening at sector level to achieve the intended institutional and policy-level impacts. The project framework was reviewed and revised in the format of a design and monitoring framework. Although the design summary statements remained as in the original project framework, performance targets have been rephrased and outputs and activities of the project separated in order to give more clarity for the project monitoring and assessment. These

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<sup>3</sup> Government of Nepal, National Planning Commission. 2010. *Three Year Approach Paper, 2011–2013*.

<sup>4</sup> In 2000, the Government of Nepal had requested ADB assistance to prepare a community-based water supply and sanitation project.

<sup>5</sup> There were 5 batches including 1 pilot batch. All include 4 districts except batch 4, which has 5 districts.

revisions were reflected in the revised design and monitoring framework (Appendix 1, Table A1.2).

8. The outcome of comprehensive stakeholder consensus building undertaken under ADB project preparatory technical assistance<sup>6</sup> resulted in the design of a sector approach which was relevant, as DWSS has sufficient experience in implementing water supply and sanitation projects. ADB's lessons learned in past projects were incorporated into the project's design. These included the needs to (i) involve beneficiaries in planning and implementation of rural water supply and sanitation schemes; (ii) delegate operation and maintenance of the schemes to water user groups; and (iii) promote public awareness campaigns to educate consumers about water as a scarce resource and the relationship between water, sanitation, and health. Measures were included in the project design to ensure institutional and financial sustainability of project benefits by adopting a poor-focused, bottom-up community participatory and demand-driven approach. Equity and pro-poor considerations through targeted subsidies were incorporated into the rural component.<sup>7</sup> The use of appropriate technology and integration of water supply with sanitation were fundamental to the project's concept.

## **B. Project Outputs**

9. The targeted outputs anticipated during appraisal (discussed below) were (a) community mobilization and capacity building for sustainability; (b) construction of community water supply and sanitation facilities; (c) conduct of an awareness program on hygiene, health, and sanitation; (d) increased gender, caste, and ethnic minority participation; (e) strengthened DDC capacity to provide water supply and sanitation services; and (f) support to decentralization policy and DWSS. Actual project outputs are described in Appendix 2.

### **(a) Community Mobilization and Capacity Building for Sustainability**

10. One hundred and seventy-four NGOs were engaged for community mobilization in 690 subprojects and to develop capacity of water user and sanitation committees (WUSCs) to plan, develop, manage, operate, and maintain water supply and sanitation facilities. Through mobilizing NGOs, the project assisted communities to organize water user groups (WUGs) and constituted WUSCs; provided training and orientation to members of WUSCs and other subcommittees; then assisted to develop their capacities to plan, construct, manage, operate, and maintain water supply schemes and sanitation facilities through several training activities, orientation, and field-based support to ensure the sustainability of water supply after project completion.

11. Six hundred and ninety WUGs were registered and have entered into four-party agreements.<sup>8</sup> Socioeconomic profiles of 690 subprojects were prepared, which helped to analyze the occupation, income status, and health and hygiene practices based on gender, caste, ethnicity, Dalit, and other groups residing within the subproject areas. Preconstruction training and post-construction training were major capacity building activities provided to the

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<sup>6</sup> Footnote 1.

<sup>7</sup> For poor communities in remote and inaccessible areas, the minimum contribution was reduced from 20% to 10% as set out in the government's 2002 policy on communities' contributions to water supply and sanitation.

<sup>8</sup> An agreement between village development committee, water user and sanitation committee, NGO, and water supply and sanitation support unit. Water supply and sanitation units (later renamed water supply and sanitation unit offices) were established in each project district under a district development committee. The chief of the water supply and sanitation divisional office was deputed as head of the water supply and sanitation unit office.

WUGs for ensuring sustainability.<sup>9</sup> WUSCs are operating and maintaining the completed subprojects by engaging village maintenance workers (VMWs) on their payrolls. However, VMWs were unable to address complex technical problems of water supply system. Therefore, there is a need to review VMW training module in terms of number of participants and duration of training or link WUSCs with water supply and sanitation divisional offices (WSSDOs) and DDCs for technical support for larger maintenance.

### **(b) Construction of Community Water Supply and Sanitation Facilities**

12. Out of 690 subprojects selected, 573 water supply subprojects were completed and are in operation.<sup>10</sup> Of these, 514 were completed and in operation as of the 31 December 2011 loan closing date.<sup>11</sup> Implementation of 59 subprojects was carried over after loan closing and completed by WSSDOs of the respective districts. The water supply systems in 531 subprojects are piped supply with community stand post. Water is distributed through 100% private household connections in 8 subprojects based on deep tube well and overhead tank system. About 4,552 kilometers of pipeline were laid and 1,390 water storage reservoirs constructed. The project provided 90,397 households with basic water supply services.

13. From observations by the project completion review mission in 14 subprojects, it can be concluded that the majority of water supply facilities constructed are in operating condition and the WUSCs are responsible for operation and maintenance of the facilities. Less than 2 years after project completion, water quality and quantity provided by all 14 subprojects are reported satisfactory. With regard to hand pumps subprojects, the mission noted that WUSCs are not sufficiently active in maintaining cohesion within the community.

14. A total of 44,768 households constructed latrines (8,909 ultra-poor households with partial subsidy, 10,105 through sanitation revolving fund, and 25,754 by self-initiation). To improve sanitation facilities in schools, 354 school latrines were constructed. The impact in improving sanitation and raising health and hygiene awareness is noteworthy. Respective village development committees have played a key role to coordinate and support increased latrine construction and declare open-defecation-free areas in some subprojects.<sup>12</sup> Subsidies and revolving funds were distributed by the users committees to the selected households.<sup>13</sup> In some Madhesi communities, provision of subsidies and revolving funds seemed to act as a disincentive for other households to build their latrines using their own resources. On the other hand, subsidies and revolving funds were effective instruments to achieve greater latrine construction in other—particularly hill—communities. Of 14 subprojects visited by the project

<sup>9</sup> Orientation to 19,013 users, of which 36% were female; preconstruction training to 6,827 WUSC members, of which 49% were female; account management training to 2,985 participants, of which 40% were female; sanitation mason training to 1,463 participants, of which 45% were female; village maintenance workers training to 1,115 participants, of which 45% were female; post-construction training to 3,012 WUSC members in only a few subprojects of 15 districts, of which 48% were female.

<sup>10</sup> 22 subprojects were dropped during the planning phase and 95 during the development phase. Reasons for dropping of subprojects are generally: (i) source disputes, (ii) high per capita cost, and (iii) not meeting the subproject selection criteria.

<sup>11</sup> Five hundred seventy-three subprojects comprised of typical gravity type (521 subprojects), gravity and pumping (9 subprojects), deep tube well with overhead tank (8 subprojects), hand pump (28 subprojects), dug well (2 subprojects), and rainwater harvesting (5 subprojects).

<sup>12</sup> Some village development committees made latrine provision at household level a condition for obtaining water supply services.

<sup>13</sup> The poorest 10% of households were provided a NRs3,000 hardware subsidy and the next poorest 10% received a revolving loan of NRs3,000. Poorest households were identified based on indicators such as food insufficiency, households with female heads, wage labor, and disability.

completion review mission, communities of 8 subprojects are still using the revolving fund effectively.

**(c) Awareness Program on Hygiene, Health, and Sanitation**

15. To maximize the health impact of project investment, the project, through NGOs, provided training and supported 21 DDCs, participating village development committees, and community leaders in planning, monitoring, and evaluating sanitation and hygiene improvement following guidelines set out for a basic sanitation package. Activities were based on PHAST (Participatory Health and Sanitation Transformation) and Participatory Rapid Appraisal tools to effectively disseminate the health and sanitation message to the community, and particularly to user committee members, women, and children. Training was provided at the beginning of the intervention to the staff of the concerned NGOs, community health volunteers, and WUSC members. In general, the awareness program on hygiene, health, and sanitation has encouraged participating communities to build latrines through self-initiation. WUSC members and other water users were provided with knowledge and information about the sanitation approaches (subsidies, sanitation revolving loan, behavior change communication, and school-led sanitation) and modality of the project through training. The project management consultant organized a training of trainers program for NGO staff. A total of 21,031 participants received training under this component of the project.<sup>14</sup>

**(d) Gender, Caste, and Ethnic Minority Participation**

16. The project has made serious efforts to increase the participation of women by requiring 50% women in the WUSCs. The project has developed gender, caste, and ethnic minority guidelines and prepared a gender and social inclusion implementation plan with measurable monitoring indicators to increase access by disadvantaged groups and castes to water supply and sanitation facilities. All project activities were planned and implemented to ensure that all men, women, and children from all castes (including Dalits), ethnic minority groups, and poor groups have equitable access to improved water supply and sanitation facilities. The project supported the development of materials and training packages focusing on gender, caste, and ethnic minority issues; provided training; and carried out awareness campaigns at district and community levels. It provided orientation on gender, caste, and ethnicity to 23,967 beneficiaries of 690 subprojects in 21 districts, of which 52% were female. Of the total 6,265 members in 690 WUSCs formed in 21 districts, 52% are female, 19% Dalits, and 14% ethnic minorities. That is almost proportionate to the district population representation of Dalits and ethnic minorities.

**(e) Strengthening DDC Capacity to Provide Water Supply and Sanitation Services**

17. Institutional strengthening and capacity building of DDCs has been supported through training and by providing consulting and services from NGOs. Twenty-one participating DDCs signed contracts with 174 NGOs. DDC staff and stakeholders received training to develop their skills and enhance their capacity to work with NGOs and communities using a participatory, demand-driven approach. The project organized district-level orientation for DDCs and NGOs in all 21 districts. A total of 607 staff of DWSS, DDCs, and NGOs received orientation training on the project approach. Regular meetings with district stakeholders are being organized. The

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<sup>14</sup> Participatory Health and Sanitation Transformation (PHAST) training to 546 participants; female health volunteers training to 3,394 participants; school teachers training to 1,827 teachers; school student training to 15,264 students; masons training to 1,463 participants; and training to 1,115 VMWs.

project developed standards; manuals; and format, technical, and gender, caste, and ethnic minority guidelines to improve rural water supply and sanitation services. These standards and manuals are being partly used. Participating DDCs and partner NGOs received training on gender, caste, and ethnic minority issues; the community-based approach; and the health and hygiene awareness program.

18. The project was able to demonstrate the importance of coordination among DDCs, WSSDO, and WUSCs. The role of DDCs was more focused upon planning and monitoring whereas technical support and facilitation were provided by WSSDO. The completion review mission noted that institutional memory of the project was poor at the DDC level. Many project staff hired on contract had moved to other positions or perhaps to other districts. In many cases, the current DDC staff had no information as to who had actually worked on the project. On the other hand, WSSDO at participating districts are aware of the project and communities are approaching WSSDO for support as and when required.

#### **(f) Supporting the Decentralization Policy and DWSS**

19. In line with the government's decentralization policies set out in the local self-governance act, the project has supported implementation of the National Water Supply Sector Policy, 1998; Rural Water Supply and Sanitation National Policy, 2004; and Rural Water Supply and Sanitation National Strategy and Action Plan, 2004. All 21 participating DDCs have entered into project implementation agreements with MPPW and established district water coordination committees chaired by DDC chairpersons.<sup>15</sup> Each DDC prioritized the communities' demands and identified subprojects based on the approved criteria from their prioritized lists. The project has enhanced capacity and confidence at DWSS to take on new roles and responsibilities assigned under the government's decentralization framework by strengthening DDCs' capacity to provide water supply and sanitation through a community-based, demand-driven approach. The project has also supported MPPW in adopting the institutional changes required by the devolution of functions to DDCs.

#### **C. Project Costs**

20. The project cost was estimated at \$35.7 million, including a foreign exchange component of \$12.1 million and a local cost component of \$23.6 million. The actual total project cost was \$36.9 million, including a foreign exchange component of \$12.8 million and a local cost component of \$24.1 million. The higher cost was because of increased transportation costs for materials due to increase in fuel prices. ADB financed the entire foreign exchange cost of \$12.8 million and part of the local currency cost of \$11.1 million. ADB financed 65% of the total project cost, which is slightly less than the original estimate of 67% at the time of approval. The total loan amount canceled was \$2.54 million.<sup>16</sup> The project costs and financing plan at project preparation and completion are shown in Appendix 3.

#### **D. Disbursements**

21. Disbursement started from the first year (2004) of the project with the release of imprest advance (Appendix 4). In 2006, the disbursement decreased to \$0.2 million as there was no expenditure under the rural water and sanitation component. The total loan disbursement was

<sup>15</sup> A local development officer deputed from the Ministry of Local Development was made the officiating DDC chairperson in the absence of an elected representative.

<sup>16</sup> In June 2006, \$2.0 million in loan proceeds was canceled, then reallocated to the Rural Reconstruction and Rehabilitation Sector Project. Another \$0.54 million was canceled in April 2011 upon closing the loan account.

\$23.9 million, including \$0.3 million for interest during construction. As per the loan agreement, the PMU established an imprest account (IA) and a sector account in Nepal Rastra Bank. The total amount of replenishment was \$4.4 million. The IA was fully liquidated before the loan closing date. The statement of expenditure procedure was used to disburse \$22.9 million, or 96% of ADB disbursement. As individual disbursements were small, the IA and statement of expenditure procedure were found to be very useful for smooth project implementation. The loan agreement had a special provision for payment to the sector account against milestone achievement. This provision was not consistent with ADB's disbursement policy, however, and was not useful. Therefore, the government used reimbursement procedure for the disbursement instead of the provision available for the milestone payment.

## **E. Project Schedule**

22. The project was originally envisaged to be implemented over 6 years to the loan closing date of 31 December 2010. Appendix 5 shows the schedule at appraisal and the actual time frame. The project started slowly because of (i) delayed recruitment of project management consultants, (ii) inaccessible project areas, and (iii) inadequate technical capacity of NGOs. Selection of project management consultants was delayed by 12 months. The first consulting service contract was awarded 21 months after loan approval. The PMU together with pilot districts started preparatory activities without consultant supports.<sup>17</sup> Project implementation was not affected by the conflict during 2004–2006 because of the communities' strong interest and participation in subproject development and implementation.

23. The project design envisaged implementation in 5 batches (1 pilot batch district and 4 additional batches). Each batch has 3 phases and an implementation period of 3 years (36 months). Considering the hardship in terms of participating communities' access to drinking water, the subproject implementation period was reduced by overlapping some activities of the planning and development phases. Because of this, the project was able to complete the planned activities under the project before the loan closing date of 31 December 2010.

## **F. Implementation Arrangements**

24. MPPW was the executing agency but delegated its authority to DWSS to execute the project. A PMU was established under DWSS at the central level. A national project steering committee, chaired by the Secretary of MPPW, guided the PMU and facilitated interagency coordination. MPPW formed the sector stakeholder group, again chaired by the Secretary of MPPW to (i) coordinate interventions supported by external funds and the government, and (ii) exchange information.

25. DDCs of the participating districts were the implementing agencies at district level. Each DDC entered into a project agreement with MPPW. Accordingly, MPPW in consultation with the chairperson of the DDC appointed the water and sanitation support unit office (WSSUO) head.<sup>18</sup> A core team of DDC staff was hired for each WSSUO under contract with the DDC and in consultation with the PMU.<sup>19</sup> Each DDC formed a district water coordinating committee (DWCC), chaired by the chairperson of the DDC, to provide guidance to the DDC and to coordinate activities of DDCs, VDCs, and communities. The head of the WSSDO was the member

<sup>17</sup> Collection of community demands, establishment of water and sanitation support units (WSSU) under DDCs, and support to WSSU to start the NGO selection process.

<sup>18</sup> The "water and sanitation support teams" were renamed as "water and sanitation support unit offices."

<sup>19</sup> Core DDC staff consist of a water supply engineer, two overseers, one community development officer, and one accountant.

secretary of the district water coordinating committee. There was no major change in the implementation arrangements. Organization and management were generally consistent with the agreed arrangements per the original design, but the levels of local government involvement, and of the DDCs in particular, was less than expected during implementation of schemes.

26. During design of the project, decision makers at MPPW, the Ministry of Local Development (MLD), the Ministry of Finance, and the National Planning Commission had fully acknowledged the project's role in implementing the government's decentralization framework. Nevertheless, the government's commitment did not fully translate horizontally at the ministries and their offices at lower echelons and DDCs. An absence of elected bodies at the DDCs, nonexistence of and/or inadequate dialogue between MPPW and MLD, an absence of a focal person for the project in the MLD, and MPPW's inability to provide the required full-time staff to the WSSUO contributed to weak linkages between DDCs and WSSUO during the first year of the project. MPPW and MLD agreed to depute the divisional chief of the WSSDO to the WSSUO, and for MLD to appoint a focal person for the project at the central level. MLD's focal person participated in quarterly progress review meetings, issued a directive to all project districts, and instructed the heads of DDCs to coordinate with the heads of WSSUO. This improved communication between the WSSUO and DDCs.

#### **G. Conditions and Covenants**

27. The loan was declared effective following fulfillment of the conditions of loan effectiveness. Covenants were broadly adequate and complied with to ensure sufficient control and quality of project implementation (Appendix 6) except 5 covenants, which (Schedule 5, paras. 29, 30, 31, 32, and 33) were not applicable during the project period as they were outcome statements of the project. Despite subproject locations being scattered across remote districts, audited project accounts and the auditor's report were submitted to ADB on time and in accordance with sound auditing standards.

#### **H. Consultant Recruitment and Procurement**

28. Consultants were recruited in accordance with ADB's Guidelines on the Use of Consultants, using a quality- and cost-based selection method. At project preparation, it was envisaged that the requirement for consultants would be equivalent to 1,217 person-months (336 person-months for project management consultants at the center and 881 person-months at district level). The PMU procured a project management consultant to support the PMU at the central level and 5 consulting contracts (1 contract per batch of districts) for the rural water and sanitation component of the project at regional level. All envisaged inputs of project management consultant and 5 regional consultants were fully utilized.

29. Procurement of civil works and goods contracts of the rural water supply and sanitation component were small and, with average values in the range of \$10,000 to \$15,000, these were done through community participation. The total amount of budget spent for 1,281 civil works and 1,239 goods and materials contracts through community participation was \$25.6 million. Due to the large number of thinly spread subprojects, ADB was unable to monitor compliance with the required provisions elaborated in project administration instruction 5.10 for the procurement done through community participation. A total of 174 NGOs were engaged as service providers using a fixed-cost selection method for assisting participating communities in social mobilization, engineering design, implementing construction activities, and monitoring and reporting subproject progress. The project document was not clear about the contract

packaging, and no procurement plan was prepared and agreed with the government during project processing.<sup>20</sup> For this reason, the project had difficulties in defining procurement requirements and budget allocation to participating districts.

#### **I. Performance of Consultants, Contractors, and Suppliers**

30. Overall, the performance of consultants was satisfactory. However, most consultants were less than serious about submitting progress reports on time. Except in four water supply subprojects, civil works were done through community participation and NGOs supported supervision of the civil works. In general, community participation in civil works and goods procurement ensured a sense of ownership, provided flexibility, and safeguarded against misuse of funds. In a few communities, however, workmanship and quality of works done through community participation were inferior.

31. The performance of NGOs was mixed. That of local NGOs compared with national NGOs was satisfactory as they enabled user committees and authorities more effectively to play their roles in community mobilization, planning, and implementation of water supply and sanitation schemes. Contrary to the assessment during project appraisal, the NGOs did not have sufficient technical capacity. As a result, finalization of the detailed engineering design of the water supply subproject took longer than expected. There were numerous cases of delayed design finalization due to poor quality of reports, and substantive revisions were made to improve the quality of the design reports. The assessment of NGOs' capacities during project formulation misguided the project design.

#### **J. Performance of the Borrower and the Executing Agency**

32. Performance of the borrower and executing agency in meeting the responsibilities assigned in the implementation plan was satisfactory. Inasmuch as the government categorized this as a core project throughout the implementation period, adequate budgetary provisions for the project were ensured. Capabilities of DWSS and WSSDO staff increased during the project period. The establishment of the project management office was satisfactory, and DWSS provided suitable qualified and experienced staff, resources, and support facilities for the PMU. Average duration of a project manager's stay was 2.5 years, which complied with government's civil service act. The project received a project management team award from ADB's Nepal Resident Mission in 2010. The assessment of the executing agency's capabilities during project formulation was reasonably accurate.

33. DWSS through DDCs coordinated the project activities well and provided support to participating districts for implementing subprojects successfully. Participating DDCs and local people had no prior experience in planning, developing, and implementing water and sanitation subprojects and obviously lacked necessary skills and capacity. A new institutional arrangement was introduced through the project. Due to limited capacity of the participating districts and political uncertainty, DDCs faced difficulties in appointing competent engineers. Appointed engineers were not interested to continue their tenures because of the hardship, remoteness, and inaccessibility of project districts and the inadequacy of incentives and allowances. Despite these difficulties, and with the support of consultants and NGOs, the WSSUO managed substantially to complete the project. In summary, the project's delivery was adversely affected due to (i) delayed appointment of project staff by DDCs, (ii) lack of incentives and inadequate

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<sup>20</sup> ADB. 2003. *Report and Recommendation of the President to the Board Directors on a Proposed Loan to the Kingdom of Nepal for the Community Based Water Supply and Sanitation Sector Project*. Manila.



hardship allowances, (iii) lack of clarity in the line of command and accountability, (iv) the acting DDC chairperson and local development officer's being preoccupied with other political issues, and (v) the WSSUO head's having dual responsibilities and thus being preoccupied with other tasks.<sup>21</sup>

## **K. Performance of the Asian Development Bank**

34. ADB's performance was satisfactory. From project preparation through implementation, it provided the necessary staff and financial resources. ADB fielded 12 missions, including 1 project inception mission, 1 midterm review mission, and 1 project completion review mission. Eleven missions out of 12 visited participating districts and consulted with DDCs, beneficiaries, NGOs, consultants, and water sanitation support unit office staff. Based on their findings, each ADB mission prepared a time-bound action plan that was readily verifiable and monitored. The midterm review mission adjusted the subproject implementation period by overlapping some activities of the planning and development phases. This enabled reducing subproject implementation by 6 months. Each review mission gave priority to monitoring implementation of a gender, caste, and ethnicity awareness and empowerment strategy to ensure active participation of women and disadvantaged groups in all WUSC activities. The increased participation of these groups is elaborated in para. 16. ADB organized monthly meetings with the project management team to monitor contract awards, disbursement, counterpart funding, and other implementation issues which improved overall project performance.

## **III. EVALUATION OF PERFORMANCE**

### **A. Relevance**

35. The project was rated *relevant*. It was relevant at the time of design, and it remained relevant during implementation and at completion. The project was consistent with both the government's and ADB's strategies for the country and conformed to ADB's country operational strategy for Nepal (2003–2005) at the time of approval. One of the strategic directions of the ADB country strategy and program update at the time of approval was to ensure strong community participation in all projects and working more closely with local government at district level. The project was also in line with the objectives of the ADB Water Policy, which includes improving and expanding services delivery, fostering water conservation, and improving governance through decentralization and capacity building of stakeholders. The overall design of the rural component (Component 1), rationale, and formulation were highly relevant, as the project contributed to improving the quality of life of people residing in remote areas supported under the project. The participatory, demand-driven, community-based approach helped ensure the project was relevant to the aspirations of community members. The project's development planning approach and implementation strategies involved multiple stakeholders oriented to promoting organized community participation. The project was instrumental to implement the National Rural Water Supply and Sanitation Policy, Strategy, and Action Plan approved in 2004. The project facilitated capacity building of DDCs, thus reflecting the government's commitment to decentralizing decision making by focusing implementation at community and district levels with a strong community-based approach. Though implementing the institutional strengthening component (Component 2) was challenging, the design of Component 2 was also relevant.

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<sup>21</sup> The water sanitation support unit office head was also the chief of the water supply and sanitation divisional office and was responsible for implementing the regular government program and day-to-day administration of the divisional office.

## B. Effectiveness in Achieving Outcome

36. The project was effective in achieving its outcome. Despite difficult geographical terrain and remote project areas, the project was effective in improving water supply and sanitation services for 84.3% of the target population of 850,000, or approximately 716,542 people (Appendix 7). This constitutes about 2.1% of Nepal's 2011 population. Water supply coverage of project districts grew from 71.6% (in 2002) to 88.6% (in 2010).

37. The project was highly successful in improving sanitation facilities for underserved populations, as 44,768 private latrines were built during the project period. About 83.4% of households in the project area did not have latrine facilities before the project. This was reduced to 33.8% after the project interventions. The project completion review mission noted that latrine construction by self-initiation is on an upward trend even after project completion. The project has contributed to increasing sanitation facilities coverage in project districts from 20% (in 2002) to 33.5% (in 2010). Since project completion, DWSS has provided continuous support to WUSCs willing to improve their sanitation situations. Based on project outputs, DWSS, in consultation with local bodies, has provided follow-up support to subprojects in the coverage area. As a result, 69 subproject areas were declared open-defecation-free areas as of 15 July 2012. Sanitation awareness is observed to have grown significantly after the project.<sup>22</sup>

38. In line with its emphasis on gender and social inclusion strategy, the project made significant achievements in promoting participation and empowerment of excluded and disadvantaged groups. It was effective in providing services to previously underserved communities and families whose access was limited due to gender, caste, ethnicity, and geographical remoteness.<sup>23</sup> Dalit and ethnic beneficiaries, respectively, comprise 20.5% and 17.3% of the total benefiting population. Project districts were ranked in the lower half by district selection criteria. The benefiting population living below the poverty line was 13.2% of the total benefitted populations of the project areas. No social, caste, or ethnic discrimination was reported in the project activities. With a few exceptions, WUSCs formed under the project were found to be active. Major reasons for WUSCs to be inactive were a WUSC's being responsible for more than one scheme of different settlements or the absence of a chairperson or other members in a key position. Therefore, reconstitution of WUSCs considering water supply schemes and a monitoring mechanism from the district agencies seem necessary to reactivate the nonfunctional WUSCs and achieve sustainability.

39. Strengthening of DDCs was not achieved as intended, largely due to the absence of elected representatives in the local bodies since July 2002. Nevertheless, progress in involving DWSS district offices through DDCs in water supply and sanitation activities has been satisfactory. DWSS staff members were sensitized to their new roles and responsibilities assigned under the decentralization, making it possible to adopt the institutional changes required by the devolution of functions to DDCs.

## C. Efficiency in Achieving Outcome and Outputs

40. On the basis of economic analyses, the project is rated *efficient* in achieving its outcomes and outputs. Following ADB guidelines,<sup>24</sup> economic analysis was undertaken of 14 subprojects in 5 selected project districts. The projects economic benefits exceeded their

<sup>22</sup> At project closing (31 December 2012), the areas of just 3 subprojects had been declared open defecation free.

<sup>23</sup> The project coverage area included all hill and mountain districts of the Mid- and Far-Western development regions having lower Human Development Index (HDI).

<sup>24</sup> ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila.

economic costs. The estimated average economic internal rate of return (EIRR) for the 14 subprojects was 74% and for the project was 73%, thus exceeding the designed estimate of 68%. For individual subprojects, the EIRRs ranged from 5% to 140% (Appendix 8). This indicates that the project is justified from an economic perspective. If such intangible benefits as social changes at community level and community empowerment could be measured, the project would have a substantially even higher EIRR than at design. Despite a start-up delay of about 1 year and the difficult terrain of the project district, the project was able to achieve about 80% of project outputs within the original project implementation period.

#### **D. Preliminary Assessment of Sustainability**

41. The preliminary assessment of sustainability for the whole project is assessed as *likely*. Participating communities have been involved in decision making throughout the community action plan process in planning, developing, construction, and O&M. This is generating ownership and building capacity to undertake O&M. Sufficient attention to community mobilization, participation in construction, and O&M has considerably impacted communities' capacity to organize their own water supply services. In line with the government's policy and the project design, almost all WUSCs are operating the water supply systems, undertaking maintenance and occasional repairs with the support of trained VMWs, and raising the monthly tariff to undertake these tasks. WUSCs have cash balances in their O&M accounts ranging from NRs1,500 to NRs2,257,493 for O&M. Community tap stand, tube well, and well systems are the most commonly adopted under the project, except in one subproject where private water connections are provided. Most WUSCs are collecting monthly cash tariffs from the benefited households to remunerate VMWs for regular operation and maintenance. The monthly water tariffs are at low rates (about NRs20 to NRs50/household/month) and are affordable to all households, including the poor. The water supply subprojects appear sustainable and are affordable to all households, unless major capital investment would be required for major repairs or maintenance due to damages caused by landslides or floods, as are likely to occur during monsoon. Communities are linked to local governments and WSSDO for support. In most cases, these institutions lack the human and financial resources to respond in a timely manner. WUSCs of overhead tank water supply systems must hire electricians to repair electromechanical equipment. Since overhead tank water supply systems are near urban centers and the relevant WUSCs are stronger, electricians are readily available for the repair of electromechanical equipment.

#### **E. Impact**

42. The project has contributed significantly positive social, gender, and environmental impacts (Appendix 9). All ethnic and caste groups in the project area were represented in the beneficiary population and noted their meaningful participation in user committees. Women and Dalits were not only significantly included into WUSCs but also were active in leadership development and decision making in most subprojects. The representation of women and Dalits is encouraging in most subprojects. Formation of such institutions as DWCC, WUGs, and WUSCs, along with working through them, has contributed to developing leadership and management skills among local people. Women from subproject areas received equal opportunities with no gender discrimination and were encouraged to become sanitation masons and VMWs. This program has created positive awareness that women can work in these roles. The project has developed social capital at community level; local communities and NGOs have become more empowered; and equitable access to water has been ensured to all castes and

ethnic minorities. There is evidence that Dalits are not being restricted access to water taps who previously were so restricted.<sup>25</sup>

43. The main project beneficiaries were women and girls who prior to the project fetched water that often was of poor quality and from multiple distant sources. With the support of the project, piped water supply is available in or near their homes. Average time savings per household of the 14 subprojects visited is estimated at about 1.8 hours per day.<sup>26</sup> The resultant time savings not only significantly reduce the stress especially on women and girls to carry water but also provide some leisure time for rest and improved quality of life due to improved hygienic conditions. Security risks to the women and girls due to the need to go for water in the dark morning and evening hours has been eliminated, and the women have more time for household chores and better child care. Girls, who share the responsibility for water collection, could then be enrolled in schools. Men and boys also benefited, but not to the same extent as did women and girls. Establishment of sanitation facilities near the house after the project not only improved the sanitation situation of community but also reduced stress on women to find a safe place for defecation far from the houses in the evening and early morning.

44. There are other significant, albeit nonquantifiable, benefits, especially in relation to improved health and vegetable production. The project completion review mission observed that there were improvements in kitchen garden vegetable production due to the availability of water for growing. Increased vegetable production not only provides savings in household expenditures but also improves the nutrition and health status of children and women.

45. Significant progress has been observed in sanitation and personal hygiene at project sites. Although quantitative information is unavailable, the communities experienced huge reduction in morbidity, and especially in relation to waterborne diseases, due to the quality water supply and improved sanitation. It was observed that practices such as washing hands before eating and washing hands and legs after handling animal dung were highly observed (97.5% and 99.2%, respectively). Hand washing with soap after toileting was observed to a slightly lesser extent (90.7%).<sup>27</sup> Bathing and personal cleanliness were found in 90% of households.

46. The project was instrumental in formulating and implementing the Rural Water Supply and Sanitation Sector Strategy and Action Plan.<sup>28</sup> The project has provided support to organize a sector stakeholder group to discuss policy issues more openly in the broader context of sector development, to bring projects under one subsectoral strategy, and to improve the quality of aid coordination. Its representation includes most of the sector related ministries, NGOs, civil society, and development partners. This has provided MPPW a formal mechanism to promote a structured policy and activity monitoring, knowledge management, confidence building, and sharing of best practices. However, the sector stakeholder group comprised of large membership which makes it less effective to drive the sector efficiency and improvement. With the experience of the sector stakeholder group, MPPW established a sector efficiency improvement unit and led the first joint sector review in May 2011. Land acquisition was based

<sup>25</sup> In the Srikala water supply and sanitation subproject of Doti District, upper caste people formerly restricted Dalits in using traditional water sources. After the project, Dalits were allowed to use community taps. All (Dalits and non-dalits) are accessing safe drinking water from the same community taps constructed under the project.

<sup>26</sup> These 14 subprojects are more accessible relative to other subprojects in mountain districts of the Far-Western and Midwestern regions. Due to weather constraints, it was not possible to visit subprojects of remote districts.

<sup>27</sup> Department of Water Supply and Sewerage. 2010. *Impact Assessment of Subprojects of Far-Western Development Region*.

<sup>28</sup> Project preparatory technical assistance facilitated drafting of the Rural Water Supply and Sanitation Sector Strategy and Action Plan. The government decision to implement the National Rural Water Supply and Sanitation Sector Strategy and Action Plan was one of the criteria for loan effectiveness.

on voluntary donation, both by public institution or individuals, and particularly for water taps stand. The project had no land acquisition or resettlement issues.

#### IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

##### A. Overall Assessment

47. Overall, the project was rated as successful in accordance with the review of its relevance, effectiveness in achieving outcome, efficiency in achieving outcome and output, sustainability, and impact. This indicates that the design and implementation were acceptable and the project had more or less the development impact anticipated at appraisal. The project was consistent with the government's development priorities at the time of approval as well as at completion. The project was implemented as conceived and to an acceptable level. It achieved its overall impact of expanding coverage of improved water supply and sanitation facilities to underserved populations—particularly to poor and remote areas—and improving health and hygiene practices related to waterborne and sanitation diseases. The project was *efficient and likely sustainable*. There was strong and effective demand for project outputs, particularly for improved water supply and sanitation services. WUSCs played important roles, on behalf of WUG, in project planning and development. WUSC members were very active, committed, and responsible.

##### B. Lessons

48. Project implementation, monitoring, and supervision were logistically difficult and costly due to scattered subproject sites (both districts and village). Clustering the project area based on geographic contiguity and similarity should be considered when selecting project sites in order to improve the efficiency of implementation, monitoring, and supervision.

49. Community mobilization should be conducted prior to WUSC formation so beneficiaries will be fully aware and their participation effective. While NGOs were effective in community mobilization and raising awareness, their technical capacity was comparatively weak. Therefore, project formulation should include capacity assessment of all stakeholders.

50. Simple technology and small systems are more sustainable, as O&M responsibility for rural water supply is assigned to the community and VMWs are able to maintain these systems with limited technical skills.

51. The project confirms that mandatory 50% participation of women and representation of caste and ethnic minorities in user-committee and executive positions that are proportionate to their populations will ensure their equal access to project benefits. Women's social empowerment can be achieved through social mobilization and capacity building in the process.

52. Covenants should be realistic and achievable to ensure sufficient control and quality of project implementation.

53. A procurement plan needs to be prepared and agreed with the government during project design in order to define procurement requirements, create a sound financial justification for procuring these, and schedule those tasks by allocating time frames and resources.

54. Retroactive financing and advance procurement action are needed to avoid start-up delays.

## C. Recommendations

### 1. Project Related

55. **Future monitoring.** DWSS will issue a directive to chief WSSDO of the 21 project districts for future monitoring of subprojects performance through the respective DDC and District Water Sanitation and Hygiene Coordination Committee (formally, DWCC) on sustaining benefits. In consultation with the respective DDCs, the chief of the WSSDO will prepare and submit the status report of subprojects on an annual basis to DWSS.

56. **Covenants.** Project outcome statements and their performance indicators had been listed as covenants. These should not be considered as covenants.

57. **Further action or follow-up.** A number of guidelines and manuals have been prepared with the project's support, and these are useful for DWSS operations. DWSS, through its Central Human Resource Development Unit, should utilize these guidelines and manuals to strengthen its capacity and provide technical support to local governments. In particular, the gender, caste, and ethnic minority guidelines and manuals should be institutionalized by integrating these into the Ministry of Urban Development's GESI Guidelines, which are in their final stage of development.

58. **Additional assistance.** Fulfillment of the recommendations requires that the government ensure adequate and timely budgetary support to DWSS for these required actions.

59. **Timing of the project performance evaluation report.** The preferred timing of a project performance audit report is in 2014, which would allow 3 years in which to assess sustainability of the project's outputs.

### 2. General

60. The design and monitoring framework needs to be developed with clear outcome and output statements, as well as relevant, specific, and quantifiable performance indicators with which the outcome and outputs can be measured.

61. Gender, caste and ethnic minority participations in user committees and executive positions should be mandatory in future projects to ensure equal access for all to project benefits.

62. DWSS should explore the possibility to use NGOs for community mobilization and awareness raising in their subprojects.

63. The sector stakeholder group shall form a small and manageable executive management team comprising key ministries including other stakeholders. Terms of references need to be developed and clarity given on its scope of role and responsibility and linking with Sector Efficiency Improvement Unit of MPPW.<sup>29</sup>

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<sup>29</sup> As a result of the reorganization in the government in June 2012, MPPW was split into two Ministries: (i) the Ministry of Urban Development (which includes sectors of urban development and water supply and sanitation) and (ii) the Ministry of Physical Planning, Works, and Transport Management. The Ministry of Local Development was renamed Ministry of Federal Affairs and Local Development. Sector Efficiency Improvement has been institutionalized under the Ministry of Urban Development.

## PROJECT FRAMEWORKS

Table A1.1: Original Project Framework<sup>a</sup>

Design Summary	Performance Indicators and/or Targets	Monitoring Mechanism	Assumptions and Risk
<p><b>Goal</b></p> <p>Human development through sustainable improvement in the water supply and sanitation (WSS) sector</p>	<p>Measurable improvement in national water and sanitation availability for all residents of remote areas</p> <p>Improved sanitation and hygiene and health practices in local communities</p> <p>Reduced incidence of waterborne disease and child mortality due to diarrheal diseases</p>	<p>Geographic information system (GIS) mapping of implemented subprojects and updating of status on a biannual basis</p> <p>Reports and statistics from government agencies, donors, nongovernment organizations (NGOs) and health care statistics</p> <p>Local health or sub-health post statistics</p>	
<p><b>Purpose</b></p> <p>Provide improved WSS services through a community-based approach to support the government's poverty reduction and decentralization programs</p>	<p>3% national increase in availability of safe drinking water attributable to project</p> <p>20% reduction in time spent collecting drinking water in participating communities</p> <p>Participating districts ranked in lower half using district selection criteria</p> <p>Low sanitation risk status achieved for all participating communities (more than 50% coverage)</p>	<p>Project performance management system and GIS mapping of implemented subprojects and updating of status on a biannual basis</p> <p>Initial site surveys and scheme completion reports</p> <p>Annually updated ranking using district selection criteria</p> <p>Initial site surveys and scheme completion reports</p>	<p>Project areas remain safe and secure.</p> <p>Accurate data from other agencies used to establish the ranking is updated and available.</p> <p>Communities take advantage of sanitation revolving fund and subsidies for latrine construction.</p>

<b>Design Summary</b>	<b>Performance Indicators and/or Targets</b>	<b>Monitoring Mechanism</b>	<b>Assumptions and Risk</b>
	50% reduction in incidence of waterborne disease in participating communities	Health impact study, local health or sub-health post statistics	Households improve environmental health practices.
<p><b>Outputs</b></p> <p><b>Component 1: Rural Water Supply and Sanitation</b></p> <p>Improve WSS facilities in remote poverty-afflicted districts</p>	<p>Approximately 1,200 water supply schemes constructed by user communities</p> <p>Approximately 30,000 household and school latrines constructed</p> <p>Participating districts and communities within these districts are in most remote, sanitation and/or hygiene high-risk, and poorest areas.</p>	<p>Project progress reports and scheme completion reports</p> <p>Water user and sanitation committee (WUSC) files and scheme completion reports</p> <p>District and community priority lists accompanied by associated selection criteria analysis</p>	<p>Communities agree to project terms and conditions.</p> <p>Poor households participate in the sanitation revolving fund program.</p> <p>Subproject selection criteria are used with no national changes in DDC priorities.</p>
Community to mobilize to apply for WSS schemes	1,500 communities apply for WSS projects.	District development committee (DDC) records and project management unit (PMU) reports	DDCs are able to implement the initial information "road show."
Communities to establish legally recognized WUSCs	All participating communities establish WUSCs.	DDC records and PMU reports	
Communities to develop and sign community action plans (CAPs) for implementing WSS projects	All participating communities prepare and sign CAPs.	CAP copies, DDC reports, and PMU reports	Internal dissension within communities limits their ability to reach consensus agreements.
Community members to receive and apply training in support of sustainable operation of WSS	All participating communities and their members receive WUSC training and health and hygiene education and awareness training.	WUSC and NGO reports to DDCs, and PMU reports	Trained individuals do not remain in the community after training.
Communities to contribute to WSS construction in cash and kind according to ability to pay, not	All project beneficiaries contribute in cash and kind to	WUSC records, DDC reports, and PMU reports	Communities misrepresent their ability and willingness to pay so



<b>Design Summary</b>	<b>Performance Indicators and/or Targets</b>	<b>Monitoring Mechanism</b>	<b>Assumptions and Risk</b>
penalizing women, poorest, and marginalized groups	construction accounts and in cash to operation and maintenance accounts in accordance with community contribution policy.		as to be included in the project.
WUSCs to implement WSS projects (procure materials and manage construction)	All participating communities procure materials, hire skilled labor, and otherwise manage and implement their WSS projects.	PMU monitoring and inspection visits, scheme completion reports, WUSC records, NGO reports, DDC records, and PMU reports	
WUSCs to establish revolving funds to provide credit for latrine construction	All participating communities establish and use revolving funds.	WUSC records, NGO reports, DDC records, and PMU reports	Participating communities have the ability to pay and ability to contribute in kind.
Village development committees and community leaders to train in planning, monitoring, and evaluating sanitation and hygiene improvement	5 people in each community, including the health promoters, receive health and sanitation improvement training.	Survey of trained individuals, NGO reports, and participatory project evaluations	Trained individuals do not apply the training.
Project communities to implement health and sanitation improvement programs	Health and hygiene programs are implemented during the development and construction phases of community projects.	Communities surveys, NGO reports, DDC records, and PMU reports	Households in participating communities value latrines and are willing to borrow from the fund to construct them.
Caste and ethnic minorities to benefit from improved WSS in proportion to community proportions	Caste and ethnic minorities in all project communities receive improved WSS service.	Communities surveys, NGO reports, DDC records, and PMU reports	Community members subvert gender, caste, and ethnicity program aims after subproject completion.
WUSCs to be composed of at least 50% women with at least one in a management position	At least 50% of WUSC members in all participating communities are female.	WUSC records, NGO reports, DDC records, and PMU reports	Not enough women are interested in participating, education level of women bars them from certain positions, and/or subsequent WUSC does not maintain the ratio.
<b>Component 2: Institutional</b>			

<b>Design Summary</b>	<b>Performance Indicators and/or Targets</b>	<b>Monitoring Mechanism</b>	<b>Assumptions and Risk</b>
<p><b>Strengthening</b></p> <p>Government capacity to manage community-based WSS projects increased</p>	<p>21 DDCs are capable of planning and managing community-based WSS projects.</p> <p>DWSS becomes a facilitator of sector activities.</p>	<p>PMU evaluation reports and project mission reviews</p> <p>Project reviews and midterm report</p>	<p>Widespread conflict does not break out in participating districts.</p> <p>Political considerations influence decisions and information is “adjusted” to favor alternative priorities.</p>
<p>DDCs to apply selection criteria to prioritize requests for project assistance</p>	<p>All participating communities are priority ranked and selected based on selection criteria.</p>	<p>DDC plans, criteria scoring sheets for each village, and PMU reports</p>	<p>Security considerations and travel restrictions limit DDC ability to visit communities.</p>
<p>DDCs to complete technical, social, and financial evaluation for each participating community</p>	<p>Appraisal reports for all participating communities are completed, with copies submitted to the PMU.</p>	<p>Copies of appraisal reports and PMU reports</p>	<p>DDCs do not have staff and are unable to create posts to manage NGOs.</p> <p>DDCs do not have sufficient per diem budget.</p>
<p>DWSS to establish capacity to engage and manage NGOs to support community-based project implementation</p>	<p>Each DDC signs contracts with NGOs to assist each community during the development phase and tripartite contracts (DDC, NGO, and WUSC) during the implementation phase.</p>	<p>NGO contracts, DDC reports, and PMU reports</p>	<p>Sufficient district NGO capacity does not exist, and other NGOs cannot be induced to work in participating districts.</p>
<p>DWSS to complete knowledge, facilities, and practices (KFP) surveys</p>	<p>KFP survey is completed in each district during first and last year the district participates in the project.</p>	<p>District KFP reports and PMU summary report</p>	<p>Security and travel restrictions limit the ability to compete KFP work.</p>
<p>DDCs to maintain a list of NGOs prequalified to assist communities</p>	<p>A list of prequalified NGOs is updated annually.</p>	<p>NGO list</p>	
<p>DWSS to orient interested NGOs to qualify them in assisting communities</p>	<p>DWSS provides orientation training to 20 NGOs annually.</p>	<p>Orientation curricula and list of participating NGOs with notations about which were prequalified</p>	<p>20 NGOs express interest and are willing to participate in the orientation.</p>

<b>Design Summary</b>	<b>Performance Indicators and/or Targets</b>	<b>Monitoring Mechanism</b>	<b>Assumptions and Risk</b>
DWSS to create or update community-based implementation sector manuals and guidelines and associated training packages	10 manuals and guidelines are created or updated and approved by Ministry of Physical Planning and Works (MPPW).	Copies of manuals and notification of approval	
DWSS to provide training and technical assistance to DDCs	DWSS gives training in use of manuals and guidelines to all participating DDCs.	Training curricula and training attendance sheets	DDCs send participants who will use the results of the training.
DWSS to monitor and evaluate project implementation	DWSS designs and implements a project performance management system with updated data twice a year.	Approved project performance management system and its updated reports	Security situation and travel restrictions limit ability of DWSS to get to the field.
DWSS to complete special studies (UCS, KFP, etc.)	DWSS completes two special studies annually.	Approval for specific special studies and completed special studies	Sector stakeholder groups (SSGs) do not clearly specify special studies or their terms of reference.
MPPW to enact policy and strategy recommendations of the SSG	SSG meets at least twice annually with policy and strategy items on the agenda.	Minutes of SSG meetings and any policy or strategy working group meetings	SSG members participate in policy and strategy discussions and make considered recommendations.
MPPW/DWSS to rationalize DWSS staffing	A rationalization plan is developed, approved, and first implementation steps completed.	Copy of plan, copy of approval, PMU reports of implementable steps, and project reviews	MPPW and/or DWSS does not have the political will to act on recommendations.

CAP = community action plan, DWSS = Department of Water Supply and Sewerage, DDC = district development committee, KFP = knowledge, facilities and practices, GIS = geographic information system, MPPW = Ministry of Physical Planning and Works, NGO = nongovernment organization, PMU = project management unit, WUSC = water user and sanitation committee, WSS = water supply and sanitation, SSG = sector stakeholder group

<sup>a</sup> This is the original project framework with only minor stylistic adjustments.

Source: ADB. 2003. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Nepal for the Community-Based Water Supply and Sanitation Sector Project*. Manila.

**Table A1.2: Design and Monitoring Framework<sup>a</sup>**

<b>Design Summary</b>	<b>Performance Targets</b>	<b>Achievements</b>	<b>Remarks</b>
<b>Impact</b> Human development through sustainable improvement in water supply and sanitation (WSS) sector	Water supply coverage increases by 15% in rural population with respect to 71.6% baseline water coverage of 2002.	Water supply coverage increased by 16.97% in rural population with respect to 71.6% baseline data. Water supply coverage in rural population is now 88.57%.	
	Water supply coverage increases by 30% in project districts' population with respect to baseline water coverage of 2002 (different baseline water coverage by individual district).	The water supply coverage in project districts' population increased in the range of 6.92% (Pyuthan) to 33.85% (Dadeldhura District).	In only one district (Dadeldhura) did water supply coverage increase by more than 30% (by 33.85%) with respect to baseline coverage of 2002.
	Sanitation coverage increases by 15% points in rural population with respect to 20% baseline sanitation coverage of 2002.	Sanitation coverage increased by 9.48% points in rural population with respect to 20% baseline. Sanitation coverage in rural population reached 29.48%.	The subproject selection did not consider the water supply coverage of the participating districts.
	Sanitation coverage increases by 30% points in project districts' population with respect to (different) % baseline coverage.	Sanitation coverage increased by 13.47% points in the project districts' household with respect to 20% baseline data. Presently, the sanitation coverage of project districts is 33.47%.	Sanitation coverage of five districts was increased more than 15% points with respect to baseline coverage of 2002. These districts are Bajhang (16.40%), Jumla (16.43%), Dadeldhura (16.44%), Rukum (17.31%), and Dolpa (20.11%). The smallest incremental coverage has been observed in Gulmi District (7.22%). Only in Dolpa District did sanitation coverage increase by nearly the target amount (26.65%) and the smallest incremental coverage was observed in Pyuthan District (7.65%)
	Reduction in incidence of diarrheal disease by 30% at community level	Due to access to clean water, sanitation facilities, and arsenic-free water, incidences of diarrheal and other waterborne diseases are significantly reduced in the subproject areas.	Since baseline and end line survey data on incidence of diarrheal disease are not available, qualitative information collected from the mission's field visit is used to present achievement.

Design Summary	Performance Targets	Achievements	Remarks
	Reduction in mortality rate of children under 5 years by 15% in project districts	Child mortality rate was reduced, according to project completion review sample survey.	No baseline targets. No deaths recorded due to waterborne diseases in 118 households surveyed during impact assessment by the Department of Water Supply and Sewerage (DWSS)
<b>Outcome</b> Improved water supply and sanitation services for rural population, including poor, through community-based approach	850,000 people (design population) have access to drinking water and sanitation facilities.	716,542 population (design-year population) have access to drinking water and sanitation facilities in 21 participating districts. At project completion, 568,177 people have access to drinking water and sanitation facilities.	
	At least 50% of 1,200 subprojects targeted to underserved groups living below the poverty line		
	At least 90% of households in project communities report increase in household water consumption levels.		
	20% reduction in time spent collecting drinking water in participating communities	Project completion review mission was informed about 50% reduction in time spent collecting drinking water.	
	21 district development committees (DDCs) capable of planning and managing community-based water supply and sanitation projects	District water supply and sanitation committees established in all 21 DDCs, making DDCs capable of planning and monitoring water supply and sanitation programs at district level. Divisional Chief of DWSS is member secretary to District Water, Sanitation and Hygiene Coordination Committee.	Government has scaled up establishment of district water supply and sanitation coordination and created a mandatory mechanism to coordinate water sanitation and health activities.
<b>Outputs: Component 1: Rural Water Supply and Sanitation</b>			
Improve WSS facilities in remote poverty-afflicted districts	Approximately 1,200 water supply schemes constructed by user communities	A total of 1,123 communities benefit from 573 subprojects implemented by water user groups.	Definition of scheme, communities, and subproject was not clear in the report and recommendation of the President.
	Approximately 30,000 household and school latrines constructed	In total, 44,768 household latrines have been constructed. A total of 354 school latrines constructed. Each of the school latrines has	About 57.5%, 19.9%, and 22.6% of latrines, respectively, have been constructed under self-initiation, subsidy,

Design Summary	Performance Targets	Achievements	Remarks
		separate latrines for girls.	and with revolving fund mechanism.
	Participating districts and communities within these districts are in the most remote, sanitation and/or hygiene high-risk, and poorest areas.	All communities selected by DDC	DDCs have prioritized all their communities using the approved project criteria for community selection.
Community to mobilize to apply for WSS schemes	1,500 communities apply for WSS projects.	2,600 applications received from water user groups and 690 subprojects identified for study under the project	
Communities to establish legally recognized water user and sanitation committees (WUSCs)	All participating communities establish WUSCs.	690 WUSCs formed in 21 districts with total of 6,265 members and registered in chief district office as per Nepal's water resource act	
Communities to develop and sign community action plans (CAPs) for implementing WSS projects	CAPs adopted by all participating communities	All 690 WUSCs developed and signed CAPs.	
Community members to receive and apply training in support of sustainable operation of WSS	One male and one female from each WUSC trained in system operation and maintenance. Similarly, one male and one female from each participating community trained as sanitation mason	394 (175 women and 219 men) users trained as village maintenance workers	Confidence of women increased to do nontraditional work such as sanitation mason
Communities to contribute to WSS construction in cash and kind according to ability to pay, not penalizing women, poorest, and marginalized groups	All project beneficiaries contribute in cash and kind to construction accounts and in cash to operation and maintenance accounts in accordance with community contribution policy.	Only 72% of community contribution in cash and kind has been achieved for construction, which is about 14% of total construction cost.	
WUSCs to implement WSS projects (procure materials and manage construction)	All participating communities procure materials, hire skilled labor, and otherwise manage and implement their WSS projects.	Small supply contracts (including non- local materials such as pipes, pipe-fittings, cement, sanitation materials) and civil works (worth less than \$50,000) have been procured by communities through shopping and community participation.	Procurement of pipes and fittings by weak and remote WUSCs carried out with support of water supply and sanitation support unit from qualified supplier. Procurement of small civil works contract managed by WUSC through community participation
WUSCs to establish	All participating communities establish	All communities established revolving funds	About 7,178 families' latrines were built

<b>Design Summary</b>	<b>Performance Targets</b>	<b>Achievements</b>	<b>Remarks</b>
revolving funds to provide credit for latrine construction	and use revolving funds.	to provide credit for latrine construction.	under revolving fund option, which is about 239% of that envisaged during project design.
Project communities to implement health and sanitation improvement programs	Health and hygiene programs implemented during development and construction phases of community projects	All communities implemented health and sanitation improvement programs.	
Caste and ethnic minorities to benefit from improved WSS in proportion to community representation	Caste and ethnic minorities in all project communities receive improved WSS services.	About 20% and 17% of total benefitted population from the project area are Dalit and ethnic minority, respectively. As per project completion report of DWSS, about 19% and 15% of representation in WUSCs are Dalit and ethnic minority, respectively. Project completion review mission confirms proportionate representation of caste and ethnic minorities in access to benefits from improved WSS.	Members in one visited subproject (in Doti District) during project completion review mission comprised solely from Dalit community
WUSCs to be composed of at least 50% women with at least one in a management position	At least 50% of WUSC members in all participating communities are female.	As per project completion report of DWSS, about 51.3% women representation in WUSCs.	WUSC of one subproject (in Dang District) visited during mission comprised solely of female working committee members
<b>Component 2: Institutional Strengthening</b>			
Government capacity to manage community-based WSS projects increased	21 DDCs capable of planning and managing community-based WSS projects	District water supply and sanitation committees established in all 21 DDCs, making DDCs capable of planning and monitoring water supply and sanitation program at district level. Divisional Chief of DWSS is member secretary to District Water, Sanitation and Hygiene Coordination Committee.	
	DWSS becomes facilitator of sector activities.	Nongovernment organizations (NGOs) recruited to support implementation of water supply and sanitation schemes. Communities were responsible for implementation.	
DWSS to orient interested NGOs to qualify them in assisting communities	DWSS provides orientation training to 20 NGOs annually.	DWSS provided orientation training to 174 NGOs (national and local) during project period. Local NGOs established links with respective local government, particularly	

Design Summary	Performance Targets	Achievements	Remarks
		DDCs.	
DWSS to create or update community-based implementation sector manuals and guidelines and associated training packages	10 manuals and guidelines created or updated and approved by Ministry of Physical Planning and Works (MPPW)	20 manuals and guidelines produced	Government needs to use these manuals and guidelines in its operations.
DWSS to monitor and evaluate project implementation	DWSS designs and implements project performance management system with updated data twice yearly.	Project performance management system established to monitor project implementation. Impact assessment carried out, but sample size taken was small.	DWSS has established national information management system and maintains database about status of water supply subprojects and construction at household level.
DWSS to complete special knowledge, attitude, and practice studies	DWSS completes two special studies annually.	7 studies completed during period of 5 years	
MPPW to enact policy and strategy recommendations of the Sector Stakeholder Group	Sector Stakeholder Group meets at least twice annually with policy and strategy items on the agenda.	Sector Stakeholder Group established to discuss policy issues more openly in broader context of sector development, bring projects under one subsector strategy, and improve quality of aid coordination. Further, government established sector efficiency improvement unit, which has been leading joint sector review since 2011. Sector efficiency improvement unit mainstreamed in structure of the Ministry, community contribution policy adopted, and action plan prepared for sector coordination	
MPPW/DWSS to rationalize DWSS staffing	A rationalization plan is developed, approved, and first implementation steps completed.	Government established sector efficiency improvement unit and joint sector review has recommended policy recommendation for sector performance improvement	

<sup>a</sup> Most of the performance targets were not quantified during project design and baseline data had not been included. Performance indicators have been modified here to make them more quantifiable, and some activities are now considered as project outputs.

Sources: ADB. 2003. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Nepal for the Community Based Water Supply and Sanitation Sector Project*. Manila. DWSS.2011. Project Completion Report.



**PROJECT OUTPUTS****Table A2.1: Project Outputs against ADB Result Framework Indicators**

<b>ADB Result Framework Indicator</b>	<b>Project Completion Report (achievement)</b>
New households served with water supply (number)	90,397 households served with improved water supply
New households served with sanitation (number)	44,768 households with new latrines (for improved environmental sanitation)
Water supply pipes installed or upgraded (length of network in kilometers)	4,552 kilometers of pipeline installed

Source: Asian Development Bank.2012

Table A2.2: Total Numbers of Water Supply Subprojects and Schemes

District	Population (2010)	Total Selected Subprojects	Sub-projects Dropped at Planning Stage	Subprojects with Detailed Engineering Design	Subprojects Dropped at Development Stage	Sub-projects Selected for Construction	Completed Sub-projects (Loan Closing)	Sub-projects Carried over after Loan Closing	Total Subprojects and Subschemes Implemented	
									Sub-projects	Sub-schemes
Kapilvastu	82,388	32		32	0	32	29	3	32	131
Pyuthan	18,792	25		25	0	25	24	1	25	49
Dadeldhura	23,260	31		31	0	31	22	9	31	62
Baitadi	18,523	25		25	6	19	18	1	19	56
Bajhang	43,802	45		45	3	42	39	3	42	88
Doti	18,011	16		16	0	16	16	0	16	24
Rukum	42,028	36		36	0	36	36	0	36	75
Rolpa	28,811	29		29	0	29	29	0	29	71
Achham	28,795	47		47	20	27	22	5	27	63
Bajura	17,239	46	4	42	20	22	22	0	22	26
Jajarkot	16,511	41		41	23	18	18	0	18	20
Humla	6,191	23		23	15	8	8	0	8	12
Dailekh	34,651	44		44	0	44	39	5	44	91
Darchula	18,647	24		24	3	21	18	3	21	86
Sallyan	31,617	40	2	38	0	38	34	4	38	48
Dolpa	11,655	22		22	0	22	22	0	22	15
Dang	43,964	37	3	34	2	32	30	2	32	92
Gulmi	33,148	50	2	48	2	46	26	20	46	48
Kalikot	20,420	24		24	1	23	21	2	23	24
Mugu	8,840	28	11	17	0	17	17	0	17	17
Jumla	20,884	25	0	25	0	25	24	1	25	25
<b>Total</b>	<b>568,177</b>	<b>690</b>	<b>22</b>	<b>668</b>	<b>95</b>	<b>573</b>	<b>514</b>	<b>59</b>	<b>573</b>	<b>1,123</b>

Sources: Department of Water Supply and Sewerage. 2011. *Project Completion Report*. Kathmandu. ADB project completion review mission.

**Table A2.3: Types of Subprojects, Pipe Length, Numbers of Reservoirs, and Numbers of Community Tap Stands**

District	Total	Type of Project						Pipe Length (kilometers)			Number of Reservoir Tanks	Number of Community Tap Stands
		Gravity	Lift and Gravity	Overhead Tank with Deep Tube Well	Hand Pump	Dug Well	Rainwater Harvesting	Transmission	Distribution Network	Total Pipe Length		
Kapilvastu	32	1	0	3	28	0	0	12	62	74	5	36
Pyuthan	25	22	3	0	0	0	0	123	122	245	82	547
Dadeldhura	31	31	0	0	0	0	0	123	137	260	60	518
Baitadi	19	19	0	0	0	0	0	92	103	196	54	482
Bajhang	42	42	0	0	0	0	0	285	190	475	121	1,127
Doti	16	16	0	0	0	0	0	87	69	156	29	430
Rukum	36	34	1	0	0	0	1	266	177	443	134	994
Rolpa	29	29	0	0	0	0	0	252	168	420	104	677
Achham	27	27	0	0	0	0	0	90	93	183	74	456
Bajura	22	22	0	0	0	0	0	74	49	123	44	336
Jajarkot	18	18	0	0	0	0	0	72	106	178	42	378
Humla	8	8	0	0	0	0	0	29	26	55	23	115
Dailekh	44	42	0	0	0	0	2	125	185	310	222	741
Darchula	21	21	0	0	0	0	0	80	95	175	77	523
Sallyan	38	38	0	0	0	0	0	135	122	258	68	538
Dolpa	22	22	0	0	0	0	0	56	33	89	23	180
Dang	32	20	5	5	0	2	0	78	175	253	66	566
Gulmi	46	44	0	0	0	0	2	209	140	349	71	607
Kalikot	23	23	0	0	0	0	0	78	75	153	39	334
Mugu	17	17	0	0	0	0	0	38	11	49	18	106
Jumla	25	25	0	0	0	0	0	84	24	108	34	255
<b>Total</b>	<b>573</b>	<b>521</b>	<b>9</b>	<b>8</b>	<b>28</b>	<b>2</b>	<b>5</b>	<b>2,390</b>	<b>2,161</b>	<b>4,552</b>	<b>1,390</b>	<b>9,946</b>

Sources: Department of Water Supply and Sewerage. 2011. *Project Completion Report*. Kathmandu. ADB project completion review mission.

Table A2.4: Numbers of Latrines Constructed

Project Districts	Existing Number of Latrines	Latrine Construction with Subsidy	Latrine Constructed with Self-Initiative	Latrine Constructed with Revolving Fund	Total Newly Constructed Latrines	Total Households with Latrines	Households Using Latrines	School Toilets Constructed
Kapilvastu	2,740	1,028	485	1,028	2,541	5,281	5,281	9
Pyuthan	265	259	1,089	405	1,753	2,018	2,018	15
Dadeldhura	2,265	327	494	317	1,138	3,403	3,403	15
Baitadi	1,216	262	2,036	262	2,560	3,776	3,776	9
Bajhang	292	462	1,354	461	2,277	2,569	2,569	17
Doti	187	312	1,711	362	2,385	2,572	2,572	5
Rukum	368	629	926	1,033	2,588	2,956	2,956	74
Rolpa	325	437	1,043	648	2,128	2,453	2,453	15
Achham	197	662	1,807	660	3,129	3,326	3,326	25
Bajura	426	303	1,095	660	2,058	2,484	2,484	18
Jajarkot	679	602	1,298	602	2,502	3,181	3,181	15
Humla	97	204	288	194	686	783	783	0
Dailekh	441	492	2,572	492	3,556	3,997	3,997	18
Darchula	362	456	1,788	402	2,646	3,008	3,008	17
Sallyan	108	464	1,187	464	2,115	2,223	2,223	10
Dolpa	107	195	714	182	1,091	1,198	1,198	19
Dang	1,434	604	2,961	604	4,169	5,603	5,603	12
Gulmi	2,717	421	1,047	594	2,062	4,779	4,779	26
Kalikot	94	281	573	281	1,135	1,229	1,229	18
Mugu	120	227	615	172	1,014	1,134	1,134	10
Jumla	610	282	671	282	1,235	1,845	1,845	7
<b>Total</b>	<b>15,050</b>	<b>8,909</b>	<b>25,754</b>	<b>10,105</b>	<b>44,768</b>	<b>59,818</b>	<b>59,818</b>	<b>354</b>

Source: Department of Water Supply and Sewerage. 2011. *Project Completion Report*. Kathmandu.

## PROJECT COST AND FINANCING

Table A3.1: Project Cost  
(\$ million)

Item	Appraisal Estimate			Actual		
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total
<b>A. Rural Component</b>						
1. Civil works (water supply)	7.49	10.98	18.47	4.44	12.69	17.13
2. Equipment and materials (water supply)	0.93	3.47	4.40	6.62	3.95	10.57
3. Sanitation	0.75	1.10	1.85	0.39	0.47	0.86
4. Community mobilization (NGO contracts)	0	1.86	1.86	0.00	2.13	2.13
5. Community mobilization (materials)	0	0.02	0.02	0.00	0.06	0.06
6. Gender, caste and ethnic minority program	0	0.04	0.04	0.00	0.03	0.03
7. Health and hygiene program	0.94	0.19	1.13	0.03	0.13	0.16
<b>Subtotal (A)</b>	<b>10.11</b>	<b>17.66</b>	<b>27.77</b>	<b>11.48</b>	<b>19.46</b>	<b>30.94</b>
<b>B. Institutional Strengthening Component</b>						
1. International consultants	0.24	0.03	0.27	0.07	0.00	0.07
2. Domestic consultants	0	2.00	2.00	0.00	2.07	2.07
3. Equipment	0.06	0.05	0.11	0.13	0.00	0.13
4. Materials	0.66	0.07	0.73	0.72	0.06	0.78
<b>Subtotal (B)</b>	<b>0.96</b>	<b>2.15</b>	<b>3.11</b>	<b>0.92</b>	<b>2.13</b>	<b>3.05</b>
<b>C. Incremental Administration Costs</b>						
1. Counterpart salaries (technical)	0	1.84	1.84	0.00	1.61	1.61
2. Counterpart salaries (support)	0	0.51	0.51	0.00	0.75	0.75
3. Equipment and vehicles	0.26	1.46	1.72	0.04	0.17	0.21
<b>Subtotal (C)</b>	<b>0.26</b>	<b>3.81</b>	<b>4.07</b>	<b>0.04</b>	<b>2.53</b>	<b>2.57</b>
<b>Interest Charges during Construction</b>	<b>0.76</b>	<b>0.00</b>	<b>0.76</b>	<b>0.33</b>	<b>0.00</b>	<b>0.33</b>
<b>Total</b>	<b>12.09</b>	<b>23.62</b>	<b>35.71</b>	<b>12.77</b>	<b>24.13</b>	<b>36.90</b>

NGO = nongovernment organization.

Note: Rupee values converted to US dollars at rate 72.8 NRs = \$1 (based on the average currency equivalent rate at project funding by Asian Development Bank).

Sources: Information system of Asian Development Bank, government's project completion report, and financial information from Department of Water Supply and Sanitation.

**Table A3.2: Financing Plan**  
(\$ million)

Item	Appraisal Estimate		Actual	
	Amount	%	Amount	%
Asian Development Bank	24.0	67	23.9	65
Government	7.7	22	7.6	21
Local authorities (district and village development committees)	0.4	1	0.8	2
Beneficiaries	3.6	10	4.6	13
<b>Total</b>	<b>35.7</b>	<b>100</b>	<b>36.9</b>	<b>100</b>

Source: Asian Development Bank. 2012

**Table A3.3: ADB Financing, Actual**  
(\$)

Budget Item No.	Items	Total	ADB Loan	
			Foreign Exchange	Local Currency
01A	Civil works (water supply)	7,322,648	4,437,968	2,884,680
01B	Equipment and materials (water supply)	10,556,778	6,621,500	3,935,278
01C	Sanitation	866,502	393,865	472,637
01D	Community mobilization (NGO contracts)	2,128,112		2,128,112
01E	Community mobilization (materials)	59,708		59,708
01F	Gender, caste and ethnic minority program	30,943		30,943
01G	Health and hygiene program	160,969	28,505	132,464
02A	International consultants	69,732	69,732	
02B	Domestic consultants	1,379,498		1,379,498
02C	Equipment	132,323	132,323	
02D	Training and materials	779,327	716,351	62,976
03A	Equipment and vehicles	39,451	39,451	
4	Interest charge	332,033	332,033	
<b>Total</b>		<b>23,858,024</b>	<b>12,771,728</b>	<b>11,086,296</b>

NGO = nongovernment organization.

Source: Loan finance information system, Asian Development Bank.

## LOAN DISBURSEMENT

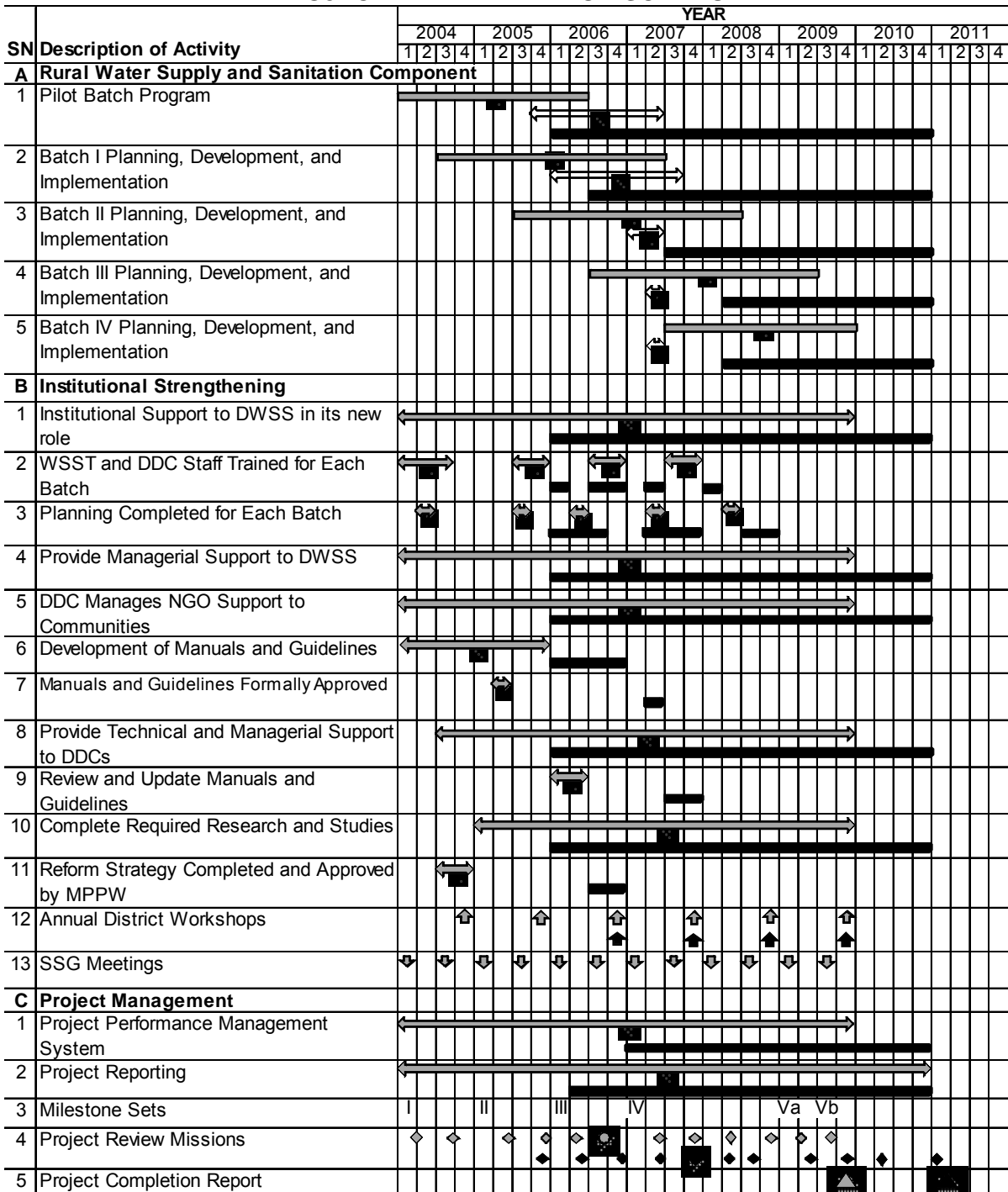
### Yearly Loan Disbursement (\$ million)

Description	Year								Total
	2004	2005	2006	2007	2008	2009	2010	2011	
01A: Civil works (water supply)		641,747		251,021	286,420	1,797,711	4,082,530	263,219	<b>7,322,648</b>
01B: Equipment and materials (water supply)	45,720	886,122		301,195	1,364,549	3,971,758	3,833,764	153,670	<b>10,556,778</b>
01C: Sanitation		141,897		2,338	299,397	336,960	85,893	17	<b>866,502</b>
01D: Community mobilization (NGO contracts)		284,309		56,955	510,948	651,393	624,507		<b>2,128,112</b>
01E: Community mobilization (materials)		59,708							<b>59,708</b>
01F: Gender, caste, and ethnic minority		5,226		480	6,359	2,272	16,606		<b>30,943</b>
01G: Health and hygiene program		18,293		2,386	80,774	47,446	12,070		<b>160,969</b>
02A: International consultants	6,595	31,875	31,262						<b>69,732</b>
02B: Domestic consultants	125,334	13,845	104,334	247,561	262,744	301,386	98,969	225,325	<b>1,379,498</b>
02C: Equipment (institutional strengthening)	41,192		32,009	12,510	1,697	44,915			<b>132,323</b>
02D: Training and materials	39,350	91,697	51,081	55,596	163,364	248,306	129,933		<b>779,327</b>
03A: Vehicles	12,809					26,642			<b>39,451</b>
4: Interest charges during construction		3,322	19,965	30,520	45,019	83,527	149,680		<b>332,033</b>
<b>Total</b>	<b>271,000</b>	<b>2,178,041</b>	<b>238,651</b>	<b>960,562</b>	<b>3,021,271</b>	<b>7,512,316</b>	<b>9,033,952</b>	<b>642,231</b>	<b>23,858,024</b>

NGO = nongovernment organization.

Source: Loan finance information system, Asian Development Bank.

**PROJECT IMPLEMENTATION SCHEDULE**



DDC=district development committee, MPPW=Ministry of Physical Planning and Works, NGO=nongovernmental organization, SN=serial number, SSG= sector Stakeholder Group, WSST= water and sanitation support team

**LEGEND :**

<b>Main Activity</b>		<b>Workshop and Mission</b>		<b>Project Completion Report</b>
As per Plan	[Horizontal bar]	As per Plan and Revised (Workshop)	[Upward arrow]	As per Plan and Revised
Revised Plan	[Horizontal bar with double arrows]	Actual (Workshop)	[Upward arrow]	Actual
As per Plan and Revised	[Horizontal bar with double arrows]	As per Plan and Revised (Review Mission)	[Diamond]	
Actual	[Horizontal bar with double arrows]	As per Plan and Revised (Mid-term Mission)	[Diamond]	
		Actual (Review Mission)	[Downward arrow]	
		Actual (Mid-term Mission)	[Downward arrow]	

Source: ADB. Project completion review mission.



### STATUS OF COMPLIANCE WITH LOAN COVENANTS

Reference	Covenant	Timing for Compliance	Remarks
LA, Schedule 5, para 1	Ministry of Physical Planning and Works (MPPW) shall be the Executing Agency in its capacity as the line Ministry responsible for the sector.		Complied with.
LA, Schedule 5, para 1	MPPW shall delegate its authority with respect to Project execution to the Department of Water Supply and Sewerage.		Complied with.
LA, Schedule 5, para 1	The Borrower will have established within MPPW a PMU in Kathmandu to support the Project and to implement the Institutional Component.	Prior to effective date	Complied with.
LA, Schedule 5, paras 1 and 7	The Borrower shall also establish in each District Development Committee (DDC) a Water and Sanitation Support Team, including a support team of consultants and DDC counterpart staff to implement the Rural Component.	No later than one month after the Borrower's selection of participating DDC	Complied with.
LA, Schedule 5, paras 1 and 8	Each DDC shall establish a District Water Coordinating Committee, chaired by the chairman of the DDC, to provide guidance to the DDC and to coordinate activities of DDCs, VDCs and communities, both as amongst themselves, and with the PMU.		Complied with.
LA, Schedule 5, para 3	The Borrower shall establish the National Project Steering Committee to supervise the overall implementation of the Project.	Within one month after the effective date – meeting at least every three months.	Complied with.
LA, Schedule 5, para 3	The Borrower shall establish the Sector Stakeholder Group. The Borrower shall ensure that a Sector Stakeholder Group meeting is convened at least twice a year.	Throughout the Project implementation – a meeting at least twice a year	Complied with.
LA, Schedule 5, para 4	MPPW shall ensure that an experienced Project Director, the level of Class I officer with sector experience, is appointed and is fully dedicated to the Project for the duration of the Project implementation period as the director heading the PMU. The Borrower shall inform ADB promptly of any change of the director of the PMU. The Borrower shall ensure that a core team of MPPW staff, including a deputy project director, senior engineers a sociologist and a senior accountant, assists the Project Director.		Complied with.
LA, Schedule 5, para 5	The PMU's role shall include (i) liaising and reporting to the ADB; (ii) management of draw	Throughout the project	Complied with.

Reference	Covenant	Timing for Compliance	Remarks
	downs and other accounting matters related to the PMU Operating Account; (iii) financial management and reporting as to all Project Accounts; (iv) liaising with government agencies; (v) development of training materials, policy manuals and technical guidelines; (vi) monitoring and evaluation of DDC's project implementation; (vii) performance of the rural component activities listed in the following paragraph; and (viii) overall project coordination.	implementation	
LA, Schedule 5, para 6	The PMU shall also ensure that each water users group (WUG) participating in the Project is formed pursuant to the Water Resources Act, 2049 (1992) and registered pursuant to the Water Supply Regulations 1998.		Complied with.
LA, Schedule 5, para 9	The Borrower shall ensure that NGOs/CBOs shall be selected using criteria for selection acceptable to ADB, and retained by DDCs and WUSCs to: (i) provide assistance to the selected communities to establish water user groups; (ii) guide communities through the creation of a community action plan (CAP); (iii) provide assistance and training to WUGs on planning, procurement, construction, management, and O&M of water supply schemes; (iv) conduct health and hygiene promotion and initiate sanitation programs, ; (increase awareness on gender, caste and ethnic, minorities and implement a WUG strategy to ensure active participation of these groups and compliance with proportional representation and gender targets.		Complied with.
LA, Schedule 5, para 10	Each participating VDC shall be staffed by at least one full-time secretary.		Complied with.
LA, Schedule 5, para 11	The Borrower shall ensure that, in selecting project target communities each DDC uses the subproject selection criteria set out in Part C of Schedule 5.		Complied with.
LA, Schedule 5, para 11	Each WUG implementing the subproject at community level is appropriately formed pursuant to the relevant laws and bylaws and that that, accordingly, it is licensed to use water supplied to it and to construct, own, operate, maintain, and dispose of rights to such water.	Throughout the Project implementation	Complied with.
LA, Schedule 5, para 12	The Borrower shall implement the national policy changes that are promoted by the Rural Water Supply and Sanitation Strategy and Action Plan.	Throughout the Project implementation	Complied with.
LA, Schedule 5,	The Borrower shall ensure that during the	Throughout the	Not complied with.

Reference	Covenant	Timing for Compliance	Remarks
para 13	project implementation period, the DWSS implements a comprehensive human resources review. Such review shall take into account the revised role of the DWSS.	Project implementation	
LA, Schedule 5, para 14	The Borrower shall ensure that, by the end of project implementation period, its Cabinet reviews its existing policy under which, depending on size of end-user population settlements, different Borrower line agencies implement rural water supply and sanitation project.		Complied with. Sector Efficiency Unit established under MPPW is leading joint sector review and benchmarking of water utilities.
LA, Schedule 5, para 15	The Borrower shall ensure that prior to the commencement of project activities within any community, and as a condition for funding by the ADB of the relevant district's project activities, the MPPW and the relevant DDC enter into a project implementation agreement (the DDC Agreement) in form and substance satisfactory to the ADB. The DDC agreement shall include provision as to the following matter: contribution of local counterpart funding, terms and conditions of release of funding from DDC to WUGs, including conditions relating to provision of DDC Contribution; establishment, and staffing, of WSST, establishment of minimum specification and standards for the works to be performed by the WUGs, and auditing of the DDC Operating Account and related reporting to PMU.		Complied with.
LA, Schedule 5, para 16	The Borrower shall ensure that in respect of any subproject works, the relevant DDC, the relevant VDC and the WUSC enter into a project implementation agreement, in form and substance satisfactory to the ADB.		Complied with.
LA, Schedule 5, para 17	The Borrower shall ensure that adequate allocations are made in its budget for the Project for each fiscal year to provide for the required amount of funds, in addition to the loan proceeds.	Every fiscal year.	Complied with.
LA, Schedule 5, para 18	The Borrower shall allocate central counterpart funds in the amount budgeted in accordance with item elaborated in para. 17 schedule 5.	Every fiscal year	Complied with.
LA, Schedule 5, para. 19	To qualify for project funding, each DDC shall pay in cash to the DDC operating account 10% of its locally generated annual revenue for the previous fiscal year (the DDC contribution).	Every fiscal year.	Partly complied with. The project completion review mission of December 2011 and January 2012 observed that of 5 DDCs selected for sampling all had provided only partial

Reference	Covenant	Timing for Compliance	Remarks
	<p>Each VDC shall pay in advance, and in cash 2.5% of total cost of the estimated cost of construction of all proposed subprojects within its region (the VDC contribution). The VDC shall pay the VDC contribution into an account operated by the applicable WUG.</p>		<p>contributions. Complied with.</p>
<p>LA, Schedule 5, para 20</p>	<p>To qualify for project funding, each WUG shall pay in cash into an account operated and maintained by the WUG for the purposes of the project (i) one year's estimated O&amp;M cost for the proposed scheme; plus (ii) 0.2 % of the estimated construction cost of the proposed subproject.</p> <p>The WUG shall commit to contribute a further 19.8% of the estimated construction cost of the subproject in cash or kind during the construction period of the relevant WUG works.</p>		<p>Complied with.</p>
<p>LA, Schedule 5, para 21</p>	<p>The Borrower ensure that within any subproject, (i) only one of the following technology options shall be selected, and (ii) expenditure of project funds per household on the selected technology option is restricted to the following respective maximum amount. Rehabilitation of gravity-feed system, new gravity-feed system, groundwater storage tank (40 m); Groundwater –storage tank (60m), overhead tank with pipe system, Rehabilitated overhead tank with pipe system, lift, with pipe system, rainwater harvesting system.</p>		<p>Complied with.</p>
<p>LA, Schedule 5, para 22</p>	<p>The Borrower shall ensure that within any subproject, project funds are not allocated to the development of water systems requiring either the use of any water the rights to which are disputed, or the involuntary resettlement of persons.</p>		<p>Complied with.</p>
<p>LA, Schedule 5, para 23</p>	<p>Each WUG shall bear the O&amp;M costs of its completed scheme, and the borrower shall ensure that no project funding will be used to pay O&amp;M costs.</p>		<p>Complied with. O&amp;M fund has been created.</p>
<p>LA, Schedule 5, para 24</p>	<p>The initial ceiling for each DDC Operating account shall be set in accordance with the approved annual district plan and shall not exceed the equivalent of \$100,000.</p>		<p>Complied with.</p>
<p>LA, Schedule 5, para 25</p>	<p>The Borrower shall ensure that DDCs shall rank all communities in each project district based on the DDC's assessment of (i) hardship factors, (ii) willingness of the community to pay for the costs of the subproject, and (iii) poverty and social factors.</p>		<p>Complied with.</p>

Reference	Covenant	Timing for Compliance	Remarks
LA, Schedule 5, para. 26	The Borrower shall ensure that in evaluating eligibility of any community for project funding, DDCs determine that hardship factors exist if: (i) the estimated time for fetching water within the community is more than 30 minutes per round trip; (ii) the existing accessible water sources are available for fewer than 9 months per year; (iii) the existing water sources are contaminated (arsenic or faecal colidorm shall be greater than 20/ml) or physically prone to contamination (for example, open dug wells, broken down tube wells, and rivers); or (iv) the daily existing water consumption of the community is inadequate, with a critical threshold being less than 15 liters per capita daily.		Complied with.
LA, Schedule 5, para. 27	Communities must be willing to pay the WUG contribution and to commit to the O&M costs set out in para. 20 of Schedule 5 of LA. DDCs shall give favorable consideration to any WUG undertaking to pay a higher WUG contribution or higher O&M costs than those described in para. 20 of Schedule 5 of the LA.  For poor communities not accessible by motorized transport, the minimum WUG contribution shall be reduced (a) from 20% to 10% of the estimated construction cost of the subproject; and (b) such that the construction cost of the subproject so estimated excludes costs of transportation of project materials and equipment.		Complied with.
LA, Schedule 5, para. 28	DDCs shall place a priority in their selection process on communities that are socially excluded and otherwise disadvantaged. DDCs shall consider in this assessment low average income, insufficient food supply, low literacy rate, and high morbidity and mortality rates within the relevant community as significant determinants of poverty or negative social factors.		Complied with.
LA, Schedule 5, para. 29	The Borrower shall ensure that based on the data of the Borrower's Ministry of Health, by project completion; there shall have been (i) a 15% reduction in infant mortality in the project districts; and (ii) 10% reduction incidence of diarrheal disease in the general population within the project districts.		Not Applicable. These are outcome performance indicators and targets of the project. As such, they are not appropriate as covenants.
LA, Schedule 5, para. 30	The Borrower shall ensure that based on the data maintained by the DWSS, there shall have been (i) at least 15% increase in rural		Not Applicable. These are outcome performance

Reference	Covenant	Timing for Compliance	Remarks
	population with access to safe water and sanitation within three years after the effective date and, (ii) by the expiration of the project implementation period, within the project districts, a 30% increase in rural population with access to safe water and sanitation.		indicators and targets of the project. As such, they are not appropriate as covenants.
LA, Schedule 5, para. 31	The Borrower shall ensure that by project completion there are adequate national budgets and allocations for rural water supply and sanitation to DDCs based on DDC's periodic plans.		Not Applicable. These are outcome performance indicators and targets of the project. As such, they are not appropriate as covenants.
LA, Schedule 5, para. 32	The Borrower shall ensure that by project completion, within project districts, there shall have been at project district level, (i) a 15% reduction in mortality rates of children under five years of age; and (ii) a 10% reduction in incidence of diarrheal disease in the general population.		Not Applicable. These are outcome performance indicators and targets of the project. As such, they are not appropriate as covenants.
LA, Schedule 5, para. 33	The Borrower shall ensure that by project completion there shall have been, at community level, (i) a 20% reduction in mortality rates of children under five years of age; and (ii) a 30% reduction in incidence of diarrheal disease in the general population.	Project completion.	Not Applicable. These are outcome performance indicators and targets of the project. As such, they are not appropriate as covenants.
LA, Schedule 5, para. 34	If any involuntary resettlement or land acquisition is required under the Project, the Borrower shall adhere to the ADB's policy on involuntary resettlement.		Complied with.
LA, Schedule 5, para. 35	The Borrower ensure that gender, caste, ethnicity and community mobilization objectives are developed, planned and integrated into project strategies, action plans and processes.		Complied with.
LA, Schedule 5, para. 36	The Borrower ensure that within each WUSC, (i) at least 50% of all members shall be women (of any caste or ethnic group) and employed as executive and general members in WUSCs, and (ii) there shall be proportional representation of all castes and ethnic groups (regardless of gender) residing in the community.		Complied with.
LA, Schedule 5, para. 38	Each WUG subproject shall undergo an environmental screening and appraisal process to identify any environmental concerns.		Complied with.

Reference	Covenant	Timing for Compliance	Remarks
LA, Schedule 5, para. 37	Ensure that the following general gender, caste and ethnic minority targets are met: (i) women, as well as men, shall be trained as paid village maintenance workers and sanitation masons; (ii) men, as well as women, shall be trained as community health motivators to promote health and sanitation to men, as well as to women, boys and girls; (iii) school water supply and sanitation facilities shall include separate toilet cubicles for boys, girls and teachers; (iv) school hygiene and sanitation promotions shall also be extended to boys and girls not attending school through a child-to-child approach; (v) the WUG shall pay the 10% poorest men and women within its community for their unskilled labor in relation to the Project, at no less than 50% of the standard daily labor rate; (vi) the DDC and the relevant WUG shall provide subsidies to the 10% poorest households in each community; (vii) each DDC shall provide Project subsidies to poor communities in remote middle hills and mountain areas within its District; and (viii) each DDC shall provide community-based revolving funds for sanitation as a means of granting loans for latrines.		Complied with.
LA, Schedule 5, para 38	The Borrower shall ensure that the Project develops an environmental checklist at planning stage in accordance with the Borrower's and ADB's Environmental Assessment Guidelines (2003), and at all times throughout the implementation of the Project, adheres to the ADB guidelines on environmental assessment procedures and the ADB policy on Involuntary Resettlement.	Throughout the project implementation	Complied with.
	The Borrower shall ensure that each WUG, with the assistance of the applicable WSST and NGOs, carries out environmental screening using this checklist. Mitigation measures shall be put in place for all environmental concerns identified by the screening process.	Throughout the project implementation	Complied with.
LA, Schedule 5, para 39	The PMU shall ensure that DDCs, VDCs and community leaders are trained and supported in planning, monitoring and evaluation of sanitation and hygiene improvement. This training shall follow the guidelines developed by UNICEF and DWSS. Each DDC shall implement awareness programs for members of the relevant WUGs.		Complied with.
LA, Schedule 5, para 40	WSST's shall prepare quarterly financial statements, including records of the statement		Complied with.

Reference	Covenant	Timing for Compliance	Remarks
	of expenditures made in relation to the project.		
LA, Schedule 5, para 41	The Borrower shall ensure that the PMU develops a Project Performance Management System.		Complied with.
LA, Schedule 5, para 42	The PPMS shall monitor and evaluate project information and data to ensure that planned interventions achieve the desired result and beneficial impact on the target a defined population.		Complied with.
LA, Schedule 5, para 43	The PMU shall gather baseline physical and socioeconomic data in each of the project districts. Within three months after commencement of project operations by the first DDC in the Pilot batch, the PMU shall submit a detailed implementation plan for monitoring performance and preparing benchmark information for the ADB's review. The PMU shall thereafter submit annual monitoring and evaluation reports to the ADB.		Complied with.
LA, Schedule 5, para. 44	The Project shall be reviewed biannually by the Borrower and the ADB to assess implementation progress.	Biannually	Complied with.
LA, Schedule 5, para. 45	Upon the earliest of (i) approval of 500 subprojects for implementation; (ii) the completion of 200 subprojects; and (iii) the expiration of three years from the Effective Date, the Project, Borrower and the ADB shall carry out a midterm review. This review shall examine the scope, design, and implementation arrangements of the Project; identify changes needed since the time of project appraisal; assess implementation performance against project indicators; review and establish compliance with loan covenants; identify problems and constraints, and if necessary recommend changes in the design or implementation arrangements.		Complied with.
LA,Section 4.01 (a)	The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound administrative, financial, engineering, environmental, and rural water supply and sanitation practices.		Complied with.
LA,Section 4.02	The Borrower shall make available, or cause to be made available, in either case, promptly as needed, the funds, facilities, services, land and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.		Complied with.



Reference	Covenant	Timing for Compliance	Remarks
LA, Section 4.06 (b)	The Borrower shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards, consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to the Bank; (iii) furnish to the Bank as soon as available but in any event not later than nine months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto.	On or before nine months after the end of each related fiscal year	Complied with.
LA, Schedule 3, para 1	The Borrower shall ensure that the DDC accountant performs an internal audit of the use of funds that are disbursed to the DDC from the Sector Account and ensure that of the funds so disbursed (i) not more than 65% are used for civil works; not less than 8% are used for community building; (iii) not less than 12% are used for the gender, caste and ethnic minority program; (iv) not less than 4% are used for the health and hygiene program; and (v) not less than 11% are used for project management.		Complied with.
LA,Section 4.07(b)	Submission to ADB of quarterly progress report	Throughout the Project implementation	Complied with.
LA,Section 4.07 (c)	Submission of Project Completion Report of the Project	Three months after completion of the Project	Complied with.

## DISAGGREGATED BENEFITING POPULATION

District	Number of Total Households (Surveyed Year)	Number of total households (2010)	Population Served by Water Supply Facilities									
			Male	Female	Survey Year	Rural Population Growth Rate (%)	Base Year	Design Year	Dallit	Ethnic	Other	Below Poverty
Kapilvastu	10,365	12,619	35,254	32,419	67,673	2.5	82,388	110,673	12,204	18,517	36,952	4,325
Pyuthan	2,604	3,030	8,240	7,912	16,152	1.9	18,792	23,582	3,613	5,667	6,872	946
Dadeldhura	3,326	3,897	10,302	9,550	19,852	2.0	23,260	29,499	4,428	508	14,916	3,326
Baitadi	2,664	3,044	8,489	7,723	16,212	1.7	18,523	22,622	3,676	-	12,536	2,170
Bajhang	5,134	5,936	19,362	18,525	37,887	1.8	43,802	54,451	7,805	-	30,082	3,273
Doti	3,036	3,496	7,904	7,736	15,640	1.8	18,011	22,257	3,957	37	11,646	1,885
Rukum	6,386	7,435	18,215	17,881	36,096	1.9	42,028	52,802	7,858	9,679	18,559	3,754
Rolpa	4,179	4,730	12,728	12,728	25,456	1.6	28,811	34,693	5,029	8,820	11,607	2,273
Achham	3,451	3,900	13,029	12,452	25,481	1.5	28,795	35,123	8,397	681	16,403	12,657
Bajura	2,316	2,644	7,664	7,435	15,099	1.7	17,239	21,380	4,041	394	10,664	7,669
Jajarkot	2,429	2,775	7,024	7,427	14,451	1.7	16,511	20,504	3,953	2,154	8,344	6,563
Humla	617	704	2,183	2,116	5,427	1.7	6,191	7,668	643	-	4,784	299
Dailekh	4,715	5,443	14,978	15,041	30,019	1.8	34,651	43,751	7,370	3,061	19,588	2,661
Darchula	2,357	2,723	7,729	8,412	16,141	1.8	18,647	23,574	3,002	355	12,784	1,404
Sallyan	4,591	5,217	14,110	13,715	27,825	1.6	31,617	38,913	5,074	7,705	15,046	2,503
Dolpa	1,975	2,255	5,066	5,142	10,208	1.7	11,655	14,455	1,106	4,328	4,774	1,986
Dang	6,183	7,481	18,321	18,017	36,338	2.4	43,964	59,916	5,095	16,806	14,437	2,146
Gulmi	4,786	5,215	15,634	14,784	30,418	1.1	33,148	38,115	5,930	6,046	18,442	2,269
Kalikot	2,709	3,107	9,067	8,734	17,801	1.7	20,420	25,520	2,662	-	15,139	991
Mugu	1,274	1,480	3,875	3,735	7,610	1.9	8,840	11,276	1,421	8	6,181	4,044
Jumla	2,870	3,266	9,385	8,965	18,350	1.6	20,884	25,768	3,094	172	15,084	1,034
<b>Total</b>	<b>77,967</b>	<b>90,397</b>	<b>248,559</b>	<b>240,449</b>	<b>490,136</b>		<b>568,177</b>	<b>716,542</b>	<b>100,358</b>	<b>84,938</b>	<b>304,840</b>	<b>68,178</b>

Source: Department of Water Supply and Sewerage. Project Completion Report.

## ECONOMIC AND FINANCIAL ANALYSES

### A. Introduction

1. Economic analyses of 14 sample subprojects (Table A8.1) are carried out in accordance with Asian Development Bank (ADB) guidelines.<sup>1</sup> The economic evaluation of completed subprojects is based on actual costs and benefits used to compare against the economic returns anticipated for the project in the original report and recommendation of the President. The reevaluation generally follows the methodology adopted at project preparation, but the present analysis relies on data provided by the Department of Water Supply and Sewerage (DWSS), by the Ministry of Physical Planning and Works (MPPW), and collected during visits of the project completion review mission to 14 sample subprojects.

**Table A8.1: List of Selected Project for Economic Analysis**

SN	Batch	District	Water Supply and Sanitation Subproject	Actual Investment (NRs)	Benefited Households (No.)	Average Household Size (No.)
1	Pilot	Kapilbastu	Ban Ganga	26,755,744	630	5.5
2	Pilot	Kapilbastu	Bhalwad	5,233,760	200	5.8
3	Pilot	Kapilbastu	Buddi	1,789,511	275	6.1
4	Third	Sallyan	Bhumeshwar	1,983,996	100	5.0
5	Third	Sallyan	Badachaur Allalla	2,023,971	50	5.3
6	Fourth	Dang	Dabara	3,162,926	92	5.8
7	Fourth	Dang	Kuirepani	6,400,843	80	4.6
8	Fourth	Dang	Sivpur Purano Bagale	4,015,280	236	5.3
9	Second	Achham	Japladevi Jumla	3,968,714	110	8.7
10	Second	Achham	Ridikot	2,516,040	133	7.1
11	Second	Achham	Navadev Matela	4,432,437	96	9.8
12	First	Doti	Mudhe Kapaleki	12,165,774	551	3.6
13	First	Doti	Sirkala	1,667,531	84	3.5
14	First	Doti	Khalagada	871,661	30	5.4

Source: Field study by the project completion review mission, December 2011.

2. The project provided water supply and sanitation facilities to those communities that shared subproject capital costs (1% upfront cash and 19% labor contribution) and undertook responsibility for operation and maintenance (O&M) of the facilities.

3. The calculation of the average incremental economic cost (AIEC) and economic internal rate of return (EIRR) of subprojects is based on the initial investment by the project and value of time saved in fetching water.

### B. Methodology and Approach

4. The project consists of 573 water supply and sanitation subprojects (521 gravity, 28 hand pump, 17 pumping,<sup>2</sup> 5 rainwater harvesting, and 2 dug well) in 21 districts of the Western, Mid-western and Far-western development regions. The rural component of the project has

<sup>1</sup> ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila; ADB. 1999. *Handbook for the Economic Analysis of Water Supply Projects*. Manila.

<sup>2</sup> Includes pumping for gravity and overhead tank system.

been implemented in 5 batches (1 pilot batch and 4 other batches). All the batches have 4 districts except the 4th batch, which has 5 districts. Five districts out of 21 have been selected for project sampling so that the economic analysis includes 1 district from each batch. Out of the 172 subprojects in the 5 selected districts, a sample group of 14 subprojects has been purposively selected to cover all types of subprojects (gravity, pumping, and hand pumps) in carrying out the economic analysis and calculating the EIRR. The EIRR has been calculated on the basis of the capital costs incurred, actual O&M costs, and benefits achieved to date.

5. Quantifiable benefit is derived from net time savings in daily collection of water by the main beneficiaries (i.e., women). The resulting time savings accruing to individuals from reduced carrying of water could permit greater labor inputs toward (i) agricultural activities, (ii) informal-sector employment, (iii) other livelihood and economic improvement activities, and (iv) benefits from leisure time. The health benefits and increase in vegetable production resulting from subprojects cannot be quantified, and therefore such benefits are not included for purposes of the EIRR analysis. However, significant improvement in personal hygiene, reduced morbidity caused by waterborne diseases and arsenic,<sup>3</sup> and increased vegetable production in kitchen gardens are commonly reported by the subproject beneficiaries.

6. In most subprojects, the tariff is based on actual monthly expenditures for O&M of the subproject. The tariff in 9 subprojects is charged on a monthly basis from the benefited households at a fixed rate. A meter-reading system is used in 1 subproject. No tariff collection system has been introduced in the remaining 4 subprojects.

### C. Assumptions

7. The main assumptions adopted for the analysis are as follow:

- (i) The economic opportunity cost of capital is 12%.
- (ii) Each subproject is assumed to have a useful economic life of 15 years, with no residual value in year 15.
- (iii) Tradable goods and services are converted into domestic prices using the shadow exchange rate factor, which is 0.90.<sup>4</sup>
- (iv) The conversion factor for unskilled labor is estimated at 0.70.
- (v) VAT of 13% is excluded from the cost, and the resulting economic values are expressed at the constant July 2011 price level.
- (vi) The base year for the analysis is 2011. Capital investment made into subprojects before the period is considered as investment made in year 0 (i.e., 2010).
- (vii) Economic-cost value of time savings is calculated at 51.5% of saved time<sup>5</sup> using a NRs170 daily rate.<sup>6</sup>
- (viii) The opportunity cost of water is assumed to be zero, because the water supply subprojects are established in geographically dispersed communities and will not significantly reduce the volume of water available for the irrigation of crops.
- (ix) Land costs are not included into the economic analysis, as the opportunity cost of land is assumed to be zero.

<sup>3</sup> Existence of arsenic contaminated water is reported in Kapilbastu District.

<sup>4</sup> A standard conversion of 0.9 for tradable goods and services is used by the World Bank-funded Rural Water Supply and Sanitation Project and ADB-funded Second Small Towns Sanitation Project. The same conversion factor is used in this analysis.

<sup>5</sup> A 1996 World Bank SAR on the Rural Water Supply and Sanitation Project in Nepal has taken the weighted average of 51.5% of time saved being devoted to economic activities.

<sup>6</sup> The Nepal Living Standards Survey, Central Bureau of Statistics 2010/2011, shows that the mean daily wage rate in the agriculture sector is NRs170 per day.

- (x) The only benefit incorporated into the EIRR is the value of time saved in fetching water, which a field survey shows to relate especially to women. As such, the average time saving benefit for each subproject has been valued in terms of the wage rate in the agriculture sector. It is assumed that 51.5% of time saved represents an opportunity cost savings vis-à-vis its utilization in agricultural labor or equivalent economic activities.
- (xi) Quantifiable benefits from improved water supply include economic cost savings on nonincremental water consumption and benefit from incremental water supply due to improved service and quality. The economic value of nonincremental water is based on the existing economic supply price of water from existing sources. The incremental water supply price is based on the average demand price computed as the average economic price of O&M costs and average water supply costs per household.
- (xii) O&M costs are based on actual costs incurred by water user and sanitation committees (WUSCs) for subprojects.

#### D. Estimation of EIRR

8. The estimated average EIRR for the 14 subprojects is 74% and for the project it is 73%, both of which exceed the 68% estimated at appraisal. These figures are conservative, as they do not include benefits derived from sanitation improvements, increase in vegetable production, and health benefits. For individual subprojects, the EIRRs range between 5% and 140%. Across subprojects, the EIRR estimates vary as a function of investment, scheme size, distance between source and settlement, population, and household size. Table A8.2 presents the AIECs and EIRRs of the 14 visited subprojects, Table A8.3 shows the EIRR for the aggregate of the visited subprojects, and Table A8.4 presents the EIRR for the project as a whole.

**Table A8.2: Average Incremental Economic Cost and Internal Rate of Return of Subprojects**

SN	Subproject	AIEC (NRs/m <sup>3</sup> )	EIRR (%)
1	Banganga (Kapilbastu)	59	74
2	Bhalwad (Kapilbastu)	96	65
3	Buddi (Kapilbastu)	84	122
4	Bhumeshwar (Sallyan)	79	57
5	Badachaur Affalla (Sallyan)	86	16
6	Dabara (Dang)	103	42
7	Kuirepani (Dang)	161	33
8	Sivpur Purano Bagale (Dang)	105	118
9	Jalpadevi Jumlaam (Achham)	98	5
10	Ridikot (Achham)	105	10
11	Navadev Matela (Achham)	119	55
12	Mudhe Kapaleki (Doti)	57	140
13	Sirkala (Doti)	117	100
14	Khalagada (Doti)	146	34

AIEC = average incremental economic costs, EIRR = economic internal rate of return, m<sup>3</sup> = cubic meters, SN = serial number.

Source: ADB. project completion review mission.

**Table A8.3: Calculation of Average Incremental Economic Cost and Internal Rate of Return in Aggregate for Visited Subprojects**  
(NRs'000)

Year	Water Supply Cumulative Cost	Cost			Gross Benefit	Net Benefit
		Capital Cost	Operation Cost	Total Cost		
2010	0	58,096	0	58,096	0	(58,096)
2011	362,471	0	23,142	23,142	64,018	40,876
2012	370,867	0	23,142	23,142	65,521	42,379
2013	379,464	0	23,142	23,142	67,061	43,919
2014	388,267	0	23,142	23,142	68,638	45,496
2015	397,281	0	23,142	23,142	70,253	47,111
2016	406,513	0	23,142	23,142	71,907	48,765
2017	415,966	0	23,142	23,142	73,602	50,459
2018	425,646	0	23,142	23,142	75,337	52,195
2019	435,560	0	23,142	23,142	77,114	53,972
2020	445,712	0	23,142	23,142	78,934	55,792
2021	456,109	0	23,142	23,142	80,799	57,657
2022	466,757	0	23,142	23,142	82,709	59,567
2023	477,661	0	23,142	23,142	84,665	61,523
2024	488,829	0	23,142	23,142	86,669	63,526
2025	500,267	0	23,142	23,142	88,721	65,579
NPV	2,779,975	58,096	157,618	215,714	491,786	276,073
<b>EOCC</b>	<b>12.00%</b>	<b>AIEC</b>	<b>(NRs/cum):</b>	<b>77.60</b>	<b>EIRR:</b>	<b>73.95%</b>

AIEC = average incremental economic cost, cum=cumulative, EIRR = economic internal rate of return, EOCC = economic opportunity cost of capital.

Source: ADB. project completion review mission.

**Table A8.4: Calculation of Average Incremental Economic Cost and Internal Rate of Return for the Project**  
(NRs'000)

Year	Water Supply Cumulative Cost	Cost			Gross Benefit	Net Benefit
		Capital Cost	Operation Cost	Total Cost		
2010	0	2,417,384	0	2,417,384	0	(2,417,384)
2011	14,835,427	0	947,172	947,172	2,620,162	1,672,990
2012	15,179,045	0	947,172	947,172	2,681,695	1,734,523
2013	15,530,903	0	947,172	947,172	2,744,715	1,797,543
2014	15,891,206	0	947,172	947,172	2,809,258	1,862,086
2015	16,260,160	0	947,172	947,172	2,875,362	1,928,189
2016	16,637,979	0	947,172	947,172	2,943,065	1,995,892
2017	17,024,882	0	947,172	947,172	3,012,406	2,065,234
2018	17,421,092	0	947,172	947,172	3,083,427	2,136,255
2019	17,826,839	0	947,172	947,172	3,156,169	2,208,997
2020	18,242,359	0	947,172	947,172	3,230,674	2,283,502
2021	18,667,892	0	947,172	947,172	3,306,987	2,359,815
2022	19,103,686	0	947,172	947,172	3,385,151	2,437,979
2023	19,549,995	0	947,172	947,172	3,465,213	2,518,041
2024	20,007,078	0	947,172	947,172	3,547,219	2,600,047
2025	204,75,202	0	947,172	947,172	3,631,219	2,684,046
NPV	113,780,389	2,417,384	6,451,061	8,868,445	20,128,118	11,259,673
<b>EOCC</b>	<b>12.00%</b>	<b>AIEC</b>	<b>(NRs/cum):</b>	<b>77.94</b>	<b>EIRR:</b>	<b>72.79%</b>

AIEC = average incremental economic cost, cum=cumulative cost EIRR = economic internal rate of return, EOCC = economic opportunity cost of capital.

Note: Water supply, operation cost, and benefits of the project are estimated based on average of the 14 visited subprojects.

Source: ADB. project completion review mission.

## E. Sensitivity Analysis

9. A sensitivity analysis was conducted to consider a 10% increase in capital and operating costs, a 10% reduction in subproject benefits, and a 20% decrease in the life of the assets. Switching values and sensitivity indicators are calculated for each visited subproject and for the visited projects as a whole using a 12% discount rate. A switching value indicates the percentage change in a given parameter required to reduce the economic net present value to zero, and the sensitivity indicator shows that the project results are rather not sensitive to both changes in the estimated benefits and costs. The sensitivity analysis of economic costs and benefits is presented in Table A8.5.

**Table A8.5: Sensitivity Analysis of Subprojects**

<b>Subproject</b>	<b>Parameters</b>	<b>Switching Value</b>	<b>Sensitivity Indicator</b>
Banganga (Kapilbastu)	Increase in cost by 10%	(176)	(1)
	Reduction in benefits by 10%	64	2
Bhalwad (Kapilbastu)	Increase in cost by 10%	(104)	(1)
	Reduction in benefits by 10%	51	2
Buddi (Kapilbastu)	Increase in cost by 10%	(66)	(2)
	Reduction in benefits by 10%	40	3
Bhumeshwar (Sallyan)	Increase in cost by 10%	(58)	(2)
	Reduction in benefits by 10%	37	3
Badachaur Affalla (Sallyan)	Increase in cost by 10%	(6)	(15)
	Reduction in benefits by 10%	6	16
Dabara (Dang)	Increase in cost by 10%	(60)	(2)
	Reduction in benefits by 10%	38	3
Kuirepani (Dang)	Increase in cost by 10%	(77)	(1)
	Reduction in benefits by 10%	44	2
Sivpur Purano Bagale (Dang)	Increase in cost by 10%	(133)	(1)
	Reduction in benefits by 10%	57	2
Jalpadevi Jumlaam (Achham)	Increase in cost by 10%	10	10
	Reduction in benefits by 10%	(11)	(9)
Ridikot (Achham)	Increase in cost by 10%	3	40
	Reduction in benefits by 10%	(3)	(39)
Navadev Matela (Achham)	Increase in cost by 10%	(76)	(1)
	Reduction in benefits by 10%	43	2
Mudhe Kapaleki (Doti)	Increase in cost by 10%	(282)	0
	Reduction in benefits by 10%	74	1
Sirkala (Doti)	Increase in cost by 10%	(187)	(1)
	Reduction in benefits by 10%	65	2
Khalagada (Doti)	Increase in cost by 10%	(76)	(1)
	Reduction in benefits by 10%	43	2

Source: ADB. project completion review mission.

10. The project is robust and insensitive to increase in cost. The aggregate result for the visited subprojects (Table A8.6) shows that it can absorb more than 128% increase in cost and 56% decrease in benefits. The project is also viable even if there is a simultaneous increase in cost and decrease in benefits.



**Table A8.6: Sensitivity Analysis for Aggregate of Visited Subprojects**

Parameter	% Change	NPV		Switching Values	Sensitivity Indicators
		Before Change (NRs'000)	NPV After Change (NRs'000)		
Increase in cost	10	276,073	254,501	128	(0.8)
Reduction in benefits	(10)	276,073	226,894	56	1.8

NPV = net present value.

Source: ADB. project completion review mission.

## F. Financial Analysis

11. No financial analysis was done at completion, because the communities are bearing only the subproject O&M costs and are not charging tariffs to recover the subproject capital costs. This is also in line with the project objectives, as the project focused on the provision of water supply and sanitation schemes to communities that lacked access to safe drinking water and were mostly poor. Therefore, they lacked capacity to make the needed infrastructure investments, particularly given that most were in small settlements at significant distances from water sources.

## G. Project Benefits

12. Under the project's rural component, 573 water supply and sanitation subprojects were constructed. The project was benefiting a population of about 542,000 in the year of completion (2010). That is expected to grow to about 716,000 in the coming 15 years.<sup>7</sup> The contribution of the project to the district water supply coverage in the selected districts was about 9% (Table A8.7).

**Table A8.7: Water Supply Coverage in 2010**

Selected District	Total Households in District	Households Benefitted by the Project	Existing Water Supply Coverage (households)	Contribution of Project to District Water Supply Coverage (%)
Kapilbastu	89,294	10,365	75,050	12
Dang	100,911	6,183	74,200	6
Sallyan	39,611	4,591	29,159	12
Achham	50,642	3,451	47,104	7
Doti	36,465	3,036	28,453	8
<b>Total</b>	<b>316,923</b>	<b>27,626</b>	<b>253,966</b>	<b>9</b>

Sources: Information collected from Water Supply and Sanitation Divisional Office, Department of Water Supply and Sewerage, and project completion reports.

13. The main benefit consists in the economic value of time saved—especially by women—and redirected to activities that will enhance household income. Average time savings per

<sup>7</sup> Department of Water Supply and Sewerage, 2011. *Project Completion Report*. Kathmandu.

household of visited the 14 subprojects is estimated at 1.8 hours per day (Table A8.8). Not only do the resultant time savings significantly reduce the stress especially on women and girls to carry water, it also provides them some leisure time to rest. With water available at a place nearby their houses, women have increased their contributions to farm-related activities, tending livestock, and other off-farm income-generating activities. Moreover, security risks to the women and girls due to their being compelled to fetch water in dark morning and evenings are eliminated, and they have more time for household chores and better child care. In addition, average water supply by the subprojects is estimated at 61 liters per capita per day, which is about 280% more than before the subprojects.<sup>8</sup>

**Table A8.8: Average Time Savings per Day per Household in 2011**

<b>Subproject</b>	<b>Benefitted Households</b>	<b>Water Fetching Time Before the Project (hours)</b>	<b>Water Fetching Time After the Project (hours)</b>	<b>Time Saved (hours)</b>
Banganga (Kapilbastu)	630	3.1	1.5	1.6
Bhalwad (Kapilbastu)	200	3.1	2.1	1.0
Buddi (Kapilbastu)	275	2.4	2.2	0.2
Bhumeswar (Sallyan)	100	3.8	2.5	1.3
Badachaur Affalla (Sallyan)	50	4.7	3.3	1.4
Dabara (Dang)	92	3.8	2.5	1.3
Kuirepani (Dang)	80	3.4	1.7	1.7
Sivpur Purano Bagale (Dang)	236	4.5	2.5	1.9
Jalpadevi Jumlaam (Achham)	110	4.8	3.2	1.5
Ridikot (Achham)	133	3.7	2.1	1.6
Navadev Matela (Achham)	96	7.6	3.9	3.7
Mudhe Kapaleki (Doti)	551	4.6	1.4	3.2
Sirkala (Doti)	84	2.8	1.3	1.4
Khalagada (Doti)	30	3.0	0.8	2.2
<b>Total</b>	<b>2,667</b>	<b>3.8</b>	<b>2.0</b>	<b>1.8</b>

Source: ADB. project completion review mission.

14. There are additional significant, albeit non-quantifiable, benefits, especially in relation to health improvement and vegetable production. Access to clean water has significantly reduced the incidence of waterborne diseases, arsenic toxicity, and other illnesses, as well as the related loss in productivity due to absenteeism from work. It was reported that, after the project, there are significant improvements in kitchen-garden vegetable production due to the availability of water for production. This increase in vegetable production not only saves on household expenditures but it also improves the nutrition and health status of children and women.

15. The community awareness program empowered the village communities, and especially women, marginalized castes, and ethnic minorities, to plan and participate in subproject screening, design, and implementation. In most of the subprojects, WUSCs were constituted by

<sup>8</sup> Before the project, water supply was estimated at 16 liters per capita per day in the visited subprojects.

the collective meeting of water user members. Women's participation in WUSCs comprised more than 50% of the total, and there was equitable participation of Dalits and ethnic minority groups in the working committees.<sup>9</sup> The community mobilization done by the project has also generated indirect benefits for the communities involved. The communities have undertaken several initiatives on a self-help basis and have associated themselves with various other government projects, village development committees, and civil society organizations.

16. Significant improvement has been observed in relation to the sanitation component. The project contributed to a 45% increase in sanitation coverage within the visited subproject areas. The project's contribution to sanitation facilities within the overall project area was 49% (Table A8.9). The community awareness program on sanitation contributed to construction of latrines on the self-initiative of people in the communities and declaration of open defecation free areas. Areas of 69 subprojects have been declared open defecation free and some other subprojects are in the process achieving such status. Subsidies for latrine construction to the ultra-poor households and provision of revolving funds for latrine construction played major roles in establishing sanitation facilities for the poor.

**Table A8.9: Improved Sanitation Systems for Aggregate of Visited Subprojects**

<b>Item</b>	<b>Number of Households</b>	<b>%</b>
Total households	3,483	100
Number of households having latrine before the project	1,179	34
Latrine constructed by project funding support	686	20
Latrine constructed by self-initiation	864	25
<b>Total latrines constructed in project period</b>	<b>1,550</b>	<b>45</b>

Source: ADB. project completion review mission.

**Table A8.10: Improved Sanitation System in Project Area Overall**

<b>Item</b>	<b>Number of Households</b>	<b>%</b>
Total households	90,397	100
Households with latrine (before project)	15,050	17
Households with latrine (after project)	59,818	66
<b>Contribution of the project</b>	<b>44,768</b>	<b>49</b>

Source: Project completion reports, Department of Water Supply and Sewerage.

## **H. Maximum Allowable Subproject Capital Cost**

17. Maximum justifiable construction cost had been identified during project appraisal on the basis of technology choice and number of households served. While the overall weighted average per-household cost of all technical options is within the range of the maximum per-household cost identified during appraisal in the sample subprojects, per-household cost for overhead tank exceeds the range of maximum per-household cost. Table A.11 compares the maximum allowable cost as adjusted for domestic inflation from 2003–2010 and the actual cost.

<sup>9</sup> Footnote 7. Also validated in a field study by the project completion review mission.

**Table A8.11: Water Supply Subproject Costs Incurred**

<b>Technology</b>	<b>Beneficiaries (Households)</b>	<b>Maximum Cost Per Household (NRs in 2002)</b>	<b>NRs Inflation (2003– 2010)</b>	<b>Maximum Cost in 2010 Prices</b>	<b>Per Household Cost Actual in 2010 (NRs)</b>
Overhead tank	802	19,800	71.20%	33,898	45,286
New gravity	1,039	29,800	71.20%	51,018	25,711
Rehabilitation gravity	551	19,700	71.20%	33,726	22,079
Groundwater (shallow tube well)	275	7,600	71.20%	13,011	6,507
<b>Total</b>	<b>2,667</b>	<b>22,417</b>	<b>71.20%</b>	<b>38,378</b>	<b>28,867</b>

Source: ADB. project completion review mission.

18. For the project as a whole, per-household actual cost of the sample subprojects is within the range of NRs6,507 (groundwater) to NRs80,011 (overhead tank). Per-household investment on a subproject basis is presented in Table A8.12.

**Table A8.12: Water Supply Investment Cost Per Household**

<b>Subproject</b>	<b>Technology Choice</b>	<b>Actual Investment (NRs)</b>	<b>Benefited Households</b>	<b>Per Household Investment (NRs)</b>
Banganga (Kapilbastu)	Overhead tank	26,755,744	630	42,469
Bhalwad (Kapilbastu)	(1) Ground water – STW (2) New gravity	5,233,760	200	26,169
Buddi (Kapilbastu)	(1) Ground water – STW (2) Dug well	1,789,511	275	6,507
Bhumeshwar (Sallyan)	New gravity	1,983,996	100	19,840
Badachaur Affalla (Sallyan)	New gravity	2,023,971	50	40,479
Dabara (Dang)	Overhead tank	3,162,926	92	34,380
Kuirepani (Dang)	Overhead tank	6,400,843	80	80,011
Sivpur Purano Bagale (Dang)	New gravity	4,015,280	236	17,014
Jalpadevi Jumlaam (Achham)	New gravity	3,968,714	110	36,079
Ridikot (Achham)	New gravity	2,516,040	133	18,918
Navadev Matela (Achham)	New gravity	4,432,437	96	46,171
Mudhe Kapaleki (Doti)	Rehabilitation gravity	12,165,774	551	22,079
Sirkala (Doti)	New gravity	1,667,531	84	19,852
Khalagada (Doti)	New gravity	871,661	30	29,055

STW = shallow tube well.

Source: ADB. project completion review mission.

## **GENDER, CASTE, AND ETHNICITY STRATEGY RESULTS, EFFECTIVENESS, AND LESSONS LEARNED**

### **I. Background:**

1. The project's gender, caste, and ethnicity strategy was intended to address gender inequality and caste and ethnic exclusion in rural water supply and sanitation. The gender, caste, and ethnic minority program component was included into the project design to address issues of social and gender exclusion and to enhance awareness in water user groups and across service providers, including the government. The strategy focused upon i) raising awareness in gender, caste, and ethnic issues in participation, access, and benefit-sharing; ii) ensuring participation of women, Dalits, and ethnic minorities in decision-making processes and their representation in leadership with equal voice; iii) training in such skilled work as mason and village maintenance worker with equal participation of women and men; iv) health and hygiene awareness and access to sanitation facilities equitably by women and the disadvantaged; and v) capacity building of district development committees and partner nongovernment organizations in implementing the strategy. The project districts were selected through prioritization by Gender Development Index, presence of caste and ethnic minorities, and remoteness. The gender issue associated with hardship in fetching water was also a criterion for the subproject selection.

2. The strategy was instrumental in mainstreaming gender, caste, and ethnic inclusion in development, planning, implementation, and post-implementation phases of the project. A detailed implementation plan for the strategy was developed by the project including specific actions, targets, and performance indicators. It was operationalized in project districts, and progress was monitored in each stage of the project cycle. Gender and social inclusion indicators disaggregated by sex, caste, ethnicity (Dalit, Janajati, and other groups) were integrated into outputs and outcomes of the project performance management system. The disaggregated database was well established in the management information system and the results were reported periodically. The placement of a long-term and full-time gender and social development specialist at the project management unit and four more at the regional level was found to be an effective arrangement to support implementation and monitoring of the strategy. The project has achieved the majority of those targets established under the strategy while facing some challenges and learning some lessons during implementation as described below.

### **II. Gender, Caste, and Ethnic Minority Strategy Achievements and Outcome**

3. Gender, caste, and ethnic minority awareness training was a key activity in community mobilization that was extended to 23,967 members of the user groups, communities, and local community-based organizations, with a 52% participation rate by women from all caste and ethnic groups. This helped to build confidence among women and enhance their involvement in such project activities as selecting the locations and designs of water taps and their surroundings. In some instances, household work sharing between husband and wife was also noted. After receiving project-specific knowledge, women and disadvantaged groups improved in their participation in the meetings while women in particular became more vocal in terms of stating their demands. This also raised social awareness, as in a few cases Dalits were allowed by other caste groups to use water from the same tap constructed with support from the project.

4. The project achieved targets for representations of women, Dalits, and ethnic minorities in water user committees. Out of a total 6,265 members in 690 water user and sanitation committees (WUSCs), 52% are female in general positions and 51% in key positions, 19% are Dalits and 14% are ethnic minorities. The representations of Dalits and ethnic minorities

(Janajati) were proportionate to their populations in the project areas. Mandatory representation of these groups in the user committees recognized and empowered their roles in providing equitable access to project benefits. There are a few instance of Dalit- and women-only user committees which were able to manage the subprojects by themselves. Women-led management committees were highly motivated, and they were able to establish higher social capital and better cohesiveness among the users. The key characteristics of these committees were less political involvement and more eagerness to excel in the work. The women-led committees were also proactive in providing support to their members to link up with other development opportunities and resources.

5. Similarly, 49% women participated in preconstruction training out of 6,827 WUSC members, 40% participated in account management training out of 2,985 WUSC members, 45% in sanitation mason training out of 1,463 participants, 45% out of 1,115 in village maintenance worker training, and 48% out of 3,012 in post-construction training. The gender, caste, and ethnic minority strategy had a target of 50% women in the sanitation mason and village maintenance worker training. That target was not quite achieved. While in some instances women mason workers continued to work, in others they discontinued for sociocultural reasons.

6. The project contributed to time savings in fetching water for women and children, as the water is now available near their houses. The increased water supply due to the subprojects provided more water for daily use, thereby improving sanitation. The average time savings per household in 14 subprojects surveyed is estimated to be 1.8 hours per day. The water fetching time before the project was 3.8 hours on average, and this is now reduced to 2 hours. The time savings have reduced the drudgery of fetching water over long distances, thus allowing women to use more time for household chores and child care. According to field assessment findings, this also provides them some leisure time and rest. With water available nearby to houses, women's contributions to farm-related activities, off-farm income-generating activities, and vegetable gardening have increased. Moreover, it is reported that security risks to women and girls due to the necessity to go for water in dark morning and evening hours also are eliminated. Girls have more time, too, for study.

7. The project made a direct sanitation subsidy available to 10% of the poorest households. With this support, 8,909 poor households constructed latrines.

8. Access to latrines near to the houses reduced women's time for defecation and security risks because they formerly went to the field for open defecation, and usually in the dark. Having latrines nearby to the houses also helped to keep the environment clean and contributed to lessening waterborne diseases, especially among the children. That ultimately reduced women's burden in caring for sick members of the family.

### **III. Lessons Learned**

- Affirmative action such as a quota for women and disadvantaged caste and ethnic groups in the committees can work through mandatory policy provisions. The project taught that affirmative action can bring positive changes in the society, as it provides opportunities for the disadvantaged to build capacity and confidence to take leadership. The government's policy of reserving 33% of positions for women in all state structures also provided a sufficient basis to push for women's representation in the water user committees.

- Involving women in water and sanitation projects can enhance community ownership, as obtaining water is women's primary responsibility in the households, and women are the ones who benefit directly from these projects. This could provide a means for women's empowerment.
- Women's meaningful participation in leadership positions can be achieved through mandatory representation interconnected with a tailor-made capacity building program and giving them wider exposure. Women from Dalit and ethnic minority groups need additional support to bring them into the decision-making processes. Low educational level is a hindrance for rural women and disadvantages them to meaningfully participate in decision making.
- Given the opportunity, young rural women can work as mason workers and village maintenance workers if provided an enabling working environment and incentives. They should be encouraged and trained to work in new areas, such as masonry. Community awareness is equally important for increasing acceptance for women to be technicians in the villages.
- A health and sanitation awareness program should equally include men in order to motivate them to share women's responsibility for family care and sanitation. With better understanding and education, the household roles and responsibilities can be shared among women and men .
- Very poor and disadvantaged communities cannot afford time to participate in meetings and training. This will be possible only if income-generating supports are provided to them. Lack of participation has hindered their access to project benefits.
- It is necessary to establish institutional structures and mechanisms for mainstreaming gender and social inclusion into the operations of the Department of Water Supply and Sanitation and to sustain project-specific successful interventions.
- Despite that gender and socially inclusive approaches were implemented and monitored by the project, one of the key hindrances to facilitating implementation was the remoteness of the project areas.