

**Document of  
The World Bank**

**Report No.: 44368**

**PROJECT PERFORMANCE ASSESSMENT REPORT**

**NEPAL**

**RURAL WATER SUPPLY AND SANITATION PROJECT  
(CREDIT 2912-NEP)**

**June 23, 2008**

*Sector Evaluation Division  
Independent Evaluation Group (World Bank)*

## Currency Equivalents

*Currency Unit = Nepalese Rupee*

1996 (July) US\$1 = NRs. 55.7

2004 (January) US\$1 = NRs. 73.0

2007 (September) US\$1 = NRs. 65.8

## Abbreviations and Acronyms

ADB	Asian Development Bank	M&E	Monitoring and Evaluation
CAS	Country Assistance Strategy	NEWAH	Nepal Water for Health
CBO	Community Based Organization	NGO	Non-governmental Organization
CBWSSP	Community Based Water Supply and Sanitation Project	NPC	National Planning Commission
CDA	Community Development Activities	NPV	Net Present Value
DDC	District Development Committee	NWSC	Nepal Water Supply Corporation
DfID	Department for International Development	O&M	Operation and Maintenance
DWSS	Department of Water Supply and Sewerage	QAG	Quality Assurance Group
ERR	Economic Rate of Return	RWSS	Rural Water Supply and Sanitation
FINNIDA	Finnish International Development Agency	SA	Service Agency
HMGN	His Majesty's Government of Nepal	SAR	Staff Appraisal Report
HSE	Hygiene and Sanitation Education	SO	Support Organization
IDA	International Development Association	SRLF	Sanitation Revolving Loan Fund
KAP	Knowledge, Attitudes and Practices	TAC	Technical Appraisal Committee
MIS	Management Information System	UNDP	United Nations Development Program
MHPP	Ministry of Housing and Physical Planning	VDC	Village Development Committee
MPPW	Ministry of Physical Planning and Works	VHP	Village Health Promoter
MLD	Ministry of Local Development	VMW	Village Maintenance Worker
MOF	Ministry of Finance	WHO	World Health Organization
		WSUC	Water Supply and Sanitation User Committee
		WSUG	Water Supply and Sanitation User Group
		WTSS	Women's Technical Support Services
		WUC	Water User Committee

## Fiscal Year

Government

July 16 – June 15

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### **About this Report**

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

### **About the IEGWB Rating System**

IEGWB's use of multiple evaluation methods offers both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEGWB evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEGWB website: <http://worldbank.org/ieg>).

**Outcome:** The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Risk to Development Outcome:** The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High, Significant, Moderate, Negligible to Low, Not Evaluable.

**Bank Performance:** The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Borrower Performance:** The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.



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This report was prepared by George T. K. Pitman (Consultant) who visited Nepal in November-December 2007. Soon-Won Pak provided administrative support.

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## Preface

This is the Project Performance Assessment Report (PPAR) on the Nepal Rural Water Supply and Sanitation Project (Credit 2912). The Project, estimated at appraisal to cost US\$ 21.25 million, was approved in September 1996 for an IDA Credit of US\$ 18.28 million. At mid-term review in November 1999 the project was restructured and US\$2.10 million was cancelled. The project closing date had two extensions totaling 21 months in order to complete physical works. DFID-Nepal allocated US\$2.724 million as a grant to allow implementation to continue during the period of extension. Total project costs at completion (excluding the DFID grant) were US\$ 19.17 million of which IDA provided US\$ 16.10 million, communities US\$2.3 million and the government US\$0.67 million.

This report is based on the review of the respective Memorandum and Recommendations of the President and Staff Appraisal Report, credit and legal documents, project files at the World Bank's Headquarters, the Implementation Completion Report (ICR) and discussions with Bank staff in Washington and Kathmandu.

An Independent Evaluation Group (IEG) mission visited Nepal in November-December 2007 to discuss the effectiveness of the Bank's assistance with the Government, development partners, implementing agencies in Kathmandu. The mission also visited project schemes in the Eastern, Central and Western Regions where it met with implementing NGOs, government and Fund Board staff and project beneficiaries. The cooperation and assistance of central government officials, management and staff of implementing agencies and other parties concerned are gratefully acknowledged.

The project was selected for assessment because IEG raised questions about sustainability during ex-post review of the ICR. Findings from the assessment will feed into IEG's ongoing evaluation of World Bank support to health, nutrition, and population (HNP) because the project was designed to improve health outcomes and improve women's welfare, and it complements the HNP evaluation case study of Nepal. In addition, this assessment informs the ongoing IEG global assessment of the Bank's experience of water development.

Following standard IEG procedures, copies of the draft PPAR were sent to the Borrower for comment, but none were received.





## Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
<b>Outcome</b>	<b>Satisfactory</b>	<b>Moderately Satisfactory</b>	<b>Satisfactory</b>
Institutional Development Impact**	Substantial	Substantial	nr
Risks to Development Outcome	nr	nr	Significant
Sustainability***	Likely	Non-evaluable	nr
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Moderately Satisfactory

\* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.

\*\* As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.

\*\*\* As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.

nr = not rated

## Key Staff Responsible

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Appraisal	Xavier Legrain	Shawki Barghouti	Heinz Vergin
Completion	Tashi Tenzing	Sonia Hammam	Kenichi Ohashi



## Summary

The Rural Water Supply and Sanitation Project, approved in 1996, was the Bank's first assistance to this subsector in Nepal. Earlier the Bank had focused on assisting urban water supply and sanitation with generally unsuccessful outcomes. This was primarily because of the unwillingness of Nepal's inefficient water supply and sanitation agencies to reform. Given the high costs of urban water supply and sanitation, the huge unmet needs of the rural population, and the success of small-scale participatory projects fostered by UNICEF and other non-governmental organizations, the Bank agreed to assist with scaling-up service provision in rural areas. Following a three-year pilot project (1993-96) financed by UNDP and Japan, institutional models, social and technical criteria were identified and a semi-autonomous Rural Water Supply and Sanitation Fund Development Board (FB) was created to implement the project. The objectives of the project were to raise living standards in rural Nepal by: (i) delivering sustainable health and hygiene benefits to the rural population through improvements in water supply and sanitation (RWSS) facilities; (ii) improving rural real incomes by assisting women to identify ways to earn income from time saved in carrying water; and (iii) strengthening governmental and non-governmental capabilities to undertake and sustain these efforts. These objectives were and remain highly relevant to Nepal's development strategy and the Bank's Country Assistance Strategies.

Project outcome is rated satisfactory. The project facilitated provision of demand-driven RWSS infrastructure and hygiene education to 95,016 households within 946 communities benefiting more than 550,000 people. The attention to promoting good sanitation facilities through a Sanitation Revolving Loan Fund grant to each community leveraged substantial self-help efforts and community-led environmental clean-up activities. As a result construction of over 46,000 latrines exceeded appraisal targets. Increased awareness of disease vectors and good hygiene practices enhanced the benefits from provision of infrastructure.

The Fund Board concept successfully challenged existing government practice used to provide RWSS in Nepal. It provided sustainable service delivery that is fully owned by the communities and is not reliant on government for routine operation and maintenance. It clearly demonstrated that adoption of a comprehensive approach to RWSS is more successful than a purely technical approach that provides only hardware. This includes building the capacity of local NGOs and rural communities to develop local institutions for service delivery that address social concerns. Empowerment of rural women with the objective of enhancing their income-generating potential and status in communities was substantially achieved with some shortcomings. Transparent and equal partnership among the FB, implementing NGOs and communities were key to project achievements. Communities endorsed this approach through provision of up to a third of the initial capital investment costs in cash and kind.

While the project was a forerunner in adopting proactive monitoring and evaluation, this needs fine tuning. There are two specific concerns. First, there is a need to provide unbiased estimates of project impact on health given that health and hygiene improvements were among the justification for the project. Second, attention needs to be

given to developing indicators and monitoring arrangements to track and evaluate changes in women's welfare and incomes resulting from project interventions.

The main quantifiable benefits were household time saved in collecting water (specifically benefitting women) and increased supply of good quality water. The average household time saving was estimated to be 3.2 hours per day throughout the year for the 95,016 project households. While there may be significant health and social benefits, the monitoring and evaluation system does not enable these to be quantified. On the basis of time saving alone the overall project economic rate of return is estimated to be 55 percent compared with the estimated rate at appraisal of 15 percent. Efficiency is rated high.

Risks to development outcomes are rated substantial. Main institutional risks are government interference in operational decisions of the FB while it remains semi-autonomous, over-reliance on Bank credits, weak linkage with local government, and delay in finding modalities to include the lower castes in community development. Primary environmental risks are system recovery from periodic landslides, water quality deterioration and arsenic in groundwater. Bank performance is rated as satisfactory and Borrower performance, because of governance issues, is rated moderately satisfactory.

The project experience confirms six IEG lessons:

- Comprehensive approaches to development in which provision of small-scale infrastructure is accompanied by capacity-building to develop local institutions and ownership are more successful than infrastructure alone.
- When existing institutions fail and are unwilling to reform, careful design of new institutions can be a viable solution. The success of this approach is heavily conditioned on in-depth institutional analysis, close attention to the governance structure and the willingness of the Bank to stand firm against vested interests for as long as it takes to be accepted. Even so, government does have a role and its interest must be internalized in the governance and regulatory structures of new organizations: partnership is better than conflict.
- Small pilot projects to test new institutional approaches can be very successful providing they adopt a learning approach and give thoughtful attention to feedback from continuous monitoring to refine the development model.
- It is important to understand the incentive structures affecting adoption of new approaches to RWSS at the village level and that this will vary geographically and socially. Such understanding takes time to mature as communities and project sponsors internalize feedback to fine tune development models. Neither top-down blueprint nor rigorously time-tabled short-term approaches work successfully. The project experience demonstrates that small pilot projects unfettered by the expectations of existing institutions can work well, as does an incremental approach that improves its relevance through sequenced feedback from well-designed monitoring and evaluation.

- Rural communities - even if poor and barely literate – can successfully implement, operate and maintain water supply and sanitation systems. This is conditioned on unanimous community agreement on what they want to achieve and their willingness to make upfront financial commitments. It also requires well-designed and sequenced support packages that enable social inclusion, enhance the social and economic role of women, and emphasize self-reliance. Local NGOs can be successful interlocutors after appropriate orientation and skills enhancement.
- If improved health outcomes are a project objective then careful design of M&E to link project interventions to improvements in health incomes is needed. This needs to be done from the outset of the project.

Vinod Thomas  
Director-General  
Evaluation



# 1. Background

1. A landlocked mountainous country, Nepal is the poorest country in South Asia and the 12<sup>th</sup> poorest in the world. The population is almost evenly split between the mountains/hills and the low lying flat Terai plains bordering India that comprise about a quarter of the total land area. Four-fifths of the population is rural. Nepal's population grew from 19 million to over 27 million in the period 1991-2005 at a mean decadal rate of 2.3 percent and urban populations doubled. Over the same period per capita annual income increased from US\$200 to US\$270 and the incidence of absolute poverty declined from 42 percent to 31 percent.<sup>1</sup> Recent analysis indicates that as much as a third to a half of the reduction in the poverty rate is due to the increase in remittances, rather than increased local productivity.<sup>2</sup> Even so, 35 percent of the rural population remained below the absolute poverty line in 2003-04.<sup>3</sup> Rural poverty has caused a steady migration of people from the mountains and hills to the Kathmandu valley and the Terai and fuelled emigration. Despite substantial investment in universal education since 1971, literacy remains low – only 49 percent of 15-year olds and older were literate in 2004.

2. Many factors slowed development. Limited natural resources, difficult terrain that causes rural isolation, natural disasters (floods and landslides) and the paucity of all-weather roads,<sup>4</sup> severely constrained markets for agriculture and industry. Poverty and caste discrimination increased social exclusion. Agricultural sector productivity almost stagnated and rural growth was slow. Together these factors contributed toward technological backwardness, rural illiteracy, and an unstable political situation that has adversely affected decision-making and economic growth.

3. Political instability has hindered development since the early 1990s. Nepal became a constitutional monarchy and multiparty democracy in 1990. After internal dissent caused a hung parliament, the Nepali Congress government called a general election in 1994, after which the Communist Party of Nepal (Unified Marxist-Leninist) emerged as the biggest party. Resistance to radical reform in parliament caused the more extreme Maoists to start a 'people's war' in 1996 to end the constitutional monarchy, a movement fuelled by public spending that benefited ruling elites and urban centers, gender, ethnic and caste-based exclusion.<sup>5</sup> Over the period 1996-2004 the insurgency affected most rural areas, particularly in the mid- and far-western regions, and killed about 10,000 people. And in the period until 2001 there were 11 short-lived coalition governments. The assassination of the monarch in 2001 and the breakdown of the cease-

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1. 2008. World Development Indicators database. Millennium Development Goals. The data for 1994/95 is an estimate while the latter data are drawn from the *Nepal Living Standards Surveys* of 1999/2000 and 2003/04. The reduction in headcount poverty rate

2. Central Bureau of Statistics/World Bank/DFID/ADB. 2006. *Resilience Amid Conflict*.

3. 2006. Nepal in Figures. Central Bureau of Statistics, National Planning Commission Secretariat.

4. There were about 10,109 km of roads in 1996 of which 5,871 km were surfaced. The pace of roadbuilding increased during the late 1990s but stagnated after 2002 because of the Maoist insurgency and conflict in rural areas. By 2006 the national road network was 17,279 km of which just 4,911 km were black-topped. Even so, 14 of Nepal's 75 districts do not have roads suitable for motor vehicles. There is only 27.3 km of railway connecting Nepal to India's rail network and ports.

5. DFID/World Bank. 2006. *Unequal Citizens: Gender, Caste and Ethnic Exclusion in Nepal*.

fire agreement with Maoists in 2003 led to the further instability and government by royal decree in 2005. The civil unrest created by this action finally unified political parties into a coalition that resolved to end the monarchy and rewrite the constitution – actions approved by parliament in December 2007. For Nepal’s development partners the continuous political uncertainty since 1996 raised questions about the most effective assistance modalities given the weakness of His Majesty’s Government of Nepal, a problem made more difficult by the constitutional crisis after 2003.

4. Economic performance has been poor, especially since 2000. Liberalization of the economy, following several IMF-Bank stabilization and structural adjustment operations in the late 1980s and early 1990s, managed to achieve GDP growth of 5 percent between 1996 and 2001.<sup>6</sup> However, after 2001 growth slowed significantly and averaged only 2.1 percent between 2001 and 2006. Agriculture, the mainstay of the economy, is mostly subsistence except in the Terai. While accounting for about 80 percent of employment in the mid-1990s and half the GDP, agriculture accounted for three-quarters of employment and about 38 percent of GDP in 2005/06. Industrial development is severely constrained by the small domestic market and Indian competition and produces mostly low-end consumer items, such as carpets, garments and handicrafts. Over the period 1994-2006 industrial output shrank from 9.3 percent to 7.5 percent of GDP quelled by the increasingly risky investment climate. Similarly, after growing steadily in the early 1990s, tourism fell sharply after 2001 because of the deteriorating security situation. In contrast, driven by the insurgency and better opportunities, as many as one million Nepalese took overseas work and remittances accounted for 12 percent of GDP in 2004.<sup>7</sup>

### **The Role of the World Bank**

5. The World Bank has assisted development of Nepal’s water supply and sanitation (WSS) since 1974 in both urban and rural areas through a series of ten IDA Credits and one Technical Assistance Credit, as executive agency for four UNDP grants, and through analytical and advisory work (Annex B.) The Bank’s primary focus in the period 1974-1991 was to upgrade WSS in urban areas and this accounted for 96 percent of its sector lending of US\$112.4 million. This included four urban water supply and sewerage projects and an urban development project. Additionally the Bank executed two UNDP-funded studies to investigate the feasibility of augmenting Kathmandu’s water supplies through the proposed Melamchi water transfer project. Very modest support for RWSS infrastructure development was included as small components (totaling US\$4.4 million) in three rural development projects that were approved over the period 1976-1986 for US\$49 million and completed by 1993. There was greater support for institutional development of rural water supply and sanitation (RWSS) under the Department of Water Supply and Sanitation (DWSS.) The Bank executed a UNDP-funded project and an IDA Technical Assistance Credit aimed at designing RWSS schemes, and a UNDP-funded project to provide capacity-building to DWSS to build data base information on 2,300 RWSS schemes constructed in the 1980s.

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6. Non-agricultural sectors grew at 6.3 percent in 1996-2001, agriculture grew more slowly at 3.2 percent.

7. The Economist Intelligence Unit, 2007. The share of households receiving remittance rose from 23 percent in 1995-96 to 32 percent in 2003-04.



6. The Bank's 1991 review of poverty and incomes highlighted the need to improve WSS, and RWSS in particular, to ensure equitable investment and reduce the burden of ill-health in rural areas.<sup>8</sup> Comparing the relatively good performance of WSS provided through NGOs with the unsatisfactory performance of government agencies, the Bank in partnership with the UNDP – World Bank Water Supply and Sanitation Program launched in 1992 a three-year pilot project to explore a variety of service delivery options. The Rural Water Supply and Sanitation Project, the Bank's first lending for RWSS in Nepal, was the outcome of this pilot and is the subject of this assessment.

## 2. The Project

### OBJECTIVES, COMPONENTS AND COSTS

7. The overriding goal was to assist the Kingdom of Nepal's implementation of a strategy to promote decentralization and involve beneficiaries and the private sector in the provision of rural water supply and sanitation. It was anticipated that this approach would lead to demand-driven schemes that were closely tailored to the local environment and communities' needs and thus be sustainable. To achieve this goal the Bank financed a new quasi-government organization, the Rural Water Supply and Sanitation Fund Development Board (the Board) to implement the project. The Board was independent of the main government agency, the DWSS that was formerly responsible for government-financed RWSS. Table 1 summarizes project objectives, components and costs.<sup>9</sup>

8. There were three major objectives:

- deliver sustainable health and hygiene benefits to the rural population through improvement in water supply and sanitation facilities;
- improve rural real income by assisting women identify ways to earn income from time saved in carrying water; and
- strengthen government and non-government capabilities to undertake and sustain the efforts.

9. The IDA credit for US\$ 18.28 million was planned to finance about 86 percent of costs. Actual credit utilization was US\$15.36 million because of exchange rate variations and because US\$1.69 million was cancelled at mid-term review. The Bank's share of total project costs increased to 96 percent. With the overrun of project implementation by a year, DFID provided bridging funds of £2.724 million of which £0.64 million was utilized. Government actually financed US\$0.88 million or about 142 percent of its planned amount to support FB operations and institutional development. It had been expected that communities would contribute US\$2.3 million in cash or kind towards civil engineering costs, but the actual amount was US\$1.27 million.<sup>10</sup>

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8. World Bank. 1991. *Nepal: Poverty and Incomes*.

9. ICR reported costs do not match disbursements recorded in the Bank's project portal. Actual local and Bank costs gives a total project cost of US\$17.51 million compared with the US\$16.01 given in the ICR. (The presentation in the first table on page 20 of the ICR is incorrect. Thank you for pointing this out).

10. The average scheme cost at appraisal was estimated to be US\$16,800: the community was expected to provide about US\$2,500 and the Board would provide the balance, US\$14,300, as a grant.

**Table 1: Nepal Rural WSS Project: Objectives, components and costs**

Objectives	Components	Project Costs US\$ millions	
		Planned	Actual
(a) Deliver sustainable health and hygiene benefits to the rural population through improvements to water supply and sanitation	<b>1. Establishment and operation of the Rural Water Supply and Sanitation Fund Development Board:</b>	4.14	4.08
	<ul style="list-style-type: none"> <li>To provide finance for board operating and capital costs, technical assistance, training of NGO supporting organizations, monitoring and evaluation, and external audits.</li> </ul>		
	<b>2. Selection and construction of rural water supply and sanitation schemes to cover about 550,000 people in about 900 communities:</b>	12.27	13.16
(b) Improve rural incomes by assisting women to identify ways to earn income from time saved in carrying water, and	<ul style="list-style-type: none"> <li>Capacity building of project communities. This included organization and formation of water user groups and water user committees, community mobilization, planning of facilities, non-formal education, training for operation and maintenance of project-financed facilities, hygiene and sanitation education program, and skills training and support of income generating activities for women.</li> </ul>	3.15	
	<ul style="list-style-type: none"> <li>Construction of about 900 community water supply and sanitation facilities. About 70 percent of these would be in the hills, the balance in the Terai. Schemes would include gravity supplies from streams and springs (including spring protection) and shallow and deep wells in the Terai. Construction would be implemented in four batches of increasing size until the target of 900 is reached.</li> </ul>	8.11	
(c) Strengthen governmental and non-governmental capabilities to undertake and sustain these efforts	<ul style="list-style-type: none"> <li>Provide sanitation facilities through a grant disbursed as a revolving fund. This would cover about 40 percent of project households in the hills and 50 percent of project households in the Terai. A small institutional latrine component would be directed at selected schools and health centers to maximize the demonstration effect.</li> </ul>	1.01	
	<b>3. Institutional development and studies</b>		
	<ul style="list-style-type: none"> <li>Conduct studies to improve the capacity of the Fund Board and its support organizations to deliver cost-effective services that facilitate replication of successful innovations. In addition criteria for scheme selection would be refined and other relevant issues (e.g. demand assessment procedures, technical options, measurement of health impact.)</li> </ul>	0.85	0.27
	<ul style="list-style-type: none"> <li>Preparation of a follow-up project.</li> </ul>		
	<ul style="list-style-type: none"> <li>Provide for sector monitoring and evaluation by the National Planning Commission and the Ministry of Housing and Physical Planning.</li> </ul>		
	<i>Physical and Price Contingencies</i>	3.98	-
	<b>Total Cost</b>	<b>21.25</b>	<b>17.51</b>

10. The logic of the project was that the new FB would be able to mobilize a new approach that would give greater attention to the institutional development of communities with a particular focus on women. Thus the components are linked to the objectives through a causal chain. Provision of water supply and sanitation facilities in

line with people's preferences would increase the chance that facilities would be maintained and provide a stream of direct health benefits. To boost this impact the project included training by NGOs aimed at raising awareness of this link and the importance of changing personal behavior related to cleanliness and sanitation. The critical role of women in this process was to be enhanced through skills and basic literacy training that would raise their status, income and voice in the community. As the primary household managers of family welfare global experience has clearly shown that women will sustain improvements that reduce family sickness and increase educational access for their children.

### **3. Implementation**

#### **IMPLEMENTING ARRANGEMENTS**

11. The Board's constitution and rules allowed it to independently plan and facilitate project implementation but more as a regulator rather than a hands-on construction agency. The primary role of the small Secretariat (30 staff) was to select NGOs, support organizations (SOs), and build and monitor their capacity to assist communities to implement sustainable demand-driven community-based RWSS schemes. A secondary role was to identify, select and recruit specialist service agencies (SAs) that would provide advisory services to the Board and SOs on issues such as socio-economics, engineering and monitoring and evaluation. Each selected SO and SA was allocated to portfolio manager accountable for their performance. Payment to SOs and SAs was based upon performance and outputs including community feedback.<sup>11</sup>

12. The Board reviewed short-listed RWSS schemes proposed by SOs to ensure they met the quality assurance criteria and finalized selection. All selected RWSS schemes covered single villages and provided 100 percent water and sanitation coverage. The model for community-led development and the role of SOs is described in Box 1.

#### **IMPLEMENTATION EXPERIENCE**

13. Because of the very thorough appraisal, the delivery of RWSS services to villages slightly exceeded expectations. At project completion over 935 RWSS schemes had been successfully implemented through only 129 SOs because many SOs were awarded two or more rounds of contracts because of good performance.<sup>12</sup> Poor performance of some SOs, however, was addressed by revisiting and upgrading eligibility criteria and increased random inspections by the SAs.

14. Exceeding the target was remarkable given the problems experienced. Even though 65 SAs were successfully recruited and completed 188 assignments, their slow procurement during the first half of the project proved to be a bottleneck – problems not helped by high staff turnover at the Board that delayed induction training for SOs, orientation for SAs and capacity-building of Board staff.

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11. Project implementation, roles and responsibilities and selection criteria for all aspects of the project were specified in great detail at appraisal based on the JAKPAS's experience and lessons (SAR Annex D.)

12. Support Organizations included one international NGO.

15. Actual RWSS scheme commissioning time took longer than planned, averaging 42 months from start to finish. The major difference was that scheme implementation took an average of 17 months, rather than the 13 anticipated. Prime reasons were delays in field validation of short-listed schemes by SAs and procedural delays in gaining Board approval of SAs while both the Board and secretariat came up to speed. Within villages routine demands from farming hindered progress in group formation. Difficulty in local procurement of building materials also slowed construction. The Maoist insurgency also hindered implementation – it certainly stopped government-affiliated workers and staff from working in rural areas. However, this impact was partly muted because the rebels normally did not interfere with community-owned and executed works such as RWSS.

16. As the Boards's and their agents' skills increased, the share of schemes that dropped out between identification and the community development stage because of physical problems and not meeting economic/social selection criteria fell from 32 percent in batch I to only 10 percent in batch IV.<sup>13</sup> The overall rate was 16 percent. Not all communities could agree with the RWSS approach and an additional 7 percent did not proceed to scheme construction for institutional reasons.<sup>14</sup> Overall, 23 percent of the initial list of candidate schemes did not go on to implementation – somewhat higher than anticipated at appraisal (13 percent). Thus 957 village WUGs signed tripartite contracts that released the Board's community grants.

17. The longer time taken to implement individual schemes that went on to construction generally had the beneficial effect of enhancing community ownership. In the first batch of gravity schemes in the hills communities contributed 29 percent of the total scheme costs, including the required 2.5 percent cash advance when the final scheme design was approved by the newly established water user groups. This increased to 34 percent for batch II. By project completion cash and kind contribution averaged 38 percent for all four batches.

18. Government's willingness to ignore clauses of the Formation Order that gave the Board autonomy on most issues, created significant problems for the Board's operational efficiency. The Secretary MHPP was designated the first Chairman of the Board for a term of two years; and the Board and government continued to nominate a majority of Board members. In consequence the Board initially became a *de facto* government agency that carried much of the baggage encumbering DWSS: slow decision-making on staff and scheme approval, insufficient attention to building capacity for participatory development, unwillingness to take risks and welcome NGO membership of the Board, and government pay structures.<sup>15</sup> When the two year term of the first Chairperson ended,

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13. The drop out rate was as follows: batch I 32%; batch II 20%; batch III 14%; and batch IV 10%.

14. Those dropping out from institutional reasons were batch I – 6%; batch II 7%; batch III 6 percent and batch IV 9 percent.

15. The World Bank's Resident Mission in Nepal commented June 4, 2008: "The same paragraph refers to "government pay structures". Actually, the Board Secretariat staff salary structure was based on market survey carried out under the pilot project, JAKPAS, although the Government reduced substantially the proposed salary scale. Nevertheless, the structure was not that of the government. The issue was the Board members (4 from government) always compared the salary of the Board secretariat staff with government permanent staff, conveniently ignoring that these staff are on term contract and do not receive the same facilities as government staff."

MHPP nominated a Joint Secretary level officer as a Board member representing the Ministry and thereafter, the Board elected its own Chairman from among its membership and many of the managerial and capacity-building problems were subsequently resolved. Even so, the continued lack of incentives caused a high staff turnover, particularly among the senior and most experienced, and this adversely affected project implementation.<sup>16</sup> Disbursement suffered. In the first three years of the five-year project only 42 percent of the IDA credit was utilized.

19. Implementation delays caused the project to be restructured at mid-term review when US\$2.1 million was cancelled and closing extended by nine months. At this time the project agreed that it would only complete the development phase of batch IV schemes; subsequent implementation would be completed under the follow-on project scheduled for 2004. As there would be a financing gap DFID agreed to provide bridging funds.

## Monitoring and Evaluation

20. **Design.** Monitoring and evaluation were given a high priority at appraisal. Design carefully distinguished between the differing requirements of the Board as the facilitating agency and activities at scheme level implemented by communities with the support of implementing SOs. It also clearly distinguished inputs, outputs, outcomes and expected impacts in relation to development objectives and M&E of managerial and financial processes. Design incorporated feedback to build the institutional capacity of the Board, the SOs and SAs as well as communities.<sup>17</sup> Within the 28 monitoring indicators, two covered impacts: adoption by communities of healthy home surveys and health impact through incidence of disease reduction. A major outcome was expected to be identification of best practice for RWSS service delivery. Baseline surveys formed part of the scheme appraisal process.

21. Impact evaluations were designed for Community Development Activities and for Health Knowledge, Attitude and Practice (KAP.) The approach adopted was to commission SAs to implement an assessment based on a stratified random sample of villages in each of the four batches. Surveys were to be undertaken in years 1 (baseline), 3 and 5. Sample villages were not subject to longitudinal surveys, each survey took a different random sample. Criteria adopted included samples from each physiographic region that adequately represented ethnic diversity and deprived communities. Within each selected village 20 households were randomly selected for interview. Women made up

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16. Salary ranges were fixed at the 1996 level and the Ministry of Finance stated that the Board could not approve matters on salary structure without government approval. Supervision Aide Memoire. January 15-16, 2001. With no inflation provision many staff effectively saw their salaries fall once they reached the top of the scale. During the project 10 of the 19 Portfolio Managers resigned as did the Head of Human Resources (twice), Management Information Systems and Monitoring and Evaluation – in each case the posts remained vacant for several months. Turnover among the 25 executive and professional staff was 84% over the five-year period 1997-2002.

17. The M&E system (SAR para 3.42-3.52) focused on five themes: compliance with contacts between FB, SOs and WUCs; evolution of process and development of service delivery over time; users' capacity to manage assets and capacity built by the project; the impact of the FB's activities on economic, financial and social justification for the program of investment; and learning from strategy development. Annex 9 of the PAD specified 28 indicators. 12 were outputs; 13 were outcomes and 3 were impacts.

the majority of respondents (in batch IV, for example women comprised 89 percent of the sample.)

22. Each SA developed their own survey instruments under the guidance of the Board. The lack of a standard instrument creates difficulties for comparisons across batches. The KAP surveys compared a random sample of 50 villages for each batch against the baseline. Importantly, while self-reporting of health changes was recorded in some surveys, in others this data was acquired from the village sub-health post or nearest village health post. In the first case incidence reporting covers both well and ill; in the second case it would be biased to those ill enough to use the health posts. The reliability of health post data is also questionable.<sup>18</sup> Attribution is a major problem with all health data as many factors outside the project interventions affect outcomes. Although the impact assessments did not utilize non-project controls to establish a counterfactual, the project did undertake a comparative survey of the 15 RWSS schemes being implemented by four other agencies.<sup>19</sup>

23. The FB's role in M&E would be primarily as a coordinator and collator of data and information generated through M&E activities in the field subcontracted to SAs. In addition it was agreed that the Planning Commission and MHPP, using TA provided through the project, would monitor and evaluate sector performance to determine the most-effective service delivery systems and guide decisions on project and inter-agency resource allocation.

24. **Implementation.** Routine input and output indicators were monitored from inception by the SOs but the rapid growth of scheme numbers allied with FB's staffing problems initially overwhelmed the nascent reporting system. This problem was exacerbated by the dearth of experienced M&E staff and their discontinuous presence during the project. The number of monitored indicators increased to 37 because of greater attention to process and output. This despite the difficulties in providing consistent database facilities within the FB and staff to ensure quality and provide timely evaluative summaries. Adherence to the 1, 3 and 5 year *ex post* surveys has not been consistent; to date only the 1 and 3 year surveys have been conducted.

25. **Utilization.** While initially poor this improved markedly as the project progressed. Significantly, the most useful evaluative findings emerged from community and KAP evaluations carried out by the SAs in the period after 2000. The results were used to fine-tune selection and monitoring criteria. Importantly they identified uneven participation of minority and tribal groups in WUG's and SO's development activities as a significant problem. This was rectified in the follow-on project.

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18. SYS-TEC Consultants. June 2003. Health KAP Impact Assessment of Batch III Schemes. See page 4. "Limitation of this venture is that it is difficult to read the health records and diagnosis is not correct due to the service of inexperienced ill-trained Auxiliary Health Workers."

19. Fund Board. 2000. *Comparative Studies of Similar Rural Water Supply and Sanitation Programs, Funding Mechanisms and Other Funding Options*. The study included three projects each from the FB; the ADB Fourth RWSS Project being implemented by DWSS: the FINNIDA RWSS Project (bilateral donor); the CARE Nepal Program (international NGO); and the Nepal Water for Health (NEWAH) Program (local NGO assisted by DFID.)

26. None of the studies and impact evaluations was able to systematically factor out spill-over impacts from other projects. The comparative study of other agencies' RWSS schemes showed that FB was the only agency in a quarter of Nepal's 75 districts. Elsewhere 53 percent of districts had one other agency operating in addition to the FB, and a further 23 percent had two or more additional agencies. This finding has prompted the Board and Bank to press government for a sector-wide approach to avoid duplication.

27. **Overall rating of M&E is substantial.** The whole process is transparent and is extremely well documented. It is owned by the FB, has been continuously improved and mainstreamed into their current operations. And most importantly, the impact assessments arose from normal appraisal and not in response to pressure from elsewhere in the Bank (as is now the case.) It is all the more remarkable because almost no projects of the same vintage adopted such comprehensive M&E systems.

## 4. Project Evaluation

### Relevance of Objectives

28. *All four project objectives are highly relevant to country, sector and Bank development objectives.* The following section explains how these ratings were determined.

29. *The objective to deliver sustainable health and hygiene benefits through improved RWSS facilities is highly relevant.* Diarrheal disease remains a major cause of sickness and death among young children in most developing countries.<sup>20, 21, 22</sup> In Nepal, water borne disease heads the list of morbidity and mortality in hospital statistics, and is probably under-reported.<sup>23</sup> Diarrheal diseases were estimated to be responsible annually for more than 30,000 deaths, 13 percent of morbidity and the major reason for hospital admission in the mid-to late 1990s.<sup>24, 25</sup> UNICEF estimated that during 1996 almost 43% of all deaths of children under 5 years of age were due to diarrhea.<sup>26</sup> The poor suffered greater diarrhea incidence than the rich in 1996: 32.2 percent of the poorest quintile under three years of age had diarrhea in the previous two weeks compared with 20.7 percent for

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20. Feacham, R.G., R.C. Hogan and M.H. Merson. 1983. *Diarrheal disease control: review of potential interventions*. Bulletin of the World Health Organization. 61(4), 637-640.

21. Cairncross, S., J.E. Hardoy and D. Satterthwaite. 1990. *The Poor Die Young: Housing and Health in Third World Countries*. Earthscan Publications. London.

22. Cairncross, S., and V. Valdmanis. 2006. *Water Supply, Sanitation and Hygiene Promotion* in Jamison, D.T., and others: *Disease Control Priorities in Developing Countries*. New York. Oxford University Press and the World Bank.

23. Pokhrel, D., and T. Viraraghavan. 2004. *Diarrhoeal disease in Nepal vis-à-vis water supply and sanitation status*. Journal of Water and Health. 02(2), 71-81.

24. Pokhrel, B. M., and T. Kubo. 1996. *Outbreaks of Cholera in Nepal*. SE Asian Journal of tropical Medicine and Public Health 27(3), 574-579.

25. Department of Health Services. 1998/99. Annual Report. Kathmadhu, Nepal.

26. UNICEF. 2000. *Nepal State of Sanitation Report*. 1999/2000.

the richest quintile.<sup>27</sup> Apart from their pernicious effects on health, diarrheal diseases severely undermine adult productivity, and nutrition and learning in children. Prime causes of water-borne diseases in Nepal are inadequate access to safe water supplies and sanitation, environmental pollution from indiscriminate defecation, poor hygiene and inadequate knowledge of the link between water quality and health.

30. Recent studies in Nepal confirm that child nutritional status is strongly linked to improved access to water and sanitation. Prevalence of child malnutrition, for example, was significantly higher in the three-fourths of sample households that reported not having a flush toilet or a latrine when income differences were factored out (Table 2.)

**Table 2: Prevalence of moderate and severe malnutrition in children under five in Nepal by type of toilet facility used by household in 2001 (percent)**

Malnutrition Indicator	Flush Toilet	Latrine	No Facility
Underweight	32.8	45.5	68.5
Stunting	43.9	58.8	77.2
Wasting	6.6	5.5	12.4

Source: World Bank, DFID and ADB. 2006. Nepal -Resilience Amidst Conflict: An Assessment of Poverty in Nepal 1995-96 and 2003-04. Report NO. 34834. June 26, 2006. Data summarized from Table 8.16, page 114.

31. ***The objective to improve rural real incomes by assisting women to identify ways to earn income from time saved in carrying water is highly relevant.*** Increased household income clearly contributes to reducing poverty. In addition to time saved from menial tasks, the project would help women to raise their educational achievements through basic literacy and non-formal education, thus improving their status, access to paid work, and involvement in decision-making. The Nepal poverty assessment (*ibid*) shows that employment status of women affects their household ‘voice.’ Thus women wage laborers have about twice the decision-making role over their own health care and household purchases compared with those not formally employed.<sup>28</sup> Mother’s educational status is inversely correlated with child malnutrition– stunting for example is 62 percent higher in children of women with no formal education compared with those with secondary education. Similarly, the wife’s decision-making over large household purchases and daily expenditures is strongly associated with lower incidence of child malnutrition.<sup>29</sup>

32. ***The objective to strengthen government and non-governmental capabilities to undertake RWSS to provide sustainable health and hygiene benefits is highly relevant.*** Official statistics indicate that access to protected water supplies rose from about 7

27. Gwatkin, D.R., S Rustein, K. Johnson, R. Pande and A. Wagstaff. 2000. *Socio-economic Differences in Health, Nutrition and Population in Nepal*. HNP/Poverty Thematic Group. The World Bank. The sample size was 4,072.

28. World Bank, DFID and ADB. *Ibid*. 2006. Women employed for wages have the following advantages: 45.5 percent have the final say over their own health care compared with only 23.1% of unemployed women. On large household purchases the respective figures are 54.2% and 29.6%.

29. *Ibid*. Incidence of moderate to severe underweight of under-five children was 51.4% when the wife made the decisions, 62.2% when the husband made then alone and 66.8% when the decision was jointly made. Table 8.15, page 118.



percent of the national population in 1970 to 70 percent by 1995, much of this spurred by the international and NGO support received during the Water Supply and Sanitation Decade that ended in 1990.<sup>30</sup> The overall 1995 average hides the marked disparity between urban and rural areas – 96 and 68 percent respectively. Sanitation coverage in 1995 was much worse: 67 percent in urban but only 18 percent in rural areas that contain 80 percent of the population. These official data give no indication of service reliability or safety of supplies.

33. Since the 1970s about three percent of the national development budget was allocated to WSS and split fairly equally between meeting urban and rural demands. In 1989 the National Planning Commission produced a US\$648 million development plan for the sector to be implemented in three five-year phases. Under this plan the allocation for WSS from the development budget would double to 6 percent. Seventy percent was to be assigned to the towns administered by Nepal Water Supply Corporation because of their rapid growth, the prospect of a severe water shortage in the Kathmandu valley, and the failing service provision caused by deferred maintenance. However, failure to meet the targets of the Water Supply and Sanitation Decade – the planned level for 1990 in Table 3 – caused these allocations to be revised.

**Table 3: National WSS Service coverage – great expectations, modest achievements**

	Water Supply		Sanitation	
	Urban	Rural	Urban	Rural
<b>1981-1990 Planned</b>	94%	67%	21%	13%
<b>1981-1990 Achieved</b>	66%	34%	34%	3%
<b>Shortfall 1981-1990</b>	<b>+28%</b>	<b>+33%</b>	<b>-13%</b>	<b>+10%</b>
<b>1992-1997 Target</b>	77%	72%	48%	9%
<b>Incremental target 1992-1997</b>	<b>+11%</b>	<b>+38%</b>	<b>+10%</b>	<b>+3%</b>

34. Thus 62 percent of development expenditures were targeted at RWSS in the Eighth Five-year Plan (1992-97) given that incremental rural water supplies were to cover 38 percent of the population and be delivered at twice the rate achieved earlier. The primary reason for the non-achievement of the decadal targets was the inability of the central HMGN institutions to deliver local services in a country as diverse as Nepal.

35. Initially the responsibility of the Ministry of Water Resources, WSS was transferred to the new Ministry of Housing and Physical Planning – later renamed the Ministry of Physical Planning and Works – in 1988. The ministry chaired the National Water Supply and Sanitation Coordination Committee that coordinated policy with other ministries with sector responsibilities. Public health, hygiene education and promotion of on-site sanitation were the responsibility of a subsection of the Ministry of Health

30. International financing of water supply and sewerage programs and projects during the 1980s supported a substantial share of national investment. In urban areas external assistance was as much as 80 percent; in rural areas it averaged about 30 percent. NGOs accounted for about 11 percent of the increased rural water supply during the decade.

(MOH).<sup>31</sup> The Ministry of Local Development oversaw local authorities and was responsible for rural development projects that may also include WSS. Within the Ministry of Housing and Physical Planning national WSS planning and management was implemented through two line agencies.

36. The autonomous Nepal Water Supply Corporation (NWSC) was responsible for provision and management of urban water supplies and sanitation for the three towns in the Kathmandu valley and ten other large towns elsewhere.<sup>32</sup> The Department of Water Supply and Sewerage (DWSS) was responsible for all 22 urban areas outside NWSC's control and for all rural water supply and sanitation. Responsibility for the UNICEF-supported community water supply program was transferred to DWSS following DWSS's decentralization into 75 District Offices in 1988. In addition to these government agencies about 20 international and several hundred local NGOs were involved in providing small-scale WSS and related health and hygiene programs and projects. NGOs were responsible for about 11 percent of WSS provision during the 1980s.

37. Key issues were the lack of capacity in the DWSS and NWSC to tailor top-down and supply-driven central planning and implementation to local needs, over-programming, preference for construction over maintenance, inappropriate engineering, and a failure to build local institutions capable of efficient O&M. These problems were exacerbated by poor internal controls, inattention to monitoring and evaluation, and high staff mobility because of poor salaries and the difficulties of working in rural areas.<sup>33</sup> In contrast, WSS provided by the NGOs were more successful because the flexibility of their community-based approach met local demand and built upon village-level institutions.

38. ***Objectives are highly relevant to HMGN policy.*** Water supply and sanitation improvements contributed to achievement of the government's health strategy during the early 1990s and were incorporated in its Ninth Five-Year Plan. This plan envisaged systematic preparation of district plans for WSS to reach 100 percent service levels for provision of drinking water by 2002. This was to be achieved, *inter alia*, through prioritizing small-scale projects implemented by locally-based NGOs and other socially concerned organizations and decreasing direct involvement of HMGN in the sector. HMGN's 1998 national sector policy emphasized a shift towards demand-driven participatory approaches to service delivery. The Tenth Five-Year Plan (2002-2007 that incorporated the Poverty Reduction Strategy Paper) allocated 5 to 7 percent of the national budget to WSS and increased the focus on provision of suitable sanitation in rural areas with the aim of decreasing child mortality by reducing water borne and water-

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31. The Health Education and Environmental Health Sections.

32. The NWSC was created in 1989 following Bank advice to replace the Water Supply and Sewerage Corporation that had been unable to efficiently manage the WSS in the major urban areas. The rationale for its creation was to address inadequate attention to financing and management of operation and maintenance (O&M), reduce government subsidization of the sector and increase consumers' contribution to the costs of full service provision.

33. OED Project Performance Assessment Reports. Urban WSS I&II (Credits 470-NEP and 704-NEP), 1986; and Urban WSS III (Credit 1059-NEP), 1990.

related epidemics. HMGN's revised RWSS policy of 2004 reaffirmed the thrust of the 10<sup>th</sup> Plan.

39. ***Objectives are highly relevant of Bank strategies and sector policy.*** The Bank's 1993 Water and Sanitation Sector Issues Paper argued for radical reform of sector institutions, devolution of service delivery, and reorientation of HMGN's role to focus on policy formulation and regulatory oversight. The Bank's 1996 Country Assistance Strategy (CAS) identified support for RWSS as a priority as well as delivering resources closer to beneficiaries and enhancing women's participation in decision-making. The 2003 CAS (2003-2007) emphasized social sector development and social inclusion as two of its four pillars. Specifically it aimed Bank support at extension of water supply to an additional ten percent and sanitation to five percent of the total rural population, with increased coverage of excluded and under-served groups.

### **Relevance of Design**

40. ***Design was highly relevant to achievement of project objectives.*** It built upon a pilot project that successfully tested alternative design options for new institutions and project management. The rationale for the rating is described below.

41. ***The Institutional Challenge.*** The major challenge was designing a viable alternative to the government's supply-driven approach. This significantly raised overhead costs, omitted beneficiary participation, and did not provide sustainable results.<sup>34</sup> As a result, the DWSS revised its implementation policy in 1991 to mandate a community-based approach through formation of user groups to leverage their contribution to investment costs and provide a focus for the recovery of O&M costs.<sup>35</sup> DWSS also recognized the pivotal role of women in implementation and mandated that each community user group should include at least two women members on its committee. Recognition of these key social issues, however, overlooked the problems caused by DWSS's top-down management. Subsequently a Bank Review Mission made the following recommendations that went beyond DWSS's 1991 policy:<sup>36</sup>

- NGOs have delivered better services than DWSS;
- Involvement of the private sector would improve implementation. However, the review cautions that while policy-makers in the Ministry of Housing and Physical Planning and the National Planning Commission appeared to support a greater role for the private sector, middle-ranking bureaucrats favored the traditional government approach practiced by DWSS;
- Creation of a fund (to be used as an intermediary) to channel resources to various support agencies including NGOs, private and public sector agencies selected by the

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34. Revised Executive Project Summary. November 6, 1991. "To date DWSS has adopted a top-down, supply-driven approach with very little involvement from communities. Partly as a result sustainability is a major problem with well over 50% of schemes requiring rehabilitation shortly after completion." On the health-related aspects: "Limitation of capacity on the regular ministry of health staff may require that NGOs be given major responsibility to implement health education components."

35. DWSS. 1991. Implementation Directive for Rural Water Supply and Sanitation.

36. World Bank. 1992. Interim Report of the Review Mission. March 3, 1992. Financed by the UNDP Policy Review and Project Development Facility for US\$40,000 and a Japanese Grant Facility of US\$140,000.

fund to implement RWSS schemes; and

- Establishment of a pilot project to develop governance structures for a fund, define its legal status and test proposed institutional options.

42. For self-serving reasons DWSS opposed these recommendations. It argued that the government should remain the facilitator and funder of the sector. A new fund was seen as neither necessary nor sensible given government's drive to reduce costs and decentralize service delivery. Indeed DWSS argued that it had decentralized and posted District Community Liaison Officers; and that the NGO's limited capacity fitted them only for advisory or monitoring roles.

43. Despite these internal divisions, the government approved implementation of a small-scale pilot project in 1993 that would "learn-by-doing." This three-year pilot, the People's Water and Sanitation Program known as JAKPAS was supported by US\$ 3.2 million of Bank's Japanese Grant Facility and UNDP grants.<sup>37</sup> The pilot worked in more than twelve districts covering eighty communities and fourteen support agencies. JAKPAS began work in March of 1993 and established a prototype Board to manage and facilitate field studies and explore institutional arrangements. Gender issues were a special focus. Lessons from the pilot project (Annex B) were fully utilized in designing the full-scale project being assessed.

44. ***The governance of the FB was the most contentious design issue.*** The Cabinet approved the project in August 1995.<sup>38</sup> However, the governance structure of the approved Board placed it firmly under the control of the MHPP and removed any reference to cost-sharing and participatory processes – a win for those opposing reform of the RWSS sector.<sup>39</sup> While appraisal went ahead, the revision of the Formation Order to meet the Bank's governance structure became a condition of negotiations. The revised Board Formation Order – a compromise that granted partial autonomy that fell between the Bank and government positions – was approved in March 1996, three months before negotiations.<sup>40</sup> The lack of full autonomy created problems for implementation (para 17).

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37. The JAKPAS acronym is derived from the Nepali phrase *JAnta ko Khane PA ni ra Safai karyakram* meaning people's water and sanitation program. JAPAS operations were started in March 1993 and completed after a second round of grants in June 1996.

38. With the fall of the Nepali Congress government and the influx of the Communist-Marxist government 1994-1995 the idea of an Act was dropped as infeasible and instead a Formation Order was accepted as a sufficient condition of appraisal. Formation Orders were legalized under the Development Committee Act 2013 (1956) that allows the government to setup a board to implement any development activity outside the regular mechanism.

39. The Secretary of the MHPP would be appointed the chairman of the Fund Board. MHPP would recruit the Executive Director, appoint 4 of the 7 Board members, and set the incentive structure and organizational rules and standards.

40. The Fund Board was to be managed by a seven member Board, four from the public sector, three from private sector, and include at least one woman. The Secretary MHPP would be Board Chairman for the first two years after which MHHP would nominate a Joint Secretary level officer to replace the Secretary and thereafter the Chairperson would be elected from among the Board members. The Board will be responsible for policy and framing its own rules in consultation with MHPP. Board staff would be recruited through open competition and serve under contract. The Board would be responsible for project implementation and subcontracting work to service agencies, support organization and communities meeting eligibility criteria.

45. **Replication of the Board Model Confirms Relevance.** The Bank modeled the first Poverty Alleviation Fund Project (PAF 2004-09) on the Board concept.<sup>41</sup> Under PAF community agreements to meet demand-driven infrastructure provided RWSS to 32,100 households spread over 25 districts and this was the largest disbursement category. IEG's 2005 evaluation of the Bank's global experience with community-based and driven development found that projects were more successful when they provided support for long-term capacity-building and home-grown initiatives.<sup>42</sup>

## Efficacy

### *The objective to deliver sustainable health and hygiene benefits through improved RWSS facilities was substantially achieved with some shortcomings*

46. The project facilitated provision of demand-driven RWSS infrastructure and hygiene education to 95,016 households in 946 villages benefiting more than 550,000 people – more because the facilities built were designed to cater for the population growth and eventually serve 726,500 people (Table 4.) Almost all of these villages (95 percent) receive their water supplies from protected gravity sources, primarily from springs that are less liable to pollution. The remainder obtains their water from sanitary protected wells. The attention to promoting good sanitation facilities through the Sanitation Revolving Loan Fund grant to each village leveraged substantial self-help efforts and community-led environmental clean-up activities (Table 5.)<sup>43</sup> Despite these substantial physical outputs, better health outcomes will only be realized if, firstly WSS services provided are physically, socially and financially sustainable, and secondly if improved hygiene practices are adopted.

**Table 4: Number of water supply facilities and institutions created by 2004**

	Schemes	Population	Village Maintenance Workers	Mother and Child Tapstand Groups	Village Health Promoters	
					All	Female
Target	900	400,000	810	ns	ns	ns
Achieved	946	568,693	984	1,366	1,004	976

*Source:* FB sponsored surveys undertaken by SAs. ns = not specified at appraisal

41. World Bank. 2004. Poverty Alleviation Fund Project (IDA/R2004-0100/1). It aims to improve access to income-generation projects and community infrastructure for the groups that have tended to be excluded by reasons of gender, ethnicity and caste, as well as for the poorest groups in rural communities. PAF was supported initially by a US\$15 million grant for six districts and topped up with an additional US\$25 million in 2006 when its coverage was extended to 25 districts. A second phase project was approved for US\$100 million in November 2007 to incrementally cover all of Nepal's districts at the rate of 15 new districts per year.

42. IEG. 2005. The Effectiveness of World Bank Support for Community-Based and Driven Development.

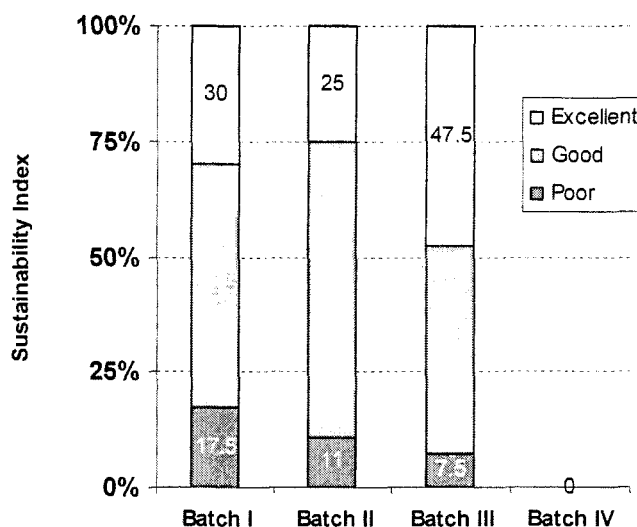
43. The FB provides a grant to the community for latrine sufficient to cover 25 percent of the total beneficiary population at a rate of Rp 750 per household. The community on-lends this to individual households at an agreed rate of interest, generally for 6 to 12 months. After the community's sanitation needs are satisfied the revolving fund becomes community property.

**Table 5: Number of environmental sanitation facilities created by 2004**

	Sanitary Latrines			Institutional Latrines		Village Waste Disposal Pits
	Under SRLF	Self-help own finance	Total	Number of Schools	Latrines	
Target	ns	ns	47,508	ns	1,800	ns
Achieved	22,178	23,561	45,739	795	589	20,271

*Source:* FB sponsored surveys undertaken by SAs. ns = not specified at appraisal.

47. Service provision is sustainable and the bulk of project facilities are adequately maintained and functional. For example, the independent surveys conducted three years after the end of each batch found that while 14 percent of Batch I tapstands were found to be inoperable, this had declined to 7.8 percent in Batch III and 4.4 percent in Batch IV as knowledge and selection techniques were refined during implementation. IEG's field visits confirmed the high level of functionality. Similarly, most respondents reported they were satisfied with the quality of water received<sup>44</sup>. The few tapstands that had operational problems were generally due to either minor mechanical faults (e.g. crossed threads), supplies being cut off by landslides, or seasonal reduction of the supply source. The FB has developed a qualitative index of scheme sustainability derived from 14 monitorable indicators assessed three years after batch completion (Annex D.) These indicators cover the institutional, social/environmental, financial and technical factors affecting sustainable operation and maintenance by the communities, each of which is given an equal weight. The results from the first three Batches indicate that more than 80 percent of sampled schemes have good to excellent sustainability (Figure 1).

**Figure 1: Sustainability of RWSS schemes (n=150)**

*Source:*

Batch I Sustainability Study, n = 20 schemes from 76 total

Batch II Sustainability Study, n = 50 schemes from 205 total

Batch III Technical and Operational Audit, n = 80 schemes from 308 total

48. A particularly important component of sustainability is the viability of the water users committee (WUC) and the sufficiency of community funds for O&M. Apart from the initial sinking fund established at scheme inception, the majority of households are typically willing to pay about Rp10 a month towards O&M. Those few poor households that could not make a financial contribution generally contributed in kind. In the majority of schemes the income contributed towards paying for the services of the Village

44. Batch IV surveys, for example, indicate that 90.2 percent of 1,699 households interviewed (out of the total sample of 6,631 households) on this topic in 2006 judged water quality to be "good."

Maintenance Worker (VMW), a post usually filled by a village resident trained by the project. In cases where the maintenance task was beyond routine (e.g., landslide damage) the communities contributed in kind to effect repairs. In Batch III for example, the sample surveys showed that in the 58 percent of schemes needing major maintenance the community participation was 83 percent.

49. The project's support for health, hygiene and sanitation education has raised awareness of the link between behavior and health. This contributed to improved hygiene behaviors particularly in Batches II and III (Table 6.) Batch IV showed a more mixed response except for washing hands before cooking and after eating, and cleaning children's buttocks, cleaning teeth and washing cloths. The reason for the muted response is that Batch IV had extended operations to the poorer and more backward areas of western and far-western Nepal and villages further away from main communication links. Within this sample, and in contrast, washing hands before eating in the Central Region rose from 67 to 80 percent, and in the Kathmandhu Valley from 79 to 100 percent.

**Table 6: Share of sampled population practicing improved hygiene behaviors (%)**

Personal Hygiene Practice	Batch II		Batch III		Batch IV	
	Before	After	Before	After	Before	After
Year	1999-01	2002	2000	2002	2003	2006
Household Sample size			1036	1048	1600	1540
Washing hands before cooking	74	92	58	81	61	66
Washing hands before serving food	43	77	30	81	41	80
Washing hands before eating	92	96	84	100	63	67
Washing hands after eating	72	88	99	100	41	84
Washing hands after defecation	65	81	65	88	61	66
Washing hands after cleaning baby's buttocks	77	92	46	60	41	80
Clipping nails		93	49	96	61	65
Brushing teeth	71	86	61	95	41	80
Washing cloths	74	92	33	91	61	66

*Source:* Health Knowledge Attitude Impact Studies, Batches II, III and IV. na = not available

50. These differences clearly indicate the importance of other factors affecting behavior, not least the initial levels of poverty and education. There is also the impact of spill-over effects from other interventions, such as improved health services. In particular, research has found that when the quality of village health posts is poor, monthly visits by Village Health Workers and the presence of Community Health Volunteers had as much impact on improved health care as significant upgrades to the quality of clinics and health post facilities.<sup>45</sup>

51. Better health knowledge and WSS facilities has also led households to increased use of safe water sources (Table 7) and improved environmental sanitation (Table 8.) These are similar to the impacts of the first two batches. The Batch IV impact survey also demonstrated that disposal of children's feces also improved. Before the project only 39 percent disposed of it in a latrine; after the project this rose to 74 percent. Wastewater

45. Acharya, L.B., and J. Cleland. 2000. *Maternal and child services in rural Nepal: does access or quality matter?* Health and Policy Planning. 15(2). 223-229.

disposal also improved. In Batch III, for example, 90 percent of wastewater had no proper drainage, after the project this was reduced to 11 percent by villagers and the difference was channeled to kitchen gardens. The practice of keeping animals within household living areas also dropped by more than a third. Animal defecation near drinking water sources is now also controlled. Similar changes were found in Batch IV. Within all Batches households improved hygiene practices – better storing and covering water and food, cleaning of utensils, vegetables and fruit, and keeping them out of the reach of children.

52. Reduction in water-borne and water-related diseases was reported in the sampled communities, based on the incidence of diarrhea reported to in the two weeks prior to the SA surveys, but the survey methodology is not robust. While diarrhea incidence was very low in both batches, a much higher incidence of skin disease and its reduction was also reported. Focus group surveys conducted for the batch IV schemes reveal that most people believe that the project interventions reduced disease incidence – by 81 percent for diarrhea, 95 percent for typhoid and 96 percent for skin disease. The FB impact assessments attributed these improvements to the project. However, the comparability of the before and after reports is questionable as the many other factors affecting disease incidence – including the myriad health improvement interventions by others, seasonality, income, education, nutrition – were not considered in the attribution. While it is reasonable to expect that there are health benefits associated with the project interventions, the project M&E methodology does not allow this to be unambiguously demonstrated.<sup>46</sup>

53. The knowledge of the relationship of disease to water and hygiene practices was also part of the community education efforts, as was use of oral rehydration solution (ORS). The impact of the project varied considerably depending on SO's effectiveness and community response. Thus, for example, awareness that contaminated water caused

**Table 7: Unsafe water sources now seldom used**

Source of water supply	Batch III (n=1393)		Batch IV (n=1540)	
	Before (%)	After (%)	Before (%)	After (%)
Tapstand	18	91	7	95
Well	9	5	39	4
River/stream	23	2	24	0.3
Pond or spring	30	2	6	0.4
Other	220	0	243	0.32
Total	100	100	100	100

Source: Health Knowledge Impact Studies.

**Table 8: And less environmental pollution**

Place of Defecation	Batch III (n=1393)		Batch IV (n=1540)	
	Before (%)	After (%)	Before (%)	After (%)
Latrine	24	64	25	65
Street	-	-	5	9
Forest/field	56	30	58	25
Riverbank	17	6	11	1
Elsewhere	2	0.5	0.8	0.4
Total	100	100	100	100

Source: Health Knowledge Impact Studies

46. Adoption of a quasi-experimental approach using propensity score matching may be more appropriate. The project's M&E methodology did not take into account other factors affecting health status including, for example location, seasonality and climate; other actors; and changes to income status.



diarrhea only increased by from 42 to 48 percent for batch III whilst in batch IV it rose from 57 to 99 percent.<sup>47</sup> Response to ORS to treat diarrhea was more uniform, increasing from 42 to 71 percent of sampled households in Batch III and from 13 to 42 percent in Batch IV – significant improvements.

**The objective to improve rural real incomes by assisting women to identify ways to earn income from time saved in carrying water was substantially achieved but with a number of shortcomings**

54. The overall average time saved by utilization of tapstands ranged considerably across the batches (Table 9 and Box 2.) The reason is that later batches moved further away from the main communication routes and into more difficult and hilly terrain where time savings were greater. When weighted by the households in each batch, the average time saving is 3.19 hours per day. Most of this time saving accrued to women and girls: Batch III, for example, found that women made 5.2 trips a day, men only 1.4. Thus tapstands made a huge difference to women's lives and enabled time for greater participation in community, personal and income development activities.

**Table 9: Tapstands substantially reduced the time spent in carrying water**

Time spent carrying water	Batch I	Batch II	Batch III	Batch IV	Weighted average
Total Households	5,305	16,477	37,297	35,937	95,016
Before (mins)	19	16	32	39	
After (mins)	3	3	7	10	
Time saving (mins)	16	13	25	29	
<b>Total time saved (hours per day)</b>	<b>2.13</b>	<b>1.73</b>	<b>3.33</b>	<b>3.87</b>	<b>3.19</b>

*Source:* Health Knowledge Impact Studies

55. The project successfully improved women's capacity through non-formal education, health hygiene and sanitation classes, and women's technical support services run by the SOs. IEG interviews found that non-formal education classes were highly sought after as this enabled women be classed as 'literate' which eased their acceptance into more demanding roles and beneficial participation into income-generating training and activities.<sup>48</sup> Graduates of non-formal education generally acquire the ability to write their names, read notices and do simple arithmetic calculations – but little else. This greatly empowers women, particularly those from the lower castes and disadvantaged groups.

56. Households fully participated in the identification and development of the RWSS schemes and women played a substantial role in these decisions according to feedback given to IEG. Their formal membership of water and sanitation user's group committees in Batches I-IV was 27 percent. And among the committees' treasurers women occupy 83

47. Batch III took an ex-post random sample of 1048 households and compared those with 1036 households sampled in the baseline survey. The Batch IV baseline was 1600 households and the ex-post sample was 1540.

48. A total of 16,637 women graduated from the project's 672 non-formal education classes taught by the SOs. 'Literacy' was defined as being able to write one's name and read simple posters and the SOs monitored and evaluated achievements.

percent of the jobs.

57. Women in the community also held 97 percent of the Village Health Promoter's posts established by the project but the numbers are dwindling as most of these positions

**Box 2: The benefits of improved RWSS significantly improve women's lives**

**Kalikhola-Pushupati Nagar Village, Ilam District, Eastern Region**

This village has 33 tap stands serving 124 households. Each household in the village contributed Rp900 at the start of the project and they pay Rp10 per month per household for operation and routine maintenance. This has yielded Rp90,000 per year. Costs to date have averaged about Rp50,000 including payment of the village maintenance worker (VMW) at Rp14,400 per year. Water supply has been continuous and they have had no problems. Villagers have agreed that individual households may connect their own supply lines to individual houses following the procedures agreed by the tap committee. Everyone is satisfied with the arrangements and the quantity of water received. In a group interview of 30 women they stated that before the project, they used springs and used to make about 8 trips per day, each trip typically taking 10 to 45 minutes depending on where they lived in the village. Survey data show the average time spent was 22.4 minutes/round trip. Since the project, a trip takes 8 minutes and total time savings are 2 hours/household. The time saved is spent on income generation, home cultivation of vegetables, and crafts, and meetings to increase knowledge and skills, for example, on literacy, health and accounting. Eighty-five per cent of the women use their increased incomes to improve family welfare, including better quality food, buying medicine for children and spending more on their children's education. While the project was very helpful in providing hygiene and health knowledge, the radio was the more effective and consistent medium.

**Kaldar Village (Batch III), District Kavre, Central Region**

The village has 11 tap stands serving 82 households. It also has 73 latrines. Before the scheme women spent 52 minutes on each trip for water and made typically 7 trips a day; now they spend 10 minutes per trip. Total time saved in the day is 4.9 hours/household. Now they make 15 trips a day and are therefore using more water and saving time. Each household pays Rp5 per month for operation and maintenance. The VMW gets paid Rp3,600 per year. To date they have not had any problems with supply which is continuous and the quantity is such that 25 new households have joined the village and the water supply is still sufficient. The WTSS has been active for 9 years and received training from the project on health, operation and maintenance etc. Women attend the monthly tap committee meetings and have a say in O&M. The women of the group make regular savings into the WTSS fund. To date the women have Rp 23,000 in their account and they lend this out as micro-credit at 2 percent per month. Main borrowing is for home gardens, animal husbandry, crop inputs, and occasionally seriously ill people borrow funds to assist them over.

**Dulaganda Village, District Tanahu, Western Region**

There are 11 project and 47 self-help latrines. The village has 12 tap stands serving 100 households (and 550 people). In addition there are 12 private connections each of which is metered for the last six years. People with meters pay a fee to the tap stand committee providing that they do not take more than 40 l/c/d. In the three summer months of April, May and June, the water supply is short and regulated from 4.00-10.00 a.m. and 4.00-8.00 p.m. Each household pays Rp20 per month. Those with meters pay Rp20 per month for the first 15,000 liters and then Rp24 per month for each 1,000 liters in excess but they are allowed all day access year round. The O&M account seed fund was Rp41,000 and it has now grown to Rp63,000. The VMW gets paid Rp1,100 per month. Before the project each trip for water took 39 minutes; the project reduced this to 8 minutes. Total time saving is 2.5 hours/household. The WTSS were trained by the FB and 16 graduates completed all courses. Four of the 11 water user committee members are women. Women now spend more time on the household and micro-enterprises such as poultry. One woman runs a small restaurant and others small agricultural enterprises – goats and pigs. The FB WTSS seed fund of Rp10,000 has since grown to Rp90,000. The WTSS group has utilized some of this to buy a marriage tent and catering pots and they run this as a profitable business. The women in the village stated that they felt better off than in the surrounding villages because their improved incomes mean they have more freedom. They are also respected because the sanitation improvements in the village have enabled them to become ambassadors for hygiene training in surrounding villages.

*Source:* IEG interviews December 4-10, 2007.

are unpaid. Initially villagers were keen to do this work as IEG found that it was seen as an entry-point to a well-paid job akin to that of Village Health Workers employed by the Ministry of Health. However, only a few village WUGs paid a stipend (typically about Rp200 a month) and most VHP's were voluntary. In addition it soon became apparent that the training given by SOs was insufficient and the VHP duty required much more time than anticipated. Thus many incumbents stopped doing the work in favor of easier and more remunerative tasks. IEG also observed that VHP's remained active if supported by health-oriented NGOs. Thus part of the institution-building effort should also build these links to ensure sustainability after the SO departs. Fortunately, the women in the child-women tapstand groups told IEG that they stuck to improved health behaviors because the direct benefits to their families and reduced medical costs were substantial.

58. Under the project each mandatory women's technical support service (WTSS) group in every project community received a Rp200 grant per member up to a ceiling of Rp10,000. It was expected that these groups would be trained by the SOs in basic skills that would help them borrow from micro-credit institutions and other sources. Each group establishes its own rules. At project closure the number of WTSS groups significantly exceeded the appraisal target (1,366 vs. 946) and included 49,114 women. At that time the groups' savings were Rp 1,976,056 or an average of Rp 40 per member. Members typically contribute between Rp 5 to Rp 40 a month and are able to take short-term loans from the groups' savings as most are not eligible for any other type of credit. While interest rates are not low (12 to 24 percent) they are far below the local moneylenders' rates and reduce dependency on the bigger landowners for credit.

**Table 10: Development of Women's Technical Support Service Groups in Batch III – 3 years on**

Indicator	Number of Groups	Proportion
WTSS formed	926	100%
WTSS membership in place	682	74%
Savings program started	510	55%
Regular meetings	451	49%
Income generation training	159	17%

*Source:* Immediate Impact Study, Batch III, July 2003

59. Comprehensive and consistent impact data are not available to judge the efficacy of WTSS activities, except for Batch III and even that is dated (Table 10.) Of the functioning groups, just over half had started savings groups. Worryingly, under a quarter of the active groups had received income generation training, and only a tenth had established linkages to other support and micro-credit agencies. This despite the fact that 94 percent wished to take part in such activities. Income-generating activities were focused on small-scale agricultural enterprises. Goat rearing was most popular, followed by poultry, piggeries and vegetables. In Batch IV, kitchen gardening was the most frequent activity. In all the groups visited by IEG, women were actively engaged in various micro-enterprises. While expressing satisfaction with the idea of WTSS group, a third of the focus groups requested more training. In one group, training in micro-credit was being launched at the time of IEG's visit.<sup>49</sup>

60. More detailed insight is provided by a recent FB-commissioned report into the

49. Bhote Kholsi in Ilam District, Eastern Nepal. This is Batch IV project implemented 2001-2003.

operational status of WTSS groups.<sup>50</sup> It affirms the relevance and efficacy of the WTSS groups. Three-quarters of the 60 randomly selected groups evaluated were still in operation. Main reasons for discontinuation were the security situation, misuse of funds or retention of the funds by members of the committee, and loan defaults. Within the functioning groups most used WTSS funds as seed money for use in savings and credit activities and income generating activities. Average levels of savings and loans per member were Rp 649 and Rp 1,363 respectively. Use of loans was split almost evenly between income and fulfillment of social needs. To date almost two-thirds of activities were profitable and a third broke even. Only 5 percent reported losses. The magnitude of income improvements could not be determined. Eighty-eight percent of respondents reported that WTSS was useful. It helped them to attain socio-economic empowerment, access to finance in times of need, and as found with Batch III, reduces their dependence on landlords and moneylenders.

**The objective to strengthen government and non-governmental capabilities to undertake RWSS was substantially achieved with some shortcomings**

61. The Fund Board was successfully established and provides a viable alternative to the government's inefficient RWSS organization. It piloted and successfully expanded beneficiary participation in RWSS scheme identification design and construction. It facilitated NGOs to develop their own capacity to implement RWSS schemes. The FB also effectively used SAs to oversee field activities and provide comprehensive M&E assessments.

62. Governance of the FB was a contentious issue throughout most of the project, yet despite this, the professional excellence of its staff enabled it to establish a reputation for excellence while continuing to deliver high-quality RWSS schemes even during the most difficult times of the Maoist insurgency. This reflects the social acceptability of the FB's mode of operation whereby it minimizes the field presence of central "government" staff, thus demonstrating that a new way of business is in operation. Expanding the remit beyond the simple provision of RWSS to include local capacity-building within communities has proved to be a viable concept that greatly increases sustainability of schemes. Better still, it ensures that the schemes are fully owned by the communities. Financing for the FB is potentially a longer-term problem as it currently relies upon the Bank for the bulk of its grants.

63. The success of the FB model is demonstrated by its replication by the Bank's Poverty Alleviation Project and its acceptance as a viable quasi-government approach to rural development.<sup>51</sup> The FB process for M&E enabled it to incrementally improve the

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50. Fund Board. 2007. *Review and Modify/Redesign of the Women's Technical Support Services Component of RWSSP-II*. June 15, 2007.

51. The World Bank's Resident Mission in Nepal commented June 4, 2008: "The ADB funded Community-based Water Supply and Sanitation Project has recognized the Board approach as best practice in its "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, September 2003, on page 2, para 6 it says: " Sectoral Implementation responsibilities will change even further as major donor organizations follow best practice, lead by nongovernment organizations (NGOs), the Rural Water Supply and Sanitation Fund Development Board (Fund Board), and bilateral donors in actively supporting demand-driven, community-based project planning and implementation."

relevance of its community-support activities. In particular, towards the end of the project, impact assessments clearly showed the special needs of disadvantaged and lower caste groups were overlooked and thus the principle of inclusion as initially practiced was faulty. This has been rectified in the follow-on projects.

64. Service organizations trained by the FB have proved to be efficient service providers and over 120 of them have demonstrated their ability to work with rural communities on both the physical and social aspects of RWSS (Box 3.). This was a highly interactive process that matured over the life of the project and is now continued under the follow-on project. The tripartite contract arrangements between the FB, SOs and the communities work well, provide transparency and are replicable.

65. The institutional capacity of communities was nurtured and enhanced by the project, specifically by the local service organizations. Over 40,000 community participants were trained to manage their schemes and organized to tackle the institutional, financial and social challenges in establishing local water supply and sanitation services. Communities now make informed decisions on engineering and costs and manage their own procurement. Women's participation was encouraged and their capabilities were fostered through carefully-structured training programs. While the idea of the WTSS group was excellent, more attention could have been given to training on income-generating activities which significantly lagged demand.

**Box 3. The Role of Service Organizations – an example from the Eastern Region**

The Sungava Club is a local NGO working with the FB since 1988 both on the first and second phase projects. Sungava was established in 1981 as a non-profit organization working in social welfare initially and more recently moving up to work with international agencies and donors on community building efforts. Their first involvement with WSS was in 1989 with the DFID water aid projects. Expertise is drawn from the local area. Earlier the local government provided an engineering advisory service to help them on WSS but this has now been stopped. They hire an engineer as needed. They joined the FB in the third batch of projects and implemented three projects over two years. The NGO publicizes its willingness to assist villages to get WSS schemes and then visits those that say they are interested. The total time to build local capacity, undertakes the surveys and engineering design, and discuss the cost estimate with the community and gain FB approval and then implement was 24 months per scheme. Once the scheme is approved the budget is agreed by the FB publicly as is the contribution to be made by the community. The community then hires the people or organized volunteers to do the work. Subsequently, the SO conducted follow up activities to further build community capacity and monitor progress. More recently it has assisted a local rural credit organization to train women's groups on basic banking and credit procedures.

*Source:* IEG visit to Ilam Town, Eastern Region. December 3, 2007

66. Attempts to induce the government to develop a coherent sector policy and guidelines for its implementation and coordination were unsuccessful. While the project was successful in inducing policy statements giving increased support to minimizing government's presence in the rural areas and enhancing community participation and ownership, this has not yet happened in practice. Government's role as a sector coordinator remains to be fulfilled and most of the inputs from donors, international and local NGOs, remain poorly coordinated leading to duplication and contradictions. For example, while the FB mandates upfront contributions from communities, other organizations provide drinking water services without such requirements (e.g. CARE and NEWAH). A covenant to the effect the DWSS would not become involved in schemes

with fewer than 500 households cannot be verified because of the government's poor M&E. This is still true four years after the end of the first RWSS project.

67. FB activities under the project were divorced from district and village development committees and were implemented with no reference to regional or district planning. By remaining aloof from these local governance organizations the project bypassed normal planning Nepali procedures. The rationale for this approach was that all the chief executives at the district level and below were selected by the central government and did not represent local interests. It was believed that during the Maoist insurgency these centrally-appointed persons would resist the demand-led approach adopted by the project.

***The counterfactual highlights the efficacy of the FB model over the traditional government approach***

68. Comparison with the DWSS program highlights the advantages of the FB model. The ADB's Fourth Rural Water Supply and Sanitation Sector Project (1996-2002) provides a realistic counterfactual to the FB's experience and achievements. Although slightly larger, it was implemented over an almost identical time period (Table 11) and had very similar objectives, particularly in supporting community-based approaches.<sup>52</sup> In physical terms, the DWSS constructed schemes more quickly but at increased costs (considering only civil works inputs.) While the project only built institutional latrines, its awareness raising activities mobilized a similar level of self-help latrines.

**Table 11: A comparison of the DWSS and FB projects**

Project	DWSS Fourth RWSS	FB First RWSS
<b><i>Comparison in absolute terms</i></b>		
Implementation	1996-2002	1996-2003
Duration (months)	75	93
Benefiting Population (number)	670,000	550,000
Tapstands (number)	1,258	945
Schemes (number)	1,258	945
Project latrines (number)	1,277	22,178
Self-help Latrines (number)	33,000	23,561
Construction Cost US\$ million	\$19.93	\$12.70
<b><i>Normalized comparison</i></b>		
Schemes/month	16.8	10.7
Population/water supply scheme	532	582
Population/project latrine	525	25
Population/Self-help Latrine	20	23
Average Scheme cost/capita**	\$29.7	\$23.1

Source: IEG. \*\* this is based on the water supply component only due to comparability problems

52. The Project's objectives were to (i) provide safe water supply in about 1,500 rural communities in 40 districts of Nepal's Eastern and Mid-Western and Far-Western Development regions; (ii) promote hygiene education and low-cost sanitation facilities in these regions; (iii) achieve greater sustainability by extending the community-based approach to all rural water supply and sanitation projects; (iv) strengthen water users committee (WUC) operation and maintenance (O&M) capabilities for completed subprojects; (v) improve sector cost recovery; and (vi) strengthen sector institutions, including the Department of Water Supply and Sewerage (DWSS) and WUCs.

69. In many aspects, the performance of the DWSS was a repeat performance of past institutional problems that undermined sustainability (paras 31, 34).<sup>53</sup> The ADB's Project Completion Report states: "while the project's design was generally based on this approach to community participation, the design provided only a limited role for communities in actually planning and implementing projects. DWSS played a more dominant role in key project activities, such as subproject design and services, civil works and supplied procurement (para 7)." And..."While DWSS increasingly moves towards a community-based approach, its capacity requires further orientation and strengthening, to play a more proactive but facilitating role in community development (para 35)."

70. Community Education and Awareness Raising (CEAP) was also far below FB's achievements. "CEAP targets were generally achieved in terms of WUC and other local community member coverage...but CEAP effectiveness was mixed." The ADB Mission observed limited improvements in hygiene and sanitation conditions in 9 of 30 subprojects they visited. "The CEAP's weak impact seems to be the result of the general lack of emphasis on the project's software aspects, a tendency to rush construction activities without adequate social preparation, and the inadequate number of sociologists and social facilitators in DWSS central and field offices (para 12)."

71. Compared with the FB, attention by DWSS to improving women's roles in community WSS was also poor: "Although the project was intended to benefit mostly the women in local communities, the design did not provide adequate measures to promote participation of women in subproject design and implementation. WUCs were constituted with two women members (para 9)."

72. And within DWSS inadequate capacity and staffing problems reduced its efficiency. "Frequent transfer of district engineer and overseers and delays in appointing engineers and social sociologists in Regional Project Management Offices impeded construction, monitoring and community training activities (para 26.)" Training is also a problem. "Training activities were significantly reduced after completion. DWSS could not sustain such training activities as part of its regular operation, partly due to inadequate budget resources (para 17)."

73. Unlike the FB that introduced community-based procurement, DWSS stayed with centralized procurement that proved to be inefficient. "While the CPMO undertook most of the procurement actions, RPMOs undertook procurement of small packages of urgently need pipe fittings to save time. A substantial quantity of surplus pipes and fittings existed at project completion. The surplus was estimated at about \$1.25 million (20% of total procurement of these supplies) and apparently due to DWSS overestimation (para 30)."

74. And while the FB put an emphasis on developing M&E systems to improve relevance and performance, DWSS paid it inadequate attention. "Subproject activities monitoring was weak, particularly with respect to establishing baseline data for benefit

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53. Summarized findings from ADB's PCR are given in Appendix C.

monitoring and evaluation and adequate front-end social preparations and community training (para 35).”

### Summary of findings on Efficacy

75. Overall efficacy is rated substantial based on the achievements of the three objectives.

- Objective 1: Physical targets for RWSS service provision were exceeded; communities are successfully operating and maintaining facilities provided by the project. Use of water has increased and better sanitation and waste disposal is being practiced. Better hygiene is also practiced. While it is reasonable to expect that there are health benefits, the M&E methodology does not allow these to be unambiguously determined. **Efficacy is rated as substantial.**
- Objective 2: The opportunities for improving rural incomes, especially those of women, were improved by the project. The project freed over 95,000 households from the daily toil of carrying water for over 3.2 hours. Almost 80 percent of this benefit accrued to women. The free time was used to increase women’s skills to earn additional income and participate in community management of the RWSS schemes. This enhanced their social standing and ‘voice’ and many women now run small businesses. Although there is good evidence from IEG’s field visits that the project had a strongly positive impact on rural incomes, systemic M&E to link project inputs to improvements in incomes is weak. **Efficacy is rated substantial.**
- Objective 3: High capability to undertake sustainable RWSS project was built under the project using the Board and the NGO sector. Cost indicators show this was done at lower cost than the alternative government service-provider. The efficacy of this objective would be rated high based solely on Board’s achievements and performance. However, the FB remained outside the formal district governance structure and the project had negligible impact on government’s own performance. **Efficacy is thus rated substantial.**

### Efficiency

76. **Efficiency is rated as high.** This rating takes into account the economic efficiency and institutional efficiencies. Project benefits in terms of time saved in collecting water and increased supply of good quality water were the main quantifiable benefits. While there are significant health and social benefits, these cannot be quantified. If they could be the economic benefits could be even greater.<sup>54</sup> Because project beneficiaries were closely involved in scheme design and construction, these were cheaper than envisaged at appraisal. Overall project economic rate of return (ERR) is estimated in the ICR to be 55 percent compared with the estimated rate at appraisal of 15 percent, and IEG’s field evidence affirms the accuracy of the data used for these calculations.

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54. Haller, L., G. Hutton and J. Bartram. 2007. *Estimating the costs and health benefits of water and sanitation improvements at global level*. Journal of Water and Health. Vol 5 (4). 467-480. They estimate that the benefits per disability adjusted life year were \$20 for water disinfection at point of use and US\$13,000 for improved water and sanitation facilities



77. Institutional efficiency is rated substantial despite the shortcomings identified in paragraph 16. Most of these shortcomings were the result of the teething problems experienced in expanding the pilot project, and the lack of Board autonomy. In the circumstances the achievements of the Board were remarkable. A proxy for the overall institutional efficiency is the relative cost of water supply provision, (Table 11) the Board delivers similar schemes to DWSS but at three-quarters of the cost.

## Outcomes

78. Outcome ratings are based on the foregoing discussion that evaluated relevance of the projects' objectives and design, the efficacy and efficiency of efforts to achieve them. Table 12 summarizes the conclusions.

**Table 12: Project Outcome Rated on Achievement of Project Objectives**

<i>Objectives</i>	<i>Overall Relevance</i>	<i>Efficacy</i>	<i>Efficiency</i>	<i>OUTCOME</i>
<ul style="list-style-type: none"> <li>(a) Deliver sustained health and hygiene benefits to the rural population through improved water supply and sanitation</li> </ul>	High	Substantial		
<ul style="list-style-type: none"> <li>(b) Improve rural incomes by assisting women to identify ways to earn income from time saved in carrying water</li> </ul>	High	Substantial		
<ul style="list-style-type: none"> <li>(c) Strengthen governmental and non-governmental capabilities to undertake and sustain these efforts</li> </ul>	High	Substantial		
<b>Overall Outcome rating</b>	<b>High</b>	<b>Substantial</b>	<b>High</b>	<b>Satisfactory</b>

## Risks to Development Outcomes

79. **Overall risks to development outcomes are rated as substantial.** The longer term risks to the continued viability of the FB are substantial. The FB is still not autonomous and its future operations in the absence of the Bank would be heavily constrained by the sectoral interests of government agencies until its board governance is reformed. The independence from central government of the FB in its rural operations has proved to be an advantage but is also a two-edged sword. The adverse side of this independence is that FB activities under the project were divorced from district and village development committees and were implemented with no reference to regional or district planning. The risk under these circumstances is that RWSS schemes have no ownership outside the local communities supported by the FB. Given that the FB's association with these communities is temporary, typically lasting 2-3 years, these communities become orphans with no formal supporting links to the local administration. They would thus find it difficult to access funding needed for emergency repairs, should the need arise. This risk has been partially mitigated by actions to implant FB schemes

within district development plans, but this is an imposed approach that would be better achieved through voluntary negotiation.<sup>55</sup>

80. Within the communities the risks to community development effectiveness are rated modest. Principal risks are environmental and social. Environmental risks include damage to scheme in-take works and transmission pipelines from landslides because these may exceed the communities' ability to pay for repairs, in which circumstance they would be reliant on external assistance from local government or donor organizations (Box 3.) There is also a modest risk from unsafe water supplies as too little attention has been given to systematically monitoring the potability of the supply source.

**Box 3: Natural hazards pose maintenance problems in some areas**

**Dhikur Phari Village, Kaski District, Western region**

This scheme was built 1997-99 and has 11 tap stands serving 118 households. Before the project there were 11 existing tap stands in the village funded by other agencies. In June and July there has been water shortages and this has been mainly the result of landslides in three places broke the water supply pipeline. It took Rp12,000 to repair plus free labor from the villagers. Water supply is also short during April-May-June and supply is limited to four hours per day, half in the morning and half in the evening. Each household has an individual connection to the tap stand and each is allowed a 10-15 minute turn depending on the size of the family. Each household pays Rp10 per month. The O&M account initially has Rp19,000 and it has now increased to Rp32,000. Community members are allowed to take micro-credit from this account at 2.5% interest per month. However, the committee is concerned that more landslides could wipe out their savings and they are worried about having sufficient funds in the future.

*Source:* IEG interview December 10, 2007.

81. The social risks are two-fold. First that the higher castes and elites dominate the management of RWSS systems and that the weaker elements of society become excluded. In such circumstances this would have a strong adverse impact on environmental sanitation that would undermine the gains under the project. The second risk is that training to foster women's income-generating activities remains incomplete. Both these risks were highlighted in the ICR and the follow-on project has introduced specific remedies to mitigate these problems for new schemes. However, additional community support is required in the completed schemes and, as yet, no provision has been made to address these problems.<sup>56</sup>

## Bank Performance

82. **Quality at entry is rated as highly satisfactory.** The project was thoroughly grounded in a series of sector studies covering the period 1986-1993 that were sensitive

55. The World Bank's Resident Mission in Nepal commented June 4, 2008: "The Risks to Development Outcomes is rated as significant and this assessment was valid for RWSSP I, despite the fact the WSUGs are registered in the District by the Water Resources Committee under the Water Resources Act. Such registration is a must to receive funding from the Board. These issues are being looked into under the Second Project. On January 10, 2008, the Government tabled a bill to Parliament to make the Board a regular sector institution. As the then Parliament was prorogued, the bill is awaiting enactment from the newly elected Parliament."

56. The World Bank's Resident Mission in Nepal commented May 31, 2008: "Recently, under the second project, the Board has initiated a pilot business development program that would then help women's groups to link with commercial banks too. Once this effort is successfully piloted, it will be scaled up to both new as well as old schemes."

to the institutional shortcomings of Nepal's WSS sector agencies and the evolving decentralization policy of HMGN. Most importantly the array of risks both real and potential were correctly identified and mitigated. The idea of a small and quasi-independent executing agency with a very clearly defined but limited role was bold and risky and it was not well-received by the HMGN because of strong vested interests. The Bank, however, was persistent and was able to sustain its case because it very carefully planned pre-appraisal activities. The JAKPAS pilot project clearly demonstrated the practicality of the concept by a process of trial and error and refinement of design and management criteria. Thus by project approval, viable and well-tested institutional arrangements, social, financial, environmental and engineering were established.

83. **Supervision is rated as satisfactory.** Resources were sufficient to ensure adequate supervision. Notwithstanding the difficulties posed by the Maoist insurgency, field visits and reports on implementation progress and problems were very thorough. Problems were highlighted and the FB was assisted to improve on the basis of experience. The Bank was only modestly successful against an intransigent government in mitigating some of the issues (e.g. increased autonomy over salaries and conditions of service) that adversely affected FB performance. The Bank could have provided more assistance to ensure application criteria for greater social diversity in the selection of SOs. But, given that the main objective of the project was to mainstream the FB implementation model, this is not a serious flaw, particularly as it was recognized and amended in the follow-on project. There should have been, however, more attention to sound M&E in the early stages of the project and this was remedied after mid-term review. **Overall Bank performance is rated satisfactory.**

### **Borrower Performance**

84. **Government performance during preparation is rated moderately satisfactory.** The FB approach was approved against strong initial opposition. Counterpart funding to the FB was more than planned, and significantly more for the institutional development and studies component. However, the HMGN was unwilling to reform the governance of the FB and give it financial autonomy, thus lowering its effectiveness. On policy, the HMGN paid lip service to the demand-driven approach as this was not adopted in its own projects. Leadership and coordination on sector policy was weak which, given the many different approaches adopted by the many international development partners and local NGOs, and led to a lack of coherence. This was not helped by the poor national M&E arrangements for the sector, the focus on infrastructure provision and low interest in maximizing social and health impacts.

85. **Agency performance is rated as satisfactory.** The FB evolved during the project to become a very effective organization and the only HMGN-sponsored one promoting demand-driven development. Early implementation problems were mostly the result of the FB's initial governance set-up that left majority power in the hands of HMGN-appointed Board members. Many of these members were antithetical to the objectives of the FB that threatened their interests and this constrained FB's policies on recruitment

and benefits and led to high staff turnover.<sup>57</sup> In turn, this slowed FB's learning process and capacity-building. Latterly these improved as the FB improved its conditions of service, organization, management information and reporting requirements. Inadequate internal capacity for M&E remained a problem, however, and this has been rectified under the follow-on project. **Overall Borrower performance is rated moderately satisfactory.**

## 5. Findings and Lessons

86. Access to rural water supply and sanitation has improved significantly since 1991 when the first reliable estimates of coverage became available.<sup>58</sup> National access to improved drinking water resources then stood at 67 percent. This increased to 75 percent by 1995. Thereafter eight independent surveys each showed improvements, albeit with some variation. Average national access in 2004 was estimated to be 89 percent based on the 2004 Living Standards Survey and the World Health Survey of 2003.<sup>59</sup> The incremental improvement of 14 percent is equivalent to about 3 million people receiving improved access to water. The FB's RWSS contributed about a sixth of the improved access – about half a million people – a major achievement.

### *The FB concept successfully challenged existing government practice used to provide RWSS in Nepal and provides a replicable model*

87. The strategy followed showed that a small organization can successfully implement a national demand-driven program to improve rural service provision. Specifically, confining itself to a facilitating role reduced its overhead costs and staffing levels while at the same time enhancing the role and skills of local NGOs in service delivery. Adoption of a comprehensive approach to RWSS that includes community-level institutions in service delivery and also addresses social concerns is more successful than a purely technical approach that provides only hardware. The focus on establishing community-level institutions, building their capacity and putting them in the lead role in the planning, design and construction of community infrastructure worked well and reduced service provision costs significantly below those of government agencies. Quality control was enhanced through participatory M&E of SOs by communities in response to FB's questions.

88. There remains the question of how to fully integrate FB-financed and community-owned RWSS in district and regional planning. This is a much discussed issue in Nepal and regionally and several of the Bank's development partners questioned the Bank's approach for RWSS that acted independently of local and central government.<sup>60</sup>

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57. High staff turnover may also have been the result of the deteriorating security situation and the excellent reputation of the FB that provided a launching pad for better-paid employment elsewhere.

58. HMG Ministry of Health, 1991. Survey conducted by the Family Planning, Maternal and Child Health Division.

59. WHO/UNICEF, 2006. Joint Monitoring Programme for Water Supply and Sanitation. Coverage Estimates – Improved Drinking Water. Updated in June 2006.

60. ADB, 2007. Serving the Rural Poor: A Review of Civil Society-Led Initiatives in Rural Water and sanitation. Discussion paper. 37 pp. July 2007.

Communities also raised this in terms of mitigating the impact of environmental risks that were beyond their resources to manage. There is also the issue of reaching the neediest; the FB's schemes tended to be near roads, not in distant or poorly accessible villages. The Bank's Second RWSS project is responding to these challenges by adding the FB's schemes (sometimes retroactively) to the District Development Plans and ensuring a greater focus on remote and underserved areas. In contrast, the ADB/DWSS Fourth RWSS actively developed District Profiles of RWSS to aid strategic planning and intervention to the neediest areas – although there is no formal mechanism to update these at present.

89. The FB project provided sustainable service delivery that is fully owned by the communities and is not reliant on government for routine operation and maintenance. A precondition is that communities must be unanimous in their support for RWSS and make an upfront cash deposit. Ownership is enhanced when the community has charge of procurement, the development is an equal partnership among the lead agency, NGOs and the community, and the community makes its own arrangements and employs its own staff for operation and maintenance in a transparent manner. Under these conditions communities are prepared to pay a substantial portion of the capital costs of RWSS – more than a third in cash and kind – and make regular monthly payments to the village water users' committee for system operation and maintenance.

90. The project helped women by significantly reducing the very onerous burden of carrying water over long distances and saved more than three hours of labor per household per day. The empowerment of rural women with the objective of enhancing their income generating potential and status in communities was substantially achieved through hygiene, literacy and skills training. With these enhanced skills women participated in village water committees, filling the bulk of treasurer posts, and as village health workers. The more enterprising engaged in small-scale agriculture and husbandry utilizing micro-credit provided by the WTSS group seed fund and members' savings. In aggregate these skills and activities increased family welfare and its health status.

***Revealed preferences in project schemes indicate satisfaction with improved RWSS service delivery and a demand for other investments***

91. Project communities' revealed preferences indicate satisfaction with the RWSS supplied by the project (Figure 2).<sup>61</sup> When water is in short supply this is the highest priority but it was not that frequent (36 percent). However, in the majority of project communities that had continuous water supplies provided by the Board they were satisfied with the service provided. Consequently the most frequent requests in these villages were for roads that would connect them to hospitals and health centers and markets, more training of women and upgrading of village schools – generally by adding

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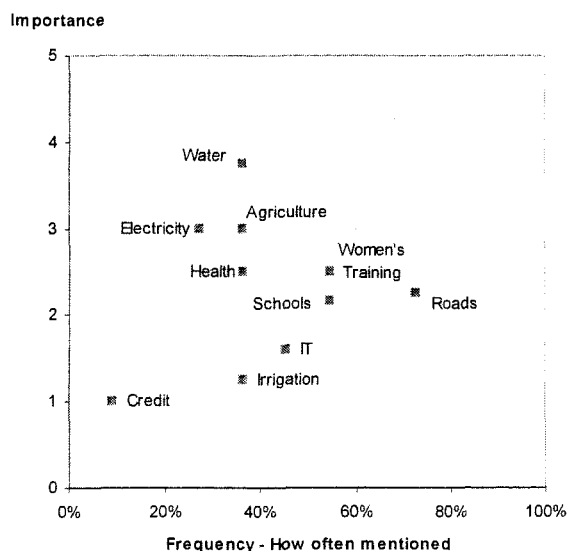
61. The data presented here are derived from focus group interviews conducted by IEG December 3-10, 2007. Although 17 villages were visited, only the findings from villages with more than 10 individuals in the group, including at least 4 women are reported. At the end of each discussion participants were asked to discuss and list their five top preferences for future assistance, Results for all the interviews were then summarized and fell into 11 categories. The frequency of responses was summed for each category and expressed as a percent of the total (11). Each answer was scored for priority, first counted as 5; last as 1, and the average priority for each category was determined.

two more grades above the primary level and additional teachers. Slightly under half the villages requested better access to communications technology for educational and marketing reasons.

92. While the RWSS project managed to successfully build results-orientated rural development, the arrangements for monitoring and evaluation need strengthening to measure health and social impacts. In particular:

- a standardized approach that would allow longitudinal comparison of project outcomes and impacts across the Batches.
- an unbiased estimate of project impact on health given that health and hygiene improvements were among the justification for the project.
- methods and application arrangements to track and evaluate changes in women's welfare and incomes resulting from project interventions.

**Figure 2: Revealed preferences**



Source: IEG field survey 2008.

The project experience confirms six IEG lessons:

- Comprehensive approaches to development in which provision of small-scale infrastructure is accompanied by capacity-building to develop local institutions and ownership are more successful than infrastructure alone.
- When existing institutions fail and are unwilling to reform, careful design of new institutions can be a viable solution. The success of this approach is heavily conditioned on in-depth institutional analysis, close attention to the governance structure and the willingness of the Bank to stand firm against vested interests for as long as it takes to be accepted. Even so, government does have a role and its interest must be internalized in the governance and regulatory structures of new organizations: partnership is better than conflict.
- Small pilot projects to test new institutional approaches can be very successful providing they adopt a learning approach and give thoughtful attention to feedback from continuous monitoring to refine the development model.
- It is important to understand the incentive structures affecting adoption of new approaches to RWSS at the village level and that this will vary geographically and socially. Such understanding takes time to mature as communities and project sponsors internalize feedback to fine tune development models. Neither top-down blueprint nor rigorously time-tabled short-term approaches work successfully. The project experience demonstrates that small pilot projects unfettered by the expectations of existing institutions can work well, as does an incremental approach

that improves its relevance through sequenced feedback from well-designed monitoring and evaluation.

- Rural communities - even if poor and barely literate – can successfully implement, operate and maintain water supply and sanitation systems. This is conditioned on unanimous community agreement on what they want to achieve and their willingness to make upfront financial commitments. It also requires well-designed and sequenced support packages that enable social inclusion, enhance the social and economic role of women, and emphasize self-reliance. Local NGOs can be successful interlocutors after appropriate orientation and skills enhancement.
- If improved health outcomes are a project objective then careful design of M&E to link project interventions to improvements in health incomes is needed. This needs to be done from the outset of the project.





## Annex A. Basic Data Sheet

### NEPAL: RURAL WATER SUPPLY AND SANITATION PROJECT (CREDIT 2912-NEP)

**Data** (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	21.25	19.17	90
Credit amount	18.28	16.10	88
Cofinancing	-	2.624	-
Cancellation	-	2.10	-

### Cumulative Estimated and Actual Disbursements

	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>	<i>FY04</i>
Appraisal estimate (US\$M)	0.9	3.5	7.5	13.0	17.0	18.28	18.28	18.23
Actual (US\$M)	0	1.4	3.5	5.5	9.6	11.8	14.7	15.4
Actual as % of appraisal	-	40	46	42	56	65	80	85

Date of final disbursement: 05/26/2004

### Project Dates

	<i>Original</i>	<i>Actual</i>
Project concept note	-	04/24/1991
Appraisal	-	11/06/1995
Board approval	-	09/03/1996
Effectiveness	04/23/1997	06/17/1997
Mid-term review	06/30/1999	11/15/1999
Closing date	03/31/2002	12/31/2003

**Staff Inputs** (staff weeks)

<i>Stage of project cycle</i>	<i>Actual/Latest Estimate</i>	
	<i>No. Staff weeks</i>	<i>US\$ ('000)</i>
Identification/Preparation	69.1	76,500.00
Appraisal/Negotiation	21.7	38,100.00
Supervision	149.58	736,071.75
ICR	24.42	59,930.86
Total	264.80	910,602.61

**Mission Data**

<i>Stage of Project Cycle</i>	<i>No. of Persons and Specialty</i>			<i>Performance Rating</i>	
	<i>Month/Year</i>	<i>Count</i>	<i>Specialty</i>	<i>Implemen tation Progress</i>	<i>Develop ment Objective</i>
<b>Identification/Preparation</b>	11/19/1993	4	TASK MANAGER/FINANCIAL ANALYST (1); ECONOMIST (1); COMM DEVELOPMENT (1); ENGINEER (1); CHIEF TECHNICAL ADVISOR (1); CONSULTANT (1)		
	03/15/1994	4	TASK MANAGER/FINANCIAL ANALYST (1); ECONOMIST (1); COMM DEVELOPMENT (1); ENGINEER (1)		
	09/24/1994	4	TASK MANAGER/FINANCIAL ANALYST (1); COMM DEVELOPMENT (1); CONSULTANT (1); ENGG (1)		
	03/22/1995	3	TASK MANAGER/FINANCIAL ANALYST (1); ECONOMIST (1); ENGINEER (1)		
<b>Appraisal/Negotiation</b>	11/06/1995	8	TASK MANAGER/FINANCIAL ANALYST (1); ECONOMIST (2); ENGINEER (3); COMM DEVELOPMENT (1); CONSULTANT - ANTHROPOLOGIST (1);		
	06/24/1996		SR. FINANCIAL ANALYST/TASK MANAGER (1); SANITATION/ENV. ENGINEER (2); SR. COUNSEL (1); SR. DISBURSEMENT OFFICER (1)		
<b>Supervision</b>	11/29/1996	4	INSTITUTIONAL (1); ENGINEER (1); COMMUNITY DEVELOPMENT (1); MISSION LEADER (1)	U	U
	02/23/1997	3	INSTITUTIONAL (1); ENGINEER/TEAM LEADER (1); COMMUNITY DEVELOPMENT (1)	S	S
	06/27/1997	4	ENGINEER (1); PROCUREMENT SPECIALIST (1); SOCIAL ANTHROPOLOGIST (1); NGO SPECIALIST (1)	S	S
	12/12/1997	5	ENGINEER (1); INST/COMM DEV SPEC. (1); PROCUREMENT SPECIALIST (1); STAFF ASSISTANT (1); SHORT-TERM CONSULTANT (1)	S	S
	06/15/1998	4	ENGINEER (2); INST/COMM DEV SPEC. (1); TEAM ASSISTANT (1)	S	S
	02/18/1999	6	ENGINEER/TEAM LEADER (1); OMM. DEV. SPECIALIST (1); ENGINEER (1); PROCUREMENT SPECIALIST (1); FINAN. MGMT SPECIALIST (1); NGO SPECIALIST (1)	U	S

Stage of Project Cycle		No. of Persons and Specialty		Performance Rating		
Month/Year	Count	Specialty	Implemen tation Progress	Develop ment Objective		
07/09/1999	7	TASK LEADER/ENGINEER (1); NGO SPECIALIST (1); INST/COMM DEV SPEC. (1); FINANCIAL MGMT. SPEC. (1); PROCUREMENT OFFICER (1); TM LEADER/SR. ECONOMIST (1); TEAM ASSISTANT (1)	U	S		
12/03/1999	8	TASK LEADER/ENGG. (1); FINANCIAL ANALYST/INST. EXPERT (1); ECONOMIST/CONSULTANT (1); INST/COMM DEV SPEC (1); SOCIAL DEV SPEC (1); PROCUREMENT OFFICER (1); FINANCIAL MGMT. SPEC. (1); HEALTH SPECIALIST (1); TEAM ASSISTANT (1)	S	U		
06/29/2000	8	TASK LEADER/ENGG. (1); ECONOMIST/TEAM LEADER (1); COMM DEV SPECIALIST (1); HEALTH SPECIALIST (1); FINANCIAL MGMT SPEC (1); CONSULTANT/PROCUREMENT (1); OPERATIONS ADVISOR (1); TEAM ASSISTANT (1)	S	S		
01/26/2001	7	TASK LEADER/ENGG. (1); OPERATIONS ADVISOR (1); HEALTH SPECIALIST (1); SOCIAL DEV SPEC (1); FINANCIAL MGMT SPEC (1); PROCUREMENT OFFICER (1); PROGRAM ASSISTANT (1)	S	S		
03/22/2002	6	TASK LEADER/ENGG. (1); HEALTH SPECIALIST (1); FINANCIAL MGMT. SPEC. (1); YOUNG PROFESSIONAL (1); PROGRAM ASSISTANT (1); W&S ECONOMIST (1)	S	S		
05/02/2003	8	TASK LEADER/ENGG. (1); SR. HEALTH SPEC (1); SR. FINANCIAL MGMT SPEC (1); DISBURSEMENT ASST. (1); PROGRAM ASST. (2); MIS CONSULTANT (1); PROCUREMENT CONSULTANT (1)	S	S		
09/05/2003	7	TASK LEADER (1); SR. HEALTH & POP. SPE. (1); WATER & SANITATION ECO (1); SR. FINC'L MGMT SPE. (1); CONSULTANT, PROCUREMENT (1); DISBURSEMENT ASST. (1); PROGRAM ASSISTANT (1)	S	S		
12/26/2003	9	TASK LEADER/ENGG. (1); SR. HEALTH SPEC (1); SR. FINANCIAL MGMT SPE (1); SR. PROCUREMENT OFFICER (1); SR. URBAN SPEC/ICR TASK LEADER (1); FINANCIAL ANALYST (1); DISBURSEMENT ASST (1); PROGRAM ASST (1); CONSULTANT (1)	S	S		
ICR	12/26/2003	9	TASK LEADER/ENGG. (1); SR. HEALTH SPEC (1); SR. FINANCIAL MGMT SPE (1); SR. PROCUREMENT OFFICER (1); SR. URBAN SPEC/ICR TASK LEADER (1); FINANCIAL ANALYST (1); DISBURSEMENT ASST (1); PROGRAM ASST (1); CONSULTANT (1)	S	S	

**Other Project Data**

Borrower/Executing Agency:

**FOLLOW-ON OPERATIONS**

<i>Operation</i>	<i>Credit no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Second Rural water Supply and Sanitation Project	3911-NEP	250.0	June 2005

## Annex B. Lessons from the Pilot Project

The JAKPAS pilot project produced a series of lessons that reinforced the earlier conclusions and were used to design the Rural Water Supply and Sanitation Project:

- the FB needs administrative and financial autonomy to work outside HMGN agencies and experiment with different approaches to RWSS;
- to maximize its impact, the FB should be flexible and support a variety of institutional arrangements depending on local needs;
- district-based NGOs, localized NGOs and community based organizations are the most effective service providers;
- larger support agencies that may include the HMGN, private and NGO actors can take contractual responsibility for guiding smaller and more localized NGOs and provision of specialist skills to the FB;
- unanimous community agreement on willingness to implement RWSS, to provide a substantial up-front cash or kind contribution to capital investment, and to provide an up-front sinking fund for subsequent O&M of the scheme is prerequisite for sustainability;
- communities involved with a variety of development projects develop better management capacities and thus the multi-sectoral approach (e.g. health and education in addition to RWSS) used by most NGOs is an asset;
- women are keen to attend community meetings, and in many schemes women's demand for non-formal education classes was high. Educational activities can be a useful vehicle for organizing women and can help them develop skills which enable effective community management;
- groups formed around tapstands are a viable alternative to other ways of organizing women.

A major lesson from the implementation of the 110 pilot RWSS schemes (completed before Board approval) was that the initial time estimate of 12 to 18 months from scheme identification to commissioning had to be doubled. Doing so enabled better community capacity-building, increased supply of local materials, adequate allowances for seasonal harvest and weather constraints and more rigorous attention to criteria for selection, design and monitoring. Specifically, the project targeted communities where scheme construction would yield a cost/benefit ratio of at least 1.5 based upon household time savings on water collection. In addition some communities not meeting the C/B criterion were included if the project was the only way of relieving water shortages or ensuring a supply of unpolluted water

Similarly, the JAKPAS pilot revealed that the capacity of local NGO support organizations to meet the demanding criteria and work involved for the RWSS program of about 900 communities needed nurturing. It was believed this would be best achieved through a slow expansion of the project and limiting the initial award of contacts to a maximum of four schemes for each qualified NGO. The project target was split into four

batches and it was expected that about 250 NGOs could be inducted to implement the project at community level. The first batch was targeted at 107 communities involving 25 NGOs and allowed for a 13 percent drop-out rate between identification and implementation of RWSS. Subsequent batches increased by 100 schemes.

## Annex C. M&E indicators to estimate sustainability

**Table B1: Indicators of Fund Board Scheme Sustainability**

<i>Description</i>	<i>Indicator</i>
<b>Institutional</b>	Status of: Water Supply User Committee Village Maintenance Worker Availability of Treasurer Mother and Child Tapstand Group Women's Technical Support Services Coordination and Linkage with Local Authorities (added later)
<b>Social/Environment</b>	Community Participation Hygiene and sanitation Environment
<b>Financial</b>	O&M Fund Regular O&M Collection
<b>Technical</b>	Source Yield Condition and Function of Structures Functioning Taps

*Source:* Fund Board, 2007.





## Annex D. Ongoing External Investment in RWSS

Table C1: Ongoing External Support for RWSS in Nepal											
Agency	Program	Total Budget (US\$ m)	Budget t 2007	Budget t 2008	Funding mechanism to district level	Key partners	Start year	End year	Core focus	Sectors	Brief description
ADB	Community Based Water Supply and Sanitation Project	23.9	1.4	3.0	Treasury to DDF	Dpt of Water Supply Sewerage, Min of Physical Planning and Works, District Development Committee, Min of Local Development	2004	2010	Empowerment, Common assets, Sectoral technical advice	Water Supply and Sanitation	Community-based, demand-driven approach to expand improved water supply and sanitation to underserved populations and improve health and hygiene practices. (i) Rural Component (community mobilization and capacity building, construction of community water supply and sanitation facilities, health and hygiene program, and gender, caste and ethnic minority program), (ii) institutional Strengthening Component (strengthening DDC capacity to provide water supply and sanitation and supporting the decentralization policy and DWSS).
DFID Nepal	Strategic Partnership Agreement with Helvetas Nepal	10.80	4.00	3.40	DFID -- Helvetas Nepal	Helvetas, SDC	2006	2009	Common assets, inclusion/empowerment	Rural infrastructure, Water and sanitation	Improve livelihoods through strengthened service systems and equitable access to resources and opportunities, for the poor and excluded (SLOW)

Agency	Program	Total Budget (US\$ m)	Budget t 2007	Budget t 2008	Funding mechanism to district level	Key partners	Start year	End year	Core focus	Sectors	Brief description
DFID Nepal	Community support Programme	23.60	6.80	7.60	DFID-CBOs, LINGOs	DDC, I/NGO, NGO, CBO, UG	2005	2008	Sectoral techn. Advice, private assets, common assets	Infrastructure, Water and sanitation, Peace support and Transition Education	Improved access to basic services for the conflict-affected people particularly poor and excluded
DFID Nepal	Gurkha Welfare Trust: Rural Water Supply and Sanitation Programme	20.00	2.00	1.8	DFID – Gurkha Welfare Trust,	Water Users Committee, DDC, VDC	1999	2008	Common assets	Water and Sanitation	Improved hygiene and sanitation practices and food habit
DFID Nepal	Mid and Far West Rural Water Supply and Sanitation Programme	8.00	1.60	0.20	DFID – NEWAH	Water Users Committee, DDC, VDC	1999	2008	Common assets	Water and Sanitation	Selected communities effectively managing and using improved water and/or environmental sanitation and practicing key hygiene behavior
FIN	Rural Village Water Resources Management Project (RYWRMP)	15.34	1.56	1.56	MFA Fin to Consultancy Company in Nepal; Finnish Embassy signs MoUs with GoN	Min of Local Development/ DOLIDAR, DDR, VDC, NGOs	August 2006	2010	Sectoral techn. Advice, education/empowerment	Drinking water, sanitation, micro-hydro, irrigation	Improved quality of life, environmental conditions and increased opportunities to improve rural livelihoods in the Mid-and Far West regions through rational, equitable and sustainable use of water at the village level.
UNICEF	Decentralized Action for Children and Women (DACAW)	36.9	8.3	9.5	District Development Fund	Line Min (Health, Educ, Women Dev, WatSan), MLJ, DDC, I/NGO	2007	2010	Empowerment/education, sectoral techn. Advice, private assets	Health, Nutrition, Education, Water and Sanitation	Integrated program to realize rights of children and women through bottom-up approaches. Build the capacity of families, communities and local bodies to plan, implement and monitor

Agency	Program	Total Budget (US\$ m)	Budget 1 2007	Budget 1 2008	Funding mechanism to district level	Key partners	Start year	End year	Core focus	Sectors	Brief description
											responsive services: community action process, responsive service delivery, and decentralized governance.
USAID	Assistance to returning IDPs and conflict-affected communities in mid and far west Nepal	1.00	1.00		Grant to implementing partner (INGO/IO)	SC/US/NGOs	2007	2008	Common/private assets	Food security and livelihood, water and sanitation	Agriculture and Food Security, Protection, Relief commodities, Water, Sanitation and Hygiene
USAID	Point of Use Water and Handwashing	0.45	0.10	0.10	Grant to implementing partner (INGO/IO)	UNICEF	Oct.20 04	Dec.20 07	Education/empowerment/sectoral technical advice	Water and Sanitation	Community-based behavior change interventions for water and sanitation
WB	Rural Water Supply and Sanitation II	41.5 (IDA 25.0)	9.30	9.00	Fund Board – Users' Group Accounts	SOs	2005	2009	Common assets, Private assets	Water and Sanitation	The primary objectives of the Project are to (i) improve water supply and sanitation sector institutional performance and mainstream the demand driven community participation approach in the Government's system and (ii) support communities to form inclusive local water supply and sanitation user groups that can plan, implement and operate drinking water and sanitation infrastructure that delivers sustainable health hygiene and productivity benefits to rural households.



## Annex E. The current performance of DWSS

**Table E1: The current performance of DWSS: excerpts from the ADB's Project Completion Report 26063 on the Fourth Rural water Supply and Sanitation Project (Loan 1464-NEP). June 2004.**

**Social Mobilization.** "While the project's design was generally based on this approach to community participation, the design provided only a limited role for communities in actually planning and implementing projects. DWSS played a more dominant role in key project activities, such as subproject design and services, civil works and supplied procurement (para 7.)" ... "While DWSS increasingly moves towards a community-based approach, its capacity requires further orientation and strengthening, to play a more proactive but facilitating role in community development (para 35.)"

**Capacity Building.** "Training activities were significantly reduced after completion. DWSS could not sustain such training activities as part of its regular operation, partly due to inadequate budget resources (para 17.)"

**DWSS Performance.** "Frequent transfer of district engineer and overseers and delays in appointing engineers and social sociologists in Regional Project Management Offices impeded construction, monitoring and community training activities (para 26.)"

**Community Education and Awareness Raising (CEAP).** "CEAP targets were generally achieved in terms of WUC and other local community member coverage...but CEAP effectiveness was mixed." The ADB Mission observed limited improvements in hygiene and sanitation conditions in 9 of 30 subprojects they visited. "The CEAP's weak impact seems to be the result of the general lack of emphasis on the project's software aspects, a tendency to rush construction activities without adequate social preparation, and the inadequate number of sociologists and social facilitators in DWSS central and field offices (para 12.)"

**Women's Roles.** "Although the project was intended to benefit mostly the women in local communities, the design did not provide adequate measures to promote participation of women in subproject design and implementation. WUCs were constituted with 2 women members (para 9.)"

**Sanitation.** "Conceptually the project was an integrated RWSS development project. However, the project's sanitation development component was limited to institutional latrine construction in local schools and community education on hygiene and sanitation, assuming that these would encourage private HH to build their own latrines (para 8.)"

**Scheme Selection.** "...started with dissemination to communities through the District Development Councils (DDCs) and Village development Committees (VDCs), followed by a formal request by the communities to the DDCS, through the VDCs. Preliminary surveys of proposed subproject sites [by DWSS staff] and subproject identification reports were consolidated by the RMPOs and the central Project Management Office and submitted to the National Planning Commission for inclusion the national program (para 27.)"

**Procurement.** "While the CPMO undertook most of the procurement actions, RPMOs undertook procurement of small packages of urgently need pipe fittings to save time. A substantial quantity of surplus pipes and fittings existed at project completion. The surplus was estimated at about \$1.25 million(20% of total procurement of these supplies) and apparently due to DWSS overestimation (para 30.)"

**M&E.** "...subproject activities monitoring was weak, particularly with respect to establishing baseline data for benefit monitoring and evaluation and adequate front-end social preparations and community training (para 35.)"

**O&M.** "22 schemes [of 30 schemes inspected] were generating adequate revenues for meeting O&M costs (para 41.)" "Each benefiting HH were requested to pay Rp1,000 per tapstand as a contribution to O&M funds that were deposited in a fixed bank account by the WUCs. O&M costs were to be financed by the interest savings and regular water charges (para 41.)"



## Annex F. List of People Consulted in Nepal

Name	Position	Agency
Mr. Shankar Koirala Mr. Shital Babu Regmi	Secretary Secretary WECS	Ministry of Water Resources and Energy
Mr. Rabindra Man Singh	Joint Secretary (Energy)	
Mr. Madhusudan Poudel Mr. Anil Kumer Pokharel Mr. Basu Dev Lohani Mr. Prakash Poudel	Director General Deputy Director General Sr. Divisional Engineer Regional Director – Western Region	Department of Irrigation " " "
Mr. Binay Kumar Singh	Project Manager Eastern Region	"
Mr. Shoba Kant Labh	Sr. Divisional Engineer	"
Mr. Gopal Prasad Sigdel Eng. Pahal Sing K.C. Eng. Pitambar Belbose Mr. Basanta Mohan Sharma	Groundwater Project Surface Water Project Irrigation Engineer	" " Bhairabwa-Lumbini " "
Mr. Nirmal Hari Rajbhandai Dr. Keshav Sharma	Deputy Director General (Meteorology) Deputy Director General (Hydrology)	Department of Hydrology and Meteorology "
Mr. Tek Bahadur Thapa	Secretary	Ministry of Agriculture and Cooperatives
Mr. Suresh Verma	Joint Secretary (Planning Division)	"
Dr. Dala Ram Pradhan	Joint Secretary (Agribusiness and Statistics)	"
Dr. Bharat Upadhyaya Mr. Kamal Gautam Mr. Mandip Rai	Officiating Director General Sr. Agriculture Economist Agriculture Economist	" " "
Mr. Uma Kant Jha	Secretary (Physical Planning)	Ministry of Physical Planning & Works
Mr. Raj Babu Shrestha Mr. Arjun Rayamajhi	Executive Director Executive Director	Poverty Alleviation Fund Rural water Supply and Sanitation Fund Board
Mr. Harischandra Neupane Mr. Bimal Chandra Sharma	Portfolio Manager Chief, M&E Division	" "
Ms Rauni Haapamaki Mr. Lawrence Robertson	Counsellor (Development) Chief-Children, Women and Environment Unit	Embassy of Finland UNICEF Nepal
Dr. Chandra Shrestha Mr. Peter Neil	Deputy Infrastructure Advisor Conflict Sensitive Development Advisor/Livelihoods	DFID Nepal DFID Nepal
Dr. Dhruva R. Pant	Head	International Water Management Institute, Nepal

