ADB

Completion Report

Project Numbers: 31501-013, 31501-023 and 31501-033
Loan Numbers: 1993, 2275, 2276, 2757, and 2758
September 2016

Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – Sri Lanka rupee(s) (SLRe/SLRs)

		At Appraisal	At Project Completion
		18 December 2002	31 December 2014
SLRe1.00	=	$0.010	$0.008
$1.00	=	SLRs96.25	SLRs131.25

ABBREVIATIONS

ADB	–	Asian Development Bank
CBO	–	community-based organization
CKD	–	chronic kidney decease
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
GAP	–	gender action plan
km	–	kilometer
m^3	–	cubic meter
MWSD	–	Ministry of Water Supply and Drainage
NGO	–	nongovernment organization
NRW	–	nonrevenue water
NWSDB	–	National Water Supply and Drainage Board
O&M	–	operation and maintenance
PCR	–	project completion report
PIU	–	project implementation unit
PMU	–	project management unit
PSIU	–	***pradeshiya sabha*** implementation unit
QPR	–	quarterly progress report
RRP	–	report and recommendation of the President
RSC	–	regional support center
RWSS	–	rural water supply and sanitation
SLRM	–	Sri Lanka Resident Mission
TA	–	technical assistance
TSU	–	technical support unit
uPVC	–	unplasticized polyvinyl chloride
WSS	–	water supply and sanitation

GLOSSARY

bund	–	a dam
grama niladhari	–	village level government officer
pradeshiya sabha	–	the smallest local government unit
samurdhi	–	government subsidy
tank	–	a reservoir or lake

NOTE

In this report, "$" refers to US dollars

Vice-President	W. Zhang, Operations 1
Director General	Hun Kim, Director General, South Asia Department (SARD)
Director	Sri Widowati, Sri Lanka Resident Mission (SLRM), SARD
Team leader	N. Sinclair, Associate Project Officer, SLRM
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CONTENTS

BASIC DATA

A. Loan Identification

1.	Country	Sri Lanka
2.	Loan Numbers	1993, 2275, 2276, 2757, and 2758
3.	Project Title	Secondary Towns and Rural Community-Based Water Supply and Sanitation Project
4.	Borrower	Government of Sri Lanka
5.	Executing Agency	Ministry of City Planning and Water Supply
6.	Amount of Loans	L1993: SDR45,689,000 L2275: $13,500,000 L2276: SDR31,481,000 L2757: $4,300,000 L2758: SDR8,389,000
7.	Project Completion Report Number	SRI 1603

B. Loan Data

1.	Appraisal	
	– Date Started	L1993: 4 September 2002 L2275 L2276: 28 August 2006 L2757 L2758: 23 November 2010
	– Date Completed	L1993: 13 September 2002 L2275 L2276: 5 September 2006 L2757 L2758: 28 November 2010
2.	Loan Negotiations	
	– Date Started	L1993: 28 October 2002 L2275 L2276: 11 October 2006 L2757 L2758: 5 April 2011
	– Date Completed	L1993: 30 October 2002 L2275 L2276: 12 October 2006 L2757 L2758: 6 April 2011
3.	Date of Board Approval	L1993: 16 January 2003 L2275 L2276: 29 November 2006 L2757 L2758: 8 June 2011
4.	Date of Loan Agreement	L1993: 18 August 2003 L2275: 6 June 2007 L2276: 14 December 2006 L2757 L2758: 22 July 2011
5.	Date of Loan Effectiveness	
	– In Loan Agreement	L1993: 21 November 2003 L2275: 4 September 2007 L2276: 14 March 2007 L2757 L2758: 20 October 2011
	– Actual	L1993: 21 November 2003 L2275: 28 August 2007 L2276: 10 April 2007 L2757 L2758: 6 December 2011
	– Number of Extensions	L1993: 0

		L2275 L2276: 0 L2757 L2758: 0
6.	Closing Date	
	– In Loan Agreement	L1993:30 September 2009 L2275 L2276: 30 June 2010 L2757 L2758: 30 June 2014
	– Actual	L1993: 30 September 2011 L2275: 31 March 2013 L2276: 30 June 2012 L2757 L2758: 31 December 2014
	– Number of Extensions	L1993: 2 L2275: 2 L2276: 1 L2757 L2758: 1
7.	Terms of Loan	
	– Interest Rate	L1993 L2276 L2758: 1% during grace period and 1.5% per annum thereafter to be paid semiannually. L2275: LIBOR-based, a commitment charge of 0.75% per year L2757: LIBOR-based, a commitment charge of 0.15% per year
	– Maturity	L1993 L2276 L2758: 32 years L2275 L2757: 25 years
	– Grace Period	L1993 L2276 L2758: 8 years L2275 L2757: 5 years
8.	Terms of Relending	
	– Interest Rate	L1993 L2275 L2276: For construction of water supply schemes: in ***pradeshiya sabhas*** (smallest local government unit), 85% as a grant and 15% as a loan for National Water Supply and Drainage Board; 50% as a grant and 50% as a loan for urban local authorities for both at the interest rate of 10% per annum. L2757 L2758: For construction of water supply schemes: in ***pradeshiya sabhas,*** 85% as a grant and 15% as a loan for National Water Supply and Drainage Board; at the interest rate of 6% per annum.
	– Maturity	L1993 L2275 L2276 L2757 L2758: 24 years
	– Grace Period	L1993: 8 years L2275 L2276 L2757 L2758: 5 years
	– Second-Step Borrower	L1993 L2275 L2276: A. National Water Supply and Drainage Board B. Urban local authorities L2757 L2758: National Water Supply and Drainage Board

9. Disbursements
   a. Dates

Loan 1993

Initial Disbursement	Final Disbursement	Time Interval
18 December 2003	14 February 2013	111.5 months
Effective Date	**Original Closing Date**	**Time Interval**
21 November 2003	30 September 2009	71.3 months

Loan 2275

Initial Disbursement	Final Disbursement	Time Interval
15 November 2007	28 August 2014	82.6 months
Effective Date	**Original Closing Date**	**Time Interval**
28 August 2007	30 June 2010	34.6 months

Loan 2276

Initial Disbursement	Final Disbursement	Time Interval
17 July 2007	18 January 2013	67.1 months
Effective Date	**Original Closing Date**	**Time Interval**
10 April 2007	30 June 2010	39.2 months

Loan 2757

Initial Disbursement	Final Disbursement	Time Interval
14 December 2011	3 February 2016	50.4 months
Effective Date	**Original Closing Date**	**Time Interval**
06 December 2011	30 June 2014	31.2 months

Loan 2758

Initial Disbursement	Final Disbursement	Time Interval
14 December 2011	1 February 2016	50.3 months
Effective Date	**Original Closing Date**	**Time Interval**
06 December 2011	30 June 2014	31.2 months

b. Amount

Loan 1993

Category or Subloan	Original Allocation		Last Revised Allocation		Amount Disbursed	
	SDR	$	SDR	$	SDR	$
1. Civil works	20,782,000	27,427,928	24,680,704	37,930,787	24,680,704	37,930,787
2. Equipment and materials	9,359,000	12,351,938	13,794,073	21,332,773	13,794,073	21,332,773
3. Vehicles	282,000	372,181	130,275	190,466	130,275	190,466
4. Consulting services	4,327,000	5,710,742	4,671,592	7,036,368	4,671,592	7,036,368
5. Project management office equipment	425,000	560,912	255,756	386,941	255,756	386,941
6. Training and fellowships	923,000	1,218,168	832,395	1,258,308	832,395	1,258,308
7. Surveys and public awareness	649,000	856,545	221,205	331,842	221,205	331,842
8. Interest charge	1,103,000	1,455,731	1,103,000	1,704,479	1,103,000	1,704,479
9. Unallocated	7,839,000	10,345,853				
Total	**45,689,000**	**60,300,000**	**45,689,000**	**70,171,964**	**45,689,000**	**70,171,964**

Loan 2275

Category or Subloan	Original Allocation	Last Revised Allocation	Amount Disbursed	Undisbursed Balance
	$	$	$	$
1. Works	5,747,000	7,530,000	7,481,747	48,253
2. Equipment and materials (net of tax)	4,609,000	4,409,000	4,133,950	275,050
3. Interest and Commitment charge	1,561,000	1,561,000	441,341	1,119,659
4. Unallocated	1,583,000			
Total	**13,500,000**	**13,500,000**	**12,057,038**	**1,442,962***

***** An undisbursed balance of $1,442,962.17 was cancelled at loan financial closure on 8 October 2014.

Loan 2276

Category or Subloan	Original Allocation		Last Revised Allocation		Amount Disbursed	
	SDR	$	SDR	$	SDR	$
1. Works	17,270,000	25,509,196	17,139,937	26,423,914	17,139,937	26,423,914
2. Equipment and materials (net of tax)	8,977,000	13,259,760	13,445,063	20,990,263	13,445,063	20,990,263
3. Interest charge	896,000	1,323,465	896,000	1,391,877	896,000	1,391,877
4. Unallocated	4,338,000	6,407,579				
Total	**31,481,000**	**46,500,000**	**31,481,000**	**48,806,054**	**31,481,000**	**48,806,054**

Loan 2757

Category or Subloan	Original Allocation	Last Revised Allocation	Amount Disbursed	Undisbursed Balance
	$	$	$	$
1. Equipment and materials (net of tax)	3,900,000	3,900,000	3,772,224	127,776
2. Interest and commitment charge	200,000	200,000	48,741	151,259
4. Unallocated	200,000	200,000		200,000
Total	**4,300,000**	**4,300,000**	**3,820,965**	**479,035***

***** An undisbursed balance of $479,035.12 was cancelled at loan financial closure on 11 February 2016.

Loan 2758

Category or Subloan	Original Allocation		Last Revised Allocation		Amount Disbursed		Undisbursed Balance	
	SDR	$	SDR	$	SDR	$	SDR	$
1. Civil works	6,749,000	10,699,928	6,749,000	10,155,861	5,698,636	8,691,370	1,050,364	1,464,491
2. Consulting services	505,000	800,632	505,870	781,110	505,849	781,080	21	30
3. Incremental	189,000	299,642	273,312	450,629	256,620	427,356	16,692	23,273
4. Interest charge	189,000	299,642	189,000	275,802	105,015	158,704	83,985	117,098
5. Unallocated	757,000	1,200,155	671,818	936,695			671,818	936,695
Total	**8,389,000**	**13,300,000**	**8,389,000**	**12,600,097**	**6,566,120**	**10,058,510**	**1,822,880**	**2,541,587***

***** An undisbursed balance of $2,541,587.09 was cancelled at loan financial closure on 11 February 2016.

10. Local Costs (Financed)[1]

Loan 1993

- Amount ($)	51.04 million
- Amount (SDR)	36.31 million
- Percent of local costs	98%
- Percent of total costs	39%

[1]local cost is only applicable to L1993.

A. Project Data

1. Project Cost ($ million)

Cost	Appraisal Estimate as at year 2002	2006	2011*	Actual
Foreign exchange cost	19.55	66.38	83.98	67.95
Local currency cost	66.79	108.79	175.50	187.40
Total	**86.34**	**175.17**	**259.48**	**255.35**

2. Financing Plan ($ million)

Cost	Appraisal Estimate as at Year 2002	2006	2011	Actual
Implementation costs				
Borrower Financed	23.01	41.51	118.50	107.34
ADB Financed	58.83	126.26	132.48	141.17
Other External Financing	3.04	3.04	3.04	3.10
Total	**84.88**	**170.81**	**254.02**	**251.61**
IDC Costs				
Borrower financed				
ADB financed	1.46	4.36	5.46	3.74
Other external financing				
Total	**86.34**	**175.17**	**259.48**	**255.35**

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

3. Cost Breakdown by Project Component ($ million)

Component	Appraisal Estimate as at year 2002	2006	2011	Actual
A. Base Cost				
1. Urban WSS[1]	41.58	100.89	151.20	200.91
2. Rural WSS	10.98	15.28	15.28	19.98
3. Institutional strengthening	3.25	3.25	3.25	2.09
4. Project management	7.73	9.92	12.80	20.62
Subtotal A	**63.54**	**129.34**	**182.53**	**243.61**
B. Contingencies	13.75	18.88	39.24	
C. Interest charges	1.46	4.36	5.46	3.74
D. Taxes and duties	7.61	22.59	32.26	8.00
Total	**86.35**	**175.16**	**259.48**	**255.35**

[1]Water supply and sanitation

4. Project Schedule

Item	Appraisal Estimate	Actual
Date of contract with consultants		
Package A: Project management and institutional strengthening	Q3 2003 – Q4 2008	Q2 2004 – Q2 2009
Package B: Design and construction supervision	Q3 2003 – Q4 2008	Q2 2004 – Q3 2013
Civil Works and Equipment Contracts		
Batticaloa UWSS		
Head works WTP and transmission	Q3 2004 – Q3 2009	Q3 2007 – Q2 2013
Date of award		16 May 2007
Completion of Tests and Commissioning		20 October 2011
Beginning of Start-Up		20 October 2011
Completion of Work		30 June 2013
Pipework and elevated towers	Q3 2004 – Q1 2009	Q1 2008 – Q2 2012
Unnichchai Tank	Q3 2004 – Q4 2008	Q1 2006 – Q4 2009
Distribution Part A	Q3 2004 – Q1 2009	Q3 2007 – Q3 2010
Distribution Part B	Q3 2004 – Q1 2009	Q3 2008 – Q4 2010
Drainage	Q3 2004 – Q4 2008	Q3 2007 – Q4 2008
Waste Water Treatment Plant	Q3 2004 – Q3 2007	Q1 2006 – Q3 2009
Hambantota UWSS		
Headworks WTP and transmission	Q2 2004 – Q4 2006	Q4 2006 – Q1 2013
Date of award		31 October 2006
Completion of tests and commissioning		23 December 2010
Beginning of start-up		23 December 2010
Completion of work		28 February 2013
Transmission main	Q2 2004 – Q4 2006	Q4 2005 – Q3 2008
Salinity barrier	Q2 2006 – Q4 2009	Q1 2010 – Q2 2013
Pipework and elevated towers	Q2 2004 – Q1 2009	Q2 2008 – Q4 2010
Muttur UWSS		
Head works WTP and transmission	Q2 2004 – Q3 2009	Q4 2011 – Q4 2014
Date of award		7 December 2011
Completion of Tests and Commissioning		28 November 2014
Beginning of Start-Up		28 November 2014
Completion of work		31 December 2014
Pipework and Elevated Towers	Q3 2004 – Q2 2009	Q4 2007 – Q2 2011
Drainage	Q3 2004 – Q3 2008	Q1 2008 – Q2 2009

Item	Appraisal Estimate	Actual
Polonnaruwa UWSS		
Head works WTP and transmission	Q2 2004 – Q4 2009	Q4 2008 – Q1 2013
Date of award		23 December 2008
Completion of Tests and Commissioning		31 January 2013
Beginning of Start-Up		31 January 2013
Completion of work		31 January 2013
Pipework and Elevated Towers	Q2 2004 – Q1 2009	Q1 2008 – Q1 2010
Anuradhapura RWSS – Batch 1	Q2 2004 – Q2 2007	Q2 2004 – Q3 2011
Anuradhapura RWSS – Batch 2	Q3 2006 – Q2 2009	Q2 2006 – Q3 2011
Polonnaruwa RWSS – Batch 1	Q2 2004 – Q2 2007	Q2 2004 – Q3 2011
Polonnaruwa RWSS – Batch 2	Q3 2006 – Q2 2009	Q3 2006 – Q3 2011
Batticaloa RWSS – Batch 1	Q2 2004 – Q2 2007	Q3 2005 – Q4 2009
Batticaloa RWSS – Batch 2	Q1 2006 – Q2 2007	Q4 2006 – Q4 2009
Institutional Strengthening	Q2 2005 – Q4 2008	Q3 2005 – Q4 2011

RWSS=rural water supply and sanitation, UWSS = Urban water supply and sanitation, WTP = Water treatment plant.

5. Project Performance Report Ratings

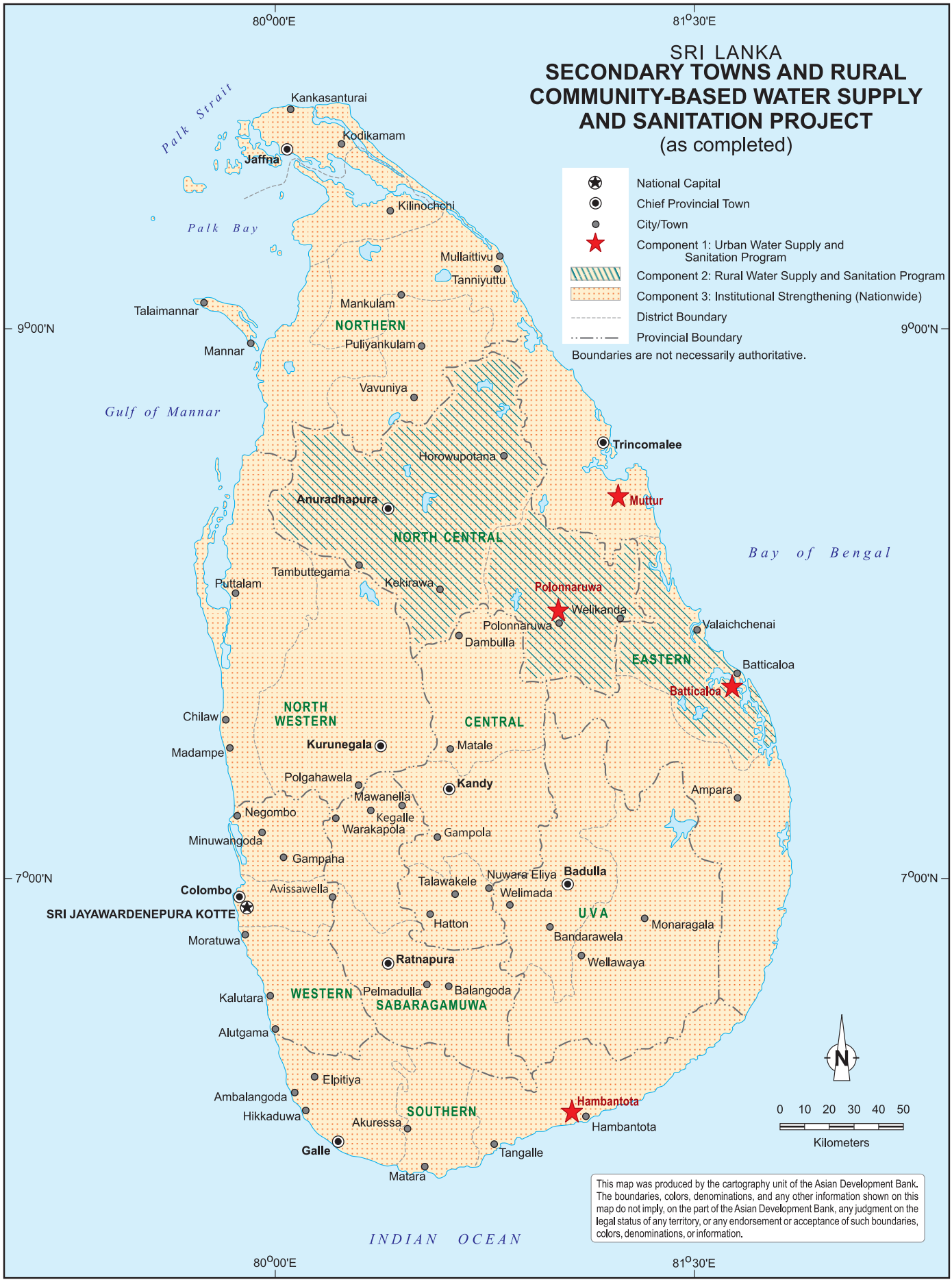
Implementation Period	Ratings	
	Development Objectives	Implementation Progress
Loan 1993		
From 31 January 2003 to 29 July 2003	Satisfactory	Satisfactory
From 30 July 2003 to 29 August 2003	Satisfactory	Unsatisfactory
From 30 August 2003 to 29 October 2010	Satisfactory	Satisfactory
From 30 October 2010 to 28 November 2010	Satisfactory	Unsatisfactory
From 29 November 2010 to 31 December 2010	Satisfactory	Satisfactory
From 1 January 2011 to 30 September 2011	On Track*	
Loan 2275		
From 29 November 2006 to 29 July 2010	Satisfactory	Satisfactory
From 30 July 2010 to 28 November 2010	Satisfactory	Unsatisfactory
From 29 November 2010 to 28 September 2010	Satisfactory	Satisfactory
From 29 September 2010 to 28 November 2010	Satisfactory	Unsatisfactory
From 29 November 2010 to 31 December 2010	Satisfactory	Satisfactory
From 1 January 2011 to 8 October 2014	On Track	
Loan 2276		
From 29 November 2006 to 29 July 2010	Satisfactory	Satisfactory
From 30 July 2010 to 28 November 2010	Satisfactory	Unsatisfactory
From 29 November 2010 to 31 December 2010	Satisfactory	Satisfactory
From 1 January 2011 to 26 February 2014	On Track	
Loan 2757		
From 6 December 2011 to 31 December 2014	On Track	
Loan 2758		
From 6 December 2011 to 31 December 2014	On Track	

* Asian Development Bank performance rating system changed on 1 January 2011

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members
PPTA 3587 Inception	28 May–1 June 2001	2	10	a, b
PPTA 3587 Review	19–23 November 2001	2	10	b, c
PPTA 3587 Final Review	21–25 January 2002	2	10	c, d
Fact-finding	30 May−20 June 2002	7	35	d, e, f, g, h, i, j
Appraisal	5−13 September 2002	2	10	d, h
Inception	10−16 January 2004	3	9	h, k, l
Review	21−30 June 2004	2	10	h, k
Review	7−11 January 2005	2	10	h, k
Review	14−23 September 2005	2	10	h, m
Review	11−24 February 2006	3	15	h, m, n
Supplementary financing - preappraisal	1−10 April 2006	5	25	h, m, n, o, p
Supplementary Financing - Appraisal	28 August–5 September 2006	3	15	h, m, n
Midterm review	27 October−3 November 2006	4	20	h, m, q, r
Supplementary Financing - Inception	22−26 January 2007	3	15	h, m, q
Review	18−25 May 2007	3	15	h, m, r
Review	20−30 November 2007	2	10	h, m
Review	7−12 May 2008	3	15	h, m, s
Review	13−19 November 2008	4	20	h, m, s, t
Review	12−26 October 2009	3	15	h, u, v
Special review	23−28 November 2010	2	10	v, w
Review	12−21 December 2011	2	10	v, x
Review	18−21 December 2012	2	6	x, y
Review	10−12 June 2013	3	15	v, x, z
Review	16−19 December 2013	3	6	x, z, aa
Review	7−30 April 2014	2	10	x, z
Review	22−23 September 2014	3	6	x, z, bb
Project completion review	26 March−30 April 2015	4	20	x, z, cc, dd

a = senior project engineer, aa = assistant project analyst, b = PPTA consultant, bb = senior operations assistant, c = project economist, cc = international consultant, d = urban development and planning specialist, dd = national consultant, e = financial management specialist, f = environment specialist, g = counsel, h = project implementation specialist, i = consultant, j = consultant, k = urban development specialist, l = associate project analyst, m = urban development specialist, n = economist, o = poverty and social safeguards specialist, p = senior counsel, PPTA = project preparatory technical assistance, q = associate analyst, r = gender specialist, s = project disbursement specialist, u = consultant, v = project analyst, w = project officer, x = project officer, y = senior financial control assistant, z = associate project officer.



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I. PROJECT DESCRIPTION

1. The Government of Si Lanka gives high priority to the provision of and access to safe drinking water and appropriate sanitation for its population. In early 2000, only 29% of the population, mostly in urban areas, had piped water services; one-quarter of the population had no access to safe sanitation. Under section lll of the government's Millennium Development Goals objective, its aim for 2015 was to reduce the proportion of people unable to reach or afford safe drinking water by 50%. To achieve this objective, the government proposed a two-pronged strategy involving large-scale system expansion for urban schemes and a vast number of small-scale community improvement initiatives, to bring better water supply and sanitation services to poor communities. Accordingly, the Asian Development Bank (ADB) provided loans to finance the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.

2. The original project was presented in 2002 in the report and recommendation of the President (RRP) to the Board of Directors.[1] Project loan 1993 for $60.3 million, was approved in 2003 during a ceasefire after two decades of civil conflict.[2] The project was to be completed in 2009. In late 2004, the Indian Ocean tsunami hit the eastern and southern parts of the country (including much of the project area). Furthermore, the conflict recommenced in 2005. These factors disrupted project implementation and contributed to cost escalation. In 2006, ADB approved supplementary loans.[3] The marginal differences from the original scope included a rural water supply scheme for Batticaloa and abandonment of the Matara salinity barrier. The conflict in the east of the country escalated to a peak during 2006–2007. The working environment in the eastern districts improved from mid-2007 and work on most contracts resumed slowly after land mines were cleared. However, even after re-tendering of works in Muttur (because of a poor response and unacceptable bid prices), there were insufficient funds to finance the works. Accordingly, additional financing was approved in 2011 to complete the works.[4] Details of the financing are given in Table 1.

Table 1: Summary of Financing at Appraisals

($ million)

Loan No.	Approval Date	ADB Financing	Government Financing	Community Contribution	Total Project Cost
1993	Jan 2003	60.3	23.0	3.0	86.3
2275	Nov 2006	13.5	28.8	0	88.8
2276	Nov 2006	46.5			
2757	Jun 2011	4.3	66.7	0	84.3
2758	Jun 2011	13.3			
Total		**137.9**	**118.5**	**3.0**	**259.5**

Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and*

[1] ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila (loan 1993).

[2] The armed conflict was between government forces and the Liberation Tigers of Tamil Eelam.

[3] ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila (loans 2275 and 2276).

[4] ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila (loans 2275 and 2276).

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3. The expected impact of the project was to improve health conditions in Anuradhapura, Batticaloa, Hambantota, Muttur, and Polonnaruwa by reducing (i) the incidence of waterborne diseases by 50%, (ii) the infant mortality rate by 20%, and (iii) the time and resources that households spend in acquiring water by 75%. The outcome of the project was to provide pipe-borne safe water to 946,000 people and safe sanitation to 171,500 people in the project areas (outcome figures were recalculated at project end [Appendix 1]).

4. Project outputs were categorized under three main components: urban, rural and institutional strengthening of the implementing agency. The first two components include implementing water supply schemes, a wastewater treatment plant, road side drainage and domestic toilets (Appendix 1). Component three included activities such as awareness campaigns, training programs and formation of operational strategies.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

5. The project was designed to extend basic services of safe water and sanitation in urban and rural areas, with focus on alleviating poverty and benefiting women. It sought to develop water supply and sanitation (WSS) infrastructure in conflict-affected areas of Eastern Province and the severely drought affected areas of the North Central and Southern Provinces. An ancillary aim was to strengthen the efficiency of service delivery of the National Water Supply and Drainage Board (NWSDB). It was relevant to the government's poverty reduction strategy, post-conflict development, [5] and WSS policy. [6] It conformed to ADB's country strategy and program that included (i) WSS as a target sector, (ii) promoting community involvement in development, (iii) mainstreaming gender issues, and (iv) strengthening the capacity and performance of public sector management.[7] At completion, the project remained consistent with the government's development policy framework. [8] It also conformed to ADB's country partnership strategy, especially under pillars one (support to WSS infrastructure) and two (improving service delivery in WSS).[9] It was thus relevant at design and at completion.

6. Component 1 followed the approach adopted under ADB's Third Water Supply and Sanitation Sector Project.[10] Delivering piped and safe water in urban centers of Batticaloa and Muttur was highly relevant, as Muttur had no such supply and it was minimal in Batticaloa. Augmentation of urban water supplies in Polonnaruwa was required to meet increased demand and in Hambantota to supplement the less-efficient existing plants and extend piped supplies to improve access to water in this dry region.

[5] Government of Sri Lanka. 2002. *Regaining Sri Lanka*: *Vision and Strategy for Accelerated Development*. Colombo.
[6] Government of Sri Lanka. 2002. *Water Supply and Sanitation Policy Statement and Poverty Reduction Strategy*. Colombo.
[7] ADB. 2001. *Country Strategy and Program Update: Sri Lanka, 2002–2004*. Manila.
[8] Government of Sri Lanka, Ministry of Finance and Planning. 2010. *Sri Lanka: The Emerging Wonder of Asia. Mahinda Chintana (Vision for the future). Development Policy Framework*. Colombo.
[9] ADB. 2014. *Country Partnership Strategy: Sri Lanka, 2012–2016*. Manila
[10] ADB. 2009. *Project Completion Report: Third Water Supply and Sanitation Sector Project in Sri Lanka*. Manila (loan1575).

7. The rural water supply and sanitation (RWSS) program (component 2) was modeled on the approaches adopted under the Third Water Supply and Sanitation Sector Project, which in turn were developed under the Community Water Supply and Sanitation project funded by the World Bank.[11] The component was aimed at extending demand-driven community-managed water supply schemes to deliver safe drinking water and provide safe sanitation. A high level of local ownership was generated.

8. Component 3 (institutional strengthening) derived from ADB post-evaluation of the Third Water Supply and Sanitation Sector Project, which stressed the introduction of broad reforms in the NWSDB, including commercial management to promote efficient, responsive delivery of services.

9. Project preparatory technical assistance (TA) provided a comprehensive basis for the project design.[12] It assessed the rationale for the project components, the water sector and institutions, economic and financial aspects, social dimensions and safeguards. As the TA was conducted between June 2001 and March 2002, during conflict in the eastern region, it accommodated the likely impacts of conflict on project implementation. The initial RRP prepared (footnote 1) after the ceasefire of December 2002, was designed in anticipation of peace. Subsequent re-eruption of conflict in Batticaloa and Muttur (2005–2007), adversely affected implementation and increased costs. Similarly, the December 2004 tsunami along the eastern and southern coasts disrupted project implementation in Batticaloa, Hambantota, and Muttur because of displacement and resettlement of people, and subsequent competition with relief agencies for materials and skilled labor for the tsunami reconstruction works, with knock-on effects in Polonnaruwa.

10. The project preparatory TA report, based on its socioeconomic survey, overestimated consumer demand for the Batticaloa urban scheme.[13] Moreover, the TA overestimated the mean family size, which inflated numbers of expected project beneficiaries (Appendix 1). During the project appraisal, standard water consumption rates were used in the design and treatment plant capacities were reduced. During the project completion report (PCR) mission the beneficiary numbers were recalculated.

11. Some changes were agreed by ADB during implementation to improve operations and relevance. At the midterm review in 2006[14], the Matara salinity barrier was dropped because of local farmers' objections (because of the fear of flooding of their cultivation lands), representing a major change in scope. Minor changes, most of which necessitated additional detailed design and construction costs, included the following:

(i) The rural component was extended to include one *pradeshiya sabha* (smallest local government unit) in Batticaloa district.
(ii) The time horizon for the design of urban water supply intakes was extended to 2050 (from 2025 at design).
(iii) The water source for the Polonnaruwa urban water supply was changed from the Parakrama Samudra tank to the Mahaweli River.

[11] World Bank. 1998. *Impact evaluation of Community Water Supply and Sanitation Project 1993−1998.* Washington, D.C (Credit 2442−CE for $24.3 million, Phase II approved 2001, $32 million grant).
[12] ADB. 2002. *Project Preparatory Technical Assistance to the Government of Sri Lanka for the Secondary Towns Water Supply and Sanitation Project.* Manila (TA3587).
[13] TA designs were based on standard 120 liters/person/day, reduced to 100 liters/person/day at appraisal.
[14] ADB. 2006. *Aide Mémoire of Midterm Review Mission for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

(iv) The Hambantota network was extended for 35,000 people displaced by the tsunami.
(v) A salinity barrier was added, which was agreed for the Hambantota intake ($10.6 million).
(vi) The urban sanitation target was reduced from 6,000 latrines to 5,000[15].

12. The DMF for each RRP described the expected outcomes and outputs. The PCR mission consolidated the three DMFs into a single framework (Appendix 1). Discrepancies found among the three DMFs were corrected to reflect revisions agreed during implementation. Evidently the DMF had not been actively used as a planning tool during the project or updated during loan reviews. At design, beneficiaries of rural water supplies were quoted as numbers of 'people' but sanitation and urban water components outputs were based on households (latrines or connections), converted to people using five persons per household. The PCR DMF targets exclude Matara barrage and are rebased on a more realistic size of four persons per household. Outcome beneficiary targets thus become 750,000 for water supplies (footnote 1: 969,000 beneficiaries) and 131,500 for sanitation (footnotes 1 and 2: 171,500 beneficiaries). The adjusted figures are used in this evaluation.

13. The project recognized that participation of women in decision making is important. Women were also considered as main beneficiaries of the project. Two gender action plans (GAPs) were used in the project. The main qualitative differences between the two GAPs arise from the GAP for the 2002 project having more focus on institutional aspects, such as employment provided to women in project activities, whereas the GAP for the 2007 project placed more emphasis on community development and field aspects (Appendix 6).

B. Project Outputs

14. Outputs are described drawing mainly on the project management unit (PMU) quarterly progress reports (QPRs); the borrower's project completion report;[16] and discussions with PMU members, NWSDB staff and beneficiaries. These are reviewed against the performance targets in the DMF (Appendix 1). The appendixes provide more detail on component 2 (Appendix 3), component 3 (Appendix 4), socioeconomic and poverty aspects (Appendix 5), compliance with the project's GAP (Appendix 6), and associated training (Appendix 7).

15. All physical outputs were achieved, although most were at least 2 years late (Appendix 2). The project benefitted 509,001 people with safe drinking water and 93,556 people with safe sanitation facilities.[17] The achievements of component 3 were generally positive but less quantifiable.

[15] Footnote1. The figure of 5,000 is given in the DMF target, but 33,000 remained in the design summary of each RRP DMF.
[16] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.
[17] In terms of ADB Results Framework, the project contributed to the following indicators: (i) 127,250 households with new or improved water supply compared with revised target of 187,500 households; (ii) 22,514 households with new or improved sanitation compared with revised target of 32,000 households; (iii) 350 cubic meters per day added or improved wastewater treatment capacity compared with target of 350 cubic meters; and (iv) 799 km of water supply pipes installed or upgraded compared with target of 799 km. (ADB. 2016. *Results Framework Indicator Definitions.* Manila.)

1. Component 1: Urban Water Supplies and Sanitation

16. Under this component the aim was to construct two new piped water supply schemes and augment two existing schemes. These were to provide 24-hour delivery of at least 15 cubic meters (m^3) per month of safe drinking water to 100,000 households covering 400,000 beneficiaries, by 2012 (Appendix 1). The design envisaged nonrevenue water (NRW) would decline to below 25% and revenue collection rates would be greater than 90%, by 2012. The component also envisaged (i) provision of 5,000 low-cost water-sealed latrines in urban areas to ensure that 90% of households have access to safe sanitation by 2012, (ii) improved storm water drainage in two towns, and (iii) a wastewater treatment plant for Batticaloa hospital and prison, by 2010.

17. **Water supply systems**. Two new systems were constructed. The Batticaloa scheme included (i) raising the bund at Unnichchai tank, to increase storage, (ii) a new intake, (iii) a treatment plant, (iv) seven water storage towers, and (v) 375 kilometers (km) of new distribution network. The Muttur scheme included (i) a new intake from the Mahaweli River, (ii) a treatment plant, (iii) three water towers, and (iv) 127 km of distribution network. The existing Hambantota scheme was augmented by constructing (i) a salinity barrier and intake structure[18], (ii) a new treatment plant, (iii) five water towers, and (iv) 158 km of distribution network. The existing Polonnaruwa scheme was expanded through (i) a new intake on the Mahaweli River, (ii) a treatment plant, (iii) three water towers, and (iv) 139 km of distribution network. Table 2 shows that the Batticaloa and Polonnaruwa schemes were completed on schedule, Hambantota was 1 year late, and Muttur commenced operation only in December 2014. On completion, 256,432 people benefited with safe water supplies, compared to the target of 400,000 beneficiaries— a 64% achievement.

Table 2: Urban Water Program Features

	Cost ($ million)				Current Performance (April 2015)			
Scheme	RRP 2002	Actual	Commissioned	WTP Capacity (m3/day)	Production (m3/day)	Beneficiaries	NRW (%)	Revenue Collection (%)
Batticaloa	22.9	89.0	Q2 2011	40,000	12,600	118,000	23.0	92.4
Hambantota	8.2	45.0	Q1 2013	15,000	15,000	52,000	28.0	100.0
Muttur	4.6	27.0	Q4 2014	8,500	800	1,432	[a]	[a]
Polonnaruwa	3.7	39.9	Q4 2011	13,500	11,000	85,000	19.6	100.0
Total [b]	**39.4**	**200.9**		**77,000**	**39,400**	**256,432**		

m^3 = cubic meter, NRW = nonrevenue water, Q = quarter, RRP = Report and recommendation of the president, WTP = water treatment plant

[a] Too soon to estimate NRW and collection rate. NWSDB expect 40,000 people to be served by 2020.

[b] Matara salinity barrage not included (estimated $2.2 million) dropped in 2006.

Source: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; Appendix 8; and project management unit.

18. **Urban sanitation program**. A total of 4,212 latrines were constructed, co-financed by the beneficiary households. These were completed ahead of schedule and benefited 16,848 people[19]. The project achieved 84% of the target of 5,000 households with access to safe

[18] The need for a barrier to prevent seawater intrusion was identified at detailed design stage. This was combined with a new intake to avoid future high pumping costs from the existing upstream intake.

[19] Batticaloa 5,548 people; Hambantota 4,392 people; Muttur 5,336 people; and Polonnaruwa 1,572 people.

sanitation and on-site facilities. Census data (2012) indicate that more than 90% of urban households have access to safe sanitation, apart from Batticaloa (87%) (Appendix 5).

19. **Storm water drainage**. This subcomponent aimed to reduce storm water flooding in densely populated areas of Muttur and Batticaloa. Drains were completed in Batticaloa in 2008 (3.6 km long) and in Muttur in 2009 (4.1 km). Residents noted that these drains effectively reduced storm water flooding.

20. **Wastewater treatment plant**. A 350 m^3/day capacity treatment plant was constructed on schedule for Batticaloa hospital and prison. Around 3,500 occupants benefited from better sanitation. The hospital authorities confirmed that effluent now meets government standards, reducing environmental damage to the lagoon.

21. **Training**. NWSDB WSS operators at headquarters and in district offices were given technical and administrative training, including formal diplomas, technical short courses, and workshops. Contractors trained staff in operation and maintenance (O&M) (Appendix 7).

2. Component 2: Rural Water Supplies and Sanitation

22. This component envisaged demand-driven, community-based water supply and sanitation programs in 14 selected *pradeshiya sabhas* of Polonnaruwa and Anuradhapura districts, and later expanded to include a *pradeshiya sabha* in Batticaloa (footnote 3). It aimed to benefit 350,000 people with safe water supplies and 108,000 people for safe sanitation (Appendix 1). Focus was on poor and underserved areas in administrative divisions that exhibited the highest incidence of poverty and lack of water supply. The PMU failed to commission an impact study of component 2, which limited assessments of the effectiveness and impact.

23. **Rural water schemes.** These schemes aimed to provide safe drinking water to the target rural communities through construction or rehabilitation of piped schemes, rain-fed harvesting, or protected well facilities. The project supported communities interested and willing to contribute 20% of the investment costs and to be responsible for their subsequent O&M. The ultimate target was 85% of the population in the project areas having access to at least 20 liters/person/day of safe drinking water by 2010.

24. Safe water supplies were provided to 252,569 people (72% of target). These comprised 228 new piped village water supply schemes implemented by community-based organizations (CBOs) serving 207,300 people, 4,627 new or rehabilitated common and private dug wells serving 25,880 people, 101 new tube wells serving 6,070 people, and 3,003 rainwater harvesting systems serving 13,319 people. Women were prominent in the CBO committees. The program was completed in late 2009 in Batticaloa and by late 2011 in Anuradhapura and Polonnaruwa. This was over 12 months behind schedule but targets for community-managed schemes inevitably under-estimate the time required for mobilization. Delays were also experienced in procurement of materials and in government approvals. By April 2015, 135 CBOs (59%) were functioning, with technical support continuing from the NWSDB RWSS units (Appendix 3). Some 93% of the population in the three districts had access to safe water (98% in Batticaloa, 91% in Anuradhapura, and 93% in Polonnaruwa).[20]

[20] Government of Sri Lanka, Department of Census and Statistics. 2015. *Household Income and Expenditure Survey, 2012/1*3. Colombo.

25. **Rural sanitation**. This subcomponent envisaged a 50% contribution by beneficiaries to construction costs (mainly as labor); an available water supply was a precondition. Targets were provision of 27,000 low-cost latrines for individual, poorer households, with 85% of the population in the project areas having access to safe sanitation by 2010. It was intended to benefit 108,000 people. A total of 18,302 low-cost latrines were constructed, achieving 66% of the target, benefiting 73,208 people (Batticaloa 293 latrines; benefiting 1,172 people, Polonnaruwa 9,022 latrines benefiting 36,088 people, and Anuradhapura 8,987 latrines benefiting 35,948 people). By 2012, 98% of the population in Anuradhapura and Polonnaruwa districts had access to safe sanitation but Batticaloa lagged with access at 87%.[21]

26. The project adopted a fixed subsidy payment of SLRs4,000 per qualifying household, with the balance paid by the beneficiary. During implementation, the total cost per latrine increased to more than SLRs20,000. The subsidy was increased to SLRs6,000 and later to SLRs7,000 but the balance amount remained out of reach of the poorest families. This is the main reason for the failure to meet targets. Other factors included a lack of awareness among potential recipients of the support available under the project (Appendix 5).

27. **Local capacity built**. This subcomponent envisaged CBOs, *pradeshiya sabh*as, and provincial councils having the capacity to implement and manage all activities of component 2, to ensure sustainability. Participating CBOs, 15 participating *pradeshiya sabhas*, and one provincial council would be trained in implementation activities and O&M. Public awareness campaigns, including production and distribution of pamphlets, effectively motivated villagers to join the project and encouraged support of local decision-makers. Training details are given in Appendix 7. Some 9,200 persons were trained, with 500–600 participants from each district (Appendix 7).

3. Component 3: Institutional Strengthening

28. The design targeted support to strategies and investments, to improve the financial management and service delivery of the NWSDB. For many of the activities, it was not possible for the PCR mission to find evidence to quantify the outcomes through the outputs (Appendix 4). This component became peripheral to the mainstream activities of the project and lacked clear management. The component is not covered in the borrower's project completion report.

29. **National Public Awareness and Education Program**. This aimed to raise awareness of the value of water and the need to reduce NRW. Awareness campaigns, conducted in national media during 2007–2008, focused on water conservation, water tariffs, and health and hygiene practices in relation to water supply and sanitation. A project website was launched to provide updates on activities (Appendix 4).

30. **National Water Supply and Drainage Board Financial and Operational Improvement.** Activities to enhance the efficiency of the NWSDB were undertaken by the specialist sections of the NWSDB, with technical contributions from the PMU. The subcomponent included the following:

(i) ***Implementation of corporate strategy***. The strategy was to be implemented by the end of 2005 but the executing agency approval for project support was

[21] Government of Sri Lanka, Department of Census and Statistics. 2015. *Data for the 2012 National Census.* Colombo.

obtained only in June 2005. The NWSDB Corporate Plan, 2007–2011 was published in 2006 and implemented under the project.[22]

(ii) ***Action plan on audit, accounting, and financial management issues***. Strategies to improve financial management were adopted from 2006 onwards, with full completion by the end of 2011. Unresolved balances were written-off.

(iii) ***Asset registry and management systems for regional schemes***. Systems were introduced to better manage stores across all regional centers. An asset register was completed for larger schemes.

(iv) ***Action plan to improve operational performance.*** The NWSDB was to implement the plan, which was not seen by the PCR mission. The following activities continued into 2011 to improve performance: (a) enhancing revenue collection rates and customer satisfaction, (b) reducing power consumption, and (c) reducing the proportion of NRW. Some of the NWSDB's performance targets were met: (a) staff ratios declined annually, (b) maintenance expenditure increased, (c), billing rates increased, (d) establishment costs declined (but only in 2014), (e) revenue collection rates remained at around 100%, (f) rehabilitation expenditure increased annually, and (g) the proportion of NRW generally declined each year. Electricity consumption and establishment expenses increased. No data were available for bill settlement periods. Overall, the NWSDB remained unprofitable.[23]

(v) ***Transfer of systems with less than 1,000 connections*****.** Only one of the 72 targeted schemes was handed over. CBOs were initially not interested. Later, the NWSDB preferred to retain ownership of the existing schemes.

31. **Training for National Water Supply and Drainage Board staff**. In-country and overseas training for relevant staff was completed by 2010, including management skills development and leadership (Appendix 7).

C. Project Costs

32. Project costs are given in Appendix 8. Cost overruns seriously affected the project. While the project was estimated at $86.3 million in 2002, the actual cost at completion at the end of 2014 stood at $255.3. The urban water supply component experienced huge cost overruns (Table 2 and Appendix 8) which necessitated increased funding. The percentage increases in actual costs over planned costs at appraisal were Batticaloa 287%, Hambantota 449%, Muttur 487%, and Polonnaruwa 978%.

33. Table 1 shows the additional funding. ADB's contribution increased by 129% (supplementary loans and additional financing); the government's share in total costs increased from 26% to 46%. Total costs increased by 202%.

34. Contributory factors for cost over-runs included

(i) inflation of material and equipment costs;

(ii) civil works costs at formulation were underestimated and there was a long time lapse between appraisal and commencement of implementation;

(iii) higher actual costs at detailed design;

[22] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2007. *National Water Supply and Drainage Board Corporate Plan 2007–2011*. Colombo.

[23] Government of Sri Lanka, Ministry of Finance and Planning. 2012. *Annual Report 2012, Performance of State-Owned Business Enterprises, Sri Lanka*. Colombo.

(iv) conflict prevented access to construction sites and delayed recruitment of contractors, who inflated bid prices to cover security risks;
(v) intake structure designs changed to account for a longer planning horizon;
(vi) inclusion of the Hambantota salinity barrier ($10.6 million);
(vii) change in location and design of Polonnaruwa intake;
(viii) flood damage to Muttur works (2014); and
(ix) post-tsunami competition for resources and need to expand water supplies for displaced persons.

35. An ADB analysis showed that final contract awards exceeded RRP estimates by 83%.[24] Contributing factors were seen as (i) 63.3% of the increased cost being due to input price increases at the time of award, (ii) 14.7% being due to physical variations and changes in design, (iii) 11.0% being due to price changes, and (iv) 11.0% being due to corresponding increase in taxes and duties. An analysis of major contracts awarded showed that the initial contracts awarded during 2005 were about 50%–150% above the estimates; between 2004 and 2009 the average cost increase for key inputs was 70%–100%. The ADB analysis cited mean annual inflation rates in 2005–2009, as 12.5%, peaking at 22.6% in 2008, using the Colombo Consumer Price Index. The more relevant construction cost index gives an average of 13.4% during 2005–2009, peaking at 18.0% in 2005–2006.

36. The huge increases in costs cast doubt on the validity of the original cost estimates.[25] These were prepared under the project preparatory TA during June 2001–March 2002. They were modified at appraisal in September 2002. However the first loan (footnote 1) did not become effective until November 2003. The project commenced in January 2004, and detailed design and tendering commenced from 2005, over 3 years after the original estimates were formulated. The three previous ADB-funded water sector projects had similar issues of cost over runs and delays in completion.[26]

D. Disbursements

37. Appendix 8 shows disbursements of the five loans. Loans L1993 and L2276 were fully utilized. However, about $1.44 million (11%) was cancelled under loan 2275 at loan closure; $0.48 million (11%) from loan 2757 and $2.54 million (30%) from loan2758 were cancelled. From 2003 to 2009, the actual disbursements exceeded the annual targets. Disbursements dropped in 2010 but picked up again in the following years. An imprest account was opened at the Central Bank of Sri Lanka, followed with second and third-generation imprest accounts at the PMU and project implementation unit (PIU) levels. This arrangement greatly helped the timely release of funds. A Statement of Expenditure procedure was used to replenish funds expended by the PMU at each level. This made transaction of funds to CBOs and nongovernment organizations (NGOs) easy and quick.

[24] Footnote 4. S*upplementary linked document 14: Detailed Analysis of the Cost Overrun*.
[25] Appraisal estimates used NWSDB's standard rates, based on recent projects. No recent projects had been undertaken in the eastern region, where costs proved to be higher. ADB. 2006. *Aide-Mémoire, Financing loan pre-appraisal mission.* Manila.
[26] ADB. 1997. *Project Completion Report: Water Supply Sector Project in Sri Lanka*. Manila; ADB. 2000. *Project Completion Report: Second Water Supply and Sanitation Project in Sri Lanka*. Manila; and, ADB. 2009. *Project Completion Report: Third Water Supply and Sanitation Sector Project in Sri Lanka*. Manila.

E. Project Schedule

38. Appendix 2 shows the project's original schedule and actual progress. Project completion, originally targeted for September 2009, was not achieved until December 2014. Loan effectiveness was 12 months later than anticipated and the project commenced about 6 months late.[27] The NWSDB requested seven extensions to loan effectiveness, and these were approved by ADB.[28] Some causes (the tsunami, armed conflict, and floods) for delay were beyond the control of the PMU but impeded progress. Slow procurement of contractors (bidding and award of contracts for the Muttur head works took 6 years), changes to civil works requirements and detailed designs, accompanied by significant cost escalation, further delayed progress. Approvals for change in the intake locations (Polonnaruwa and Hambantota) took additional time. Components 2 and 3, which were less affected by the above factors, were 3 years late in completion.

F. Implementation Arrangements

39. There were several changes in the projects' executing agency (Appendix 2). During planning and the initial 3 months of implementation, the Ministry of Housing and Plantation Infrastructure was the executing agency. The project then passed to Ministry of Urban Development and Water Supply, later to the Ministry of Water Supply and Drainage (MWSD) and thereafter, to Ministry of Urban Development, Water Supply and Drainage. During 2015 the executing agency was the Ministry of City Planning and Water Supply. NWSDB, as the implementing agency, set up a PMU in Colombo, through which the project operated. Implementation arrangements at design and during implementation are shown in Appendix 9. The implementation arrangements were satisfactory. PIUs were closer aligned with the NWSDB district offices and local government agencies. The Irrigation Department became a partner organization for the Unnichchai tank in Batticaloa, and participated in decisions on water access in Polonnaruwa and Hambantota. The North Central Provincial council and NWSDB RWSS division worked on the rural component (component 2). NGOs became a crucial part of the rural component, although not originally indicated in the implementation arrangements.

40. A national steering committee, chaired by the secretary of the MWSD, met quarterly to review progress. Project coordinating committees reviewed activities at district, division and village levels. SLRM officers participated in the committee meetings.

41. For the urban schemes, PIUs operated under the guidance and supervision of the district officers with a separate PIU formed in the Irrigation Department office of Batticaloa. Technical support units (TSUs) were set up in Polonnaruwa and Anuradhapura, and PSIUs were set up in target areas of the rural component. These were strengthened by support staff under the Package A consultancy contracts (Appendix 10). Procurement was handled centrally by the PMU, except for component 2, under which funds were channeled to CBOs and NGOs for local procurement.

42. ADB supervision was transferred in January 2009 from ADB headquarters to the SLRM.

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[27] Footnote 1. Loan 1993 was approved by the ADB Board in January 2003, but signing did not occur until August 2003 and it became effective in November 2003. ADB. 2004. *Project Administration Memorandum: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[28] Footnote 1. Loan 1993 two extensions, total 24 months; footnote 2−loan 2275 two extensions, 34 months and loan 2276 one extension, 24 months; footnote 4−loan 2757 one extension, 6 months and loan 2758 one extension, 6 months.

G. Conditions and Covenants

43. The borrower complied with all general covenants however a few specific covenants were not complied with (Appendix 11). The NWSDB could not coordinate regular sector donor meetings (footnote 1, schedule 6, para. 7). The Matara salinity barrier was taken out and thus the need for environmental clearance (footnote 1, schedule 6, para 23). The water service industry act was not passed by the government (footnote 1, Schedule 6, para.17). The strategy by NWSDB to reduce O&M costs was only partly complied with because of insufficient fund allocation for this component (L1993, Schedule 6, para 14). Out of the 72 targeted rural water schemes of fewer than1,000 connections, four were selected but only one was transferred to CBOs, on a pilot basis (footnote 1, schedule 6, para 14). An audited project financial report for fiscal year 2016 is yet to be submitted (footnote 1, schedule 6, para 28).

H. Consultant Recruitment and Procurement

44. Two consulting services contracts were awarded: package A for project management and institutional strengthening and package B for design and construction supervision. Numerous variation orders were agreed during implementation. Sixteen major civil contract packages were procured under component 1. Of these, 10 contracts were procured through international competitive bidding and the balance through national competitive bidding (NCB). The design and build bid packaging resulted in transfers of new technologies and minimized contract variations. Local NGOs were recruited to assist with the forming of the CBOs to implement the rural WSS activities. Construction materials for the rural schemes were locally procured by the NWSDB. Problems were encountered with bidding and execution of works on the Muttur intake and the raising of the Unnichchai tank bund, where conflict prevented site access until 2007. Security risks deterred bidders and contributed to higher bid values, and led to re-tendering for the Muttur intake.

I. Performance of Consultants, Contractors, and Suppliers

45. The consultants performed satisfactorily, according to the borrower's project completion report. Package A consultants did not seem to add significant value specially for activities under institutional strengthening. Package B consultants contributed to the QPRs. Their contract was curtailed 4 months early because the Government of Sri Lanka did not approve the full amount of additional funding for consultancy in the last RRP (footnote 4). Thus, they were unable to prepare their completion report. According to district engineers, contractors generally performed satisfactorily. A few adverse events did happen. Inferior pipes imported by the contractor for the 90 km main pipe section at Batticaloa were rejected.

J. Performance of the Borrower and the Executing Agency

46. The performance of the borrower and the executing agency was *satisfactory*. During implementation, the borrower coped well with disruptions caused by the tsunami and conflict. All urban water schemes were operational at project completion. The Unnichchai tank bund works needed sensitive negotiation between the conflicting parties. The rural component was implemented successfully. The NWSDB maintained continuity of project directors and deputy directors (Appendix 2) and the flow of works.

47. A number of shortcomings were noted. Major civil works encountered serious cost escalation and design variations; inaccurate estimation was one reason. The institutional

strengthening lacked consistent leadership. Reporting by the PMU had shortcomings; QPRs were prepared regularly but had weaknesses.

K. Performance of the Asian Development Bank

48. ADB's performance was *satisfactory*. The government appreciated the effective support of ADB throughout implementation.[29] ADB fielded 25 review missions and assisted the PMU in resolving implementation issues. Transfer of responsibility from ADB headquarters to the SLRM made communication easier, facilitating a closer relationship. The PMU appreciated ADB's problem-solving technical advice and comprehension of implementation issues, particularly disbursements.

III. EVALUATION OF PERFORMANCE

A. Relevance

49. The objectives at design and completion were *relevant*. Provision of access to reliable supplies of safe drinking water and safe sanitation to urban and rural communities was a priority for the government. The project had both urban and rural components, and institutional development activities as other core outputs. Urban component was relevant, providing the necessary utilities for sustainable urban growth. Component 2 adopted proven approaches. A high sense of ownership was generated among stakeholder CBOs. Sanitation facilities were partly funded by households, who maintain a sense of ownership. Institutional strengthening (component 3) of the NWSDB was highly relevant and consistent with ADB's development strategy but it was peripheral to the PMU's skills set.

50. The appraisal costs for the civil works of the urban component, proved to be underestimated. But the rapid cost escalation as a result of the subsequent resumption of armed conflict, the tsunami, and floods could not be predicted. Slow procurement and implementation also affected the project costs. Because of design weaknesses in over estimation of water consumption and beneficiary calculation, the project is just rated *relevant*.

B. Effectiveness in Achieving Outcome

51. The project was rated *less than effective*. The DMF outcome aimed at provision of safe water and safe sanitation to people in the target areas. The project provided access to safe water for an additional 509,001 people, compared to 750,000 people envisaged (68% achievement). The sanitation outcome was an additional 131,500 people having access to safe sanitation; the project reached 93,556 people (71% achievement). Even with the massive cost overrun and implementation period extending to around 13 years, the project could not reach the expected beneficiaries. In Batticaloa, beneficiaries were reluctant to use the project-supplied water for reasons beyond the knowledge of the project completion mission. The Muttur scheme is yet to be fully operational and the connection achievement rate is expected to be reached during 2016–2018. Only around half of the rural water supply schemes are functional at project completion, and only a minimal handover of small schemes was achieved.

[29] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

Table 3: Achievement of Urban and Rural Component Outputs

Component	Output	Revised DMF Target	Achievement	
1. Urban	Water supply beneficiaries	400,000	256,432	64%
	Sanitation beneficiaries[a]	23,500	20,348	87%
	Storm water drainage schemes	2	2	100%
	Waste water treatment plant	1	1	100%
2. Rural	Water supply beneficiaries	350,000	252,569	72%
	Population with access to safe water	85%	93%	109%[b]
	Sanitation beneficiaries	108,000	73,208	68%
	Population with access to safe sanitation	85%	95%	112%[b]

DMF = design and monitoring framework.
[a] includes 3,500 beneficiaries of the Batticaloa wastewater treatment plant.
[b] indicates achievement is more than planned.
Source: Appendix 1.

C. Efficiency in Achieving Outcome and Outputs

52. The project is rated *less than efficient*. The project showed economic viability only at original appraisal in 2002 (Appendix 12). Subsequent appraisals (footnote 2 and 4) highlighted the emerging inefficiency of project investments. This could have signaled the need for rationalization of some activities. The cost escalations for the four urban schemes were an unprecedented 300%–1,000%. Implementation delays also had an inevitable impact on the economic analysis at project completion. The efficiency of component 3 activities cannot be evaluated because of a lack of information.

D. Preliminary Assessment of Sustainability

53. The project is rated *less than likely sustainable*. The urban water treatment plants (around 90% of the project investment) are being maintained to a high standard by the NWSDB. Water tariff collection rates of the project's urban areas are very positive. The rural water supplies are being managed by CBOs, with technical support continuing from the NWSDB RWSS units. The uptake of reverse osmosis water treatment systems by several CBOs has given added profit stimulus and enhanced sustainability. Latrines provided under the sanitation programs should be sustainable because they were funded largely by individual households.

54. However, the financial internal rates of return (FIRRs) for all urban schemes are negative, indicating that the quantified economic benefits were not adequate to meet the project costs (Appendix 12). While the NWSDB is looked at having the necessary capacity to manage its urban plants well, this is noted to be contingent on interagency cooperation to ensure access and delivery of essential services to avoid disruptions as experienced at the Muttur site.[30] Intake structures are designed for 2050 demand but the NWSDB will need external capital funding to upgrade treatment plants over the next 35 years if design demand develops. Four years after completion of the rural component, only 59% of the 228 CBOs established are functioning successfully. Although RWSS activities are being successfully assisted by the NWSDB at district level, a dedicated and funded national agency is needed to sustain community schemes. The MWSD established a department for this purpose but RWSS progress is hampered by lack of funds.

[30] In December 2014, floods broke the river levee, exposed the raw water mains, severely damaged the access road, and severed power lines to the intake site. The *Irrigation Department, Ceylon Electricity Board, Road Development Department*, and the *NWSDB* had still been unable to arrange repairs by April 2015. Meanwhile, the pumps were operating on generator power supplies and the treatment plant working at reduced capacity.

E. Impact

55. The impact is rated *satisfactory* in terms of the DMF indicators, which were met ahead of schedule: (i) infant mortality declined by over 20%, (ii) waterborne disease incidence is negligible, and (iii) time to access safe water is reduced by over 75% to "insignificant". Socioeconomic impact studies conducted at completion (Appendix 5) show positive impacts. Beneficiaries spend less time collecting water. Around 95% of urban consumers report improvements in taste, color, and odor of the water, and to their health. Reliability of daily supply has improved, with 90% of households expressing satisfaction.

56. Poverty assessment at appraisal was based on regional disparity and its mitigation; the selection of the project areas achieved this objective. Impact on the poorest people was less positive because of the cost of initial connection to the piped supply being seen as too expensive.[31] Similarly, the poorest were excluded from the sanitation program because of the high beneficiary contribution (mean SLRs14,000) required.

57. In impact assessment surveys (Appendix 6), most respondents from Batticaloa (93%) and Hambantota (83%) reported that women's workload had reduced when new water supplies reached the household. Women benefited most from safe sanitation facilities, in terms of safety and privacy. The reduction of water borne diseases by 50% mainly benefited women. Provisions in each gender action plans (GAP) were broadly achieved. Provision of safe drinking water to the villages affected by chronic kidney disease (CKD), through rural water schemes running reverse osmosis plants, is an additional and an unanticipated positive impact of the project (Appendix 3).

58. Some beneficial institutional impacts were achieved in the performance of the NWSDB (Appendix 4). The staff skills and motivation of RWSS units were strengthened but *pradeshiya sabha* technical units were not sustained as the activities were discontinued after the project.

59. At design, no significant environmental impact was envisaged for most subcomponents (footnote 1). Design safeguards were adopted to reduce adverse impacts, especially at intakes to minimize wildlife disturbance (buried mains, fish ladders, low-noise pumps) and with compensation for farmers displaced near the Unnichchai tank. Sanitation programs reduced open field defecation. The Batticaloa hospital and prison wastewater treatment plant eliminated septic tank discharge to the lagoon; the prison now meets International Committee of the Red Cross sanitation standards.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

60. The project is rated *less than successful*. Even though the project was considered relevant, it could not be delivered efficiently and its outcomes did not meet the envisaged level. All outputs of the urban component were delivered but with a huge cost overrun and significant delays. There is optimism around the sustainability of the urban schemes, yet the negative FIRRs and economic internal rates of return (EIRRs) show the challenges these schemes face in the long run. Only around half of the rural schemes active, show a negative picture. Reporting on component 3 was inadequate to allow assessment of its effectiveness, and performance indicators for the NWSDB's operations were incomplete. A regular project performance and

[31] SLRs7,000 for the poorest category of *Samurdhi* (government subsidy) welfare recipients.

monitoring system was not maintained by the PMU and QPRs lacked cumulative data and descriptions of processes.

B. Lessons

61. Several lessons have been learned:
   (i) With proper negotiations with the conflicting parties, projects serving basic needs (such as water) can be implemented even during conflicts.
   (ii) By not using DMFs as dynamic planning tools, inconsistencies were repeated in the DMF of each RRP, leading to discrepancies in output and outcome targets.
   (iii) Latrine provision programs needed greater flexibility to target the poorest people.
   (iv) It would have been more effective if component 3 had been implemented by NWSDB rather than the PMU.
   (v) Institutional memory is reduced on a long duration project; proper record keeping is, therefore, essential to assist final evaluation.
   (vi) The goodwill of nonbeneficiary villagers living along a raw water main can be ensured by providing access through stand-pipes (Batticaloa).[32]

C. Recommendations

62. Project-related recommendations include the following:
   (i) Ancillary institutional strengthening components should be managed directly by the implementing agency rather than the PMU.
   (ii) To reduce risk of cost overruns, ADB's project design advance and TA loans should be sought to prepare detailed design before project commencement.
   (iii) PMUs should have a monitoring officer and the project performance monitoring system should be maintained linked to DMF indicators so as to show current and cumulative work achieved in each period.
   (iv) CBO-implemented water schemes should be planned to involve more participation by women, especially in managing the schemes, on completion.

63. **Future monitoring**. Progress on improving the NWSDB's operational performance is to be monitored.

64. **Covenants.** Audited reports for the financial year 2015 till the end of February 2016 shall be submitted by the borrower.

65. **Further action or follow-up**. These include the following actions by the NWSDB:
   (i) Damage to the road and power lines to the Muttur intake should be rectified.
   (ii) More public awareness campaigns should be run to alert poor beneficiaries to preferential terms for connections and latrines, especially in Batticaloa.
   (iii) A study of why Batticaloa people are not using piped water to full advantage should be undertaken.

66. **Timing of the project performance evaluation report**. Evaluation proposed in Mid-2017.

[32] The raw water main from the Unnichchai tank to the Batticaloa water treatment plant has stand pipes in the villages it passes, enabling the villagers to support the system even though they were not targeted as part of the original beneficiary group.

DESIGN AND MONITORING FRAMEWORK

A. Variations in Content

1. The design and monitoring framework (DMF) used in this project completion report (PCR) to evaluate achievements is based on those contained in each of the reports and recommendations of the President (RRPs) of 2002,[1] 2006,[2] and 2011.[3] The DMF for the 2002 RRP provided the clearest definition of outputs and outcomes and figures in the RRP text mostly match those in the DMF. The target beneficiaries are set at 969,000 for water supplies and at 171,500 for sanitation. The subsequent RRPs did not maintain the logical justifications for calculating beneficiaries and, in several cases, the text and DMF figures do not tally.

2. The content of this PCR DMF is therefore derived from the DMFs for the original RRP but accommodates subsequent RRPs in a logical and justified manner. Three main reasons for the changes in the project outcomes, between the RRP 2002 and this PCR are that (i) the beneficiaries for each water connection or toilet were recalculated at four people per household, instead of five, in line with district population data;[4] (ii) the output targets, in terms of number of water connections and latrines, were modified during the course of the project to account for shortages of funds and implementation time; and (iii) the Matara salinity barrier was abandoned in 2006 because of local objections.

3. The changes between each successive RRP DMF are summarized in Table A1.1and are reflected in the PCR DMF. Other changes include the following:

(i) The RRP 'outputs' have been separated to show the main subcomponent elements contributing to the 'outcome'. The envisaged physical achievements and expected completion dates are retained under the heading of "performance targets". This facilitated direct comparison with actual achievements.

(ii) The outcome performance target text has been corrected to 'four urban areas and three rural districts', from five urban areas and two rural districts. This discrepancy occurred in the DMFs of the RRPs for 2006 and 2011, and did not account for the dropping of the Matara salinity barrier or inclusion of Batticaloa rural areas.

(iii) The DMF format was amended to reflect the correct styles of presenting impacts and activities, as per Asian Development Bank (ADB) guidelines.[5]

B. Beneficiary Calculations

4. A fundamental concern is the quantification of project beneficiaries. As shown in Table A1.2, the outcome targets for water supply beneficiaries in the RRPs originally were 969,000 people, and for sanitation beneficiaries 171,500 people. These were based not on actual people

[1] ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[2] ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[3] ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[4] Government of Sri Lanka, Department of Census and Statistics. 2015. *Household Income and Expenditure Survey, 2012/1*3. Colombo.

[5] ADB. 2007. *Guidelines for Preparing a Design and Monitoring Framework*. Manila.

numbers for the rural water supplies but on connections for the urban subcomponent. Sanitation beneficiaries were based on the numbers of latrines. Each connection and latrine served one household. Thus, the calculation of beneficiaries was obtained by multiplying the connections and latrines by the average number of people in a household.

5. Table A1.2 shows that a household size of 5.0 persons was used in the RRPs (Appendix 8). National census data show mean household sizes as 4.1 in 2001 and 3.9 in 2012; district data for 2012/13 show mean household sizes as follows: Anuradhapura 3.7, Batticaloa 4.1, Hambantota 3.9, Polonnaruwa 3.8, and Trincomalee (includes Muttur) 3.9 (footnote 4). The original project preparatory technical assistance (TA) during 2001–2002, quoted household sizes ranging from 4.5 to 5.2 (with no source), and rural household sizes were cited as 4.6 in Polonnaruwa and 4.3 in Anuradhapura on the basis of field surveys.[6]

Table A1.1: Key Sequential Content Variations from the 2002 Report and Recommendation of the President

Topic	RRP 2006 from RRP 2002	RRP 2011 from RRP 2006
Impact	"Goal" changed to "Impact"; target dates added 'to 2012'. Assumptions and risks added	Impact statement modified. Added target date to 2015; % changes in target achievements; 2003 baseline data. Assumptions revised.
Outcome	"Purpose" changed to "Outcome"; people with access to safe water decreased to 946,000 (from 969,000).	Added target of 799km water supply pipes installed or upgraded.
Output: Urban	Batticaloa water network added; Hambantota expansion separated; Matara salinity barrage dropped. Targets revised to 100,000 connections (from 101,400), safe sanitation facilities reduced to 5,000 (from 6,000) households but summary remains erroneously, as 33,000 latrines. Assumptions and risks revised.	Target date to 2012. Batticaloa Hospital waste treatment capacity defined. Deleted target of safe sanitation facilities reduced to 5,000 households, Summary remains as 33,000 latrines. 2003 baseline data added. Assumptions revised, 'risks' removed.
Output: Rural	Beneficiaries increased to 350,000 people (from 322,000), adding Batticaloa; latrines reduced to 27,000 (from 27,600).	Target dates changed to 2010.
Output: Institutional	No change	Completion dates changed (2010 or 2012). Assumptions modified slightly.
Activities	Added detail with completion dates; Batticaloa prison waste water added.	Activity achievement dates specified by year and quarter.
Inputs	Categories removed, shows ADB ($120.3 million) government ($51.9 million) and community ($3.0 million). Total $175.2 million not stated.	Expanded to cover each loan ($137.9 million), government ($118.5 million) and community funding ($3.1 million). Total $259.5 million not stated.

ADB = Asian Development Bank, DMF = design monitoring framework, km = kilo meter, RRP = Report and Recommendations of the President.
Sources: DMFs from: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary*

[6] ADB. 2002: *Project Preparatory Technical Assistance to the Government of Sri Lanka for Secondary Towns Water Supply and Sanitation Project.* Manila (TA3587, Consultants' report).

Towns and Rural Community-Based Water Supply and Sanitation Project. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

Table A1.2: Calculation of Expected Project Beneficiaries

	RRP 2002				PCR Recalculation			
Category	People	Water Connect'n	Latrines	Person/ HH	Water Connections	Latrines	Person/ HH	People
DMF outcome								
Water supplies	969,000							750,000
Sanitation	171,500							131,500
DMF outputs totaled								
Urban water								
- piped water[a]	507,000	101,400		5	100,000		4	400,000
- Matara barrier[b]	140,000							0
Rural water[c]	322,000							350,000
Sub-Total	**969,000**							**750,000**
Urban Sanitation								
- urban latrines[d]	30,000		6,000	5		5,000	4	20,000
- Batticaloa WWTP[e]	3,500							3,500
Rural latrines[f]	138,000		27,600	5		27,000	4	108,000
Sub-Total	**171,500**							**131,500**

DMF = design and monitoring framework, HH = household; PCR = project completion report; RRP = report and recommendation of the President; WWTP = waste water treatment plant.

[a] RRPs stated connections: 101,400 in RRP 2002 reduced to 100,000 in RRP 2006 and RRP 2011.

[b] Matara salinity barrage dropped at midterm review in 2006, removing 140,000 potential target beneficiaries

[c] 28,000 new rural beneficiaries in Batticaloa added in RRP in 2006 (and outcome total amended to 946,000)

[d] 2002 DMF erroneously showed 33,500 latrines (but the text used 32,500 people), reduced to 6,000 latrines at midterm review and amended to 5,000 latrines in RRP in 2011, as used in PCR.

[e] 3,500 people benefited from a new waste water treatment plant at the hospital and prison in Batticaloa.

[f] 2002 RRP Appendix 9, para. 13 incorrectly stated 124,000 'households' would have latrines, instead of beneficiaries. 27,600 given in RRPs in 2002 and 2006. Reduced to 27,000 in RRP in2011 and used in PCR.

Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

6. The original RRP outcome targets included 140,000 beneficiaries from the Matara salinity barrage that was dropped from the project at the midterm review in 2006 but the beneficiaries were not removed from the 2006 or 2011 RRPs. The figures have been recalculated by the PCR mission on the basis of an overall mean of four people per household, excluding the Matara barrage. This yielded more realistic outcome targets of 750,000 beneficiaries for water supplies and 131,500 beneficiaries for sanitation (128,000 from latrines and 3,500 beneficiaries from the Batticaloa waste water treatment plant). The revised figures are adopted in the PCR DMF. Outputs have similarly been adjusted to the four people per household.

7. The net result is that outcome and output targets have been reduced: by about 23%. Output achievements reported by the project, which were based on a five people per household, have been reduced by 20%. Table A1.3 summarizes these changes in beneficiary numbers used in the PCR.

Table A1.3: Summary of Changes in Project Beneficiaries

Category	RRP 2002 (People)	PCR Recalculation (People)	Change (People)	Change %
DMF outcome				
Water supplies	969,000	750,000	(219,000)	(23)
Sanitation	171,500	131,500	(40,000)	(23)
DMF outputs totaled				
Urban water				
- piped water	507,000	400,000	(107,000)	(21)
- Matara Salinity Barrier[a]	140,000	0		
Rural Water	322,000	350,000	28,000	9
Sub-total	969,000	750,000	(219,000)	(23)
Urban sanitation				
- urban latrines	30,000	20,000	(10,000)	(33)
- Batticaloa WWTP	3,500	3,500	0	0
Rural latrines	138,000	108,000	(30,000)	(22)
Subtotal	171,500	131,500	(40,000)	(23)

( ) = negative, DMF = design and monitoring framework, PCR = project completion report, RRP = report and recommendations of the President, WWTP = waste water treatment plant.

[a] Matara salinity barrage dropped at midterm review in 2006.

Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

8. Basing urban water supply outputs on the number of connections and the outcome on the numbers of people with access to safe drinking water was inconsistent. In the Sri Lankan context, access to safe drinking water' implies the availability of such water within 200 meters of a household, whether or not the household is able to or wishes to benefit from it. The RRPs of 2002 and 2006 did not actually define the meaning of "access to safe drinking water" but the DMF in the 2011 RRP defines "access" according the World Health Organization as "the proportion of people **using** improved drinking water sources," and "safe" as water that meets World Health Organization or national standards of quality.

C. Other Changes and Corrections to Design and Monitoring Framework Content

9. Other changes made are as follows:

(i) Anuradhapura district, missing from the impact, has been inserted.

(ii) Impact statement achievement extended to 2017, 3 years from completion, in line with ADB guidelines.

(iii) Assumptions and risks deleted from impact, to conform with ADB's 2015 DMF policy.

(iv) The outcome target of 799 kilo meters of *water supply mains installed'* has been deleted; this is an activity, leading to outputs that contribute to outcome. There should be a single outcome.

(v) Batticaloa prison has been re-inserted as a beneficiary of output 1.4. (waste water treatment plant, included in RRPs, but missing from the DMFs). The beneficiaries are included in the urban sanitation outcome.

(vi) The phrasing of the output design summaries has been altered to state what was actually done: "Schemes constructed" is an output, "construction of schemes" is an activity. Better wording at output level would have been, for example, "new

water supply networks operating, with capacities of 40,000 cubic meters (m^3) per day at Batticaloa and 8,500m^3/day at Muttur".

(vii) Outputs 1.1 and 1.2: Polonnaruwa capacity corrected to 13,500m^3/day and moved to 1.2 as an 'augmented network.

(viii) Output 1.3 for construction of low-cost latrines corrected from 33,500 to 5,000 to match 2006 RRP, following delays reported at midterm review.[7]

(ix) Output 1.5: "Storm water drainage" inserted, as included in component 1 of the 2002 RRP but not shown in any DMFs.

(x) "Provision of training and public awareness campaigns" (1.6) and 'delivering of training" (2.3) are 'activities; the wording has been changed to reflect 'output'.

(xi) Component 3: Output 3.4 performance indicators are expanded to match the main text of the 2006 RRP.

(xii) Output 3.2 performance target of 5% annual decrease of staff numbers per year should have been phrased as 5% annual reduction in average staff numbers per 1,000 connections to reflect productivity of staff in relation to changing work load, as correctly used in the RRP texts.

D. Conclusions

10. Overall, the content of the DMFs was not consistently amended to accommodate agreed changes in approach over the 10-year project life. Some errors have been repeated in each version.

11. The calculation of beneficiaries was fundamentally flawed but has been corrected to give more realistic outcome and output target figures.

12. DMFs are supposed to be dynamic, as noted in the following box.

Characteristics of Design and Monitoring Frameworks

- *The DMF is revised and updated regularly to reflect the necessary changes in the project scope during implementation.*
- *The DMF is a primary source for, and is embedded in, PCRs.*
- *A DMF is a living document. The DMF is revised and updated regularly to reflect the necessary changes in the project scope during implementation.*

DMF = design and monitoring framework, PCR = project completion report.
Source: ADB. 2007. *Guidelines for Preparing a Design and Monitoring Framework*. Manila.

[7] ADB. 2006. *Aide-Mémoire of Midterm Review Mission for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

Design and Monitoring Framework

Design Summary	Performance Targets	Actual Achievements (as of April 2015)	Assumptions and Risks
Impact			
Improved health conditions in Anuradhapura, Batticaloa, Hambantota, Muttur, and Polonnaruwa by 2017[a]	20% decrease in infant mortality in project areas	Achieved: infant mortality in Sri Lanka 9.7 per 1,000 live births (Hambantota 5.5, Batticaloa 17.4, Trincomalee 4.5, Polonnaruwa 7.8, Anuradhapura 12.3)[b]	
		(2003 baseline: Sri Lanka 11.3, Hambantota 6.7, Batticaloa 21.1, Trincomalee [Muttur] 3.4, Polonnaruwa 27.6, Anuradhapura 19.4)	
	50% decrease in incidence of waterborne diseases in project areas	Achieved: incidence of dysentery (number of cases in 2013) Hambantota 79, Batticaloa 407, Trincomalee (Muttur na) 82, Anuradhapura 125, Polonnaruwa 107[b]	
		(2003 baseline incidence of water- and sanitation-related disease: Batticaloa 16%, Hambantota 16%, Muttur 39%, Polonnaruwa 10%; Anuradhapura not available)	
	75% decrease in time spent collecting water in project areas	Achieved: time in collecting water termed "insignificant" after project in all regions, including Hambantota (by 95% of respondents)[b]	
		(2003 baseline [hours/day]: rural areas 3–4; urban: Batticaloa 6, Hambantota 16, Muttur 0 (mostly household wells), Polonnaruwa 24; Anuradhapura not available)	
Outcome			
Provision of safe drinking water[c] and safe sanitation to people in project areas	In four urban areas and three rural districts an additional 750,000 people have access to safe water and 131,500 people have access to safe sanitation, by 2015[d]	A total of 509,001 additional people (68% of the target) have access to safe water by Q4 2014 (256,432 urban people in Batticaloa, Muttur, Polonnaruwa, and Hambantota; and 252,569 rural people in Anuradhapura, Batticaloa, and Polonnaruwa districts)	**Assumption** A stable political environment and positive economic growth
		A total of 93,556 additional people (71%) have access to safe sanitation by Q4 2011 (20,348 people in Batticaloa, Muttur, Polonnaruwa, and Hambantota urban areas; and 73,208 rural people in Anuradhapura, Batticaloa, and Polonnaruwa districts)	
Outputs			
1. Urban Component			
1.1 Two new water networks constructed to provide 40,000 m^3/day in Batticaloa, and 8,500 m^3/day in Muttur	100,000 connections providing at least 15 m^3/month of safe drinking water 24 hours daily by 2012 (400,000 people served) Non-revenue water less	New networks completed, with ultimate capacity to benefit 298,000 people 24 hours per day, currently serving 119,432 people (30%) through 29,858 connections. Batticaloa network capacity 40,000 m^3/day, capable of serving 246,000 people, completed Q2 2011, currently producing 12,600m^3 per day serving 118,000 people; Muttur network capacity 8,500 m^3/day capable of serving 52,000 people completed Q4 2014, currently producing 800m^3 per day and serving 1,432 people (10,000 connections,	**Assumptions** Timely provision of counterpart funds No delays in construction

Design Summary	Performance Targets	Actual Achievements (as of April 2015)	Assumptions and Risks
	than 25% and collection rate is greater than 90% by 2012.	with 40,000 people served expected by 2020)	activities due to former conflict areas Continuous government support to the National Water Supply and Sanitation Policy and sector reforms
		NRW and collection rates: Batticaloa NRW 23% and collection rate 92.4% by Q4 2014.[g] Too soon to estimate NRW and collection rates for Muttur.	
		(2003 baseline: Batticaloa, capacity of 1,400 m^3/day, 1,769 connections, coverage of 7,200 people, NRW 30%; Muttur, small scheme only, supply limited to 2 hours daily)	
1.2 Two existing water networks augmented to provide 15,000 m^3/day in Hambantota and 13,500 m^3/day in Polonnaruwa		Two networks augmented, potentially benefiting 218,000 people with 24-hour service, currently serving 137,00 people (34%) through 34,250 connections. Hambantota new capacity of 15,000 m^3/day completed at end of 2013, including completion of salinity barrier in Q1 2013, augmenting two existing schemes with a potential to serve 133,000 people regionally. New scheme currently producing 15,000 m^3/day and serving 52,000 people. Polonnaruwa new capacity of 13,500 m^3/day, augmenting existing 6,000 m^3/day plant, capable of serving 85,000 people completed in Q4 2011	
		NRW and collection rates: Hambantota NRW 28% and collection rate 101.0%; Polonnaruwa NRW 19.6% and collection rate 102.3%[g]	
		(2003 baseline. Hambantota, capacity of 7,500 m^3/day, 9,288 connections, coverage of 42,000 people, NRW 29%; Polonnaruwa, capacity 6,000 m^3/day, 4,200 connections, coverage of 22,300 people, NRW 30%)	
1.3 Total of 5,000 low-cost latrines constructed[e]	90% of households in project area have access to safe sanitation by 2012	96% of population had access to safe sanitation by 2012 (Batticaloa 87%, Muttur 96%, Hambantota 100%, Polonnaruwa 98%)[h]	
	Access to safe sanitation and on-site facilities provided for 5,000 households	Total of 4,212 low-cost household latrines (84%) constructed through provision of financial assistance, benefiting 16,848 people (72%); Batticaloa, 1,387 latrines benefiting 5,548 people by Q4 2010; Polonnaruwa, 393 latrines benefiting 1,572 people by Q4 2009; Hambantota, 1,098 latrines benefiting 4,392 people by Q3 2011; Muttur, 1,334 latrines benefiting 5,336 people by Q4 2010.	
1.4 Storm water drainage constructed in Batticaloa and Muttur	Reduced flooding in densely populated areas	Storm water drainage completed in Batticaloa by Q4 2008 (3,600 meters) and Muttur by Q2 2009 (4,100 meters)	
1.5 Treatment plant constructed for Batticaloa hospital and prison, with	Batticaloa hospital and prison waste discharge meets Government of Sri Lanka standards by	Waste water treatment plant installed for hospital and prison, with capacity of 350 m^3/day, benefiting 3,500 people (15%) and reducing environmental damage to lagoon. Completed by Q1 2010. Discharge meets government standards.	

Design Summary	Performance Targets	Actual Achievements (as of April 2015)	Assumptions and Risks
capacity to treat 350 m^3/day	2010	(2003 baseline: Batticaloa hospital and prison septic tanks with effluent discharged into lagoon)	
1.6 Public more aware of importance of safe water and sanitation	Public awareness raised through campaigns	Media publicity programs and awareness campaigns undertaken during 2004–2008 to promote importance of safe water and hygiene	
2. Rural Component			
2.1 Rural water schemes constructed to provide drinking water (piped, rain fed, protected well) to 350,000 people (87,500 households) in Anuradhapura, Batticaloa, and Polonnaruwa	85% of the population in project areas has access to at least 20 liters/person/day of safe drinking water by 2010	93% of population in the three districts had access to safe water by 2012 (Batticaloa 98%, Anuradhapura 91%, Polonnaruwa 93%)[i]	**Assumptions** Willingness of beneficiaries to organize into CBOs and participate in project activities
		Population of 252,569 people (72%) provided with safe water supplies through new community-based water supply schemes (135 schemes serving 207,300 people), new or rehabilitated common and private dug wells (4,627, serving 25,880 people), tube wells (101, serving 6,070 people), rainwater harvesting systems (3,003, serving 13,319 people). Completed by Q4 2009 in Batticaloa and by Q4 2011 in Anuradhapura and Polonnaruwa	
2.2 Total of 27,000 low-cost latrines constructed	85% of the population in project areas has access to safe sanitation by 2010	95% of population in the three districts had access to safe sanitation by 2012 (Batticaloa 87%, Anuradhapura 98%, Polonnaruwa 98%)[i]	
		18,302 low-cost latrines (68%) constructed through provision of financial assistance, benefiting 73,208 people. Batticaloa, 293 latrines benefiting 1,172 people by Q4 2009; Polonnaruwa, 9,022 latrines benefiting 36,088 people by Q4 2011; Anuradhapura, 8,987 latrines benefiting 35,948 people by Q4 2011	
2.3 CBOs, *pradeshiya sabhas,*[f] and provincial councils have the capacity to implement all project activities and to assure the sustainability of investments	Participating CBOs, 15 participating *pradeshiya sabhas*, and one provincial council trained in implementing project activities and O&M	Public awareness campaigns effectively motivated villagers to join the project; 14 *pradeshiya sabhas* participated in training. PSIU staff and CBOs trained under RWSS program (implementation, O&M, and book-keeping, etc.), with follow-up refresher training as required. Training events, involving some 9,200 participants, completed by Q3 2011. Technical assistance officers of *pradeshiya sabhas* trained by RWSS team. Technical staff of NCP provincial council members trained in RWSS.	
3. Institutional Strengthening (NSWDB)			
3.1 National public awareness of cost of water raised	Increased public awareness	National media and awareness campaigns conducted during 2007–2008. Radio, television, and paper media used to promote the value of water, using Sinhala, Tamil, and English languages. Children and youth targeted in project districts. Schools presentations and forum theatre conducted.	**Assumptions** Enforcement of water sector regulations and

Design Summary	Performance Targets	Actual Achievements (as of April 2015)	Assumptions and Risks
3.2 Corporate strategy implemented to improve NWSDB management	Performance targets agreed by the project are met[j]	NWSDB corporate strategy for 2007–2011 prepared. This, and subsequent strategy for 2012–2016, were being implemented from 2007.	implementation of sector reforms Willingness of CBOs, local authorities, or the private sector to take responsibility for small schemes Willingness of consumers to pay full cost of water Commitment to an autonomous and accountable service delivery mechanism
		Management skills of NWSDB staff enhanced through about 16 in-country and nine overseas training programs (Appendix 7).	
		Some performance targets for NWSDB's business operation were met: staff ratios declined annually, maintenance expenditure increased and electricity consumption decreased; establishment cost increased, declining only in 2014; collection rates stabilized at around 100%; rehabilitation expenditure increased; and NRW proportion declined annually. No data on bill settlement periods (Appendix 4).	
3.3 A strategy to reduce O&M cost implemented	Weighted average tariff covers O&M, debt service, and rehabilitation expenses	Hardware and computer-assisted bill payment systems were installed but no data are available for changes in collection rates (Appendix 4)	
		Energy efficiency programs were conducted. Electricity usage appeared to decline dramatically from 2012 (Appendix 4).	
		The institutional capacity for repairs and maintenance has improved and expenditure on maintenance has met targets set in 2002 RRP.	
3.4 NSWDB financial management strategy implemented	Performance-based incentives	Introduction of performance-based incentives to staff not possible, contrary to government policy. Dropped in Q1 2007.	
	Improved financial management	Unresolved balances were written off. Systems were introduced to better manage stores across all regional centers.	
3.5 Strategy implemented to transfer systems with less than 1,000 connections to local authorities, CBOs, and the private sector	85% of schemes with less than 1,000 connections are operated by CBOs, local authorities, or the private sector by 2012	Four schemes were selected on a pilot basis but only one (Samurdhigama RWSS, Puttalam district) was completed and handed over by 2010. Other schemes were dropped because of lack of community interest or inadequate funds available; 85 such schemes existed. Only 1.4% of the 72 targeted schemes (85% of 85 schemes) were handed over. No strategy was seen by the PCR mission.	
3.6 An asset registry developed for systems with more than 10,000 connections	100% of schemes with more than 10,000 connections have an asset registry by 2010	Asset register system introduced, with bar coding, across all regional centers and WSSs of more than 10,000 connections between 2008 and 2010. Upgraded IT systems and NWSDB networking installed and operating	

Activities with Milestones	**Inputs by Source**	
1. Urban Component	**Inputs ADB loan: $ 137.9 million**	
1.1 PMU, town PIUs, and PIU (irrigation) formed by Q4 2006	**Item**	**$ million**
1.2 Benefit monitoring survey conducted for different towns by end of Q2 2007	Asian Development Fund resources (original)	60.3
1.3 Necessary water rights water extraction (memorandum of understanding signing) obtained by the end of Q1 2007	Asian Development Fund resources (supplementary 1)	46.5
1.4 Bidding documents tendered, evaluated, and contractors selected by the end of Q4 2009	Asian Development Fund resources (additional financing 2)	13.3
1.5 Construction activities completed by the end of Q4 2012	Ordinary capital resources (supplementary 1)	13.5
1.6 Initial households connections started by Q2 2011 for completed schemes	Ordinary capital resources (additional financing 2)	4.3
2. Rural Component	**Government: $118.5 million**	
2.1 PMU, Technical Support Unit, and *pradeshiya sabha* implementation units formed by the end of Q2 2007	**Item**	**$ million**
2.2 *Pradeshiya sabhas* selected by the end of Q3 2007	Counterpart financing (original)	18.6
2.3 Nongovernment organizations/partner organizations registered and recruited to support CBOs for batch 1 by Q3 2007	Counterpart financing (supplementary 1)	97.9
2.4 Completion of all schemes by Q4 2010	Counterpart financing (additional financing)	2.0
3. Institutional Strengthening	**Community $3.1 million**	
3.1 NWSDB will implement a corporate strategy to improve financial planning and resource allocation by the Q2 2005	**Actual Expenditure**	
3.2 NWSDB will implement its strategy and action plan to address audit findings and accounting and financial management recommendations by the Q3 2007	Appendix 8 includes appraisal estimates and actual expenditure by completion	
3.3 Action plan to improve operational performance implemented by the end of Q4 2008		
3.4 NWSDB will complete an asset registry in all regional centers by Q3 2008		

ADB = Asian Development Bank, BME = benefit monitoring and evaluation, CBO = community-based organization, DMF = design and monitoring framework, IED = Independent Evaluation Department, IT = Information technology, km = kilometer, m^3 = cubic meter; NCP = North Central Province, NRW = nonrevenue water, NWSDB = National Water Supply and Drainage Board, O&M = operation and maintenance, PCR = project completion report, PIU = project implementation unit, PMU = project management unit, PSIU = p*radeshiya sabha* Implementation Unit, Q = quarter, RRP = report and recommendation of the President, RWSS = rural water supply and sanitation.

The DMF is based on the 2011 RRP, with reference to DMFs in 2002 and 2006 RRPs. Minor changes have been made to the 'output' components to highlight the sub-components and distinguish the actual physical outputs under the performance targets, and correction of errors and discrepancies as explained in the Appendix text.

Notes:

[a] Anuradhapura district added: it had been omitted in error from the RRP 2011 DMF Impact section. New achievement date set by project/ PCR mission.

[b] Sources: Infant Mortality, Annual Health Bulletin 2012, Ministry of Health; Water-borne disease, Epidemiology Unit, Ministry of Health (all districts <0.08%. Baseline from PPTA (2002), covering '*diarrhea, typhoid, worms and skin diseases'* but source unknown); water collection, project impact assessment surveys.

[c] "Access to safe drinking water" = people using safe water sources (World Health Organization http://www.who.int/water_sanitation_health/mdg1/en/).

[d] The Outcome performance target text has been corrected to '4 urban areas and 3 rural districts', from 5 urban areas and 2 rural districts. Target beneficiaries are reduced to account for mean household size of 4.0 persons. Includes 3,500 beneficiaries from Batticaloa wastewater treatment plant See Appendix 1 text.

[e] Proposed construction 6,000 low-cost toilets, reduced to 5,000 in RRP 2011 (but still shown as 6,000 in borrower's project completion report). Initial figure of 33,000 in RRP 2002 was an error.

[f] *Pradeshiya sabha* = smallest local government unit.

[g] Data for 2015 for north central, southern and eastern regional service centers of NWSDB (http://www.waterboard.lk)

[h] Data for sanitation drawn from 2012 national census data (Department of Census and Statistics, 2012) for relevant urban Divisional Secretariats.

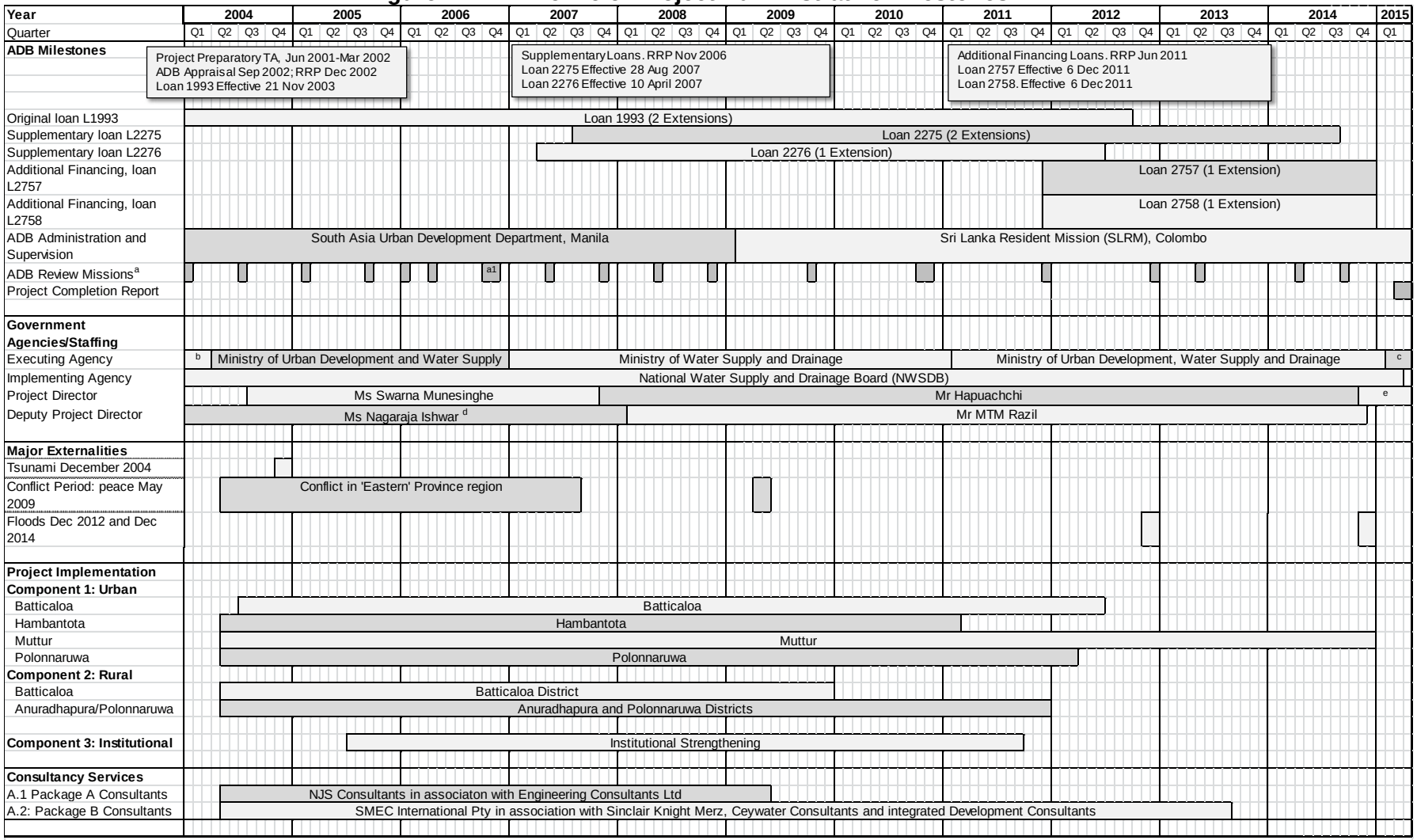
[i] District-wide data used as approximate indicators: safe water from Household Income and Expenditure Survey (2009/10), safe sanitation from Department of Census and Statistics (2012) data for the 2012 national census.

[j] Performance targets included: a 1.2 debt service ratio, a 10% decrease in establishment expenses, and a 20% increase in rehabilitation costs, a 2% annual decrease in kilowatt-hours electricity and a 5% annual decrease of staff numbers, a 14% increase in m^3 billed, and a 97% collection rate by 2010

Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; Government of Sri Lanaka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural community-Based Water Supply and Sanitation project.* Colombo; PMU Annual Report 2014 (2 pages); interviews with beneficiaries and field officers.

IMPLEMENTATION TIMELINE AND SCHEDULE

Figure A2.1: Timeline of Project Administrative Milestones



RRP = report and recommendations of the President

[a] Full details of missions given in Basic Data section of main Project completion report.

[a1] Midterm Review Mission Oct-Nov 2006

[b] Ministry of Housing and Plantaion Infrastructure was executing gency in early 2004

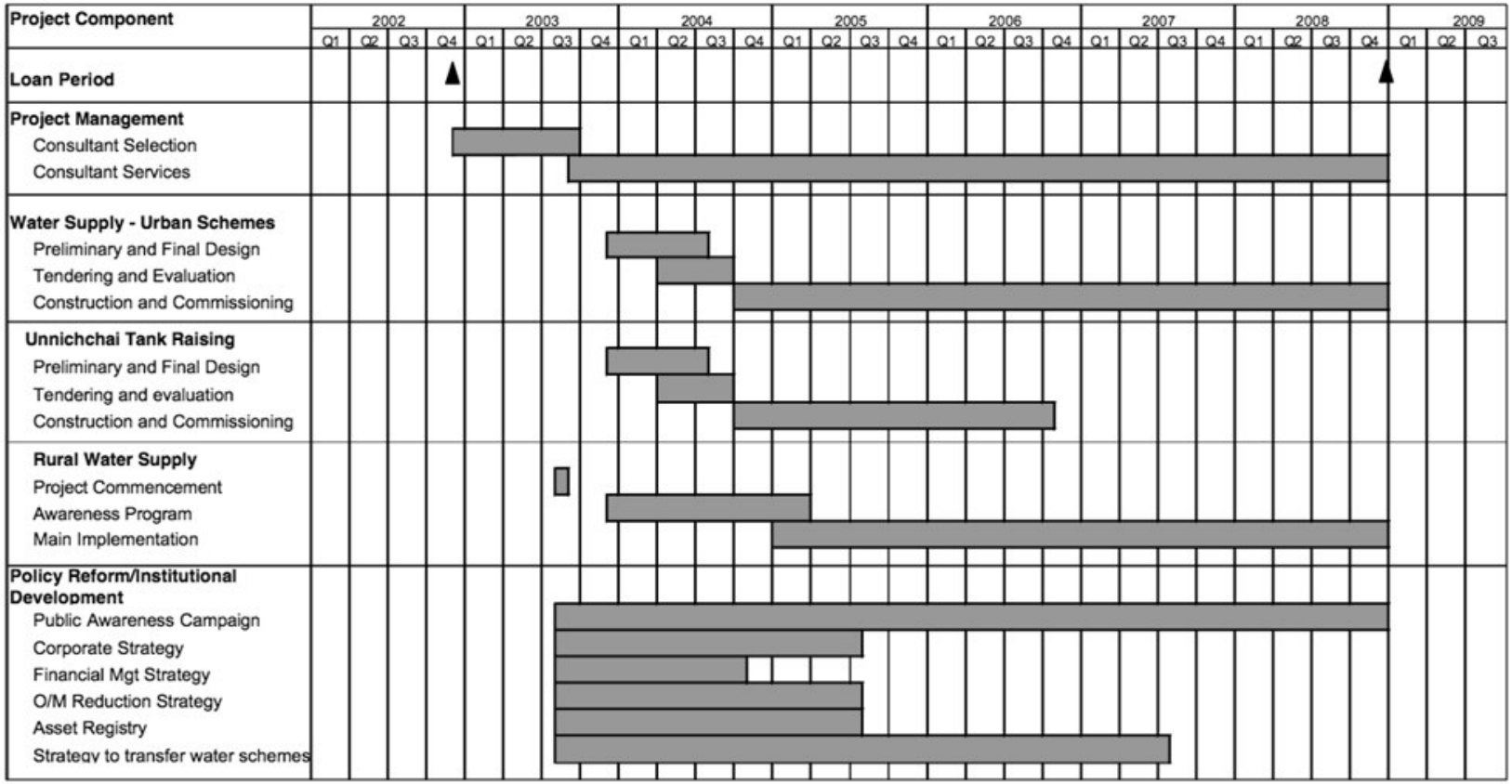
[c] Ministry of City Planning and Water Supply as the executing agency from January 2015.

[d] Ms Nagaraja, Assstant general manager, acted as project director initially and then as deputy project director.

[e] MTM Razil appointed project director

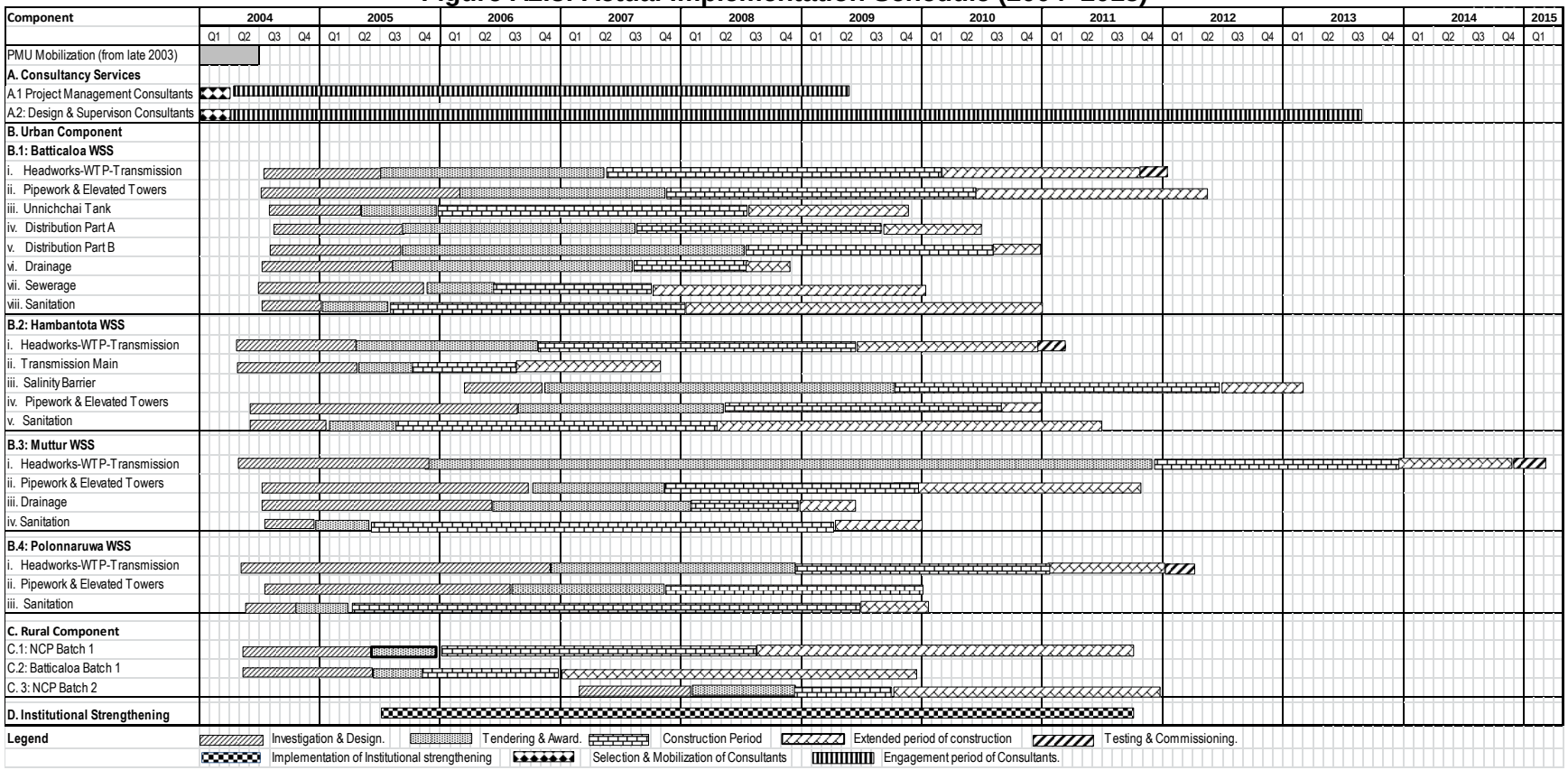
Source: Project Completion Review mission.

Figure A2.2: Originally Proposed Implementation Schedule (2002)



Source: ADB. 2004. *Project Administration Memorandum: Secondary Towns and Rural Community–Based Water Supply and Sanitation Project*. Manila.

Figure A2.3: Actual Implementation Schedule (2004–2015)



NCP = north central province, WSS = water supply scheme, WTP = water treatment plant, PMU = project management unit

Notes: Several minor errors in timings shown in the *Borrower's project completion report*, corrected by Project Completion Review mission.

Sources: Gvernment of Sri Lanka, Ministry of Water Supply and Drainage. 2015. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

RURAL COMPONENT

A. Background

1. Component 2, as outlined in the report and recommendation of the President (RRP),[1] envisaged financing a demand-driven and community-based water supply and sanitation program in 14 selected p*radeshiya sabhas*[2] of Polonnaruwa and Anuradhapura districts in North Central Province. The program was extended to one *pradeshiya sabha* in Batticaloa in the 2006 RRP.[3]

2. The expanded program aimed to benefit 350,000 people for water and 108,000 for sanitation.[4] It focused on poor and underserved areas in administrative divisions that exhibited the highest incidence of poverty and lack of water supply, and that were interested and those willing to contribute 20% of the investment costs and take responsibility for the operation and maintenance (O&M) of the facilities, would be invited to apply for assistance.

3. The subproject selection process was to combine elements of both a poverty-targeted and a demand-responsive approach. The program envisaged a four-stage approach:

(i) Organizing beneficiaries in selected communities into community-based organizations (CBOs) through nongovernment organizations (NGOs)
(ii) Developing the capacity of the CBOs to implement, operate, and maintain water supply schemes and sanitation facilities, through local government offices and NGOs.
(iii) Constructing community-based rural water supply infrastructure, using appropriate water sources, with the beneficiaries contributing a minimum of 20% of the costs in labor or cash.
(iv) Constructing rural sanitation (toilet) infrastructure for individual households, against a minimum contribution of 50% of the costs by the user household.

4. The rural component expected communities to participate actively in the project design and implementation, and to develop a sense of ownership of the project. The component included institutional support for the North Central Provincial council, for participating p*radeshiya sabhas* and for CBOs. This aimed to develop their capacities to implement, operate, and maintain water supply schemes and sanitation facilities and to assure the sustainability of water supplies after project completion.

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[1] ADB. 2002. *Report and Recommendations of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.
[2] Pradesiya sabah is the smallest local government unit.
[3] ADB. 2006. *Report and Recommendations of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.
[4] Water supply: 322,000 at design but increased to 370,000 to include Batticaloa villages (footnote 3) and reduced to 350,000 (ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila). Sanitation: 138,000 beneficiaries at design reduced to 108,000, based on 27,000 latrines and four people per household (Appendix 1).

B. Method of Evaluation

5. The impact studies commissioned by the project management unit (PMU) as part of its borrower's project completion report[5] inexplicably failed to include a review of component 2. The Asian Development Bank (ADB) project completion report (PCR) mission therefore undertook a rapid assessment. The mission visited Anuradhapura, Batticaloa, and Polonnaruwa districts to assess the impacts of the rural component. Discussions were held with members of rural water and sanitation units of the National Water Supply and Drainage Board (NWSDB). Field visits were made to six community water supply schemes—three in Polonnaruwa and three in Anuradhapura district—accompanied by staff of the respective rural water and sanitation units. Field visits in Batticaloa were not feasible in the time available.

C. Results of Rapid Impact Studies

1. Implementation Process

6. The rural component was implemented in two batches between 2004 and 2011, in collaboration with partner NGOs, who were selected by competitive bidding. Project staff and NGOs worked closely with the *pradeshiya sabha* implementation units (PSIUs), with involvement of grama niladharis (village officers) and divisional government agencies (especially public health inspectors for the sanitation elements) and the project technical support units. The NGOs operated on a rolling program, spending about 18 months with each CBO. The program was preceded by awareness campaigns and CBO staff were trained in operations and maintenance (O&M) methods.

7. To ensure maximum participation, small groups of between 10–25 people were formed initially. Two people were then selected from each group and the executive committee of the CBO was in turn selected from them. Some of the CBOs were federated into a CBO forum. It was also observed that CBOs are more sustainable if the water scheme is pump-based. Point source systems (e.g, based on rainwater collection) are less sustainable because interest in the system is limited to those in the immediate vicinity of the source.

8. The CBOs established in each district are summarized in Table A3.1.

Table A3.1: Community Based Organizations

District	Year Started	CBOs Established	CBOs Functioning	
			Number	%
Polonnaruwa	2004	101	51	51
Anuradhapura	2005	127	84	66
Batticaloa [a]	2005	0	0	0
Total		**228**	**135**	**59**

CBO = community based organization, NGO = nongovernment organization, PMU = project management unit.
[a] No CBOs reported to have been established, program implemented by NGOs.
Source: PMU sociologist.

9. The number of schemes and beneficiaries, as reported in the borrower's project completion report, are summarized in Table A3.2. The extent to which dug wells and tube wells were community based is unclear from this report.

[5] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

10. The NWSDB and sanitation units in each district are still actively supporting the CBOs, especially through their community development officers. The Rural Water and Sanitation Unit in Batticaloa was established only in 2014, mainly to support the many village water supplies constructed under tsunami relief programs, as well as those under the project. No field visits were possible in Batticaloa because of time constraints.

D. Rural Water Supply Schemes

11. The rural water supply schemes comprise piped systems fed from dug wells or tube wells; some also use tanks or reservoirs to supplement supplies. Point sources, which include protected shallow dug wells, hand pumps, tube wells, and domestic rainwater harvesting systems, have been constructed in rural areas where piped water supplies are not feasible. House connections have been provided in all piped water schemes and all connections are metered. The original households contributed about 20% of the construction costs; new connections are now charged by the CBOs at a realistic rate. Water sources were sometimes supplemented by rainwater collection at the household level.

12. Many of the CBOs established in Anuradhapura and Polonnaruwa districts are functioning, up to 6 years after completion of component 2 interventions. Some have had organizational problems but, with support of the rural water and sanitation units, new committees have been formed to take over responsibility. In general, once providing water, the CBOs develop a sense of responsibility to their community to continue provision or to hand over to a new committee.

13. CBO committees do not charge for their work, which is seen to be a community service. However, salaries are paid to individuals who perform specific services (such as bookkeeper, meter reader, watchperson, and pump operator) and the costs are included in the billings. Collection rates are around 99%, with set rules for settling outstanding balances and disconnection as a final sanction, which is rarely applied.

14. Women are key members of committees, although the president is usually a man, often a retired government servant with a pension. Committee members are subject to re-election at annual general meetings but are usually reappointed.

15. The observations from visits to the six CBO water supply schemes are summarized in Table A3.3. Observations by the PCR mission are given in Box A3.1 for each CBO visited. The CBOs in Batticaloa were not visited but it is understood that the project focused on rehabilitation of common dug wells.

16. Although not part of component 2, during construction of the intake at Unnichchai tank and raw water main to the Batticaloa urban water treatment plant, villagers from nearby poor communities had complained that they were being bypassed by the project. As a public relations exercise, six standpipes were installed along the main. These were much appreciated by the villagers.

17. All CBOs provide water free to schools and temples, and in some cases, to people with chronic kidney decease.

Table A3.2: Outputs of Rural Water Supply Component

Rural Water Supply Category	Batticaloa		Polonnaruwa		Anuradhapura		Total	
	No Units	People Benefit	No Units	People benefit	No Units	People benefit	No Units	People benefit [b]
Construction of Community-Based Rural Water Supply Schemes	0	0	51	74,202	84	133,098	135	207,300
Construction and Rehabilitation of Common and Private Dug Wells [a]	78	4,105	3,093	14,102	1,456	7,673	4,627	25,880
Construction of Tube Wells	40	2,448	6	392	55	3,230	101	6,070
Construction of Rainwater Harvesting Tanks	20	80	1,205	5,201	1,778	8,038	3,003	13,319
Totals		**6,633**		**93,897**		**152,039**		**252,569**

[a] In Batticaloa only common and private dug wells constructed.

[b] The Borrower's Project Completion Report appears to have used an average of five people per household' whereas the actual average is four people per household according to the Department of Census and Statistics, Ministry of Policy Planning, Economic Affairs, Child, Youth and Cultural Affairs. 2015. *Household Income and Economic Survey 2012/13*. Sri Lanka; beneficiary numbers have been reduced by 20% in the Table.

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Colombo.

Table A3.3: Features of Sample CBOs

CBO	Start year	Connect-ions	Charge/ m^3 (SLRs)	Monthly Billing (SLRs)	Collection rate %	Bank Balance (SLRs)	New Connection (SLRs)	Water source	Remarks
Polonnaruwa									
Navodhya	2,006	115	15–25[a]	30,000	73	(…)	23,000	Dug well and canal	Local gov't funds for sand filter and settling tank.
Jana Shakhti	2,004	226	10-15	53,000	75	(…)	(…)	Dug well and tube well	Added RO plant
Arunodhaya	2,005	258	10-25	60,000	(…)	(…)	25,500	Tube well and dug wells	2014 added RO plant and delivery service
Anuradhapura									
Pandukabhaya	2,007	480	7–50	(…)	(…)	6,00,000	(…)	Dug well then tube well	RO water delivery service
Nildiya	2,007	320	1060	50,000	99	17,00,000	32,000	Dug well and tube well	Seeking funds for RO plant
Arunalu	2,005	220	15–25	80,000	99	9,00,000	35,000	Dug well and tube well	RO plant

CBO = community based organization, m^3 = cubic meter, RO = reverse osmosis.
[a] sliding scale, less per m^3 for low usage.
Sources: Project Completion Review mission, from interviews with CBO members.

Box A3.1: Observations on Community-Based Organizations Visited

Polonnaruwa	Anuradhapura
Navodhya CBO (Magulpokkuna GND, Welikandha DSD) has 12 members of the executive committee, eight are women. They have one employee (pump operator). Initially there was low interest but this rose to the entire village after awareness campaigns. The water has high fluoride content. To gain more water, the CBO has accessed water from an adjacent canal, which is fed direct to the dug well, with risk of contamination. They have gained funds for a settlement tank and filter from local government, without knowledge of NWSDB. Around 200 households are connected in this scheme.	**Pandukabhaya CBO** (Belangkadawala GND, Thambuthethegama DSD). Formerly 30 households shared a dug well. The piped system installed under the project initially used the well but its capacity was inadequate. The project funded a tube well but the water is hard and high in fluorides. The CBO is planning a loan scheme for welfare and emergencies. A new team took over the CBO in 2012. While 480 households are connected to this scheme, a reverse osmosis plant has been installed and they sell 5,000 litres of treated water per day, at SLRs1.0–SLRs1.5 per litre. They have a water delivery service to other villages (SLRs2.50 per litre). They recently replaced their submersible pump at their own cost and also paid for flood damage repairs.
Jana Shakhti CBO (Vijeyaba GND, Thimbulagala DSD). Joined the project because of awareness programs. The president is a female school teacher. Women are prominent on the committee. Villagers previously had to walk for water or rely on a bowser. The water quality is poor from the dug well (algae, turbidity) and the tube well water is hard and contains fluoride; 226 connections are managed by this CBO. Monthly billing includes charges for electricity (SLRs5,000) and travel costs. The committee did well until 2006 but then lapsed; a new team took over in 2013, encouraged by NWSDB. They have a reverse osmosis water purification system.	**Nildiya CBO** (Ihala Kalangkkutiya GND, Galnawe DSD) has had the same president from the start. Initially a dug well was the water source but they added a 53 meter tube well, using their own funds (SLRs55,000). Consumers are divided into 36 groups; each sends a representative to annual general meetings. The CBO employs a bookkeeper and a pump operator. Initially connections were charge at SLRs 5,500 plus meter and labor. New connections are now charged at SLRs 35,000. The CBO managed to connect 320 households out of the 500 planned.
Arunodhaya CBO (Ihalawewa GND, Thimbulagala DSD) was failing in 2007 but a new president took over and charges were raised; it has functioned well from 2009. Currently 260 households are fed water by this scheme. There are 30 CKDu patients in the village. The CBO installed a reverse osmosis system and is selling 700 litres per day of treated water. They plan a delivery service. Rain water provides 5.0 litres per day per person over a 6-month period and campaigns have been launched to use rainwater, using CKD funds. Of 28 committee members, 20 are women. The CBO received a SLRs20,000 donation from the project, which was on lent as four loans; such donations do not seem to be relevant.	**Arunalu CBO** (Sangilikantharawa GND, Rambawa DSD) has five employees (two reverse osmosis plant managers, a pump operator, a bookkeeper, a meter reader, and a part-time reserve). It provides water to 326 households in the village. Their bank account includes SLRs60,000 for reverse osmosis plant maintenance. CKD patients get free water. Water from the tube well has problems of fluorides and hardness. The CBO does not see rainwater as a practical source as it is a household resource and not managed by the CBO.

CBO = community based organizations, CKD = chronic kidney decease, DSD = divisional secretary division; GND = grama niladhari division, PCR = project completion report.
Source: Project Completion Review mission field visits.

E. Rural Sanitation Program

18. Several toilets were inspected (at random) by the mission. All were clean and well maintained. Some households had added a washroom adjacent to the toilet, at their own expense.[6] The sanitation (latrine) outputs are summarized in Table A3.4.

19. The original design envisaged a 50% contribution (mainly as labor) by the beneficiary and there was a precondition that a water supply was available. The project adopted a fixed subsidy payment of SLRs4,000, with the balance paid by the beneficiary. Over the implementation period, the total cost per latrine increased to more than SLRs20,000. The subsidy element was increased to SLRs 6,000 and then SLRs7,000 but the balance amount remained out of reach of the poorest families. In Muttur the NWSDB team reported that toilets were costing SLRs40,000, which seemed excessive.

20. Figures for latrines constructed in the villages visited in Anuradhapura and Polonnaruwa districts are shown in Table A3.5.

Table A3.4: Outputs of the Rural Sanitation Program

District	GN Divisions	Latrines	People Served[a]
Polonnaruwa	54	9,022	36,088
Anuradhapura	76	8,987	35,948
Batticaloa	24	293	1,172
Total	**154**	**18,302**	**73,208**

GN = grama niladhari (village officer), NWSDB = National Water Supply and Drainage Board.
[a] assumed to be an average of 4 persons per household.
Sources: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based water Supply and Sanitation Project*. Colombo; NWSDB's rural water and sanitation units and district engineers' offices.

Table A3.5: Latrine Construction in Sample Villages

District	CBO	Latrines Constructed	Households with Latrines % (estimate)
Polonnaruwa	Navodhya	22	(…)
	Jana Shakhti	(…)	(…)
	Arunodhaya	73	100
Anuradhapura	Pandukabhaya	90	n/a
	Nildiya	102	95
	Arunalu	45	90

CBO = community based organizations, PCR = project completion report.
Source: Project Completion Review mission interviews with CBO committees.

21. From the mid-2000s onwards there has been increasingly widespread concern about chronic kidney disease (CKD) in Polonnaruwa and Anuradhapura districts. The disease is perceived to be due to contaminated drinking water.[7] This has polarized the villagers' interest in pure drinking water.

[6] Including a washroom as standard would have enhanced the value of the facilities in terms of wider sanitation and hygiene benefits but would have increased costs.

[7] The impact of chronic kidney decease of unknown aetiology (locally known as CKD) was observed in Padaviya, Anuradhapura district in 1991. It was medically identified and defined in 2002 at the district hospital. Patients with CKD show damage to the urinary tubules (whereas in hypertension-diabetes the damage is to the blood vessels in the kidneys). The precise cause of CKD is still not known but is variously attributed to water hardness (which

22. In 2015, ADB provided the government with $3 million of loan funds, reallocated from the ongoing Local Government Enhancement Project, to support installation of village reverse osmosis plants to produce pure water.[8]

23. Many CBOs successfully qualified to access these funds for establishing reverse osmosis plants. Although this was not part of the project, several project-initiated CBOs qualified for grants by having an established organization and an assured tube well water supply.

24. In addition to the reverse osmosis equipment, the qualifying CBO receives grants of up to SLRs100,000 for three 5 m^3 high-density polythene tanks and concrete stands and associated piping. They can also apply for up to SLRs 500,000 for a building to house the equipment and an office. The balance of any other costs and future maintenance are paid from the CBO's own resources.

25. The reverse osmosis plants have created an additional and profitable enterprise for the CBOs to serve their communities. Of the six CBO schemes visited, four had reverse osmosis plants and one was planning to apply for a grant to set up a plant.

26. As shown in Table A3.6, the reverse osmosis plants are proving to be profitable for the CBOs, on a recurrent cost basis. The CBOs are maintaining bank accounts to cover future maintenance and part replacement costs. The three CBOs each have around SLRs600,000 in such accounts.

Table A3.6: Reverse Osmosis Plants

District	CBO	Price Per Liter Collected (SLRs)[a]	Monthly Sales (liters)	Monthly Income (SLRs)	Monthly Operating Expenses (SLRs)[b]
Polonnaruwa	Jana Shakhti	1.5	27,000	40,000	12,000
	Arunordaya	1.5	21,700	30,000	40,000
Anuradhapura	Arunalu	(…)	60,000	(…)	(…)

CBO = community based organization.
[a] Delivery service operates on SLRs20 per liter.
[b] Additional expenses for replacing semipermeable membranes, and other spare parts.
Sources: Respective CBO executive committee members.

F. Conclusions

1. Village Selection Process and Poverty Focus

27. The village selection process was transparent and involved local government agencies, *pradeshiya sabhas* and the NWSDB. However, poverty does not seem to have been the primary criterion. The key criteria were lack of suitable water sources, incidence of water-borne diseases, sanitation requirements, and demand by the community.

include more than 300 milligrams of Calcium Carbonate per liter, and more than 0.6 milligrams of fluoride per liter), arsenic algae, cadmium, agrochemicals or illegal drugs in the drinking water. See: http://www.island.lk/index.php?page_cat=article-detailsandpage=article-detailsandcode_title=85230

[8] On 19 February 2015, ADB approved the government utilizing uncommitted funds from the Local Government Enhancement Project to provide safe drinking water to areas affected by CKD disease and the initiatives to be implemented with the collaboration of the NWSDB.

28. Water supply schemes were generally successful. However, some households could not afford the connection charge for water supplies, and did not appreciate that the costs could be spread over their monthly bills.

29. Sanitation schemes were less successful. Poorer households were often unable to meet their required contribution towards the cost of toilets.

2. Continuity of Support

30. Since project completion, many contract staff appointed to the project technical support units and pradeshiya sabha implementation unit, under consultancy package A, have been engaged by the Rural Water and Sanitation Units as community development officers and in *pradeshiya sabhas* as technical officers.

31. There continues to be a good relationship between the CBOs and sanitation unit teams of the NWSDB.

3. Post-Project Sustainability of Community Based Organizations

32. Overall, 59% of CBOs were functioning, with 75% of CBOs on pump-based systems still operational. Most point source (e.g, rainwater) CBOs are non-operational.

33. The CBOs have become business enterprises, accumulating bank balances of at least SLRs500,000, with which to cover maintenance costs and develop new water sources. Some have expanded into making loans for agricultural inputs or welfare (e.g, funeral expenses).

34. CBO members have been trained by the project in operation and maintenance (O&M) and are capable of managing their systems.

35. Post project, several CBOs have managed to leverage funds from other sources to expand their water supply systems or to exploit improved water sources.

36. The advent of concern about CKD in Polonnaruwa and Anuradhapura districts, which has resulted in provision of government funding for plants, has created a new source of funding for eligible CBOs. Many project CBOs have successfully invested their own funds to access grants. They have developed profitable businesses selling reverse osmosis water to their own, and often other, villages. Four of the project initiated CBOs in Polonnaruwa have successfully obtained grants and established reverse osmosis plants. Reverse osmosis water quality is regularly tested by the NWSDB. This enterprise was not envisaged in the project design but its success demonstrates the competence and sustainability of the participating CBOs.

37. Arunalu CBO has negotiated with a new rural water supply project, funded by the Japan International Cooperation Agency to receive bulk supplies, so as to maintain its existing systems and responsibilities.

38. The successful CBOs appear to be firmly established and sustainable.

INSTITUTIONAL STRENGTHENING COMPONENT

A. Introduction

1. According to the original design given in the report and recommendation of the President (RRP),[1] the institutional strengthening component would support specific strategies to improve the financial management and service delivery of the National Water Supply and Drainage Board (NWSDB).

2. The component was elaborated UPON in the 2006 RRP[2] into six subcomponents:
   (i) Deliver a national public awareness and education program.
   (ii) Support the implementation of the NWSDB's corporate strategy to improve financial planning and resource allocation.
   (iii) Support the implementation of THE NWSDB's action plan to improve operational performance.
   (iv) Support the implementation of the action plan to address audit, accounting, and financial management issues.
   (v) Implement a strategy to transfer systems with less than 1,000 connections to local authorities, community-based organizations (CBOs), and the private sector (added in text of the 2011 RRP,[3] although already included in the original design and monitoring framework).
   (vi) Provide an asset registry for regional water supply schemes with more than 10,000 connections.

3. A seventh topic was included in the 2011 RRP: "Train NWSDB, project staff, CBOs, and communities for improved operation and maintenance (O&M) and scheme management".

4. The 2002 RRP proposed special attention to ongoing changes in the sector, including the existence of new service providers, private sector participation, the need for tariffs to reflect real cost, and the role of the public utilities commission in monitoring service standards and protecting consumers' rights. The design also envisaged the support for project implementation units (PIUs) under the urban component, and p*radeshiya sabha*[4] implementation units (PSIUs) under the rural component, to run project-specific awareness campaigns on hygiene and sanitation.

5. The members of the concerned sections of the NWSDB implemented the subcomponents, with assistance from the project management unit (PMU) and project management consultants. Subcomponents were completed by the end of 2011, apart from the small scheme transfer (subcomponent [v]), which was not completed.

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[1] ADB. 2002. *Report and Recommendation of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[2] ADB. 2006. *Report and Recommendations of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[3] ADB. 2011. *Report and Recommendations of the President: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[4] Pradeshiya Sabaha is the smallest local government unit.

6. Information on achievement of outputs was gleaned from the project quarterly progress reports, which give little information on the process of implementation or the actual dates when achieved. Copies of quarterly reports for 2009 and 2010 were incomplete.

7. The budget for the institutional strengthening component (footnote 1), was $3.25 million. The budget was under-spent: total expenditure was $1.84 million by project completion. (Appendix 8).

B. National Public Awareness and Education Campaign

8. The original project envisaged recruitment of a public relations company to undertake the national public awareness and education campaign. At the midterm review it was agreed instead to engage a media specialist to assist the project in engaging local organizations with whom to establish partnerships.[5] A public awareness specialist was recruited under consultancy package A. In 2005, the consultant prepared a strategy and methodology, based on brainstorming sessions with staff of the project, the NWSDB, and the Ministry of Urban Development and Water Supplies, which defined the target audiences and media appropriate to the campaign.

9. The overall objectives were defined in the work plan and progress report prepared by the PMU in December 2005.[6] The aims of the overall objectives were to:

(i) inform and educate the general public and national audience on the need for charging a viable tariff for water supply and prepare them for the possibility of introducing, at some future date, a sewerage tariff;
(ii) contribute to the broader understanding, endorsement, and realization on the need to minimize water consumption and to use the new water supplies in project areas only for basic requirements, because of restricted availability; and
(iii) improve public knowledge and awareness of health and hygiene practices in relation to water supply and sanitation.

10. The Specific objectives were to:

(i) educate the public in the urban project areas of Batticaloa, Hambantota, Muttur and Polonnaruwa in relation to the restricted availability of water and raise the level of awareness for improving water demand management and conservation; and
(ii) stimulate public interest and discussion on best practices.

11. The consultant prepared media material for the NWSDB's Public Relations Unit. The target audience included all consumers, including youth and children.

12. Radio spots (30–45 seconds), in Sinhala, Tamil, and English, were prepared and broadcast in November 2007 on national and private radio stations (Lakhanda, Sri Lanka Broadcasting Corporation, and MBC Networks). These included messages to reduce the proportion of nonrevenue water (NRW). TV documentaries and talk shows on water conservation, sanitation, and water tariffs were completed and broadcast in 2008. The Forum

[5] ADB. 2006. *Aide-Mémoire of Midterm Review Mission for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.
[6] Government of Sri Lanka, National Water Supply and Drainage Board. 2005. *Work Plan and Progress of Public Awareness Program: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Colombo; p*roject management unit.*

Theatre, in a trilingual format, was used for developing the stem-line as the main story line. Messages were presented in national and private print media.

13. The NWSDB Public Relations Unit conducted awareness programs for school children and at other public forums.

14. Project staff undertook campaigns for specific target audiences, which included project beneficiaries or potential beneficiaries, in the towns of Batticaloa, Hambantota, Muttur and, Polonnaruwa, and in rural areas of Anuradhapura, Batticaloa, Polonnaruwa.

15. Awareness messages were spread in Muslim areas through Friday prayers.

16. The PMU launched a website in July 2008. This was expanded to include details of project construction progress, for the benefit of the public, especially in project towns. The website was regularly updated during the project but was closed in June 2015.

C. National Water Supply and Drainage Board Financial and Operational Improvement

17. These activities were undertaken by the specialist sections of the NWSDB, with contributions from the PMU. Progress was reviewed twice monthly by the NWSDB, separately from the Component 1 and 2 steering committees. No consolidated report on processes or achievements was prepared by the PMU.

1. Corporate Strategy

18. The design envisaged support to the NWSDB in developing and implementing a corporate strategy to improve (among others) financial planning and resource allocation to adapt to the current reforms in the sector, with emphasis on reduction of tariff cross-subsidies, introduction of performance-based financial incentives to regional centers, and appropriate management of existing assets.

19. The strategy was to be implemented by the end of 2005 (2 years from loan effectiveness). However, ministry approval for the project to support the preparation of the corporate strategy was obtained only in June 2005. This delayed contributions by the project.

20. The NWSDB Corporate Plan 2007–2011was published in late 2006, with financial support from the Japanese Bank for International Cooperation [7]. The plan includes seven goals, which can be summarized as follows:

(i) Goal 1: Increase the water supply and sanitation coverage. The target was 85% of the national population with sufficient and safe drinking water by 2015. *This has been met in the project areas* (safe sanitation targets were not given).

(ii) Goal 2: Improve operational efficiency, with a reasonable level of financial self-sufficiency, to ensure successful service delivery. Objectives included *reducing* NRW nationally to 30%; improving water quality and *service levels*; and *implementing cost-effective operations (in areas such as abor productivity, and energy efficiency*).

[7] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2007. *Corporate Plan 2007–2011: National Water Supply and Drainage Board*. Colombo

(iii) Goal 3: Achieve customer satisfaction. The two objectives specified were prompt action on customer complaints, and implementing *public awareness programs* to improve public relations.
(iv) Goal 4. Increase commercial viability. Objectives included revise tariffs annually to meet operation and maintenance costs, minimize estimated bills, introduce sewerage service charges, and *improve collection efficiency*.
(v) Goal 5. Ensure greater accountability and transparency. This was to be achieved through improving *financial control and fund management,* decentralizing authority to regions, developing *an asset management plan,* improving the flow of management information, and meeting debt service obligations.
(vi) Goal 6. Institutional development. This largely envisaged *improving performance and attitudes of employees and training programs in-country and overseas*.
(vii) Goal 7. Provide facilities and service support to marginalized communities. This included *increased safe water supply and sanitation in rural communities as well as advisory services on best options and value for money*. This element was based on the experiences gained under component 2.

21. The sections *italicized* in the above goals important elements of the current project, which are addressed in the corporate plan. No supplementary business plan was included to show how targets would be met, as recommended by ADB at the midterm review (2006). The 2007–2011 plan (and the subsequent 2007–2011 corporate plan) was being implemented by the NWSDB from the first quarter of 2007.

2. Action Plan on Audit, Accounting and Financial Management Issues

22. The original design envisaged the NWSDB implementing its strategy and action plan to address audit findings and the 2002 recommendations by KPMG International on accounting and financial management, agreed on 13 September 2002.[8] These were to be implemented by the end of 2004 (within 1 year of loan effectiveness).

23. For Financial Management Strengthening, the project design proposed implementing strategies for resources allocation with performance-based incentives. However, such performance-based incentives for government staff are not permissible under Government of Sri Lanka civil service commission rules. This element could not be pursued further.

24. A range of strategies to improve financial management were implemented:
(i) Unresolved balances were written-off after receipt of appropriate approvals.
(ii) Independent accounting and financial management system reviews were outsourced. Proposals prepared by the consultants are being implemented.
(iii) The design for implementation of a pilot computerized stores management system was outsourced. This covered the main stores in Colombo and five regional support centers (RSCs). The Enterprise-wide IT Solution, which comprises one module for inventory management systems, was introduced to head office and the five RSCs. The system was run in parallel with the existing system initially.
(iv) After successful introduction of the pilot computerized stores management system, it was expanded to cover stores in all remaining RSCs.

[8] ADB. 2000. *Technical Assistance to the Government of Sri Lanka for Accounting Review of the National Water Supply and Drainage Board*. Manila (TA3434).

(v) A valuation of fixed assets was completed. A fixed asset management system was designed and implemented across regional offices.

25. Activities were completed from 2006 onwards, with full completion by the end of 2011, apart from the performance-based incentive task.

3. Asset Registry and Management Systems for Regional Schemes (outside Colombo)

26. The NWSDB has over 20,000 fixed-asset items. A strategy for asset registry and management was prepared under funding from the project.[9] An asset register was completed for schemes in excess of 10,000 connections. This is comparable with the ledger balances, providing a depreciation schedule and facilitating allocation of funds for rehabilitation and maintenance. Inputs under the project included the following, which were completed between 2008 and 2010:

(i) Valuations of fixed assets completed by the government valuer.
(ii) Supply and installation of a barcodes system for fixed assets, including all office equipment.
(iii) Supply and installation of computer systems for stores management.
(iv) Supply and installation of computer systems at regional level (area engineers, district engineers, and managers) to enhance decentralization.
(v) Supply and installation of an NWSDB network service.
(vi) Supply and installation of equipment to enhance the performance of the NWSDB information technology division and facilitated network maintenance.
(vii) Provision of software packages for reporting from the Oracle database and analyzing data on human resources, finance, fixed assets, stores, etc.

4. Action Plan to Improve Operational Performance

27. The original project design proposed that the NWSDB would implement an action plan to improve operational performance (including cubic meters billed, collection rates, aging of accounts receivable, staff–connection ratio, kilowatt-hours of electricity used, and reduction of establishment expenses).

28. The action plan, which was expected to be completed by the end of 2005, was not seen by the project completion review mission. However, activities continued with project support into 2011. A number of actions were taken to improve operational performance.

a. Enhancing Collection Performance and Customer Satisfaction

29. Computer systems were upgraded in the NWSDB's commercial offices.

30. Computer-assisted bill receiving cashier points were established in Colombo and outstations.

[9] Undated document, possibly June 2004.

b. Reducing Power Consumption

31. The NWSDB prepared an energy efficiency strategy[10] to reduce overall power use by 15% over the period 2007–2011, including new equipment for power cost reduction. The strategy aimed at incorporating and institutionalizing energy efficiency practices in all operations.

32. Reducing power consumption was achieved through several means:

(i) Training by project in reducing power consumption commenced in mid-2004.
(ii) Installing capacitor banks at the NWSDB Head Office, and Ratnapura regional office.
(iii) Undertaking energy audits, formulating and implementing energy-saving projects, and energy-saving training programs.
(iv) Procuring power measuring equipment for NWSDB centers.
(v) Replacing pumping sets with higher energy efficiency sets at Ratnapura high lift pumping station and other pumping stations at Badulla, Balangoda, Bandarawela Boskombe, Diyathalawa, and Wakwella.
(vi) Improving institutional capacity for repairs and maintenance, including procurement of safety equipment for maintenance staff.

33. During field visits by the ADB project completion review mission, the staff of the Hambantota water treatment plant confirmed that energy audits had been undertaken. The older treatment plant, funded by the previous ADB water supply project[11], was shut down for repairs and to improve energy efficiency.

c. Reducing Non-revenue Water

34. The NWSDB strategy (footnote 10) aimed at reducing the NRW component of the water supplied. This included pilot schemes to enhance the capacity and awareness amongst all staff, pipe replacement programs to reduce leakages, introducing metering, strengthening legal enforcement, and introducing incentive schemes for meter readings to reduce theft. Apart from leakages, nonpayment, and theft, NRW includes water provided free to schools, poorest households, and religious institutions.

35. Several activities were undertaken under project funding. These were implemented by NWSDB sections and regional service centers:

(i) Ultrasonic portable flow meters were provided to nonrevenue water management section of the NWSDB.
(ii) Bulk meters were provided to Central, North Central, and north-west regional Support Centers to measure NRW accurately.
(iii) Asbestos-cement pipes were replaced with un-plasticized polyvinyl chloride (uPVC) pipes along three roads in towns in the region north of Colombo.
(iv) NRW was reduced through repairing leaks. Old asbestos-cement pipe line at Rathnapura water supply scheme was replaced. Transmission main and pumping main was laid from New Town reservoir to Court Junction, replacing asbestos-cement pipes with uPVC pipes.

[10] The strategy is undated.
[11] ADB. 2009. *Project Completion Report: Third Water Supply and Sanitation Sector Project in Sri Lanka*. Manila (loan1575).

(v) Ductile iron pipes, and fittings were supplied for transferring of asbestos-cement pipes to uPVC pipes.
(vi) Supply of ductile iron pipes for raw water pumping main was abandoned.
(vii) Pressure management pilot scheme was dropped.
(viii) A demand management program was undertaken in Kolonnawa.

36. These actions were undertaken by respective NWSDB sections and were not completed until 2011. The PMU was not directly involved.

5. Transfer Systems with less than 1,000 Connections

37. This subcomponent aimed to develop a strategy for handover of schemes with less than 1,000 connections to local authorities, CBOs, or the private sector, with handover of 85% (72) of 85 such schemes by 2012 (Appendix 1). The strategy was intended to focus on (i) improving the efficiency of schemes, so that they could be profitable; and (ii) training the *pradeshiya sabhas*, private sector entities, and/or CBOs for taking over the schemes. The NWSDB would agree with a local agency to take responsibility for the assets and O&M, prior to disbursing project funds for scheme-specific investments (physical works and O&M training). The target completion date was the end of 2007.

38. The project identified four pilot schemes for testing the transfer of O&M of water supply and sanitation to communities: Katuwana (Hambantota district), Minigamuwa (Kegalla district), Vilagamuwa (Kurunagala district), and Samurdhigama[12](Puttalam district). The schemes were selected on the basis of (i) multiregional coverage, (ii) need for rehabilitation and augmentation, (iii) feasibility or capacity for transferring of operation and maintenance, and (iv) being categorized under the rural water supply policy.
39. Progress was extremely slow. The Katuwana water supply scheme was dropped because the fund requirements exceeded the budget available. The Minigamuwa and Vilagamuwa schemes were abandoned because local communities were not interested in taking over management and did not participate.

40. Work commenced on the single remaining scheme at Samurdhigama. It was completed by the end of 2010. After augmenting the scheme, it was handed over by the NWSDB to the *Sisila* CBO for operation and maintenance. Presently, there are 202 water connections. Before the improvements, the Samurdhigama WSS had six stand post connections and two individual connections. The required technical support is being provided through the NWSDB's Rural Water and Sanitation Unit (Puttalam).

41. The project completion report (PCR) mission was not shown any strategy and no description of the process adopted is given in the PMU quarterly reports. ADB missions in 2008 and 2009 had noted the noncompliance by the NWSDB in this subcomponent. Ultimately, only 1.4% of the 72 targeted schemes were handed over.

42. Initially, CBOs were deterred from taking over schemes because the standard NWSDB tariffs were too low. In 2009 and 2012 tariffs were raised by 25%, which increased profitability. Thereafter, the NWSDB preferred to retain ownership of the existing schemes but transferred ownership to new schemes.

[12] This replaced *Mahaoya* in *Ampara* district, which had initially been selected.

D. Training

43. Training courses for relevant NWSDB staff were completed by 2010 in project management, management skills development and in leadership. These training events included in-country and overseas programs. Decisions on trainees and courses were taken by the NWSDB. Further details of training are given in Appendix 7.

E. Improving Overall Performance of the National Water Supply and Drainage Board

1. Meeting Performance Targets

44. As emphasized at the midteam review in 2006, ADB was especially keen to see the target indicators for the NWSDB improve over the period as a result of component 3 activities. The indicators included[13] (i) change in rate of billing (%), (ii) collection rates (as a percentage of amounts received compared to those invoiced), (iii) time delay for receiving billing payments (private and government), (iv) ratio of staff per 1,000 connections, (v) change in electricity use (%), (vi) change in maintenance expenses (%), (vii) change in establishment expense (%), (viii) change in rehabilitation expense (%), and (ix) debt service coverage. Targets were defined in Appendix 2 of 2002 RRP (footnote 1).

45. Attempts have been made to combine the performance indicator data from earlier ADB sources (2002 RRP, midterm review 2006, loan review mission 2008) and from data provided by the PMU and the NWSDB. Combining different data sets is difficult, especially when the original source figures for the ADB data were unavailable and that some change figures were cumulative, requiring recalculation. Many gaps occur in the information obtained from the PMU. Current performance indicators are given regional support centers on the NWSDB website but there are no consolidated data at national level (http://www.waterboard.lk/web/index.php?lang=en).

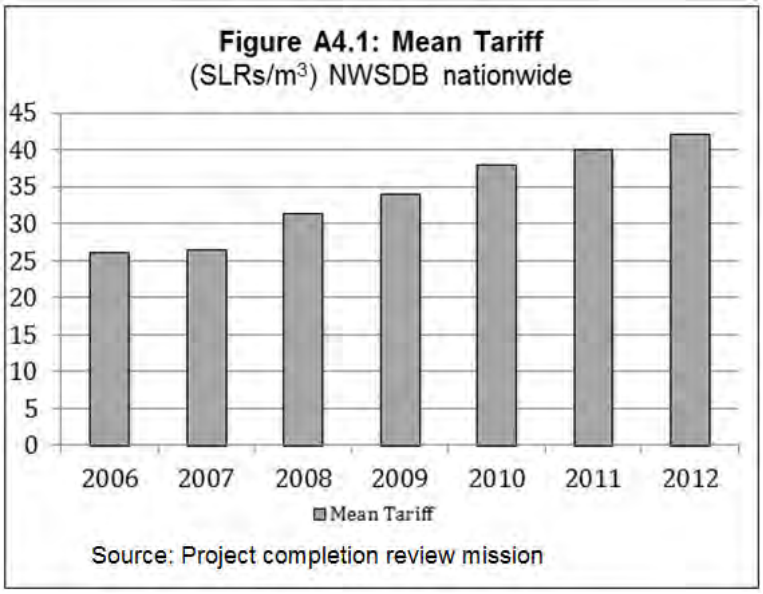
46. A synthesis of the available data is given in table later in this appendix. The year-on-year change elements have been abstracted and presented in chart form at the ned of this appendix for easier visual interpretation. The following conclusions can be drawn:

(i) Staff ratios per 1,000 connections have consistently declined, meeting the 2002 RRP targets.
(ii) Expenditure on maintenance has consistently increased since 2009, meeting the targets suggested in 2002 RRP.
(iii) Establishment expense changes increased erratically, failing to meet the proposed 6% per year reductions, but declined in 2014.
(iv) Connections have increased, year-on-year since 2008.
(v) Electricity use decreased initially but rose from 2010 onwards, not meeting the overall target of 15% annual reduction.
(vi) Billing rates increased since 2009 by around 5% per year, 5 years later than targeted.
(vii) NRW generally declined each year.
(viii) Rehabilitation expenditure increased during 2004–2012 by 5–10% annually. The target was a 20% annual increase.
(ix) Collection rates were maintained at just under 100%.
(x) Loan interest payments have declined slightly.

[13] A criticism of the ADB data is that they assumed a reduction or increase (eg: “Reduction in electricity use %”). The correct wording should have been “change in electricity use %”, as used in this Appendix.

47. No information was provided on account settlement periods, which the 2002 RRP envisaged declining from 60 days in 2004 to 35 days in 2008 (private consumers).

48. Average tariffs for water have been raised (Figure A4.1).



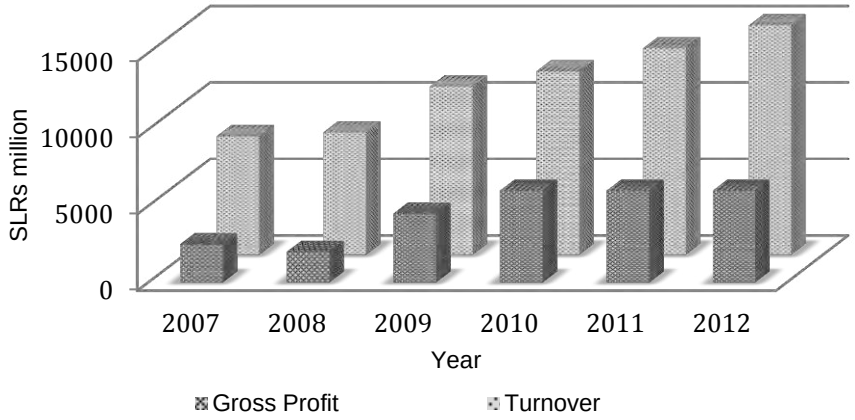
49. The NWSDB profits remained static despite increasing turnover, as shown in a recent government review of state-owned enterprises (Figure A4.2).[14] The review also drew attention to the need for government to allocate significant amounts of additional funds to the NWSDB to cover cost overruns on projects.

50. During 2009, ADB undertook a mission to prepare a Readiness Assessment and Capacity Development analysis and plan, aimed at assisting the NWSDB.[15] This was conducted in parallel with the project, in partnership with NWSDB management and stakeholders. The mission noted that head office staff tended to focus on planning and development of new water supply schemes to expand services. This diverted attention from the business aspect of the utility. The report would have been helpful to the NWSDB in tackling, among other things, the objectives of the project's component 3.

[14] Government of Sri Lanka, Ministry of Finance and Planning. 2012. *Annual Report 2012, Performance of State-owned Business Enterprises*. Colombo.

[15] ADB. 2009. *Technical Assistance to the Government of Sri Lanka for Readiness Assessment Report, Capacity Development and Change Plan*. Manila (TA6306).

Figure A4.2: Financial Performance of NWSDB



Source: Government of Sri Lanka, Ministry of Finance and Planning. 2012. *Annual Report 2012, Performance of State-Owned Business Enterprises. Co*lombo.

2. Conclusions

51. Component 3 was nominally the responsibility of the PMU but most of the activities were unrelated to the mainstream tasks of implementing water supply and sanitation schemes.

52. The component would probably have been better managed and reported under a separate project manager, preferably a senior member of the NWSDB's administrative cadre, who would have had a better understanding of the needs and practicalities of the component.

53. The PMU published minimal information on the processes of implementation in its project quarterly reports, with most emphasis placed on hardware development. The borrower's completion report contains no description of component 3 activities or analysis of the results. The PMU did not include this component in the impact studies commissioned on completion. It would have been better managed under a separate project manager, preferably a senior member of the NWSDB's administrative cadre.

54. ADB repeatedly expressed concern at the lack of progress and reporting on this component.[16]

55. Overall, the success of the component is inconclusive. The public awareness campaigns seem to have been effective. The effectiveness and coverage of the training program is unclear (Appendix 7). The development of a strategy for handing over schemes with less than 1,000 connections to CBOs failed to achieve the target of handing over 85% of such schemes (design and monitoring framework, Appendix 1). Only one scheme (1.2%) was completed and handed over, 3 years late, and no strategy was seen by the PCR mission.

56. As discussed, there appears to have been some improvements in NWSDB efficiency, especially since 2009, but much critical data were unavailable. Some of the improvements are probably attributable to component 3 activities.

[16] For example: ADB. 2008. *Back to Office Report for Loan Review Mission: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

Table A4.1: Operational Performance of National Water Supply and Drainage Board

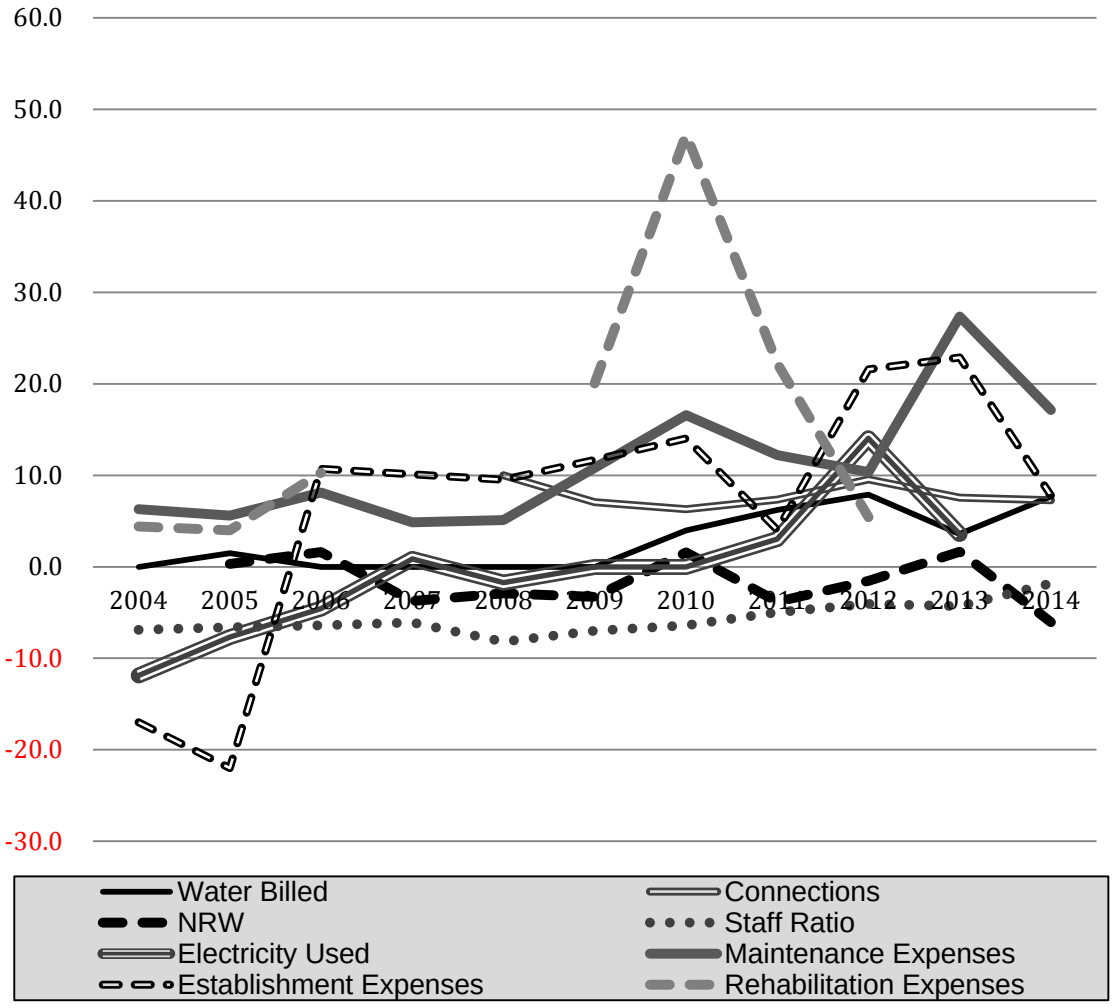
Water Billed/Sold (million m^3)	(...)	(...)	(...)	(...)	(...)	309.2	321.5	341.5	368.5	381.6	410.9
Change in Water Billed (% year on year)	0.0	1.5	0.0	0.0	0.0	(...)	3.98	6.22	7.89	3.58	7.67
Amount Billed (SLRs million)	(...)	(...)	(...)	(...)	(...)	11,119	12,409	13,343	15,088	18,167	19,785
Total Bill Revenue (SLRs million)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)
Collection Rate (%)	110.0	96.0	98.0	98.0	100.0	(...)	(...)	(...)	(...)	(...)	(...)
Number of Connections (million)	(...)	(...)	(...)	(...)	(...)	1.27	1.35	1.45	1.59	1.71	1.83
Change in Connections (% year on year)	(...)	(...)	(...)	(...)	(...)	(...)	6.89	7.07	9.55	7.56	7.28
Total Staff	(...)	(...)	(...)	(...)	(...)	9,063	9,018	9,199	9,670	9,953	10,483
Ratio of staff to 1,000 connections	(...)	(...)	(...)	(...)	(...)	715.7	666.2	634.7	609.1	582.8	572.2
Change in Staff Ratio (% year on year)	-6.9	-6.6	-6.4	-6.1	-8.2	(...)	-6.91	-4.73	-4.04	-4.31	-1.82
Electricity used (KWh million)	(...)	(...)	(...)	(...)	(...)	(...)	186.2	191.9	218.8	226.6	163.6
Change in Electricity Used (% year on year)	-11.9	-7.7	-4.6	0.9	-1.7	(...)	n/a	3.03	14.03	3.57	-27.81
Maintenance Expenses (SLRs million)	(...)	(...)	(...)	(...)	(...)	428.0	499.0	560.0	618.0	787.0	922.0
Change in Maintenance Exp (% year on year)	6.3	5.6	8.1	4.9	5.1	(...)	16.59	12.22	10.36	27.35	17.15
Establishment Expenses (SLRs million)	(...)	(...)	(...)	(...)	(...)	985	1,123	1,168	1,420	1,745	1,881
Change in Establishment Exp (% year on year)	-17.0	-22.0	10.7	n/a	9.5	(...)	14.0	4.0	21.6	22.9	7.8
Scheme Rehabilitation Exp (SLRs million)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)	(...)
Change in Rehabilitation Exp (% year on year)	4.4	4.0	10.3	n/a	n/a	(...)	(...)	(...)	(...)	(...)	(...)

KWh = kilowatt hour, m^3 = cubic meter.

Notes: Figures prepared by ADB for 2004-2008 were difficult to analyse without the source material: some figures were cumulative and have been recalculated to be compatible. The PMU was unable to provide the full data set.

Sources: ADB. 2006. *Aide Mémoire of Midterm Review Mission for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila. *ADB. 2008. Aide Mémoire of Review Mission for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; project management unit.

Figure A4.3: NWSDB Performance Indicators
(year-on-year % change; missing data for 2009 interpolated)



Sources: Ministry of Water Supply and Drainage; National Water Supply and Drainage Board; project management unit; and ADB. 2008. *Back to Office Reports of Project Review Missions for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

SOCIOECONOMIC ASSESSMENT

A. Background

1. This appendix presents an assessment of the social and economic impact of the investments made under the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project, for the urban component (component 1). The assessment of the impact of the rural component (component 2) is presented in Appendix 3.

2. The project had a relatively lengthy period of implementation—from late 2003 to 2014—and witnessed two major events which had an impact on its outcome: (i) the internal conflict in the island, and (ii) the Asian tsunami of December 2004. The conflict affected three of the four project districts, with the exception of Hambantota, while the tsunami had an impact on the schemes in Batticaloa, Hambantota, and Muttur. The expected impact (goal) of the project at appraisal in 2002 was improved health conditions in Anuradhapura, Batticaloa, Hambantota, Muttur, and Polonnaruwa, as measured by reductions in infant mortality and waterborne diseases and in the time spent in the collection of water, by 2017. Most works under the project were completed only in 2013–14 and the full impact cannot be assessed until 2017: For this reason, this assessment is based on the expected outcomes of the project in provision of safe drinking water and safe sanitation in the project areas.

B. Methodology and Data Availability

3. The assessment draws upon several data sources that were made available to the mission and also on observations made during a field visit conducted during 6–10 April 2015. The data sources comprised the following:

(i) Project quarterly progress reports submitted by the Project Management Unit.
(ii) Impact assessment reports based on field surveys conducted as part of the preparation of the borrower's completion report by the implementing agency, the National Water Supply and Drainage Board (NWSDB), and the results of focus group discussions with stakeholders conducted at the same time. The impact surveys were conducted across a sample of 1,050 households in the four urban schemes. The focus group discussions were held with a different group of beneficiaries. It is noted that no surveys were conducted in the rural water supply schemes, and the assessment of these schemes was based on field observations by the mission (Appendix 3).
(iii) Interviews with project stakeholders conducted by the mission in the field

4. It must be noted that there are no impact assessment studies covering the project at baseline or the period of project implementation, except for two baseline surveys conducted in 2005 for the rural component in Anuradhapura and Polonnaruwa. These surveys are comprehensive and ideally should have been extended to the urban component. Paradoxically, the end-of-project impact surveys exclude the rural component and focus only on the urban component.

C. Preproject Status

5. The predominant source of water prior to the commissioning of the project water supply schemes was protected or unprotected dug wells. Table A5.1and Figure A5.1 show the details of water sources that were used by the households prior to the project. It should be noted that the urban schemes funded by the project at Hambantota and Polonnaruwa augmented existing schemes. At Muttur, a high percentage of households (19.1%) also relied on water transported

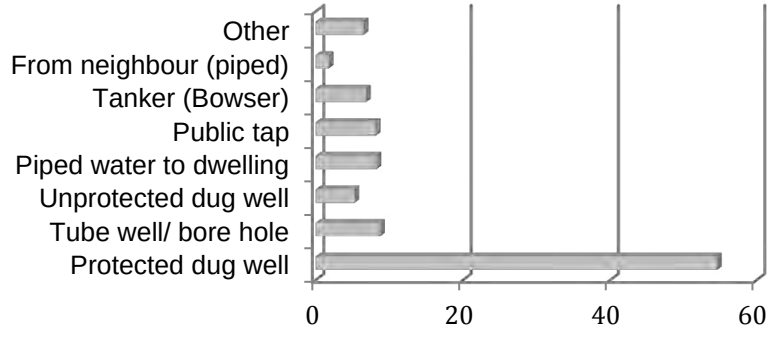
by water tankers, for which payments were made. Dug wells were not prevalent at Hambantota, while there is a higher incidence of public stand post taps provided by local authorities. In terms of availability of water, Hambantota was the most deficient among the project locations.

Table A5.1: Preproject Sources of Water Supply by Urban Scheme
(% of households)

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
Protected dug well	61.5	71.8	36.1	48.9
Tube well/ bore hole	19.6	1.8	3.3	10.2
Unprotected dug well	1.4	7.3	7.8	4.5
Piped water to dwelling	5.4	0	13.4	14.2
Public tap	3.4	0	19	10.2
Tanker (bowser)	0.8	19.1	7.4	0
From neighbor (piped)	1.4	0	4.5	1.1
Other	6.5	0	8.5	10.9
	100.0	**100.0**	**100.0**	**100.0**

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

Figure A5.1: Preproject Sources of Water by Urban Scheme
(% of Households)



Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

6. The source of water (Table A5.2) was located further from the household at Hambantota than at other locations, with around one quarter of households seeking water from a source more than 500 meters away.

Table A5.2: Preproject Location of Water Source
(% of households)

Distance	Batticaloa	Muttur	Hambantota	Polonnaruwa
At doorstep	73.0	77.3	23.8	63.1
A few yards distant	23.8	20.9	35.3	20.5
Less than 1/2 km	1.8	1.8	16.7	7.4
1/2 km to 1 km	0.4	0	11.5	2.3
Greater than 1 km	1.0	0	12.7	6.8
Total	**100.0**	**100.0**	**100.0**	**100.0**

Km = kilometer.

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based water Supply and Sanitation Project*. Colombo.

7. Table A5.3 shows the time taken to fetch water to the household from the source. Residents at Hambantota had been the most affected in this respect, whereas a significant majority at the other schemes reported that this had not been an issue. Around 30% of the households at Hambantota, as captured in the impact assessment survey, spent more than 10 hours per week obtaining water. Where the source of water was close to the household, men and women appeared to have shared the responsibility on an equal basis. To fetch water over long distances, men have assumed responsibility because of the need to use bicycles or motorcycles. The time taken to fetch water is a key indicator in measuring the economic benefits of the project.

Table A5.3: Time Taken to Fetch Water per Week- Prepoject
(% of households)

Time	Batticaloa	Muttur	Hambantota	Polonnaruwa
Insignificant	94.6	98.2	30.1	85.2
Less than 2 hours	0.4	0	1.9	0
2–5 hours	3.4	0.9	13.4	6.3
5–7 hours	0.8	0.9	9.7	1.7
7–10 hours	0.2	0	15.7	4
More than 10 hours	0.6	0	29.2	2.8
Total	100	100	100	100

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based water Supply and Sanitation Project*. Colombo.

8. Beneficiaries have expressed the view that seasonality of water availability had an impact on both the quantity of water available as well as quality. The impact on different project areas of seasonal differences is shown in Table A5.4. Hambantota had the worst seasonal shortages, with more than half the population affected during the dry season, followed by Polonnaruwa with around 35 %. The population of Muttur has also been affected by the changes in the quality of water with changes in seasons. It is interesting to note that some households reported deterioration of quality during the dry season, while others were affected in the wet season, a phenomenon linked to the nature of pollution at the source.

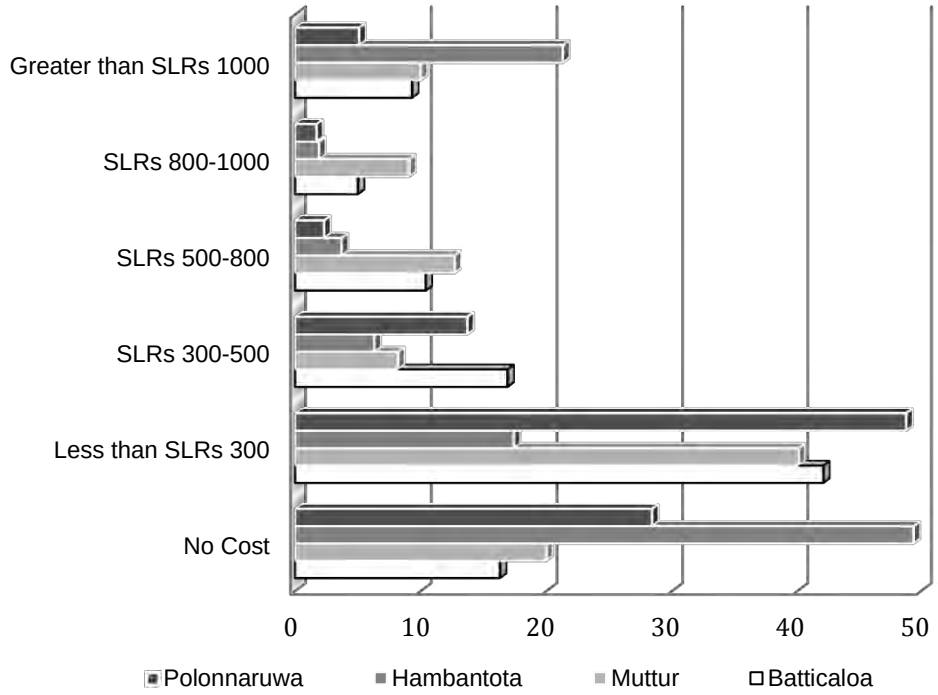
9. Expenditure on water before the project was a key consideration in the decision made by each household to obtain a water connection from the project-funded schemes. Figure A5.2 indicates the monthly expenditure on water prior to the project interventions. An average of 29% of households in all four schemes did not incur any expenditure for water, mainly because the primary source being dug wells at the household. At all four schemes, 37% of households paid an average of less than SLRs300 per month.

Table A5.4: Periods of Water Shortages Preproject
(% of household)

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
Both dry and wet periods	0.6	1.8	15.7	2.3
Dry periods only	21.6	12.7	52	34.6
No shortages	77.8	85.5	32.3	63.1
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based water Supply and Sanitation Project*. Colombo.

Figure A5.2: Preproject Expenditure on Water
(SLRs per month)



Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

10. Data collected during the assessment also showed that households in Hambantota showed a high willingness to pay for water, with 21 % of households paying more than SLRs 1,000 per month, which is a very high percentage of overall household expenditure.

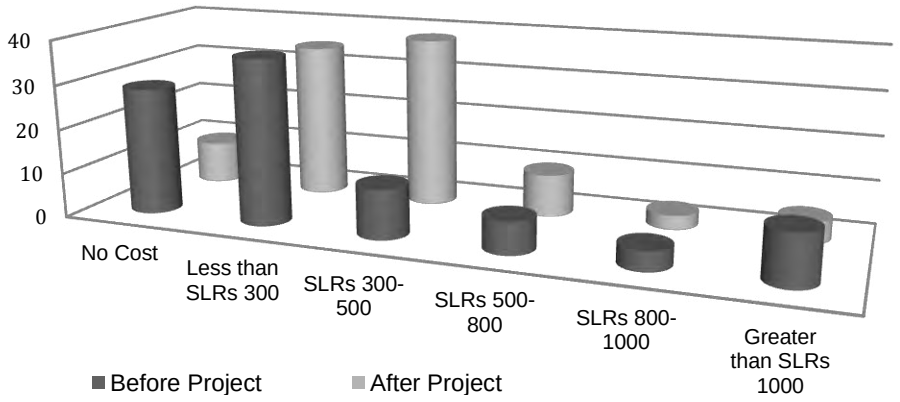
D. Socioeconomic Impact

1. Urban Water Supply Schemes

a. Impact on Household Expenditure

11. The implementation of the urban water schemes has had a noticeable impact on the expenditure patterns on water of the beneficiary households. FigureA5.3 illustrates the changes in the pattern of expenditure on water. Prior to the project, around 29% of households received water at no cost, from a domestic source, usually a dug well. After project intervention, this has reduced to 10%. At the other extreme, 11.4% of households spent more than SLRs1,000 per month, which reduced to 5.0% with project intervention. Households spending SLRs300–SLRs500 in the median range increased from 11% to 38% of households after project intervention.

Figure A5.3: Average Cost of Water before and after Project
(total project area: SLRs/month)



Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

12. The results of the assessment show that, after obtaining water connections from the project, consumers who received water without cost earlier are now prepared to pay for the convenience of piped water and the safety of treated water. Consumers who were forced to pay high amounts earlier are now required to pay much less. The median value of SLRs300–SLRs500 has also been stated as the average willingness to pay for water by beneficiaries interviewed during the focus group discussions at the time of the preparation of the borrower's project completion report.

13. However, the cost of a connection for water was seen by many of the lower income beneficiaries as a barrier to accessing the benefits of the project.

b. Overall Benefits

14. There is universal appreciation of the benefits of the water schemes by the consumers. All parameters identified as negative prior to the schemes are now viewed as positive. Among the perceived benefits are the following:

(i) Less time spent on the collection of water with the corresponding savings in time and money, and less drudgery for women.
(ii) Better perception of the quality of water obtained from the new water connections, with around 95 % of consumers reporting improvements in taste, color and odor, and an improvement in health.
(iii) Greatly reduced water shortages during periods of drought and improvements in reliability of supply on a daily basis, with more than 90 % of households expressing satisfaction in continuity of supply.
(iv) A very positive impact on women, with a greatly reduced dally workload of household chores and increased time for leisure.
(v) An indirect positive impact on land values after the availability of piped water in the respective neighborhoods

15. Negative views of the impact of the project were mainly expressed on the tariff that is required to be paid for water, with 20%–30% of households expressing concern. A large section of consumers were also concerned about the wastage of water after commissioning the schemes, an indication of the value of water as perceived by them.

c. Affordability Aspects

16. **Use of multiple sources of water**. An important feature of the consumption patterns after the commissioning of the water schemes is the incidence of using additional sources of water in addition to the new piped connection. This fact has been observed during the impact assessment surveys, focus group discussions, as well as the mission's meetings with stakeholders. Typically, many households use the piped water for drinking and cooking, while a secondary source (e.g. household dug well) is used for the washing of utensils and clothes. This is done primarily to keep the monthly household tariff low. Another reason is consumer resistance to the taste of chlorinated water, although this can be viewed as a misplaced perception. The percentage of households following the practice of using multiple sources is 20%–30% in Batticaloa, Muttur, and Polonnaruwa, and around 50% in Hambantota. This practice has a negative effect on the overall financial performance of the schemes, which are designed for a per capita consumption of around 100–120 liters per day, and may lead to less-than-optimum utilization of the capacity of the schemes. At times, the secondary source provides a lower quality of water and its use is often due to a lack of awareness of the advantages of piped water. Increased awareness, as well as gradual increases in per capita incomes, are expected to increase the use of the piped connections.

17. **Affordability of connections**. The initial cost of a connection to the piped supply is seen as too expensive by low income households. The cost of a household connection may range from SLRs19,000 to SLRs25,000 depending on the area. Households can make a down payment of 40% with the balance being recovered from monthly bills. Samurdhi (government subsidy) beneficiaries, who are from the lowest income groups and receive welfare payments from the government, are entitled to concessions from the government for both connections and consumption, where a separate, lower tariff is used in billing. For example at Muttur, Samurdhi beneficiaries, comprising the poorest segments of the population, pay only around SLRs 7,000 for a connection. This is recovered in installments. A standard connection costs SLRs17,317 with the possibility of a higher charge, depending on location and other factors.

18. The impact assessment surveys at Hambantota reported many instances where support for new connections was provided by charity organizations and well-wishers for the poorer income groups.

2. Sanitation Schemes

a. Overall Impact

19. The project design1 incorporated a sanitation component, under which low cost latrines were expected to be provided to contribute to a goal of 90% coverage of the urban population in the project area, and 85% coverage in rural areas. Data were collected on the sanitation component during the focus group discussions that took place during the preparation of the borrower's project completion report.

20. There appeared to be a variation in the availability of latrines of acceptable standard in the project area. Unlike the water supply component, data on the sanitation component is not comprehensive enough to draw project-wide conclusions. However, for the purpose of illustration, adequate data are available for Muttur and Hambantota, obtained from the impact

[1] ADB. 2002. *Report and Recommendations of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

assessment surveys. Table A5.5 shows the type of sanitation facilities used by households in the areas covered by the two schemes.

Table A5.5: Sanitation Facilities Before and After Project Intervention

	Muttur		Hambantota	
Facility	Before	After	Before	After
Pit latrine (own)	0.9	0	11	7.6
Open defecation	0.9	0	4	0.9
Neighbor's toilet	14.5	14.6	5.3	5.9
Common (shared toilet)	3.6	0	2.2	1.7
Attached toilet (own)	13.6	13.6	4.5	6.9
Water sealed latrine (own)	66.5	71.8	73.0	77.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based water Supply and Sanitation Project*. Colombo.

21. The situation after project intervention is a moderate improvement over the pre-project situation. There was an increase in the percentage of the more hygienic, water sealed latrines over the earlier pit latrines, while the percentage use of common or shared toilets fell. The use of the open field for sanitation has dropped to negligible levels. The share of the more convenient but expensive attached toilets has increased, although only at Hambantota. The reasons for this improvement are linked to project interventions as well as the overall improvement in living standards due to consistent economic growth.

22. To present a more comprehensive view of the impact of the sanitation component and also as a comparison to the survey data, Table A5.6 presents the situation with respect to sanitation in the project areas as reported in the national census of 2012. Safe sanitation was available at 96% of households in the project area by 2012, with a lower incidence of 87% in the Batticaloa region. The findings of the impact assessment surveys are compatible with the national census data. This indicates that the project objective of providing safe sanitation to 90% of the population in the project area has been met. Batticaloa is an exception, although an improvement could be expected by 2017 in reaching the goal of 90 % from the 87% coverage of safe sanitation in 2012.

Table A5.6: Safe Sanitation in the Project Areas

District	Total Households	With Safe Sanitation	%
Batticaloa	133,795	116,927	87
Muttur (DSD)	15,112	14,522	96
Anuradhapura	228,304	223,262	98
Polonnaruwa	110,476	108,394	98
Hambantota	155,299	154,699	100
Total	**642,986**	**617,804**	**96**

DSD = divisional secretariat division
Source: Government of Sri Lanka, Department of Census and Statistics. 2013. *National Census Data 2012. Colombo.*

b. Affordability and Targeting of Sanitation Component

23. The design and monitoring framework (Appendix 1) for the project specifies the construction of low cost toilets, implying a poverty focus of the project. If this was the overall objective, the financial support provided by the project does not appear to have been adequate. There is considerable merit in beneficiary contributions in that the concept introduces a greater

sense of ownership. However, the results of the impact assessment surveys show that the beneficiaries in Batticaloa and Muttur have had to contribute several times the project contribution in the construction of their toilets, which is not realistic given the poverty focus of the component. Table A5.7 provides the details of the actual unit cost of toilets.

Table A5.7: Unit Cost of Toilets in Project Sanitation Schemes

(SLRs)

	Batticaloa	Muttur	Hambantota	Polonnaruwa	Average
Project Contribution	5,000	7,417	6,084	(…)	6,167
Beneficiary Contribution Cash	11,850	26,000	5,438	(…)	14,429
Beneficiary Contribution Labor	750	9,833	7,188	(…)	5,924
Total Cost	**17,600**	**43,250**	**18,710**	**(…)**	**26,520**

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Colombo.

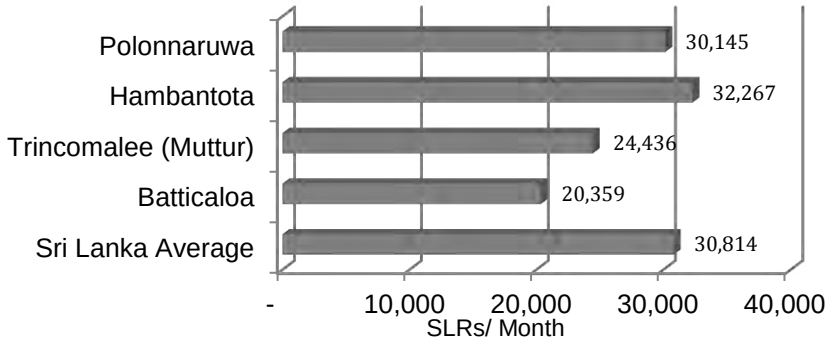
24. Among the observations made by participants at the discussions was the fact that they were not made aware of the sanitation program by the relevant authorities. Respondents have also reported that selection of some beneficiaries was made by public health inspectors rather than the grama niladharis (village officers), who are better suited to identifying deserving beneficiaries. For example, the mission was informed that most toilets at Muttur had cost as much as SLRs40,000 which raises questions whether such households needed project assistance at all. This suggests that more careful targeting should have been applied to limit the beneficiaries to those in the category of having no access to any toilet (approximately 1% of households in the project areas) and providing them with a higher and more realistic financial package to construct toilets.

E. Poverty Assessment

25. The project areas were selected with consideration given to prevailing poverty levels. The towns in the Eastern Province, Muttur and Batticaloa, had been affected by the civil conflict and had not had any infrastructure improvements throughout the conflict period. The opportunity provided by the period of ceasefire and the peace process commencing in 2012 was the prime factor for the inclusion of these two towns in the project (footnote 1).

26. Socioeconomic surveys conducted at the time of the preparation of the project have shown that the two towns had lower health indicators compared to national averages, and that overall poverty was higher, especially in Muttur. In North Central Province, comprising Anuradhapura and Polonnaruwa districts, poverty incidence was 8% higher than the national average at project commencement. Household incomes at Hambantota were similar to the national average- however the region suffered from severe shortages of water and the population spent considerable resources in obtaining water (footnote 1).

Figure A5.4: Median Household Income in Project Areas 2013-14 (SLRs/ month)



Note: Muttur is a division of Trincomalee District
Source: Government of Sri Lanka, Department of Census and Statistics. 2015. *Household Income and Expenditure Survey 2013–2014. Colombo.*

27. Poverty assessment at appraisal was that of regional disparity and its mitigation. This assessment was based on the same approach. The project did not aim directly to reduce poverty; the benefits were meant to be indirect, especially by easing the burden of procurement of water and improving the overall quality of life.

28. Based on the description of project impact earlier in this appendix, the poverty impact of the project can be summarized as follows:

(i) Expenditure on water has reduced for the people who paid high amounts for procurement of water before the project. At the other extreme, households that obtained water at no cost from dug wells and other sources now obtain water of good quality piped to their home on a 24-hour basis, at an average monthly tariff of SLRs300–SLRs500 that is accepted by the majority of households as reasonable.

(ii) There is a reduction in the time spent on the procurement of water with the most significant reductions being in the Hambantota region. This frees-up time for income earning activities and an increase in leisure time for beneficiaries, especially the poor.

(iii) Reduction in waterborne diseases in the project areas can be expected though this cannot be verified because (a) most schemes have only recently been commissioned, especially Muttur, (b) project activities in Polonnaruwa and Hambantota augmented existing schemes, so that attribution to the project is not possible, and (c) accurate and consistent data is not available on the incidence of disease on a pre- and post-project basis. However beneficiaries had observed pollution of their regular water sources before the project during drought as well as during floods, a situation now avoided through treated piped water.

GENDER ASSESSMENT

A. Background

1. This appendix describes the results of the gender assessment of the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.

2. Two separate gender action plans (GAP) have been used in the project. The initial GAP (GAP 2002) was presented in the original report and recommendation of the President (RRP) of 20021, and appears to have been in force until 2007, when a new GAP was prepared. The new GAP (GAP 2007) is presented in the Quarterly Progress Report of the second quarter of 2007. The second GAP was prepared at two workshops facilitated by the Asian Development Bank (ADB). Subsequent actions of the Project Management Unit (PMU) have been based on the GAP 2007. The main qualitative differences between the two GAPs arise from the GAP 2002 having more focus on institutional aspects, such as employment provided to women in project activities, whereas GAP 2007 laid more emphasis on community development and field-level aspects.

3. The project had three output components:
Component 1: Urban Water Supplies and Sanitation,
Component 2: Rural Water Supplies and Sanitation, and
Component 3: Institutional Strengthening

4. The provisions of both GAPs had been limited to components 2 and 3 only, and have excluded the component on urban water supplies and sanitation. There is no explanation provided for this exclusion, despite component 1 being the largest in terms of total project investment.

5. **Data availability**: The availability of data on the implementation impact of the GAP has been very limited. Inexplicably, the impact assessment surveys[2] conducted at the end of the project were limited to component 1. The quarterly progress reports prepared by the PMU refer to progress related to gender, but lack a consolidated report showing cumulative achievements, which greatly limits the usefulness of the information. A detailed study of the gender aspects was conducted by ADB in 2010[3], which presented an in-depth assessment of the gender aspects of three projects implemented in Sri Lanka, including the Secondary Towns and Rural Community-based Water Supply and Sanitation Project. For reasons that are not clearly explained, the study is based on provisions in the earlier GAP 2002 and not the revised GAP 2007.

6. The impact assessment surveys conducted by the PMU at project completion had collected data on the impact of project activities of component 1 on women. Although the component is not covered by either of the two GAPs, the present assessment includes the urban component.

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[1] ADB. 2002. *Report and Recommendations of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[2] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo (Impact assessment surveys for the urban water supply and sanitation schemes).

[3] ADB. 2010. *Gender Equality Results in ADB Projects: Sri Lanka Country Report*. Manila.

B. Gender Action Plans

1. Initial Gender Action Plan (GAP 2002)

7. Gap 2002 covered two areas of action: (i) strategies during implementation of the project, and (ii) strategies to be followed to ensure women's participation and in recruitment of personnel for project implementation.

a. Strategies During Implementation

8. Several strategies were to be adopted.

(i) Project partner nongovernment organization (NGO) facilitators will emphasize the need to have active participation of all at community meetings, which will include 50% participation by women.
(ii) Fifty percent of participation in small group activities will be by women.
(iii) The executive committee of the community-based organization (CBO) will be at least 50% women.
(iv) Separate discussions with women's groups will take place regarding technologies and service level of the water supply facilities built by the project. If major differences occur between women's groups and mixed or men's groups, the project facilitators will take an active role to prevent women's decisions being overshadowed.

b. Strategies in Recruitment and Women's Participation

9. Strategies were to include the following:

(i) The executing agency will actively recruit qualified women in all levels of the project implementation structure, especially in the rural component. The institutional strengthening component activities related to training will specify how participation of women will be encouraged.
(ii) The following targets shall be achieved in the project implementation and the institutional strengthening component.
    a. 25 % of professional and technical staff working in the project, project monitoring unit (PMU), project implementation unit (PIU), pradeshiya sabhas, and partner NGOs will be women.
    b. On the institutional strengthening component, at least 20% of NWSDB professionals who participate in the training subcomponent will be women.
    c. In designing awareness campaigns about water supply and sanitation, the role of women in the household for most of the provision and use of water will be taken into account.

2. Revised Gender Action Plan

10. The revised GAP of 2007 focused more on the community development aspects of the project at field level. The elements of GAP 2007:

(i) Conduct initial participatory social assessment on gender involvement in village development activities (present status of men and women's involvement in village development activities identified and recorded).

(ii) Form small groups of men and women in each village (small groups of men and women are formed, leadership skills are developed, development activities commenced)
(iii) Form women's' associations (women's' associations are registered with the Women's Bureau, women's associations are functioning in all villages).
(iv) Form CBOs (CBOs are formed, 50% of office bearers are women)
(v) Provide training to men and women leaders on leadership, household management and gender development (trained men and women leaders).
(vi) Assess involvement of men and women in project activities (men and women participate in project activities equally).
(vii) Implement income generating programs, savings and credit programs (iIncome generating activities commenced, persons trained in relevant skills, savings and credit activities begun, and marketing facilities explored)
(viii) Form forum of Women's Associations in each pradeshiya sabha area (forum registered with Women's Bureau in each PS area).
(ix) Assess impact of programs and collect information on improvement of quality of life (comprehensive study report).
(x) Review issues identified through impact evaluation, reestablish women's association if required (preparation of action plan for further development based on analysis of issues).

C. Gender Impact OF URBAN Water Supply and Sanitation

11. The urban water supply and sanitation component was implemented in the towns of Batticaloa, Hambantota, Muttur and Polonnaruwa. One of the main advantages associated with having easy access to water for a household is the reduction in time spent fetching water from the nearest source. There is a preconception that this is a task that is usually assigned to women. The impact assessment surveys show that both men and women took an equal share in fetching water before the project. The task was difficult only at Hambantota, where the average time taken was 55 minutes per day before the project. When the distance was large, the men undertook to fetch water using cycles or motorcycles.

12. A high percentage of beneficiaries from Batticaloa (93%) and Hambantota (83%) have reported that women's difficulties had reduced after the new water supply schemes reached the households.

13. The sanitation component provided low-cost toilets to deserving families, with a subsidy payment to ease the burden of cost. The availability of safe toilet facilities in the household compound mainly affects women, in terms of safety and privacy. There was an increase in the percentage of the more hygienic, water-sealed latrines over the earlier pit latrines, while the percentage use of common or shared toilets fell. The use of the open field for defecation has dropped to negligible levels. These changes all had a positive impact on women.

14. The project also sought to reduce infant mortality by 20% in the project areas. District-level data is not available for the pre-project situation; the national infant mortality rate was 17.7 per 1,000 live births in 2002. Using this as reference, there has been a reduction in infant mortality but only marginally so in Batticaloa. Infant mortality rates in 2009 were Anuradhapura (12.3), Batticaloa (17.4), Hambantota (5.5), Polonnaruwa (7.8), and Trincomalee (4.5).

15. Another important aspect of gender impact is the reduction of water borne diseases because of improved water supply and sanitation. The project impact targets included the

reduction of water borne diseases by 50% in the project areas. This target has been achieved. The reported number of cases of dysentery in 2013 was Batticaloa 407, Hambantota 79, Muttur (Trincomalee) 82, and Polonnaruwa 10. All these improvements are beneficial to women as the primary care giver in the family.

D. Gender Impact of Rural Water Supply and Sanitation Component

16. As indicated earlier, the two GAPs (2002 and 2007) covered only the rural water supply and sanitation and institutional strengthening components. The gender assessment of these two components is presented in the table below.

17. In the course of field visits (Appendix 3), the project completion review mission was able to observe the active participation of women in the implementation of the rural water supply schemes (RWSS) in Anuradhapura and Polonnaruwa districts. At the Arunodhaya CBO RWSS scheme at Dimbulagala, 20 of the 28 committee members (71%) are women. At the Janashakthi CBO also at Dimbulagala, the president is a woman and the CBO also has a majority of female members. At the Navodaya CBO in Welikanda, 8 out of 12 committee members (67%) are women. The project provided an opportunity for women to actively participate in an activity from which they benefitted the most, and the enthusiasm of women in the operation of their respective CBOs as observed by the project completion review mission shows the potential for replication of this activity in other areas.

Table A6.1: Gender Assessment- Rural Water and Sanitation and Institutional Strengthening Components

Project Components	Gap Provisions (GAP 2002 and GAP 2007)	Achievements at Project Completion
Component 2—Rural Water Supply and Sanitation Construction of rural water schemes to provide drinking water (piped, rain fed, protected well) to322,000 people in Polonnaruwa and Anuradhapura. Construction of 27,600 low-cost latrines. Delivery of training to participatingCBOs,14 participating rural councils, and 1 provincial council	**GAP 2002:** 1. Project facilitators will emphasize need to have active participation of all at community meetings, which will include 50% participation by women. 2. 50% of participation in small-group activities will be by women. 3. Executive committee of the CBO will be at least 50% women. 4. Separate discussions with women's groups will take place regarding technologies and service level of the water supply facilities built by the project. If major differences occur between women's groups and mixed or men's groups, the project facilitators will take an active role to prevent women's decisions being overshadowed.	- Upon the formation of small groups, one male and one female member are chosen from each group who in turn become candidates for the executive committee of the CBO. This ensures equal participation of both sexes. In actual practice, the chairperson is male while the secretary and treasurer are female. More women were present at all CBO meetings than men. - Women made up 49% of CBO executive committee members in Anuradhapura and 52% in Polonnaruwa. - Participation in CBOs was 55% women and 45% men in Anuradhapura and 50% women and 50% men in Polonnaruwa. - Women's CBOs made up 45% of the total in Anuradhapura and 42% of the total in Polonnaruwa. - Women's groups formed under the project were associated with the Women's Bureau of Sri Lanka and each group was given SLRs. 20,000 to commence self-employment activities. This was mostly seen as inadequate to establish viable self-employment projects. - Forum of Women's Associations for each Pradeshiya Sabha area was established. - Links were made between the Women's Bureau and social development officers at steering committees within NWSDB. Some community development officers joined the Chronic Kidney Disease (CKDu) unit at NWSDB

Project Components	Gap Provisions (GAP 2002 and GAP 2007)	Achievements at Project Completion
	GAP 2007 1. Conduct initial participatory social assessment on gender involvement in village development activities 2. Form small groups of men and women in each village 3. Form women's' associations 4. Form Community Based Organizations (CBOs) 5. Provide training to men and women leaders on leadership, household management and gender development 6. Assess involvement of men and women in project activities 7. Implement income generating programs, savings and credit programs 8. Form forum of Women's Associations in each Pradeshiya Sabha (PS) area 9. Assess impact of programs and collect information on improvement of quality of life. 10. Review issues identified through impact evaluation, re-establish women's association if required.	- Women had actively participated in all programs as at least 50% of participants, and in some cases more than 50%. E.g., after almost 400 health and hygiene programs, 65% women had participated; after350 income-generating programs, more than 98% women had participated; intake construction training included 60% women. - Women willingly donated labor required for infrastructure components and adjusted domestic and other responsibilities around this as they had time to plan participation in the work.

Project Components	Gap Provisions (GAP 2002 and GAP 2007)	Achievements at Project Completion
Component 3— Institutional Strengthening Delivery of a national public awareness and education campaign. Implementation of a corporate strategy to improve NWSDB management. Implementation of a strategy to reduce operation and maintenance costs.	1. 25%of professional and technical staff working with the PMU and PIU, rural councils and IP–NGOs will be women. 2. 20% of training offered through the project will be reserved for women.	- The project director during the initial period of implementation was a woman. - The requirement that 25% of staff at the PMU has been met, and also at the support units established at the Pradeshiya Sabhas. - The awareness campaign was targeted at women, since it was accepted that women were the main stakeholders in the water schemes. - In the early phase of project implementation, 25% targets for women's participation on project teams and IP–NGOs were met. - The requirement that 20% of trainees be women has been met.

TRAINING

A. Background

1. Objectives

1. The report and recommendation of the President (RRP)[1] of the original project (RRP 2002) envisaged a comprehensive training program, with a budget of $1.217 million. No additional funding was included in the subsequent loan agreements.

2. The RRP 2002 identified several training elements:
   (i) Under the urban component, contractors' obligations would include training of National Water Supply and Drainage Board (NWSDB) staff in the operation and maintenance (O&M) of the new facilities. The training would be carried out in conjunction with the physical implementation of the project.
   (ii) The rural component would provide training to strengthen the capacity of community-based organizations (CBOs) to participate in community development. This training would be undertaken by nongovernment organizations (NGOs).
   (iii) Water supply system operators in the district offices and the NWSDB, technical officers in the p*radeshiya sabhas*[2], and CBOs would be trained during project implementation.
   (iv) In addition, the institutional strengthening component would provide resources for management training of NWSDB staff.

2. Training Strategy and Annual Plans

3. The design stated that the NWSDB would submit, for concurrence by the Asian Development Bank (ADB), a 5-year strategic training plan within 3 months of fielding of the two project management consultants, and an annual training plan prior to 31 October of each year. The plan would specify training institutions, methodologies, targeted population, and expected outputs. As per the gender action plan (Appendix 6), 20% of the trainees would be women.

4. A training report was prepared in September 2004, which outlined the 5-year strategy.[3] Annual plans were prepared for 2004/2005, 2005/2006, 2006/2007, 2007/2008, and 2008/2009, which were shared with ADB and extracts were included in the project management unit (PMU) quarterly progress reports (QPRs). The original annual plans were not seen by the project completion report (PCR) mission.

5. The training strategy was modeled on the training needs identified during 2001–2002 under the project preparatary technical assistance.[4]

6. Plans included four main types of training:

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[1] ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[2] *Pradeshiya sabha is the* smallest local government unit.

[3] Project Management Unit, Secondary Towns and Community-Based Rural Water Supply and Sanitation. 2004. *Training*. Colombo.

[4] ADB. 2002. *Project Preparatory Technical Assistance to the Government of Sri Lanka for the Secondary Towns Water Supply and Sanitation Project.* Manila (TA3587).

(i) in-country training for project staff,
(ii) overseas training for project staff,
(iii) in-country training for NWSDB staff, and
(iv) overseas training for NWSDB staff.

7. The main focus of training was to be on:
(i) component 2: rural water supplies and sanitation (RWSS) training;
(ii) component 2: public awareness training for rural communities;
(iii) component 3: training of NWSDB staff for institutional strengthening; and
(iv) component 3: national public awareness and education training.

8. Component 1 contractors also conducted training, as part of their build–operate contracts.

3. Training Progress

9. The PMU training specialist managed the program. Training commenced in 2005 and continued until late 2012, beyond the scheduled completion date of 2008. The extended period of training resulted from delays in the implementation of components 1 and 2 and the need for refresher training after field activities were completed, especially in the rural component 2.

10. At the midterm review in 2006, ADB noted that the in-country program had progressed well, with participant numbers greatly exceeding those planned. However, only 50% of the planned overseas programs had been achieved.[5] This appeared to have resulted from unions objecting to contract staff being given overseas training, which is viewed as an underserved benefit for government officials. As PMU contract staff are not entitled to overseas training, the midterm review recommended exploring the possibility of providing more in-country training in the form of group training programs, conducted by experienced foreign resource personnel. This does not appear to have been pursued.

11. Subsequently, senior staff of the NWSDB and other senior officials were selected for the remaining overseas training slots for institutional strengthening (component 3).

12. In November 2008, ADB expressed serious concerns about the lack of a training plan for 2008–2009 (due in September 2008) and directed that remaining funds for overseas training events would be reallocated to CBO training, unless fully justified and approved by ADB.[6] Following the handover of the project supervisory role by ADB headquarters to the Sri Lanka Resident Mission in January 2009, there has been no further reference to training in ADB review mission reports.

13. The PMU does not appear to have prepared any consolidated report on training. There was no mention of training achievements in the borrower's completion report.[7] The following review is therefore based on information gleaned from available QPRs produced by the PMU.

[5] ADB. 2006. *Aide Mémoire of the Mid-term Review Mission for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.
[6] ADB. 2008. *Back to Office Reports for Loan Review Missions for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.
[7] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

B. Training programs conducted

1. Rural Water Supply and Sanitation

14. This was the most extensive and comprehensive program, comprising 2–3 day sessions focused on members of:

(i) partner NGOs, including community facilitators;
(ii) CBOs, office bearers and members;
(iii) women's associations (Appendix 6);
(iv) *pradeshiya sabha* coordinating committees (executive members), g*rama niladharis* and s*amurdhi niladharis;*[8]
(v) school teachers (especially on hygiene and water use); and
(vi) project technical support units and *pradeshiya sabha* implementation units.

15. The training targeted rural communities in Anuradhapura and Polonnaruwa districts. No training appears to have been given for the rural water supply and sanitation component in Batticaloa, where access was subject to security risks until mid-2007.

16. The QPRs clearly indicate the topics of training and target trainees but do not define the training providers. Training topics evolved over the project period and individual subcomponent implementation cycles to meet actual needs They include community mobilization, village planning, CBO organization, bookkeeping and financial management, water use, water supply design and construction technology, rainwater harvesting, pump operation, and operation and maintenance.

17. The numbers of trainees per event are listed in the QPRs but the data sets are incomplete,[9] precluding accurate calculation of totals of trainees involved. It appears that about 500–600 participants from each district were trained each quarter from mid-2005. This declined to about 300 per district by mid-2011 and training was completed in late 2011. Consequently, probably around 9,200 persons were trained.[10]

2. Public Awareness Training for Rural Communities

18. Awareness training commenced in 2005 and was completed by the end of 2007. The training, which usually comprised 1-day events, targeted political leaders (central and provincial), p*radeshiya sabha* members, village communities, members of the public, and local institutions (such as schools).

19. The purposes seem to have been to raise awareness of the project objectives and the importance of water and sanitation amongst decision makers and the wider public, and to encourage villagers to join the rural water supply and sanitation (RWSS) program. Programs included health and hygiene elements for communities and schools.

20. The PMU quarterly progress reports indicate that some 525 political leaders (including p*radeshiya sabha* members) were trained, as well as some 8,900 community members. No indication is given as to the training providers.

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[8] *Grama Nilidhari* = village level government officer; *samurdhi niladhari* = village-level government person responsible managing the *samurdhi* (government subsidy) poverty relief program

[9] Quarterly Progress Reports for 2009 and 2010 were unavailable and the 2009 PMU Status Report did not mention training.

[10] Note that some of these individuals may have attended more than one training event.

3. In-Country Training of Project Management Unit and National Water Supply and drainage Board Staff

21. This covered technical and administrative training for PMU and NWSDB staff at institutes within Sri Lanka, comprising formal diplomas, technical short courses and workshops. Other short training courses were provided, such as water quality testing.

22. The training events are summarized in Table A7.1, based on information available in the quarterly progress reports.

Table A7.1: In-Country Training Program for Project Management Unit and National Water Supply and drainage Board Staff

Training Course	Venue	Trainees
2005		
Graduate Diploma Sanitary Engineering	(…)	(…)
Certificate Course In Human Resources Management	(…)	12
Na	Centre for Housing Planning and Building	10
Upgrading and Maintenance of Personal Computer Systems	Computer Service Centre	(…)
2006		
Diploma in Environmental Engineering Management	University of Moratuwa	na
Management Development For Engineers	Institute of Engineers of Sri Lanka	12
Diploma in English for Professionals	Sri Lanka Institute of Development Administration	9
Postgraduate Diploma in Business and Financial Administration	Institute of Chartered Accountants of Sri Lanka	(…)
Maintenance of Hydraulic Systems	Institute of Construction Training and Development	(…)
Mechanical Design	Institute of Engineers of Sri Lanka	(…)
Diploma Course in English	Sri Lanka Institute of Development Administration	(…)
Project Implementation and Administration (ADB Projects)	(…)	2
32nd WEDC Conference	Colombo	(…)
2008 (none in 2007)		
Demand Management Training	Kolonnawa	(…)
Residential workshop	Berjaya Hotel Colombo	(…)
English Language	Dept of Official Languages	(…)
2009		
Leadership training	(…)	(…)
Algae Analysis	Faculty of Applied Science, Rajarata University	(…)

ADB = Asian Development Bank, PMU = project management unit, WEDC = Water, Engineering and Development Centre (UK)
Source: PMU quarterly progress reports; PMU training papers, unreferenced.

4. Overseas Training of Project Management Unit Staff

23. A total of 39 PMU staff appears to have attended overseas training courses in 2005 and 2006, as part of component 2 (Table A7.2). Further overseas training events had been planned but the slots were taken by NWSDB senior staff, under component 3.

24. The venues for training are not given in the available PMU documentation.

Table A7.2: Overseas Training of Project Management Unit Staff (Component 2)

Training Program	Trainees	Participants	Location
Project Management	Project Director, Deputy PD, Accounts	3	Training Institutes in South east Asia
Participatory Watershed Management	Project managers,, Chief Engineer (TSU)	3	
Management of Poverty Alleviation Projects	Project managers,, Chief Engineer (TSU)	2	
Workshop on Rural Poverty Alleviation	Sociologist (PSIU/TSU)	3	
Effective Rural Leadership Development	Project Engineers/ Sociologist	4	
Environmental and Natural Resource Planning	Senior Engineers (PSIU/TSU)	4	
Community-based development	Engineers/ Engineering Assistants	4	
Project Monitoring and Evaluation	Engineers/Accountants	4	
Organizational Financial Planning and Cost Control	Accountants/ Senior Engineers (PMU/TSU/PSIU)	6	
Construction Management Practice	Engineering Assistants (TSU)	6	
Total		39	

PMU = Project Management Unit; PSIU = pradeshiya sabha Implementation Unit TSU = Technical Support Unit.
Source: PMU document (unreferenced or dated, probably part of the 2005 *Training Strategy*)

5. Overseas Training of National Water Supply and Drainage Board Staff

25. This training was intended to support institutional strengthening of the NWSDB under component 3.

26. The training was conducted during 2005 and 2006. It comprised one master of science course, study tours, short courses and attendance at conferences. Table A7.3 lists the courses but full details of participants and numbers involved were not available.

Table A7.3: Overseas Training of National Water Supply and Drainage Board Staff (Component 3)

Trainee	Number	Course	Venue
2005			
(…)	3	Environmental Risk Assessment	AIT, Bangkok
(…)	5	Organizational Financial Planning and Cost Control	AIT, Bangkok
(…)	(…)	Advanced Management Program for Asia-Pacific Managers	AIT, Bangkok
2006			
(…)	2	International Executive Workshop	Australia/New Zealand
(…)	1	4th World Water Forum	Mexico
(…)	1	Project Team Management	Quebec
(…)	(…)	Flow measurement and control techniques/ software in industrial	Kerala

Trainee	Number	Course	Venue
		process and water distribution	
Chief engineer	1	M.Sc. in Municipal Water and Infrastructure Specification in Sanitary Engineering	UNESCO-IHE Netherlands
Chief secretary (NCP), district secretaries Anuradhapura and Polonnaruwa	3	Planning and Administering Good Governance	AIT, Bangkok

AIT = Asian Institute of Technology; M.Sc. = master of science; NCP = North Central Province; PMU = project management unit, UNESCO-IHE = United Nations Education, Scientific and Cultural Organization – Institute of Hydraulic Engineering.
Sources: PMU quarterly progress reports and (undated) PMU training financial accounts.

6. National Public Awareness and Education Training

27. No information is available on the training provided for the public awareness and education program, which was largely conducted by the NWSDB Public Relations Section.

C. Evaluation of Training

28. The training strategy proposed the following evaluation: formative Evaluation, at training program design stage; summative evaluation, at end of each training program; and impact evaluation, 1–3 months after the training event.

29. There was no evidence of such evaluations and the PMU did not prepare a consolidated report on training. The following comments therefore derive from discussions by the PCR mission with NWSDB staff and beneficiary villagers, during field visits, and extracts from QPRs.

30. Many villagers confirmed that they had received awareness training, which had motivated them to join the project. One CBO (*Navodaya* CBO, Welikandha, Polonnaruwa) noted that only 10% of the community was interested in the project initially: this rose to 50% and finally 100% after repeated awareness campaigns.

31. Many CBO members had been trained and appeared to be competent in O&M activities of their RWSS schemes. They were also competent in organizing their enterprises and managing their accounts. Several CBOs have since qualified for government grants for reverse osmosis plants, which is confirmation of their competence and abilities (Appendix 3). Several CBOs noted that, without training by partner NGOs, they would not have been able to establish their schemes.

32. NWSDB staff, who had been involved on the project, generally confirmed that training under the project had been useful.

33. There is no information on the contribution of overseas training of senior NWSDB staff on the operational performance of the NWSDB.

COST TABLES AND FIGURES

Table A8.1: Estimated Project Costs at Appraisal 2002, by Category and Donor

($ million)

	ADF (L1993)			Gov	CC	
Category	**FC**	**LC**	**Total**	**LC**	**LC**	**Total**
1. Civil works	0.00	27.43	27.43	6.71	2.41	36.55
2. Equipment and materials	11.19	1.15	12.34	1.98		14.32
3. Vehicles	0.37	0.00	0.37	0.00		0.37
4. Consulting services	2.79	2.92	5.71	0.00		5.71
5. Project management office equipment	0.56	0.00	0.56	1.98		2.54
6. Training and fellowships	0.00	1.22	1.22	0.00		1.22
7. Surveys and public awareness	0.00	0.86	0.86	0.00		0.86
8. Interest charge	1.46		1.46			1.46
Land acquisition and resettlement				1.95		1.95
Contingency	3.18	7.16	10.34	2.78	0.63	13.75
Tax and duties				7.61		7.61
Total	**19.55**	**40.74**	**60.29**	**23.01**	**3.04**	**86.35**

ADB = Asian Development Bank, ADF = Asian Development Fund, CC = Community Contribution, FC = foreign currency, Gov = Government of Sri Lanka, LC= local currency.

Source: ADB. 2002. *Report and Recommendation of the President: Proposed Loan to the Democratic Specialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila.

Table A8.2: Estimated Project Costs at Appraisal 2006, by Category and Donor
($ million)

	ADB															
	ADF (L1993)			OCR (L2275)			ADF (L2276)			Gov			CC	Total Estimated Cost		
Category	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**LC**	**FC**	**LC**	**Total**
1. Civil works	5.30	21.22	**26.52**	1.15	4.60	**5.75**	5.10	20.41	**25.51**	3.45	11.40	**14.85**	2.41	**15.00**	**60.04**	**75.04**
2. Equipment and materials	13.72	1.52	**15.24**	4.15	0.46	**4.61**	11.93	1.33	**13.26**	5.59	0.62	**6.21**		**35.39**	**3.93**	**39.32**
3. Vehicles	0.37	0.00	**0.37**							0.00	0.00	**0.00**		**0.37**	**0.00**	**0.37**
4. Consulting services	4.19	2.52	**6.71**							0.00	0.00	**0.00**		**4.19**	**2.52**	**6.71**
5. Project management office Equipment	0.56	0.00	**0.56**							0.00	3.17	**3.17**		**0.56**	**3.17**	**3.73**
6. Training and fellowships	0.00	1.22	**1.22**							0.00	0.00	**0.00**		**0.00**	**1.22**	**1.22**
7. Surveys and public awareness	0.00	1.40	**1.40**							0.00	0.00	**0.00**		**0.00**	**1.40**	**1.40**
8. Interest charge	1.46		**1.46**	1.58		**1.58**	1.32		**1.32**					**4.36**		**4.36**
Land acquisition and resettlement											1.55	**1.55**			**1.55**	**1.55**
Contingency	2.43	4.43	**6.86**	0.63	0.93	**1.56**	2.21	4.20	**6.41**	1.24	2.18	**3.42**	0.63	**6.51**	**12.37**	**18.88**
Tax and duties											22.59	**22.59**			**22.59**	**22.59**
Total	**28.03**	**32.31**	**60.34**	**7.51**	**5.99**	**13.50**	**20.56**	**25.94**	**46.50**	**10.28**	**41.51**	**51.79**	**3.04**	**66.38**	**108.79**	**175.17**

ADB = Asian Development Bank, ADF = Asian Development Fund, OCR = Ordinary Capital Resources, CC = Community Contribution, FC = foreign currency, LC= local currency, Gov = Government of Sri Lanka.
Source: ADB. 2006. *Report and Recommendation of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila.

Table A8.3: Estimated Project Costs at Appraisal 2011, by Category and Donor
($ million)

	ADB																	
	ADF (L1993)			OCR (L2275)			ADF (L2276)			OCR 2757[a]	ADF 2758[a]	Gov[a]			CC	Total Estimated Cost		
Category	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**FC**	**FC**	**LC**	**Total**	**LC**	**FC**	**LC**	**Total**
1. Civil works	5.30	21.22	**26.52**	1.15	4.60	**5.75**	5.10	20.41	**25.51**	0.00	9.40	3.45	38.43	**41.88**	2.41	24.40	87.07	**111.47**
2. Equipment and materials	13.72	1.52	**15.24**	4.15	0.46	**4.61**	11.93	1.33	**13.26**	3.60	0.00	5.59	8.72	**14.31**		38.99	12.03	**51.02**
3. Vehicles	0.37	0.00	**0.37**										0.00	**0.00**		0.37	0.00	**0.37**
4. Consulting services	4.19	2.52	**6.71**								0.80	0.00	0.00	**0.00**		4.99	2.52	**7.51**
5. Project management office equipment	0.56	0.00	**0.56**								0.30	0.00	4.95	**4.95**		0.86	4.95	**5.81**
6. Training and fellowships	0.00	1.22	**1.22**								0.00	0.00	0.00	**0.00**		0.00	1.22	**1.22**
7. Surveys and public awareness	0.00	1.40	**1.40**									0.00	0.00	**0.00**		0.00	1.40	**1.40**
8. Interest charge	1.46		**1.46**	1.58		**1.58**	1.32		**1.32**	0.50	0.60					5.46		**5.46**
Land acquisition and resettlement													3.55	**3.55**			3.55	**3.55**
Contingency	2.43	4.43	**6.86**	0.63	0.93	**1.56**	2.21	4.20	**6.41**	0.20	2.20	1.24	20.31	**21.55**	0.63	8.91	30.50	**39.41**
Tax and Duties													32.26	**32.26**			32.26	**32.26**
Total	**28.03**	**32.31**	**60.34**	**7.51**	**5.99**	**13.50**	**20.56**	**25.94**	**46.50**	**4.30**	**13.30**	**10.28**	**108.22**	**118.50**	**3.04**	**83.98**	**175.50**	**259.48**

ADB = Asian Development Bank, ADF = Asian Development Fund, OCR = ordinary capital resources, CC = Community Contribution, FC = foreign currency, LC= local currency, Gov = Government of Sri Lanka, RRP = Report and Recommendation of the President.

[a] Since in the 2011 RRP there is no separation of local cost and foreign cost identified, the total cost is considered as foreign cost. Government's cost is considered as local cost.

Source: ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

Table A8.4: Estimated Project Costs at Appraisal 2002, by Component and Donor

($ million)

Item	ADB ADF (L1993) FC	ADB ADF (L1993) LC	ADB ADF (L1993) Total	Gov LC	CC LC	Total LC	Total
A. Base Cost							
1. Component 1: Urban WSS							
a. Batticaloa Urban WSS	6.40	11.95	18.35	4.60		16.55	22.95
b. Hambantota Urban WSS	1.27	4.86	6.13	2.07		6.93	8.20
c. Matara Urban WSS	0.18	1.01	1.19	1.00		2.01	2.19
d. Muttur Urban WSS	1.07	1.53	2.60	2.00		3.53	4.60
e. Polonnaruwa Urban WSS	0.59	2.07	2.65	1.00		3.07	3.65
Component 1 Subtotal	**9.50**	**21.41**	**30.91**	**10.67**		**32.08**	**41.58**
2. Component 2: Rural WSS							
a. Anuradhapura Rural WSS	0.48	3.19	3.67	0.00	1.21	4.40	4.88
b. Polonnaruwa Rural WSS	0.48	3.20	3.68	0.00	1.20	4.40	4.88
c. Batticaloa							
d. RWSS Training	0.00	0.72	0.72	0.00		0.72	0.72
e. Community Participation, Public Awareness and Education Campaigns	0.00	0.50	0.50	0.00		0.50	0.50
Component 2 Subtotal	**0.97**	**7.61**	**8.58**	**0.00**	**2.41**	**10.01**	**10.98**
3. Component 3: Institutional Strengthening							
a. NWSDB FOPIP Support							
i. Corporate Strategy and Financial Management Strengthening	0.40	0.10	0.50	0.00		0.10	0.50
ii. Asset Registry	0.10	0.40	0.50	0.00		0.40	0.50
iii. Improving O&M Cost Effectiveness							
- NWSDB Training	0.00	0.50	0.50	0.00		0.50	0.50
- Reducing NRW (Bulk Meters)	0.50	0.00	0.50	0.00		0.00	0.50
iv. Transfer of Schemes	0.23	0.77	1.00	0.00		0.77	1.00
b. National Public Awareness and Education Campaigns	0.00	0.25	0.25	0.00		0.25	0.25
Component 3 Subtotal	**1.23**	**2.02**	**3.25**	**0.00**		**2.02**	**3.25**
4. Project Management							
a. Consultancy – International	1.46	0.00	1.46	0.00		0.00	1.46
b. Consultancy – National	0.00	1.03	1.03	0.00		1.03	1.03
c. Detailed Design and Construction Supervision	1.33	1.33	2.66	0.00		1.33	2.66
d. PMU/PIU Offices (Counterpart Salaries and Running Costs)	0.43	0.00	0.43	1.98		1.98	2.41
e. Socioeconomic and Environmental Surveys	0.00	0.11	0.11	0.00		0.11	0.11
f. Audit Services	0.00	0.06	0.06	0.00		0.06	0.06
Project Management Subtotal	**3.22**	**2.53**	**5.75**	**1.98**		**4.51**	**7.73**
Subtotal A	**14.92**	**33.57**	**48.49**	**12.65**	**2.41**	**48.62**	**63.54**
B. Contingencies							
1. Physical Contingencies	1.49	3.36	4.85	1.30	0.29	4.95	6.45
2. Price Contingencies	1.69	3.80	5.49	1.47	0.33	5.61	7.30
Subtotal B	**3.18**	**7.16**	**10.34**				**13.75**
C. Interest Charges	**1.46**		**1.46**				**1.46**
D. Taxes and Duties				**7.61**		**7.61**	**7.61**
Total	**19.55**	**40.74**	**60.29**	**23.03**	**3.04**	**66.79**	**86.35**

ADB = Asian Development Bank, ADF = Asian Development Fund, CC = Community Contribution, FC = foreign currency, Gov = Government of Sri Lanka, LC= local currency, WSS = Water Supply and Sanitation.

Source: ADB. 2002. *Report and Recommendation of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

Table A8.5: Estimated Project Costs at Appraisal 2006, by Component and Donor

($ million)

Item	ADB (L1993,2275,2276)[a] FC	ADB LC	ADB Total	Gov FC	Gov LC	Gov Total	CC LC	Total FC	Total LC	Total
A. Base Cost										
1. Component 1: Urban WSS										
a. Batticaloa Urban WSS	20.04	20.92	40.96	3.07	3.09	6.16		23.11	24.01	47.12
b. Hambantota Urban WSS	9.31	7.86	17.17	3.00	4.30	7.30		12.31	12.16	24.47
c. Matara Urban WSS										
d. Muttur Urban WSS	3.95	7.17	11.12	0.50	2.18	2.68		4.45	9.35	13.80
e. Polonnaruwa Urban WSS	4.76	4.27	9.03	2.47	4.00	6.47		7.23	8.27	15.50
Subtotal	**38.06**	**40.22**	**78.28**	**9.04**	**13.57**	**22.61**		**47.10**	**53.79**	**100.8**
2. Component 2: Rural WSS										
a. Anuradhapura Rural WSS	0.95	4.38	5.33	0.00	0.00	0.00	1.21	0.95	5.59	6.54
b. Polonnaruwa Rural WSS (Batch 1 & 2)	1.21	4.70	5.91	0.00	0.00	0.00	1.20	1.21	5.90	7.11
c. Batticaloa	0.40	0.00	0.40	0.00	0.00	0.00		0.40	0.00	0.40
d. RWSS Training	0.00	0.72	0.72	0.00	0.00	0.00		0.00	0.72	0.72
e. Community Participation, Public Awareness and Education Campaigns	0.00	0.50	0.50	0.00	0.00	0.00		0.00	0.50	0.50
Subtotal	**2.57**	**10.30**	**12.87**	**0.00**	**0.00**	**0.00**	**2.41**	**2.57**	**12.71**	**15.28**
3. Component 3: Institutional										
a. NWSDB FOPIP Support										
i. Corporate Strategy and Financial Management Strengthening	0.40	0.10	0.50	0.00	0.00	0.00		0.40	0.10	0.50
ii. Asset Registry	0.10	0.40	0.50	0.00	0.00	0.00		0.10	0.40	0.50
iii. Improving O&M Cost										
- NWSDB Training	0.00	0.50	0.50	0.00	0.00	0.00		0.00	0.50	0.50
- Reducing NRW (Bulk Meters)	0.50	0.00	0.50	0.00	0.00	0.00		0.50	0.00	0.50
iv. Transfer of Schemes	0.23	0.77	1.00	0.00	0.00	0.00		0.23	0.77	1.00
b. National Public Awareness and Education Campaigns	0.00	0.25	0.25	0.00	0.00	0.00		0.00	0.25	0.25
Subtotal	**1.23**	**2.02**	**3.25**	**0.00**	**0.00**	**0.00**		**1.23**	**2.02**	**3.25**
4. Project Management										
a. Consultancy (PMU and DSC)	4.19	1.96	6.15	0.00	0.00	0.00		4.19	1.96	6.15
b. PMU/PIU Offices (Counterpart Salaries and Running Costs)	0.43	0.00	0.43	0.00	3.17	3.17		0.43	3.17	3.60
c. Socioeconomic and Environmental Surveys and Audit Services	0.00	0.17	0.17	0.00	0.00	0.00		0.00	0.17	0.17
Project Management Subtotal	**4.62**	**2.13**	**6.75**	**0.00**	**3.17**	**3.17**		**4.62**	**5.30**	**9.92**
Subtotal A	**46.48**	**54.67**	**101.15**	**9.04**	**16.74**	**25.78**	**2.41**	**55.52**	**73.82**	**129.34**
B. Contingencies										
1. Physical Contingencies	2.06	2.48	4.54	0.45	0.43	0.88	0.29	2.51	3.20	5.71
2. Price Contingencies	3.20	7.08	10.28	0.79	1.76	2.55	0.33	3.99	9.17	13.16
Subtotal B	**5.26**	**9.56**	**14.82**	**1.24**	**2.19**	**3.43**	**0.63**	**6.50**	**12.38**	**18.88**
C. Interest Charges	**4.36**		**4.36**					**4.36**		**4.36**
D. Taxes and Duties					**22.59**	**22.59**			**22.59**	**22.59**
Total	**56.09**	**64.23**	**120.33**	**10.28**	**41.52**	**51.80**	**3.04**	**66.37**	**108.78**	**175.16**

ADB = Asian Development Bank, CC = Community Contribution, FC = foreign currency, Gov = Government of Sri Lanka, LC = local currency, WSS = Water Supply and Sanitation.

[a] Refer table A8.7 for individual estimated costs for the primary, supplementary and additional financing loans.

Source: *ADB. 2006. Report and Recommendation of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila.

Table A8.6: Estimated Project Costs at Appraisal 2011, by Component and Donor
($ million)

Item	ADB (L1993, 2275, 2276, 2757, 2758)[a, b]			Gov[a]			CC	Total	Total	
	FC	LC	Total	FC	LC	Total	LC	FC	LC	Total
A. Base Cost										
1. Component 1: Urban WSS										
a. Batticaloa Urban WSS	20.04	20.92	40.96	3.07	3.09	6.16		23.11	24.01	47.12
b. Hambantota Urban WSS	9.31	7.86	17.17	3.00	4.30	7.30		12.31	12.16	24.47
c. Matara Urban WSS										
d. Muttur Urban WSS	16.95	7.17	24.12	0.50	2.18	2.68		17.45	9.35	26.80
e. Polonnaruwa Urban WSS	4.76	4.27	9.03	2.47	41.31	43.78		7.23	45.58	52.81
Subtotal	**51.06**	**40.22**	**91.28**	**9.04**	**50.88**	**59.92**		**60.10**	**91.10**	**151.20**
2. Component 2: Rural WSS										
a. Anuradhapura Rural WSS (Batch 1 &	0.95	4.38	5.33	0.00	0.00	0.00	1.21	0.95	5.59	6.54
b. Polonnaruwa Rural WSS (Batch 1 & 2)	1.21	4.70	5.91	0.00	0.00	0.00	1.20	1.21	5.90	7.11
c. Batticaloa	0.40	0.00	0.40	0.00	0.00	0.00		0.40	0.00	0.40
d. RWSS Training	0.00	0.72	0.72	0.00	0.00	0.00		0.00	0.72	0.72
e. Community Participation, Public Awareness and Education Campaigns	0.00	0.50	0.50	0.00	0.00	0.00		0.00	0.50	0.50
Subtotal	**2.57**	**10.30**	**12.87**	**0.00**	**0.00**	**0.00**	**2.41**	**2.57**	**12.71**	**15.28**
3. Component 3: Institutional										
a. NWSDB FOPIP Support										
i. Corporate Strategy and Financial	0.40	0.10	0.50	0.00	0.00	0.00		0.40	0.10	0.50
ii. Asset Registry	0.10	0.40	0.50	0.00	0.00	0.00		0.10	0.40	0.50
iii. Improving O&M Cost Effectiveness										
- NWSDB Training	0.00	0.50	0.50	0.00	0.00	0.00		0.00	0.50	0.50
- Reducing NRW (Bulk Meters)	0.50	0.00	0.50	0.00	0.00	0.00		0.50	0.00	0.50
iv. Transfer of Schemes	0.23	0.77	1.00	0.00	0.00	0.00		0.23	0.77	1.00
b. National Public Awareness and Education Campaigns	0.00	0.25	0.25	0.00	0.00	0.00		0.00	0.25	0.25
Subtotal	**1.23**	**2.02**	**3.25**	**0.00**	**0.00**	**0.00**		**1.23**	**2.02**	**3.25**
4. Project Management										
a. Consultancy (PMU and DSC)	4.99	1.96	6.95	0.00	0.00	0.00		4.99	1.96	6.95
b. PMU/PIU Offices (Counterpart	0.73	0.00	0.73	0.00	4.95	4.95		0.73	4.95	5.68
c. Socioeconomic and Environmental Surveys and Audit Services	0.00	0.17	0.17	0.00	0.00	0.00		0.00	0.17	0.17
Project Management Subtotal	**5.72**	**2.13**	**7.85**	**0.00**	**4.95**	**4.95**		**5.72**	**7.08**	**12.80**
Subtotal A	**60.58**	**54.67**	**115.25**	**9.04**	**55.83**	**64.87**	**2.41**	**69.62**	**112.91**	**182.53**
B. Contingencies										
1. Physical Contingencies	3.76	2.48	6.24	0.45	10.90	11.35	0.29	4.21	13.67	17.88
2. Price Contingencies	3.90	7.08	10.98	0.79	9.25	10.04	0.33	4.69	16.66	21.35
Subtotal B	**7.66**	**9.56**	**17.22**	**1.24**	**20.15**	**21.39**	**0.63**	**8.90**	**30.34**	**39.24**
C. Interest Charges	**5.46**		**5.46**					**5.46**		**5.46**
D. Taxes and Duties					**32.26**	**32.26**			**32.26**	**32.26**
Total	**73.69**	**64.23**	**137.93**	**10.28**	**108.24**	**118.52**	**3.04**	**83.97**	**175.50**	**259.48**

ADB = Asian Development Bank, CC = Community Contribution, FC = foreign currency, LC= local currency, Gov = Government of Sri Lanka, WSS = Water Supply and Sanitation.

[a] Since in the 2011 RRP there is no separation of local cost and foreign cost identified, the total cost is considered as foreign cost. Government's cost is considered as local cost.

[b] Refer table A8.7 for individual estimated costs for the primary, supplementary and additional financing loans.

Source: ADB. 2011. *Report and Recommendation of the President: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila.

Table A8.7: Estimated Loan Costs at Appraisal 2011, by Component

($ million)

	ADF(1993)			ADB OCR(2275)			ADF(2276)			OCR (2757)[a]	ADF (2758)[a]
Item	**FC**	**LC**	**Total**	**FC**	**LC**	**Tot**	**FC**	**LC**	**Total**	**FC**	**FC**
A. Base Cost											
1. Component 1: Urban											
a. Batticaloa Urban WSS	9.40	9.13	18.53	2.30	2.04	4.34	8.34	9.75	18.09		
b. Hambantota Urban WSS	4.26	2.14	6.40	1.05	0.72	1.77	4.00	5.00	9.00		
c. Matara Urban WSS											
d. Muttur Urban WSS	1.25	3.78	5.03	0.70	0.39	1.09	2.00	3.00	5.00	3.60	9.40
e. Polonnaruwa Urban WSS	2.01	1.07	3.08	0.75	0.72	1.47	2.00	2.48	4.48		
Subtotal	**16.9**	**16.1**	**33.04**	**4.80**	**3.87**	**8.67**	**16.3**	**20.23**	**36.57**	**3.60**	**9.40**
2. Component 2: Rural											
a. Anuradhapura Rural WSS	0.48	3.19	3.67	0.25	0.69	0.94	0.22	0.50	0.72		
b. Polonnaruwa Rural WSS	0.48	3.20	3.68	0.25	0.50	0.75	0.48	1.00	1.48		
c. Batticaloa	0.40	0.00	0.40								
d. RWSS Training	0.00	0.72	0.72								
e. Community Participation, Public Awareness and Education Campaigns	0.00	0.50	0.50								
Subtotal	**1.37**	**7.61**	**8.98**	**0.50**	**1.19**	**1.69**	**0.70**	**1.50**	**2.20**		
3. Component 3: Institutional Strengthening											
a. NWSDB FOPIP Support											
i. Corporate Strategy and Financial Management Strengthening	0.40	0.10	0.50								
ii. Asset Registry	0.10	0.40	0.50								
iii.Improving O&M Cost											
- NWSDB Training	0.00	0.50	0.50								
- Reducing NRW (Bulk Meters)	0.50	0.00	0.50								
iv. Transfer of Schemes	0.23	0.77	1.00								
b.National Public Awareness	0.00	0.25	0.25								
Subtotal	**1.23**	**2.02**	**3.25**								
4. Project Management											
a. Consultancy (PMU and	4.19	1.96	6.15								0.80
b. PMU/PIU Offices	0.43	0.00	0.43								0.30
c. Socioeconomic and	0.00	0.17	0.17								
Subtotal	**4.62**	**2.13**	**6.75**								**1.10**
Subtotal A	**24.1**	**27.8**	**52.02**	**5.30**	**5.06**	**10.3**	**17.0**	**21.73**	**38.77**	**3.60**	**10.50**
B. Contingencies											
1. Physical Contingencies	0.95	1.14	2.09	0.26	0.25	0.51	0.85	1.09	1.94	0.10	1.60
2. Price Contingencies	1.48	3.29	4.77	0.37	0.68	1.05	1.35	3.11	4.46	0.10	0.60
Subtotal B	**2.43**	**4.43**	**6.86**	**0.63**	**0.93**	**1.56**	**2.20**	**4.20**	**6.40**	**0.20**	**2.20**
C. Interest Charges	**1.46**		**1.46**	**1.58**		**1.58**	**1.32**		**1.32**	**0.50**	**0.60**
D. Taxes and Duties											
Total	**28.0**	**32.3**	**60.34**	**7.51**	**5.99**	**13.5**	**20.5**	**25.93**	**46.49**	**4.30**	**13.30**

ADB = Asian Development Bank, ADF = Asian Development Fund, FC = foreign currency, LC= local currency, OCR = ordinary capital resources, WSS = Water Supply and Sanitation.

[a] Since in the 2011 RRP there is no separation of local cost and foreign cost identified, the total cost is considered as foreign cost. Government's cost is considered as local cost.

Source: ADB. 2011. *Report and Recommendation of the President: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila.

Table A8.8: Actual Project Costs at Project Completion (2015), by Category and Donor

($ million)

	ADB															Gov	CC	Total Actual Cost		
	ADF(1993)			OCR(2275)			ADF(2276)			OCR(2757)			ADF(2758)							
Category	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**FC**	**LC**	**Total**	**LC**	**LC**	**FC**	**LC**	**Total**
1. Civil Works	12.15	25.78	37.93	1.43	6.05	7.48	1.41	25.01	26.42				0.66	8.03	8.69	54.70	3.10	15.65	122.67	138.32
2. Equipment and Materials	17.68	3.65	21.33	3.81	0.33	4.14	19.51	1.48	20.99	3.19	0.58	3.77				30.34		44.19	36.38	80.57
3. Vehicles	0.06	0.13	0.19													0.62		0.06	0.75	0.81
4. Consulting Services	2.55	4.49	7.04										0.28	0.50	0.78	2.17		2.83	7.16	9.99
5. Project Management Office Equipment	0.27	0.12	0.39										0.00	0.43	0.43	8.41		0.27	8.96	9.23
6. Training / Fellowships	0.93	0.33	1.26													1.00		0.93	1.33	2.26
7. Surveys and Public Awareness	0.28	0.05	0.33													2.10		0.28	2.15	2.43
8. Interest Charge	1.70		1.70	0.44		0.44	1.39		1.39	0.05		0.05	0.16		0.16			3.74		3.74
Tax and Duties																8.00			8.00	8.00
Total	**35.62**	**34.55**	**70.17**	**5.68**	**6.38**	**12.06**	**22.31**	**26.49**	**48.80**	**3.24**	**0.58**	**3.82**	**1.38**	**8.89**	**10.06**	**107.34**	**3.10**	**67.95**	**187.40**	**255.35**

ADB = Asian Development Bank, ADF = Asian Development Fund, CC = Community Contribution, FC = foreign currency, LC = local currency, Gov = Government of Sri Lanka, OCR = ordinary capital resources.

Sources: Project Completion Report mission computations: project management unit.

Table A8.9: Actual Project Costs at Completion, by Component and Donor

($ million)

Item	ADB (L1993,L2275,L2276,L2757, L2758)[a]			Gov	CC	Total	
	FC	LC	Total	LC	LC	LC	Total
A. Base Cost							
1. Component 1: Urban WSS							
a. Batticaloa Urban WSS	19.76	33.11	52.87	36.13		69.24	**89.00**
b. Hambantota Urban WSS	15.51	13.82	29.33	15.70		29.52	**45.03**
c. Matara Urban WSS							
d. Muttur Urban WSS	5.41	13.70	19.11	7.90		21.58	**27.01**
e. Polonnaruwa Urban WSS	13.42	4.64	18.06	21.81		26.45	**39.87**
Subtotal	**54.10**	**65.27**	**119.37**	**81.55**		**146.81**	**200.91**
2. Component 2: Rural WSS							
a. Anuradhapura Rural WSS	5.54	0.04	5.58	2.44	1.70	4.18	**9.72**
b. Polonnaruwa Rural WSS	0.16	4.20	4.36	1.64	1.40	7.24	**7.40**
c. Batticaloa	0.00	0.21	0.21	0.09		0.30	**0.30**
c. RWSS Training				0.75		0.75	**0.75**
d. Community Participation, Public Awareness and Education Campaigns				1.81		1.81	**1.81**
Subtotal	**5.70**	**4.45**	**10.15**	**6.73**	**3.10**	**14.28**	**19.98**
3. Component 3: Institutional							
a. NWSDB FOPIP Support							
i. Corporate Strategy and Financial Management Strengthening	0.00	0.00	0.00	0.00		0.00	**0.00**
ii. Asset Registry	0.00	0.00	0.00	0.00		0.00	**0.00**
iii. Improving O&M Cost Effectiveness							
- NWSDB Training	0.89	0.33	1.22	0.25		0.58	**1.47**
- Reducing NRW (Bulk Meters)	0.00	0.00	0.00	0.00		0.00	**0.00**
iv. Transfer of Schemes	0.00	0.00	0.00	0.00		0.00	**0.00**
b. National Public Awareness and Education Campaigns	0.28	0.05	0.33	0.29		0.34	**0.62**
Subtotal	**1.17**	**0.38**	**1.55**	**0.54**		**0.92**	**2.09**
4. Project Management							
a. Consultancy – International	2.84	4.99	7.83	0.03		5.02	**7.86**
b. Consultancy – National	0.00	0.00	0.00	2.14		2.14	**2.14**
c. Detailed Design and Construction							
d. PMU/PIU Offices (Counterpart Salaries and Running Costs)	0.37	1.87	2.24	8.35		10.22	**10.59**
e. Socioeconomic and Environmental Surveys	0.04	0.00	0.04	0.00		0.00	**0.04**
f. Audit Services	0.00	0.00	0.00	0.00		0.00	**0.00**
Project Management Subtotal	**3.25**	**6.86**	**10.10**	**10.52**		**17.38**	**20.62**
Subtotal A	**64.22**	**76.95**	**141.17**	**99.34**	**3.10**	**179.39**	**243.61**
B. Interest Charges	**3.74**		**3.74**	**0.00**			**3.74**
C. Taxes and Duties				**8.00**		**8.00**	**8.00**
Total	**67.95**	**76.95**	**144.91**	**107.34**	**3.10**	**187.39**	**255.35**
Share in Total Actual Cost (%)	**26.61**	**30.14**	**56.75**	**42.04**	**1.21**	**73.39**	**100.00**

ADB = Asian Development Bank, CC = Community Contribution, FC = foreign currency, LC= local currency, Gov = Government of Sri Lanka, WSS = water supply and sanitation.

[a] Refer tables A8.10a–A8.10e for individual actual costs for the primary, supplementary and additional financing loans.

Sources: Project Completion Review mission computations; project management unit.

Table A8.10a: Actual Costs at Completion, by Loan, by Project Component
L1993: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project
($ million)

Item	ADB FC	ADB LC	ADB Total	Gov LC	CC LC	Total LC	Total
A. Base Cost							
1. Component 1: Urban WSS							
a. Batticaloa Urban WSS	0.00	12.23	12.23	6.92		19.15	19.15
b. Hambantota Urban WSS	11.58	4.71	16.29	7.68		12.39	23.97
c. Matara Urban WSS							
d. Muttur Urban WSS	1.56	4.67	6.23	3.54		8.21	9.77
e. Polonnaruwa Urban WSS	10.95	2.18	13.15	18.22		20.40	31.37
Subtotal	**24.09**	**23.79**	**47.88**	**36.37**		**60.16**	**84.27**
2. Component 2: Rural WSS							
a. Anuradhapura Rural WSS	5.54	0.04	5.58	2.44	1.70	4.18	9.72
b. Polonnaruwa Rural WSS	0.16	4.20	4.36	1.64	1.40	7.24	7.40
c. Batticaloa	0.00	0.21	0.21	0.09		0.30	0.30
d. RWSS Training	0.00	0.00	0.00	0.75		0.75	0.75
e. Community Participation, Public Awareness and Education Campaigns	0.00	0.00	0.00	1.81		1.81	1.81
Subtotal	**5.70**	**4.45**	**10.15**	**6.73**	**3.10**	**14.28**	**19.98**
3. Component 3: Institutional Strengthening							
a. NWSDB FOPIP Support							
i. Corporate Strategy and Financial Management	0.00	0.00	0.00	0.00		0.00	0.00
ii. Asset Registry	0.00	0.00	0.00	0.00		0.00	0.00
iii. Improving O&M Cost Effectiveness							
- NWSDB Training	0.89	0.33	1.22	0.25		0.58	1.47
- Reducing NRW (Bulk Meters)	0.00	0.00	0.00	0.00		0.00	0.00
iv. Transfer of Schemes	0.00	0.00	0.00	0.00		0.00	0.00
b. National Public Awareness and Education Campaigns	0.28	0.05	0.33	0.29		0.34	0.62
Subtotal	**1.17**	**0.38**	**1.55**	**0.54**		**0.92**	**2.09**
4. Project Management							
a. Consultancy – International	2.55	4.49	7.04	0.00		4.49	7.04
b. Consultancy – National	0.00	0.00	0.00	2.14		2.14	2.14
c. Detailed Design and Construction Supervision	0.00	0.00	0.00	0.00		0.00	0.00
d. PMU/PIU Offices (Counterpart Salaries and	0.37	1.44	1.81	7.81		9.25	9.62
e. Socioeconomic and Environmental Surveys	0.04	0.00	0.04	0.00		0.00	0.04
f. Audit Services	0.00	0.00	0.00	0.00		0.00	0.00
Project Management Subtotal	**2.96**	**5.93**	**8.89**	**9.95**		**15.88**	**18.84**
Subtotal A	**33.92**	**34.55**	**68.47**	**53.59**	**3.10**	**91.24**	**125.17**
B. Interest Charges	1.70		1.70				1.70
C. Taxes and Duties				4.41		4.41	4.41
Total under L1993	**35.62**	**34.55**	**70.17**	**58.00**	**3.10**	**95.65**	**131.29**

ADB = Asian Development Bank, CC = community contribution, FC = foreign currency, LC = local currency, Gov = Government of Sri Lanka, WSS = Water Supply and Sanitation.
Sources: Project Completion Review mission computations; project management unit.

Table A8.10b: Actual Costs at Completion, by Loan, by Project Component
L2275: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project – Supplementary Loan
($ million)

Item	ADB			Gov	Total	
	FC	LC	Total	LC	LC	Total
A. Base Cost						
1. Component 1: Urban WSS						
a. Hambantota Urban WSS	2.77	3.92	6.69	3.91	7.83	10.60
b. Polonnaruwa Urban WSS	2.47	2.46	4.93	3.24	5.70	8.17
Subtotal	**5.24**	**6.38**	**11.62**	**7.15**	**13.53**	**18.77**
B. Interest Charges	**0.44**		**0.44**			**0.44**
C. Taxes and Duties				**0.17**	**0.17**	**0.17**
Total under L2275 – Supplementary Loan	**5.68**	**6.38**	**12.06**	**7.32**	**13.70**	**19.38**

ADB = Asian Development Bank, FC = foreign currency, LC = local currency, Gov = Government of Sri Lanka, WSS = water supply and sanitation.
Sources: Project Completion Review mission computations; project management unit.

Table A8.10c: Actual Costs at Completion, by Loan, by Project Component
L2276: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project – Supplementary Loan
($ million)

Item	ADB			Gov	Total	
	FC	LC	Total	LC	LC	Total
A. Base Cost						
1. Component 1: Urban WSS						
a. Batticaloa Urban WSS	19.76	20.88	40.64	29.21	50.09	69.85
b. Hambantota Urban WSS	1.16	5.19	6.35	4.11	9.30	10.46
c. Muttur Urban WSS	0.00	0.42	0.42	0.51	0.93	0.93
d. Polonnaruwa Urban WSS	0.00	0.00	0.00	0.35	0.35	0.35
Subtotal	**20.92**	**26.49**	**47.41**	**34.18**	**60.67**	**81.59**
B. Interest Charges	**1.39**		**1.39**			**1.39**
C. Taxes and Duties				3.42	3.42	3.42
Total under L2276 – Supplementary Loan	**22.31**	**26.49**	**48.80**	**37.60**	**64.09**	**86.40**

ADB = Asian Development Bank, FC = foreign currency, LC = local currency, Gov = Government of Sri Lanka, WSS = water supply and sanitation.
Sources: Project Completion Review mission computations; project management unit.

Table A8.10d: Actual Costs at Completion, by Loan, by Project Component
L2757: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project – Additional Financing Loan
($ million)

Item	ADB			Gov	Total	
	FC	LC	Total	LC	LC	Total
A. Base Cost						
1. Component 1: Urban WSS						
a. Muttur Urban WSS	3.19	0.58	3.77	1.28	1.86	5.05
B. Interest Charges	0.05		0.05			0.05
C. Taxes and Duties						
Total under L2757 – Additional Financing Loan	**3.24**	**0.58**	**3.82**	**1.28**	**1.86**	**5.10**

ADB = Asian Development Bank, FC = foreign currency, LC = local currency, Gov = Government of Sri Lanka, WSS = water supply and sanitation.
Sources: Project Completion Review mission computations; project management unit.

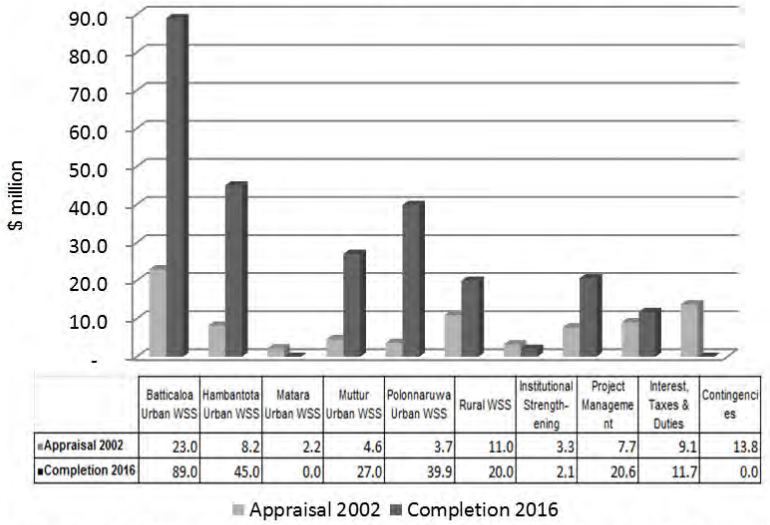
Table A8.10e: Actual Costs at Completion, by Loan, by Project Component L2758: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project – Additional Financing Loan

($ million)

Item	ADB FC	ADB LC	ADB Total	Gov LC	Total LC	Total
A. Base Cost						
1. Component 1: Urban WSS						
d. Muttur Urban WSS	0.66	8.03	8.69	2.57	10.60	11.26
4. Project Management						
a. Consultancy	0.29	0.50	0.79	0.03	0.53	0.82
d. PMU/PIU Offices (Counterpart Salaries and	0.00	0.43	0.43	0.54	0.97	0.97
Project Management Subtotal	0.29	0.93	1.22	0.57	1.50	1.79
Subtotal A	0.95	8.95	9.90	3.14	12.09	13.04
B. Interest Charges	0.16		0.16			0.16
C. Taxes and Duties						
Total under L2758 – Additional Financing Loan	1.11	8.95	10.06	3.14	12.09	13.20

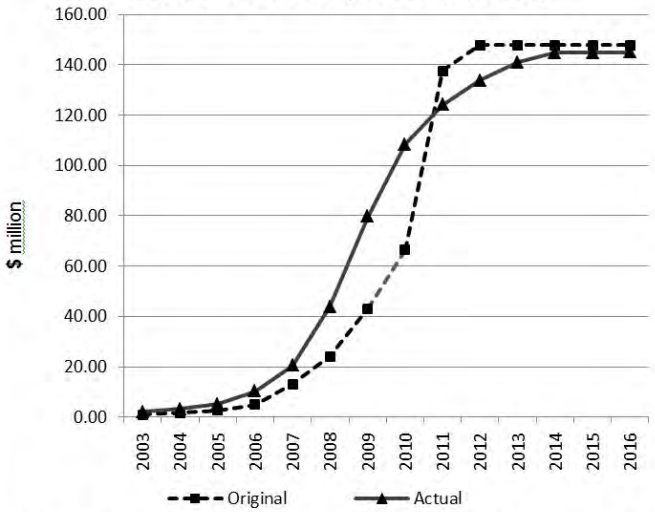
ADB = Asian Development Bank, FC = foreign currency, LC = local currency, Gov = Government of Sri Lanka, WSS = water supply and sanitation.
Sources: Project Completion Review mission computations; project management unit.

Figure A8.1 : Cost Estimates at Appraisal and Actual Costs at Completion



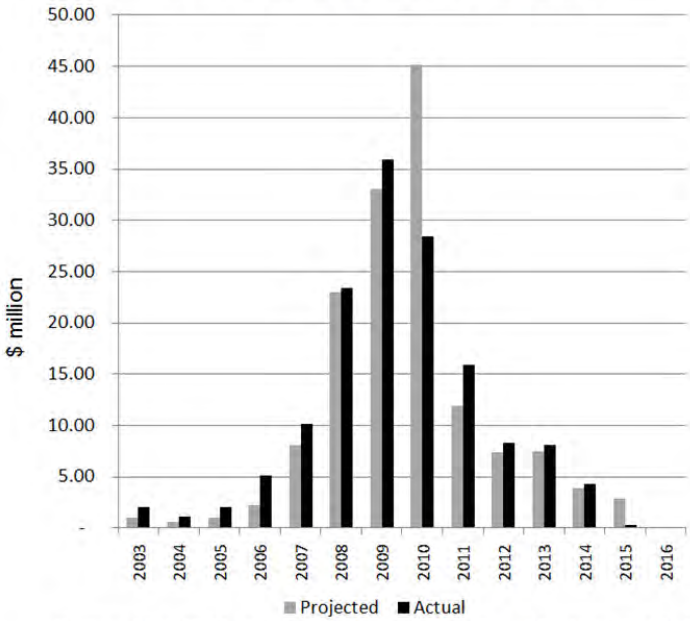
Source: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila; project completion report computations; project management unit.

Figure A8.2 : Cumulative Disbursements Original verses Actual (L1993,L2275,L2276,L2757 and L2758)



Source: ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila; Project completion report computations; project management unit.

Figure A8.3 : Projected verses Actual Disbursements (L1993, L2275, L2276, L2757 and L2758)



Source: ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila; Project completion report computations; project management unit.

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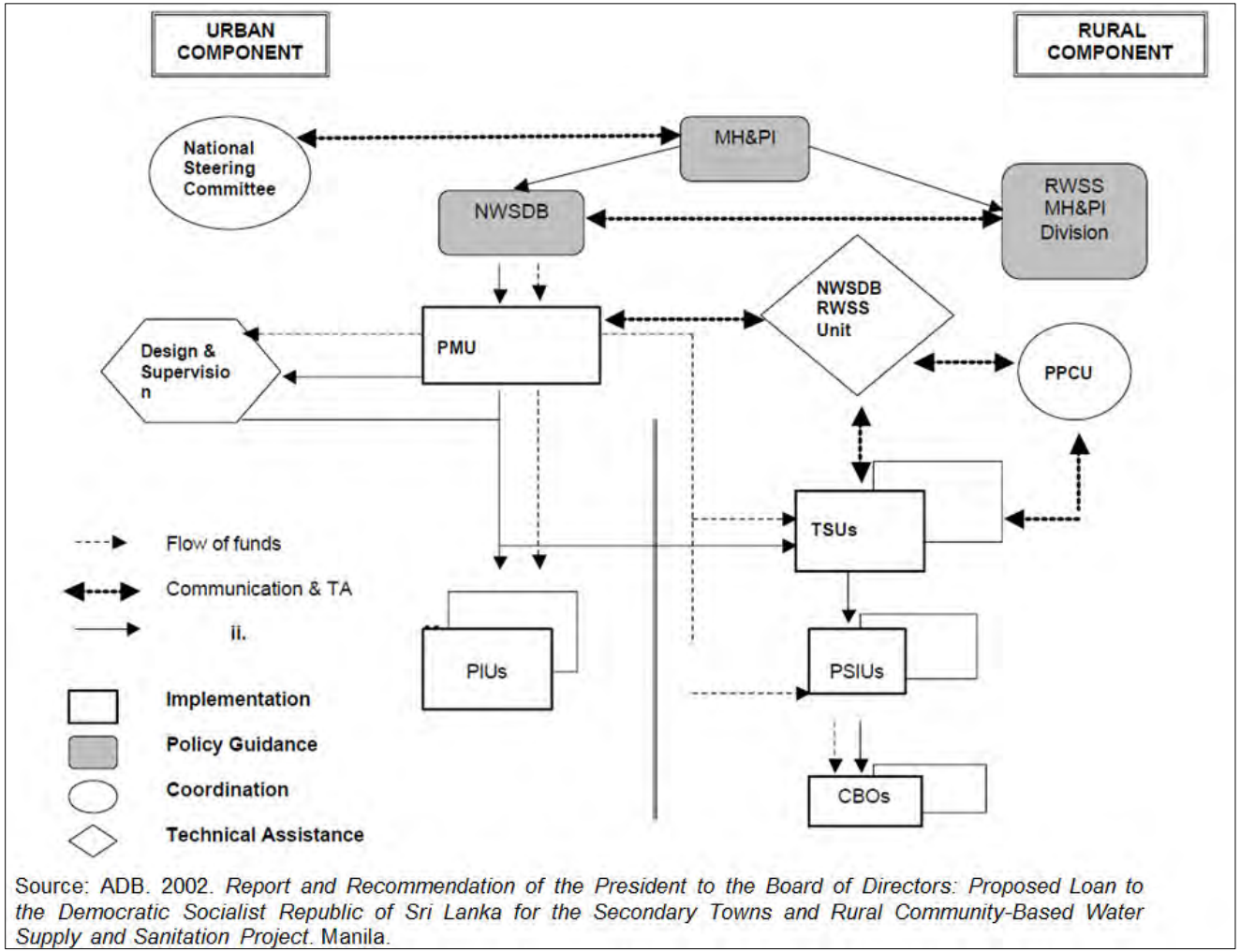
IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

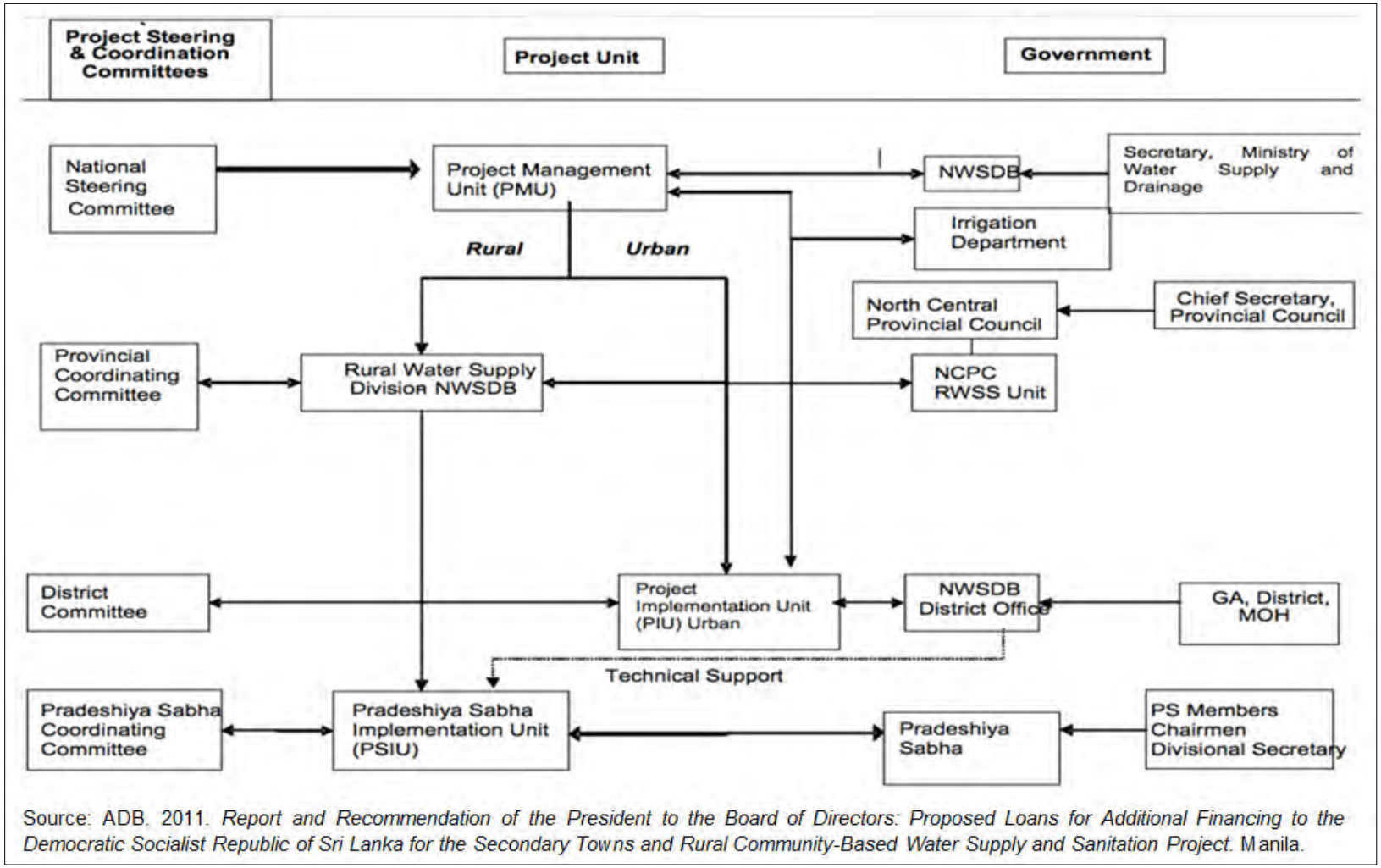
Figure A9.1: Originally Proposed Management Structure



Source: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

CBO = community-based organization, MH&PI = Ministry of Housing and Plantation Infrastructure, NWSDB = National Water Supply and Drainage Board, PIU = project implementation unit, PMU = project monitoring unit, PPCU = provincial project coordinating unit, PSIU = Pradeshiya Sabha implementation unit, RWSS = rural water supply and sanitation, TA = technical assistance, TSU = technical support unit.

Figure A9.2: Actual Management Structure



Source: ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila.

GA = government agent, MOH = medical officer of health, NWSDB = National Water Supply and Drainage Board, PS = *pradeshiya sabha*
Note: Neither the original nor the revised diagrams included component 3 (Institutional Strengthening), which was supervised by the project management unit but implemented largely by specialist sections of the National Water Supply and Drainage Board.

CONSULTING SERVICES

A. Introduction

1. The report and recommendation of the President (RRP)[1] for the original project included provision for 1,140 person-months of consultant services (120 international and 1,020 local). It was proposed that the consultancy would be split into two packages:

(i) Package A: Project management consultants. These would support the project management unit (PMU), project implementation units (PIUs), *Pradeshiya sabha* (the smallest local government unit) implementation units (PSIUs), project support units, and provincial project coordinating committees. They would assist the National Water Supply and Drainage Board (NWSDB) with management, design and supervision of the urban sanitation and drainage; surveys; specific studies; appraisals; institutional development; monitoring; and financial recording.

(ii) Package B: Design and supervision consultants. These would prepare detailed designs and supervise construction of urban schemes, including tender documents, tender evaluation, quality assurance, and training of trainers in implementation and future operation and maintenance (O&M).

2. A consultancy firm was to be recruited for each of the packages through international competitive bidding and local competitive bidding.

B. Consulting Service Inputs and Costs

3. There is a disparity in totals cited in the text of 2002 RRP, which specifies 711 person-months for package A and 536 person-months for package B. These total 1,247 person-months, which does not tally with the total of 1,140 person-months given in 2002 RRP text. This report uses the 1,247 person-months figure (Table A10.1).

4. Inclusion of contracted support staff (drivers, clerks etc) with consultant staff also complicates the assessment of consulting services. The PMU justified this as a pragmatic means for properly staffing field offices, which would not have been possible through the NWSDB systems. The total consultancy provision shown in Appendix 12 of the 2002 RRP includes provision for some 2,000 person-months of support staff, giving a total of 3,329 person-months. Several other inconsistencies occur in the consultancy provisions cited in the later RRPs. The text of the 2006 RRP[2] refers to 1,500 additional person-months for local consultants of package B, most of which are actually for support staff but the reasons cited for additional consulting services (see box) relate largely to technical consultant inputs. No additions were made to package A. The 2011 RRP[3] provides for additional local consultant inputs of 40 person-months, but Annex C of the supporting project administration manual shows this was to cover mainly additional support staff of some 1,000 person-months. The project administration manual updated the input provisions for package A, presumably to accommodate contract variations

[1] ADB. 2002. *Report and Recommendation of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[2] ADB. 2006. *Report and Recommendation of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

[3] ADB. 2011. *Report and Recommendation of the President: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila.

agreed before this package was completed in May 2009. The input figures from the RRPs are summarized in Table A10.1.

5. The budget allocated for consulting services was $7.04 million for loan 1993, $0.78 million for loan 2758, with a total of $7.82 million. At completion the total expended on consulting services was $7.82 million (Appendix 8).

Table A10.1: Summary of Consultancy Provision and Inputs
(person-months)

	RRP 2002[a]		RRP 2006[b]		RRP 2011 (PAM)		Actual
Category	**Text**	**App 12**	**Text**	**App 13**	**Text[c]**	**Annex C**	**(PMU)**
Package A							
International	64	64				81	53
Domestic and support	647	1,691				2,430	1,916
Subtotal	**711**	**1,755**				**2,511**	**1,969**
Package B							
International	56	56		56		64	99
Domestic and support	480	1,518		2,848		2,452	2,891
Subtotal	**536**	**1,574**		**2,904**		**2,516**	**2,990**
Totals	**1,247**	**3,329**		**2,904**		**5,027**	**4,959**

APP = appendix, PAM = project administration manual, PMU = project management unit, RRP = report and recommendation of the President.

[a] 2002 RRP text cites 1,140 person-months total but package subtotals add up to 1,247 person-months, which is used in this report (para 3); Appendix 12 shows a total of 3,502 person-months, including support staff (slight errors in addition have been corrected).

[b] No changes given for package A in 2006 RRP; the text refers only to 1,500 additional person-months for domestic package B.

[c] 2011 RRP text refers only to additional (unspecified) 40 person-months.

Sources: ADB. 2002. *Report and Recommendation of the President: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Manila; ADB. 2006. *Report and Recommendation of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; and project management unit records.

6. The consultant and support staff costs have been accommodated within the approved consulting services budgets. The confusion arises because consulting services are conventionally expressed in person-months within an overall budget; variations are permissible, within this budget and with Asian Development Bank (ADB) agreement, to meet actual needs. This can result in increasing the person-months expended, such as by changing from international to local consultants. Support staff are not normally included in consulting services but it was agreed for this project as a pragmatic response to providing adequate support to the field offices.

7. As the reports and recommendations of the President (RRPs) contained contradictory figures, the project completion report (PCR) mission recalculated the total actual inputs on completion of their assignments (Table A10.2), as agreed between the firms and the PMU (Tables A10.3 and A10.4). These are based on data from the consultants' final invoices to the PMU.

Table A10.2: Summary of Actual Consultancy Inputs
(person-months)

Package	International Consultants	Local Consultants	Total Consultants	Support Staff
Project management	53	228	281	1,688
Design and supervision	99	983	1,082	1,908
Total	**152**	**1,211**	**1,363**	**3,596**

Source: Project Completion Review mission computations; project management unit.

Reasons for Additional Consultancy Provision

The feasibility study for the project envisaged 3,666 person-months of consultants for local supervisory support under the project. At appraisal, the government and the Asian Development Bank agreed to reduce the consultancy packages. It was envisaged that most contracts would be design-build, for which supervision is limited. Subprojects were sequenced so that the consultants could be moved from one location to another within the project implementation period. However, because of delays caused by the Asian tsunami, the consulting packages were reassessed. The project indicated that additional local supervisory staff was required for package B to enable timely and simultaneous supervision of ongoing contracts in each town, to enable project completion dates to be met.

Other reasons for the additional person-months included the following:

(i) Resident engineer, assistant resident engineer, and engineering assistant requirements are based on organizational needs for adequate supervision of all contracts, including three design-build, and 12 bill-of-quantity (BOQ) type contracts.

(ii) BOQ type contracts are of diverse nature, including raw and treated water transmission, distribution mains and elevated towers, and sewerage and drainage contracts.

(iii) Additional quality control measures were recommended during construction.

(iv) For Hambantota and Batticaloa, additional assistant resident engineers and National Water Supply and Drainage Board inputs are critical, considering the large geographic area of these contracts.

(v) Person-month estimates were based on the individual contract durations agreed by the project and take account of 15 contracts in four project urban areas.

(vi) Batticaloa and Muttur included needs for supervision and/or support staff for drainage and sewerage.

Source: ADB. 2006. *Report and Recommendation of the President: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila (Appendix 13, page 56).

C. Consultant Firm Tendering and Selection

8. Tendering and selection of firms was undertaken by the NWSDB during late 2003 and consultants were fielded in the second quarter of 2004. The packages were as follows:

(i) Package A: NJS Consultants, in association with Engineering Consultants.

(ii) Package B: SMEC International, in association with Sinclair Knight Merz, Ceywater Consultants, and integrated Development Consultants.

9. The 2002 RRP envisaged that the package B consultants would report to the package A consultants. This obviously illogical provision was not applied; each consultancy team, rightly, reported to the PMU.

10. The total inputs under each package are summarized in Table A10.2.

11. Copies of the consultants' contracts were provided by the PMU. The package A contract makes no reference to any final report. However, the package B consultants were expected to prepare a completion report "incorporating as-built drawings, operation and maintenance (O&M) manuals, asset registers and other relevant manuals and catalogues." No such report was seen by the PCR mission; the PMU explained that it was not completed because the package B contract was curtailed early (paras 15−16).

1. Package A: Project Management and Institutional Strengthening

12. The consultants for package A focused mainly on the following:

(i) Day-to-day management of the project for all three components. They assisted in monitoring the progress of the project and keeping appropriate financial records.

(ii) Component 1 (urban): Responsibilities included contract management, coordinating implementation schedules and plans, monitoring quality of works, identifying and resolving constraints, conducting surveys and specific studies, design and supervision of urban sanitation and drainage, and preparing procurement documents.

(iii) Component 2 (rural): This was their main role, through supporting the project implementation units (PIUs), *pradeshiya sabha* implementation units (PSIUs), project technical support units (TSUs), and provincial coordinating committees in project management, design and supervision, monitoring and evaluation, and financial management. They undertook evaluation and selection of communities, socioeconomic surveys, subproject appraisals, community mobilization and public participation, and planning and design of community-based schemes. The consultant assisted the NWSDB and the Irrigation Department in detailed design and supervision of raising the Unnichchai tank bund and head works.

(iv) The consultants also assisted in public awareness campaigns and service delivery of water-related issues under component 3 (institutional development).

13. The NJS Consultants' contract extended from May 2004 to May 2009. Five contract variation orders were agreed with the Asian Development Bank (ADB) to amend the consultancy inputs to meet actual project needs. Table A10.3 details the approved provision of inputs by category, based on NJS Consultants' final invoices provided by the PMU. However, these show that by the completion of the NJS commitment, there remained the following unused person-month of inputs: international 7, local consultants 22, and support staff 47. However, the budget had been expended. Actual inputs by category are shown in Table A10.2.

14. The PCR mission located a few progress reports prepared by the package A consultants, included in the PMU quarterly progress reports (QPRs), but their contact did not require them to produce a completion report.

2. Package B: Design and Construction Supervision

15. The package B consultants were responsible for review and approval of designs and supervision of construction of the urban water supply activities (component 1). They prepared

detailed designs and supervised the construction of the urban schemes. Their main responsibilities included detailed surveys and designs, preparation of tender documents, assisting with tender evaluation, construction supervision, recommendation for payments, quality assurance and training trainers for project implementation and future O&M.

16. The SMEC Consultants' contract was amended through 16 variation orders, approved by ADB, in order to match inputs to the evolving needs of the project. The principal alterations were made in 2006, to include an additional 1,500 person-months of services, and again in 2011 to include $1 million for additional inputs agreed under RRP 2011. The consultants' input extended from May 2004 to March 2013. Although it was intended to last longer, it had to be curtailed because the government had approved only $800,000 out of the $1 million budgeted by ADB in RRP 2011 for additional consulting services.

17. The SMEC team regularly prepared reports that were incorporated into the PMU quarterly progress reports. They did not prepare a completion report, although it was specified in their contract, because of early curtailment of their assignment.

18. Approved input provisions over the period are shown in Table A10.4, based on May 2013 SMEC cumulative figures in their final invoices to the PMU. However, as the contract was curtailed early, on completion following unused person-month inputs remained: 10.7 international, 114.0 local, and 527.0 support staff, but the agreed budget was expended. The actual inputs in person months expended were 99 international, 983 local and 1,908 support staff (Table A10.2).

D. Performance of Consultants

19. According to the borrower's project completion report, the experts fielded under both packages performed satisfactorily in supporting the PMU and PIUs.[4] The on-site staff discharged their functions well. The PMU did not encounter any difficulty in recruiting the consultants or adopting ADB procedures. The consultants were mobilized promptly.

[4] Government of Sri Lanka, Ministry of Water Supply and Drainage. 2015. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

Table A10.3: Package A: Project Management Consultant Inputs
(Total provision as at May 2013, person-months)

Position	Input	Position	Input
International consultants		**Support staff (local contract)**	
Team leader	17.0	**Project management Unit**	
Project manager	34.0	Office manager	65.0
Change management specialist	0.0	Secretary	60.0
Sociologist	6.2	Typist clerk/accounts clerk	94.0
Environmental specialist	2.9	Office aide	63.0
Operation and management specialist	0.0	**Technical support unit: Anuradhapura**	
Subtotal international	**60.1**	Training officer	44.5
Local consultants		Community development officer	22.5
Deputy project manager	12.4	Administration officer	47.5
Financial specialist	10.8	Computer operator	45.5
Procurement specialist	34.0	Hydrogeologist	48.0
Environmental specialist	24.0	**PSIU: Anuradhapura**	
Resettlement specialist	6.0	Engineer (2)	103.0
Community development specialist	51.3	Community development assistants (4)	260.0
Public awareness specialist	15.0	Typist/ clerks (4)	177.0
Rural water supply specialist	52.2	Driver	24.0
Health and sanitation specialist	6.0	**Technical support unit: Polonnaruwa**	
Rural water supply engineer	13.5	Administration officer	47.4
Training officer	25.2	Computer operator	48.0
Subtotal local	**250.3**	**PSIU: Polonnaruwa/ Batticaloa**	
		Engineers (2)	116.0
Total consultant inputs	**310.4**	Community development assistants (3)	272.0
		Typist/ clerks (3)	180.0
		Compensation officer	18.0
Total consultant and support staff	**2,045.7**	**Subtotal support staff (local)**	**1,735.4**

PSIU = *Pradeshiya Sabha* implementation unit
Note: Unused on completion: 7.0 international, 22.0 local, and 47.0 support staff person-months.
Sources: Project Completion Review mission computations; project management unit.

Table A10.4: Package B: Design and Construction Supervision Consultant Inputs
(Total provision as at May 2013, person-months)

Position	Input	Position	Input
International consultants		**Support staff (local)**	
		Design and supervision	
Team leader	98.0	**contract**	
Water treatment specialist	5.0	Quantity surveyors (3)	69.0
Hydrologist	1.9	Assistant engineer	5.0
Dam specialist	4.4	Draftsmen (3)	230.0
Intake specialist	1.0	Office manager	12.0
Subtotal international	**110.3**	Secretary	12.0
Local consultants		Office manager/ secretary	93.0
Deputy team leader (design)	73.0	Computer operator	116.0
Deputy team leader	77.9	Office aide (2)	212.0
Water supply engineer 1	98.5	Watchman	105.0
Water supply engineer 2	26.0	**Batticaloa**	
Water supply engineer 3	8.0	Engineering assistant (7)	284.0
Resident engineer 1 (Hambantota)	74.5	Quantity surveyors (2)	54.0
Resident engineer 2 (Muttur)	8.0	Draftsman	12.0
Resident engineer 3 (Hambantota)	31.0	Computer operator (4)	102.0
Resident engineer 4 (Batticaloa)	33.5	Administrative assistant (4)	114.0
Resident engineer 5 Polonnaruwa)	30.0	Driver (3)	15.0
Resident engineer 6 (Batticaloa)	23.0	Office aide (3)	104.0
Electro-mechanical engineer 1	29.8	**Polonnaruwa**	
Electro-mechanical engineer 2	21.8	Engineering assistant (2)	75.0
Electro-mechanical engineer 3 (Muttur)	53.0	Quantity surveyor	27.0
Electro-mechanical engineer 4 (Batti)	12.0	Computer operator (2)	48.0
Electro-mechanical engineer 5	9.0	Administrative assistant	42.0
Structural engineer 1	18.0	Office aide (2)	48.0
Structural engineer 2	53.6	**Hambantota**	
Geotechnical engineer	0.5	Engineering assistant (3)	143.0
Senior irrigation design engineer	16.1	Quantity surveyor	47.0
Assistant res engineer 5 (Hambantota)	63.5	Computer operator (2)	69.0
Assistant res engineer 4 (Polonnaruwa)	45.0	Administrative assistant (2)	69.0
Assistant res engineer 3 (Polonnaruwa)	21.0	Office aide (2)	69.0
Assistant res engineer 2 (Muttur)	37.0	**Muttur**	
Assistant res engineer 1 (Batticaloa)	67.0	Engineering assistant (3)	94.0
Assistant res engineer 8 (Batticaloa)	33.7	Quantity surveyor	21.0
Assistant res engineer 9 (Hambantota)	18.0	Computer operator (2)	48.0
Assistant res engineer 7 (Muttur)	18.0	Administrative assistant (2)	48.0
Assistant res engineer 6 (Batticaloa)	30.0	Office aide (2)	48.0
Sanitary engineer	35.8		
Other specialists	31.0		
Subtotal local consultants	**1,097.1**	**Subtotal support staff (local)**	**2,435.0**
Total consultant inputs	**1,207.4**	**Total consultant and support**	**3,642.4**

Note: Unused at completion 10.7 international, 114.0 local, and 527.0 support staff person-months
Sources: Project Completion Review mission computations; project management unit.
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COMPLIANCE WITH LOAN COVENANTS

No	Covenant	Reference in Loan Agreements	Status of Compliance
A. Particular Covenants			
1	(a) The Borrower shall cause the NWSDB to carry out the Project with due diligence and efficiency and in conformity with sound administrative, financial, engineering, environmental and public utility and water supply practices. (b) In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 6 of L1993, Schedule 5 of L2276, Schedule 4 of L2758 to Loan Agreements.	L1993/L2276/L2758, Article IV, Section 4.01. L2275/L2276, Project Agreement, Article II, Section 2.01 (a), (b).	(a) Complied with (b) Partly complied with
2	The Borrower shall make available to NWSDB, promptly as needed, and on terms and conditions acceptable to the Bank, the funds, facilities, services, land and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for facilitating operation and maintenance of the Project facilities.	L1993, Article IV, Section 4.02.	Complied with
3	The Borrower shall ensure that the activities of NWSDB and its department and agencies with respect to the carrying out of the Project and operation of the Project facilities are conducted and coordinated in accordance with sound administrative policies and procedures.	L1993, Article IV, Section 4.03.	Complied with
4	(a) The Borrower shall furnish, or cause to be furnished, to the Bank all such reports and information as the Bank shall reasonably request concerning (i) the Loan, and the expenditure of the proceeds and maintenance of the service thereof; (ii) the goods and services and other items of expenditure financed out of the proceeds of the Loan; (iii) the Project; (iv) the administration, operations and financial condition of NWSDB; (v) financial and economic conditions in the territory of the Borrower and the international balance-of-payments position of the Borrower; and (vi) any other matters relating to the purposes of the Loan. (b) NWSDB shall promptly notify ADB of any proposal to amend, suspend or repeal any provision of its constitutional documents, which if implemented, could adversely affect the carrying out of the Project or the operation of the Project facilities. NWSDB shall afford ADB an adequate opportunity to comment on such proposal prior to taking any affirmative action thereon.	L1993, Article IV, Section 4.04. L2275/L2276 & L2757/L2758, Project Agreement, Article II, Section 2.15.	(a) Complied with (b) Complied with
5	The Borrower shall enable the Bank's representatives to inspect the Project, the goods financed out of the proceeds of the Loan, and any relevant records and documents.	L1993, Article IV, Section 4.05. L2276/L2758, Section 4.02.	Complied with
6	The Borrower shall take all action which shall be necessary on its part to enable NWSDB to perform its obligations under the Project Agreement, including the establishment and maintenance by the Borrower of tariffs as stipulated in paragraph 17 of Schedule 6 of this Loan Agreement, and shall not take or permit any action which would interfere with the performance of such obligations.	L1993, Article IV, Section 4.06. L2276/L2758, Section 4.03.	Partly complied with (para 41 of this table)
7	(a) The Borrower shall exercise its rights under the Subsidiary Financing Agreement in such a manner as to protect the interests of the Borrower and the Bank and to accomplish the purposes of the Loan.	L1993, Article IV, Section 4.07. L2276/L2758, Section 4.04 (a),	Complied with

No	Covenant	Reference in Loan Agreements	Status of Compliance
	(b) No rights or obligations under the Subsidiary Financing Agreement shall be assigned, amended, or waived without the prior concurrence of the Bank.	(b).	
8	(a) It is the mutual intention of the Borrower and the Bank that no other external debt owed a creditor other than the Bank shall have any priority over the Loan by way of a lien on the assets of the Borrower. To that end, the Borrower undertakes (i) that, except as the Bank may otherwise agree, if any lien shall be created on any assets of the Borrower as security for any external debt, such lien will ipso facto equally and ratably secure the payment of the principal of, and interest charge and any other charge on, the Loan; and (ii) that the Borrower, in creating or permitting the creation of any such lien, will make express provision to that effect. (b) The provisions of paragraph (a) of this Section shall not apply to (i) any lien created on property, at the time of purchase thereof, solely as security for payment of the purchase price of such property; or (ii) any lien arising in the ordinary course of banking transactions and securing a debt maturing not more than one year after its date. (c) The term "assets of the Borrower" as used in paragraph (a) of this Section includes assets of any political subdivision or any agency of the Borrower and assets of any agency of any such political subdivision, including the Central Bank of Sri Lanka and any other institution performing the functions of a central bank for the Borrower.	L1993, Article IV, Section 4.08.	(a) Complied with (b) Complied with (c) Complied with
9	The Borrower shall ensure that project facilities are operated and maintained according to sound water supply and utility practices.	L1993, Schedule 6, para 25.	Complied with
B. Execution Arrangements			
10	The Borrower and NWSDB shall ensure that the Project is Implemented in accordance with the detailed arrangements set forth in the PAM. Any subsequent change to the PAM shall become effective only after approval of such change by the Borrower and ADB.	L2758, Schedule 4, para 1.	Complied with
11	The Borrower and NWSDB shall continue to implement the Project in accordance with the provisions set forth in Schedule 6 to the Initial Loan Agreement and Schedule 5 to the Supplementary Special Operations Loan Agreement.	L2758, Schedule 4, para 2.	Complied with
12	NWSDB shall establish a PMU headed by an experienced Project Director supported by a core team of NWSDB employees comprising a DPD, Chief Engineer, Chief Sociologist and Accountant selected not later than one month after the effectiveness. NWSDB shall provide technical support to the PSIUs and TSUs.	L1993, Schedule 6, paras 2, 3 and 4.	Complied with
13	For urban component PIUs shall be established at the five districts not later than six months after the Design and Construction Supervision Consultants are fielded. Project Managers / Engineers shall head the PIUs.		Complied with
14	A separate PIU shall be established under the Irrigation Department (ID) for the implementation of the Unnichchai tank bund raising sub component. A Resident Engineer from ID shall head this ID PIU.		Complied with
15	NWSDB shall implement the loan agreements, with the Irrigation Department and concerned Pradeshiya Sabhas setting out the details of project implementation arrangements.	L1993, Schedule 6, para 5.	Complied with
16	In the carrying out of the Project, NWSDB shall employ competent and qualified consultants and contractors, acceptable to ADB, to an	L2275/L2276 & L2757/L2758,	Complied with

No	Covenant	Reference in Loan Agreements	Status of Compliance
	extent and upon terms and conditions satisfactory to ADB.	Project Agreement, Article II, Section 2.03.	
17	NWSDB shall take out and maintain with responsible insurers, or make other arrangements satisfactory to ADB for, insurance of the Project facilities to such extent and against such risks and in such amounts as shall be consistent with sound practice	L2275/L2276 & L2757/L2758, Project Agreements, Article II, Section 2.05.	Complied with
18	The PIU at Anuradhapura for Loan L-1575-SRI shall be converted into a District TSU and a District TSU shall be established at Polonnaruwa, no later than 6 months after the design consultants are fielded. NWSDB shall appoint a District Manager to head each TSU, to be assisted by a senior level officer appointed by the North Central Provincial Council. The District TSUs shall be supported by a team of consultants specializing in rural water supply, community participation and institutional capacity building.	L1993, Schedule 6, para 8.	Complied with
19	PSIUs shall be established in participating *Pradeshiya Sabha* (PS) prior to the implementation of any sub project in that Pradeshiya Sabha. Project Officers at the level of Technical Officers shall head the PSIUs. The participating *Pradeshiya Sabhas*, shall demonstrate project management and accounting capacity, and shall each employ full time one Technical Officer for the duration of the Project who shall receive appropriate training to be delivered by the PMU and NWSDB.	L1993, Schedule 6, para 3-4.	Complied with
20	PMU shall oversee detailed design and construction supervision for Urban Component; undertake national level coordination for Rural Component; preparation of guidelines; capacity building and liaison the PPCC and MHPI's Rural Water Supply Division; and assist the NWSDB and MHPI to design, implement and monitor the strategies and activities for the Institutional Strengthening Component.	L1993, Schedule 6, para 2.	Complied with
C. Coordinating Arrangements			
21	The borrower shall establish the National Steering Committee (NSC) with responsibility for overall coordination of project implementation including policy matters, coordinating with other Ministries and Agencies. NSC shall meet at least every three months or as often necessary. Members of the NSC include amongst others representatives from the Ministry of Finance, Ministry of Policy Development and Implementation, Ministry of Health, Ministry of Provincial Councils and Local Government, Ministry of Irrigation, Chief Secretary of North Central Province, and line agencies under these ministries. Project area stakeholders shall be encouraged by the NSC to participate in meetings and raise any concerns specific to the Project.	L1993, Schedule 6, para 7.	Complied with
22	The borrower shall call for water sector donor coordination meetings to occur at least once per year.	L1993, Schedule 6, para 7.	Partly complied with. Sector donor coordination meetings were rare and irregular.

No	Covenant	Reference in Loan Agreements	Status of Compliance
23	The Provincial Project Coordination Committee (PPCC) shall be established in the North Central Provincial Council immediately after the effective date for monitoring of the PSIUs and coordination with the other agencies.	L1993, Schedule 6, para 9.	Complied with
D. Social Covenants			
24	The Government and NWSDB will ensure (and NWSDB will obtain Government assurance from the Land Acquisition Section) that all land, land rights, rights-of way, and other land-related rights, and all water and water-related rights for the Project be acquired in accordance with (a) the Government's National involuntary Resettlement Policy (b) ADB's Policy on Involuntary Resettlement : and (c) the " Short resettlement Plan (RP) for Land Acquisition" for the Project submitted by the Government to ADB on 15th September 2002, by the earlier of one year after Effective Date or mobilization of construction contractors.	L1993, Schedule 6, paras 19 & 20. L2276, schedule 5, para 3.	Completed with
25	The Government shall submit an acceptable RP after the detail technical design of the Unnichchai tank sub-component has been completed, prior to award of civil work contracts and such resettlement plan shall be implemented to the satisfaction of the bank.	L1993, Schedule 6, paras 19 & 20.	Complied with
26	The Government shall ensure that compliance with Borrower's and ADB policy on Involuntary Resettlement is covered in the Quarterly reports.	L1993, Schedule 6, para 19.	Complied with
27	(i) The Borrower and NWSDB shall ensure that the Project is implemented in accordance with the Gender Action Plan agreed between the Borrower, NWSDB and the Bank on the date of this Loan Agreement. (ii) Within one month of the Effective Date, NWSDB shall submit to the Bank a strategy to ensure that at least 25% of professional and technical staff working in the PMU, the PIUs, PSIUs and counterpart NGO's shall be women. (iii) Within three months of the fielding of the Project Management Consultant, a strategy to ensure that women comprise 50% of participating CBO's and CBO executive committees. (iv) Within three months of the fielding of the Project Management Consultant, a strategy to ensure that at least 20% of the NWSDB employees receiving training shall be women.	L1993, Schedule 6, para 24.	(i) Complied with (ii) Complied with (iii) Complied with (iv) Complied with
28	(i) The Borrower and NWSDB acknowledge that consistent with its commitment to good governance; (ii) The Borrower and NWSDB shall ensure that additional specific measures to enhance governance and prevent corruption are introduced and implemented under the project (iii) The Borrower and NWSDB shall ensure that specific measures are adopted and implemented to enhance transparency under the project.	L2276, Schedule 5, para 11-13.	Complied with
E. Environmental Covenants			
29	The Borrower and NWSDB shall ensure that the Project is carried out in accordance with existing environmental laws and regulations of Sri Lanka and Bank environmental guidelines. The project shall carry out as per the monitoring and mitigation measures indicated in the IEE and CEA approval documents and consult the local communities on Environmental issues.	L1993, Schedule 6, para 23. L2276, Schedule 5, Para 4.	Complied with

No	Covenant	Reference in Loan Agreements	Status of Compliance
30	NWSBD shall obtain Environmental clearance from CEA for Matara subcomponent before any withdrawals are to be made from the loan account except as the bank may otherwise agree.	L1993, Schedule 6, para 23.	Not required. Sub component is discontinued.
F. Urban component			
31	The Borrower shall ensure that local authority shall be engaged by the PMU in the implementation of the drainage sub component and drainage shall be undertaken in GNDs selected based on population density and state of existing facilities.	L1993, Schedule 6, para 8.	Complied with
32	The ID shall enter into an agreement with NWSDB regarding the implementation arrangement for the Unnichchai tank bund raising subcomponent and allowing the NWSDB to audit the ID project's accounts.	L1993, Schedule 6, para 8.	Complied with
33	NWSDB shall ensure that private sector participation in the form of outsourcing of activities such as metering and collection shall be implemented in all Urban Component project areas to the satisfaction of the Bank	L1993, Schedule 6, Para 25.	Complied with
34	The Borrower shall ensure that the Unnichachai Tank Feasibility study shall be provide to ADB	L1993, Schedule 6, para 21.	Complied with
G. The Rural Component Implementation			
35	The borrower shall ensure registration of CBOs as a legal entity: (i) Approval of the by-laws and resolutions related to management of RWS for CBO by the relevant authority. (ii) CBOs have been duly constituted (iii) Approval of the relevant authorities for the water supply management manuals prepared for the use of PS and CBO under the third water supply and sanitation project. (iv) PSIUs of the project select sub projects that meet selection criteria satisfactory to the bank. (v) CBOs and PSs enter into agreements relating to management regulations and distribution of water.	L1993, Schedule 6, para 12. L2276, Schedule 5, para 5.	Registration of CBOs with RWS section of NWSDB is completed. (i) Complied with (ii) Complied with (iii) Complied with (iv) Complied with (v) Complied with
36	The Rural Water Supply Division in the MHPI shall provide policy guidance to PMU, PPCC, TSUs and PSIUs, and shall monitor policy implementation.	L1993, Schedule 6, para 10.	Complied with
37	Selection of subprojects shall follow criteria agreed between NWSDB and the Bank shall include: (i) criteria for technology options appropriate for rural water supply (including tube wells with hand pumps, shallow dug wells, pipe borne water supply schemes, rainwater harvesting, and household water treatment technologies; (ii) criteria for water supply service levels; (iii) criteria for cost-sharing contributions of CBOs, subject to a minimum of 20% of the construction cost or the entire unskilled labor component, whichever is higher, and subject to a maximum based on the technology employed; and (iv) criteria for selection of communities, based on community response, existing status of water supply, existing status of sanitation facilities, availability of water sources within or close to the GND, location and socio-economic composition of the community, income of the community, existence of community assets constructed by the community, and maintenance of community assets.	L1993, Schedule 6, para 13.	Complied with

No	Covenant	Reference in Loan Agreements	Status of Compliance
H. Financial Management			
38	At the inception of the Project, the PMU shall assist the PIUs and PSIUs to formulate budgets for all Project activities, with estimates for each year of project implementation. The PIUs and PSIUs shall review and update these budgets every six months and submit them to the PMU for approval prior to implementation.	L1993, Schedule 6, para 6.	Complied with
39	NWSDB shall maintain, or cause to be maintained, records and accounts adequate to identify the items of expenditure financed out of the proceeds of the Loans, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, its operations and financial condition.	L2275/L2276 & L2757/L2758, Project Agreements, Article II, Section 2.06.	Complied with
40	(i) NWSDB shall prepare strategy to improve its financial management operations with a detailed schedule and financial plan, to be submitted to the Bank for approval within three months of the Effective Date. (ii) The performance of NWSDB shall be measured by operational performance indicators and targets set out in Appendix 2 of the RRP (iii) NWSDB to audit the Irrigation Department's project accounts for Unnichchai Tank Bund Raising sub-component.	L1993, Schedule 6, para 14 & 15. L1993, Schedule 6, para 3.	(i) Complied with (ii) Complied with (iii) Complied with
41	The Borrower shall ensure that water tariffs are set by NWSDB prior to the Water Services industry Act coming in to legal effect.	L1993, Schedule 6, para 17. L2276, Schedule 5, para 6.	Not complied with. Act not yet passed by government. The matter is outside NWSDB's control
42	(i) NWSDB to implement a corporate strategy to improve the financial planning and resource allocation within 2 years of the effective date. (ii) NWSDB shall implement within one year of the effective date an action plan to address audit findings and KPMG Accounting and Financial Management Recommendations attached to the 13 Sept. 2002 MOU between the Borrower and ADB. (iii) NWSDB shall implement the strategy to reduce O&M cost by reducing electricity cost and non-revenue water within two years of effective date. (iv) Completion of assets registry in all regions for water supply schemes having more than 10,000 connections within two years of the effective date. (v) NWSDB shall identify water schemes less than 1,000 connections for rehabilitation and mutual transfer to Local Government Institutions, private sector entities and / or CBO s within four years of the effective date. The strategy shall focus on improving the efficiency of the identified water schemes so they can be profitable and on training the staff of the proposed transferees for taking over the identified water schemes. With respect to each identified water scheme, the NWSDB shall enter into an agreement with a proposed transferee that the proposed transferee will take responsibility over the assets and O&M for identified water scheme, prior to any project funds being disbursed for scheme specific rehabilitation (physical works and O&M training). The identified water schemes shall be transferred to proposed transferees within four years of the Effective Date.	L1993, Schedule 6, para 14.	(i) Complied with (ii) Complied with (iii) Partly complied with. Overall funds allocated under this loan insufficient to achieve corporate strategy targets. (iv) Complied with. (v) Partly complied with. NWSDB undertook this activity on a pilot basis prior to establishing the transfer of all schemes. Only one scheme is completed out of four selections.

No	Covenant	Reference in Loan Agreements	Status of Compliance
43	The Borrower shall ensure that NWSDB (a) has introduced a sewerage charge and revised it to accommodate O&M cost recovery for the year of concern, and (b) has revised water tariffs	L2276, Schedule 5, para 9.	Complied with
I. Training			
44	NWSDB shall submit for the Bank concurrence a strategic five year training plan which shall specify in the training institutions methodologies and expected training outputs within three months of the effective date and annual training plan prior to 31st October of each year.	L1993, Schedule 6, para 16.	Compiled with.
J. Reporting			
45	NWSDB shall submit quarterly progress reports on project implementation following the Bank standards procedures	L1993, Schedule 6, Para 27.	Complied with.
46	NWSDB shall submit to the Bank the project completion report (PCR) within three months from the physical completion of the project	L1993, Schedule 6, Para 29.	Complied with
47	The PIUs and PSIUs shall maintain separate project accounts. The Audited project subaccounts and financial statements shall be submitted through the PMU within 09 months of the close of the related financial years. The audited Annual report of NWSDB shall be submitted to the Bank not later than 9 months after the close of each financial year.	L1993, Schedule 6, para 28.	Will be complied - APFS up to 2014 have been received, although were delayed. APFS for the rest of the period (until February 2016, financial closure of L2757 & 2758) to be received.
48	The Borrower and local Governments shall prepare by 31 December of each year and operation plan of the next fiscal year.	L1993, Schedule 6, para 31. L2276, Schedule 5, para 7.	Complied with.
K. Counterpart funding			
49	The Borrower shall ensure that counterpart funds shall be released by 31st December of each year.	L1993, Schedule 6, para 26. L2276, Schedule 5, para 2.	Complied with.
L. Project Performance Monitoring			
50	The PMU shall develop comprehensive PPMS procedures and plans in accordance with ADB's standards within 6 months after effective date.	L1993, Schedule 6, para 32.	Complied with.

ADB = Asian Development Bank, APFS = audited project financial statement, CBO = community-based organization, CEA = Central Environmental Authority, DPD = deputy project director, EIA = environmental impact assessment, GND = *Grama Nilathari* Division, ID = Irrigation Department, IEE = Initial environmental examination, LA = local authority, MOU = memorandum of understanding, NGO = nongovernment organization, NWSDB = National Water Supply and Drainage Board, O&M = operation and maintenance, PIU = project implementation unit, PMU = project management unit, PPCC = provincial project coordination committee, PPMS = project performance monitoring system, PS = Pradeshiya Sabha, PSIU = Pradeshiya Sabha implementation unit, RRP = report and recommendation of the President, RWS = rural water supply, TSU = technical support unit.
Source: Asian Development Bank.

FINANCIAL AND ECONOMIC ANALYSES

A. Background

1. The financial and economic analysis of the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project (ST&RCBW&SSP) took into consideration the previous financial and economic analyses conducted at the times of reappraisals needed to approve supplementary financing that was required for project completion.

2. Three separate analyses were conducted in 2002 (initial appraisal for primary loan), 2006 (appraisal for supplementary loans) and 2011 (appraisal for additional financing loans) for ST&RCBW&SSP. The original target year for project completion was 2009. For several reasons, actual completion was in 2014. The financial internal rates of return (FIRRs) and economic internal rates of return (EIRRs) calculated during the earlier appraisals are useful in illustrating the trend of project implementation and will be discussed in this appendix. In keeping with the approach used in the earlier appraisals, the analysis is conducted only for the four urban water supply schemes at Batticaloa, Hambantota, Muttur and Polonnaruwa.

3. The Annex to this appendix details the cash flows used in the financial and economic analysis.

B. Financial Analysis

4. Following the methodology adopted in the earlier analyses, this analysis is conducted in real terms using constant 2010 financial prices. The investment costs comprise (i) capital expenditures incurred under the project including contingencies, taxes and duties; and (ii) operating costs including staff remuneration, power, chemicals and material costs. The revenue projections are based on the actual connections made from the respective water supply schemes after commissioning, up to the maximum number of connections specified for each scheme. The revenues are based on the standard island-wide tariff charged by the National Water Supply and Drainage Board (NWSDB). However, an average tariff obtained from each scheme is used in the analysis, because the average value differs by scheme depending on average per capita consumption at each scheme. The per capita consumption and cost of production was obtained directly from NWSDB staff at each scheme.

5. Table A12.1 sets out the key assumptions used in the financial analysis. This report was prepared in April 2015 after visiting the project schemes. At the time of preparation of this report, the scheme at Hambantota was at full capacity utilization, whereas the scheme at Batticaloa was operating at 32% utilization and at Polonnaruwa at 81% utilization. The rate of utilization at Muttur was only 17% because of partial decommissioning as a result of damage from floods.

Table A12.1: Financial and Economic Analysis- Key Assumptions Used

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
Target population	246,000	52,000	133,000	85,000
Design capacity (m^3/day)	40,000	8,500	15,000	13,500
Date of commissioning	Q2 -2011	Q1-2014	Q1-2013	Q4-2011
Current production (m^3/day)	12,600	800	15,000	11,000
Current connections	29,500	358	13,000	21,250
Current number of people served	118,000	1,432	52,000	85,000

m^3 = cubic meter, Q = quarter.

Source: National Water Supply and Drainage Board Regional Offices

6. Table A12.2 shows the summary of results of the financial analysis. The FIRR for all schemes is negative, indicating that the quantified financial benefits were not adequate to meet the project investment and operating cost. Sensitivity tests were not conducted because of their irrelevance in view of the negative base case results.

Table A12.2: Financial Analysis- Summary of Main Results

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
Financial internal rate of return	Negative	Negative	Negative	Negative
Net present value ($ million)	(40.68)	(11.11)	(19.73)	(17.25)

() = Negative.
Source: Project completion report mission computations.

7. The financial performance of the project was affected by steep escalation of costs and delays in implementation. These factors had an inevitable impact on the results of financial analysis at project completion. Because of cost escalation, the project required four additional loans approved in 2006 and 2011. Table A12.3 shows the trend in the FIRR estimates from 2002 to 2015, which were conducted using the same assumptions. All four schemes were financially viable at initial appraisal in 2002, with the FIRR above the weighted average cost of capital (established at 0.78% for the initial appraisal). However, the tariff assumptions used in the initial appraisal have remained valid.

Table A12.3: Financial Internal Rate of Return, 2002−2015

Item	2002 (%)	2006	2010	2015
Batticaloa	5.3	Negative	Negative	Negative
Muttur	3.6	Negative	Negative	Negative
Hambantota	1.9	Negative	Negative	Negative
Polonnaruwa	1.2	Negative	Negative	Negative

Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; Project Completion Review mission computations; and project management unit.

8. The FIRR has been shown to be negative at each of the reappraisals conducted in 2006, 2010, and the current assessment in 2015. The poor financial performance has been due to several factors that are summarized in paras 16−25.

C. Economic Analysis

9. This section sets out the approach, methodology and results of the economic analysis of the project.

1. Methodology for economic analysis

10. The economic analysis uses the same methodology and assumptions used in the previous appraisals, as listed above, in order to provide a realistic comparison over the relatively

lengthy time period that was required for project completion. The analysis is based only on the measurable benefits. The key indicator used is the EIRR. The economic analysis uses economic border prices using the world price numeraire.

11. The actual costs incurred during project implementation are divided into traded, nontraded, and labor components with a further categorization into civil works, general material, training and recurrent expenses. A standard conversion factor of 0.9 is used to derive general economic prices. Because of escalation of wages and resulting labor shortages of both skilled and unskilled laborers during project implementation, economic wages are treated as being equal to market wages. Other conversion factors are derived for each of the cost categories based on the weight of traded and nontraded goods in each category. The analysis is conducted in constant 2010 prices.

12. The analysis uses data collected from the facilities of the NWSDB at the project sites, and also from the impact assessment surveys conducted by the project management unit (PMU) as part of the preparation of the borrowers' project completion report. The project investment costs used are sourced from the borrowers' completion report while operating costs, and production and revenue information for the water schemes were obtained from staff at the respective schemes.

2. Economic Benefits

13. The analysis is based on two main streams of economic benefits: (i) resource cost savings from the time saved in fetching water prior to the project, and (ii) the value of the incremental water supply from the project. These are the same parameters used in the earlier appraisals.

14. Table A12.4 shows the amount of time spent in collecting water by the households before the project benefits were available. This varied widely across the four schemes, with the lowest time being recorded in Muttur and the highest in Hambantota. Except Hambantota, households in the schemes obtained water from dug wells in their compounds or from other nearby sources.

Table A12.4: Estimate of Time Savings per Week

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
Insignificant (% of HH)	94.6	98.2	30.1	85.2
Less than 2 hours (%of HH)	0.4	0.0	1.9	0.0
2−5 hours (%of HH)	3.4	0.9	13.4	6.3
5−7 hours (%of HH)	0.8	0.9	9.7	1.7
7−10 hours (%of HH)	0.2	0.0	15.7	4.0
More than 14 hours (%of HH)	0.6	0.0	29.2	2.8
Weighted average (week hours)	0.33	0.17	6.39	1.08
Time spent per HH (hours/day)	0.05	0.02	0.91	0.15
Cost per hour (SLRs)	87.5	87.5	87.5	87.5
Cost per day (SLRs)	4.16	2.18	79.86	13.46

HH = household

Source: Government of Sri Lanka, Ministry of Water Supply and Drainage. 2014. *Borrower's Project Completion Report: Secondary Towns and Rural Community-Based Water Supply and Sanitation Project.* Colombo.

15. The estimate of the value of incremental water supply from the schemes resulting from project investments is shown in Table A12.5. The per capita consumption before the project is assumed to be 60 liters per day and is the figure assumed at initial project preparation and

appraisal. The per capita consumption after the project is based on the latest information provided at the respective schemes by NWSDB staff, who also provided the values for the average tariff at each scheme. Although a standard national tariff schedule based on consumption slabs is used at each scheme, the average tariff at each site varies because of the different volumes of water consumed at each household. The project design assumed a preproject average per capita consumption of 60 liters per day, and a design per capita consumption value of 100 liters per day.

Table A12.5: Value of Incremental Water Supply

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
PCC Before Liters/ day (Planning Assumption)	60.00	60.00	60.00	60.00
NRW %	0.25	0.24	0.24	0.24
Incremental Per Capita Liters / day	48.00	167.00	81.00	126.00
Value per liter financial SLRs	0.02	0.02	0.03	0.04
Value per liter economic SLRs	0.01	0.01	0.03	0.03

PCC = per capita consumption, NRW = nonrevenue water.
Source: National Water Supply and Drainage Board Regional Offices.

3. Results of Economic Analysis

a. Economic Internal Rate of Return

16. Table A12.6 shows the summary of results of the economic analysis. The EIRR for all schemes is negative, indicating that the quantified economic benefits were not adequate to meet the project costs. Sensitivity tests were conducted to ascertain the impact of changes in key parameters used for the analysis. Reduction by 20% of capital costs, and operating costs, and an increase in revenues by 20% also resulted in negative EIRR values.

Table A12.6: Economic Analysis, Summary of Main Results

Item	Batticaloa	Muttur	Hambantota	Polonnaruwa
Economic internal rate of return	Negative	Negative	Negative	Negative
Net present value ($ million)	(34.36)	(9.30)	(16.53)	(9.17)
Sensitivity tests				
Reduction in capital costs by 20%	Negative	Negative	Negative	Negative
Reduction in operating costs by 20%	Negative	Negative	Negative	Negative
Reduction in capital and operating costs by 20%	Negative	Negative	Negative	Negative
Increase in revenues by 20%	Negative	Negative	Negative	Negative

() = negative.
Source: Project Completion Review mission computations.

b. Comparison with Past Viability Estimates

17. The performance of the project is characterized by steep escalation of costs and delays in implementation, which have had an inevitable impact on the results of economic analysis at project completion. Because of cost escalation, the project required four additional loans, approved in 2006 and 2011. The project was reappraised at each of these loan approvals. Table A12.7 shows the trend in the EIRR estimates from 2002 to 2015, which were all conducted using the same assumptions. All four schemes were economically viable at appraisal, with the EIRR above the economic opportunity cost of capital, assumed to be 12%. At the second appraisal conducted in 2006, the scheme at Batticaloa showed a breakeven EIRR while

the other three schemes had become unviable. By 2010, all four schemes had EIRR values below the opportunity cost of capital, demonstrating the nonviability of all four urban water supply schemes. Notably, the Batticaloa scheme that had the highest EIRR at initial appraisal had the lowest by value 2010. At the end of the project in the current assessment, all schemes had negative EIRR values.

Table A12.7: Economic Internal Rate of Return, 2002−2015

Scheme	2002	2006	2010	2015
Batticaloa	14.3	12.0	11.1	Negative
Muttur	12.6	8.3	9.5	Negative
Hambantota	12.3	7.6	7.4	Negative
Polonnaruwa	16.6	7.9	4.6	Negative

Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loans for Additional Financing to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; Project Completion Review mission computations; and project management unit.

4. Contributing Factors for Economic Non-Viability

a. Cost Escalation

18. The primary cause for the poor economic performance of the four schemes is the high price escalation, which was attributable to several causes. Batticaloa and Muttur were in the former conflict zone, although a ceasefire existed at the time of appraisal. The resurgence of the conflict in 2004 resulted in price escalation of both material and labor, as well as inflated bid prices by contractors conscious of risk. The factors leading to cost escalation and delays are further described in the main report in the context of overall project performance.

19. The impact of cost escalations on the project is illustrated in Table A12.8 and Figure A12.1 which compare the actual costs of the four schemes at appraisal (with estimated costs in 2001) and the actual costs in 2015, and the corresponding changes in the cost per connection.

Table A12.8: Total Project Cost at Appraisal 2002 and Actual 2015
($ million)

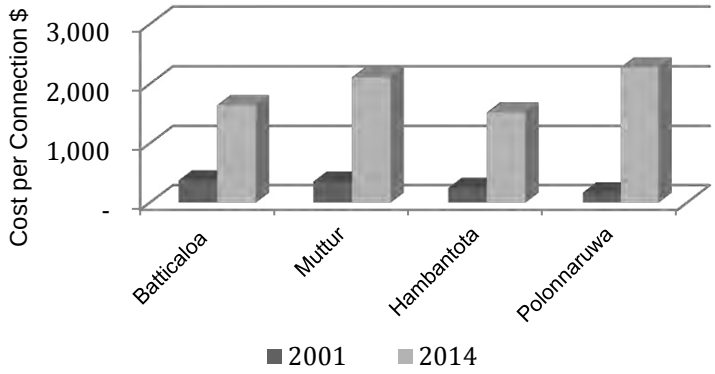
Scheme	2002 Cost	Actual Cost 2014	% Increase
Batticaloa	23.0	101.07	439%
Muttur	4.6	27.44	596%
Hambantota	8.2	50.65	618%
Polonnaruwa	3.6	48.31	1,342%

Note: Costs relate to urban water supply schemes only.
Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; Project Completion Review mission computations; and project management unit.

20. The appraisal conducted in 2011 included a detailed assessment of the reasons for cost escalation, which was causing concern at the time of processing of the final two additional financing loans. The main reasons identified were (i) higher bid prices mainly due to rising international rates for construction materials and demand from the post-tsunami construction boom from 2005, (ii) high domestic inflation, (iii) currency fluctuation, (iv) lengthy bidding process, and (v) undercosting at appraisal.

21. Figure A12.1 provides graphic illustration of the impact of cost escalation. The cost per connection to a household at appraisal and at completion is shown in comparison.

Figure A12.1: Cost Per Connection at Appraisal 2002 and Actual 2014



Sources: ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila; Project Completion Review mission computations; and project management unit.

b. Overestimate of Economic Benefits at Appraisal

22. The estimate of one stream of economic benefits at the appraisal for the first loan[1] (Asian Development Bank *Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project* of 2002) was overoptimistic. The economic analysis assumed a value of 43−76 minutes per day as the time saved in having access to piped water from the schemes. The actual time spent before the project in collecting water was investigated during the post-project impact assessment surveys. The average actual times were Batticaloa 3.0 minutes per day, Muttur 1.5 minutes, Polonnaruwa 9.0 minutes and Hambantota 55.0 minutes. With the exception of Hambantota, the households in the areas covered by the water supply schemes had easy access to water from traditional sources such as dug wells, however without assurance of the quality of water. The time saved is a key variable in the economic analysis, translating to monetary values based on

[1] ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Secondary Towns and Rural Community-Based Water Supply and Sanitation Project*. Manila (loan 1993).

average wage rates. The overestimated benefits at appraisal led to a better than realistic estimate of the EIRR.

c. Under consumption of Project-Supplied Water

23. The initial analysis conducted in 2002 was based on an initial assumption of each household comprising five people. Actual data shows that each household comprises only four people (Appendix 1), with the corresponding 20% reduction in projected volumes of water consumption used for the initial assessment.

24. In addition, residents in some areas under the project, notably Batticaloa, are seen to be reluctant to use the project-supplied water for purposes other than drinking and cooking. The main reason is sensitivity to the cost. Some consumers in Batticaloa are also sensitive to the taste of chlorine in the water. Households were also assumed to connect to water supply progressively over the initial years of the project, which has not happened in practice at Batticaloa and also at Muttur, the latter because of technical reasons.

25. The initial economic analysis conducted in 2002 was based on a per capita consumption of 100 liters/day, which was also the assumption used for the engineering design specifications. The financial analysis conducted in 2011 is based on an assumption that average per capita consumption was 150 liters/day. Current reported values for per capita consumption are Batticaloa 48 liters/day, Muttur 167 liters/day, Hambantota 81 liters/day and Polonnaruwa 126 liters/day. Therefore the initial financial analysis conducted in 2002 was based on a revenue stream that was overstated.

5. Conclusions on Economic Viability

26. The four urban water schemes under the project have not shown economic viability from 2011 onwards. However, the schemes provide fresh treated water on a continuous basis at an affordable cost to households in the project areas. These households did not have the benefit earlier, or received water in limited quantities. The project areas had also been adversely affected by either the conflict or the 2004 tsunami or both. The investments under the project also cater to demands of households over a long time horizon. Despite the low economic returns, the project has strong justification in that it improves the overall quality of life of people in the project area.

Appendix 12 Annex: Cash Flows

A12 Annex Table 1: Financial Net Cash flows
($ million in financial prices)

Year	Batticaloa	Muttur	Hambantota	Polonnaruwa
2003	0.02	(0.19)	(0.21)	(0.02)
2004	0.01	(0.12)	(0.13)	(0.01)
2005	0.02	(0.22)	(0.24)	(0.02)
2006	0.05	(0.62)	(0.67)	(0.05)
2007	0.18	(2.07)	(2.24)	(0.18)
2008	0.46	(5.39)	(5.84)	(0.46)
2009	0.53	(6.21)	(6.74)	(0.53)
2010	0.31	(3.62)	(3.93)	(0.31)
2011	0.22	(2.53)	(2.75)	(0.22)
2012	0.33	(2.11)	(2.45)	(0.33)
2013	0.38	(1.09)	(1.47)	(0.38)
2014	0.49	(0.98)	(1.47)	(0.49)
2015	0.26	0.00	(0.26)	(0.26)
2016	1.16	0.01	(1.15)	(1.16)
2017	1.01	0.01	(1.00)	(1.01)
2018	0.88	0.02	(0.86)	(0.88)
2019	0.83	0.04	(0.79)	(0.83)
2020	0.78	0.04	(0.74)	(0.78)
2021	0.74	0.04	(0.70)	(0.74)
2022	0.69	0.04	(0.66)	(0.69)
2023	0.65	0.03	(0.62)	(0.65)
2024	0.62	0.03	(0.59)	(0.62)
2025	0.58	0.03	(0.55)	(0.58)
2026	0.55	0.03	(0.52)	(0.55)
2027	0.52	0.03	(0.49)	(0.52)
2028	0.49	0.03	(0.46)	(0.49)
2029	0.46	0.02	(0.44)	(0.46)
2030	0.44	0.02	(0.41)	(0.44)
FIRR	**Negative**	**Negative**	**Negative**	**Negative**

() = negative, FIRR = financial internal rates of return
Source: Project Completion Review mission computations.

A12 Annex Table 2: Economic Net Cash flows
($ millions in economic prices)

	Batticaloa	Muttur	Hambantota	Polonnaruwa
2003	(0.59)	(0.16)	(0.30)	(0.28)
2004	(0.36)	(0.10)	(0.18)	(0.05)
2005	(0.69)	(0.19)	(0.35)	(0.09)
2006	(1.91)	(0.52)	(0.96)	(0.55)
2007	(6.38)	(1.73)	(3.20)	(2.54)
2008	(16.63)	(4.52)	(8.34)	(6.27)
2009	(19.19)	(5.21)	(9.62)	(7.49)
2010	(11.19)	(3.04)	(5.61)	(3.67)
2011	(7.83)	(2.12)	(3.92)	(2.06)
2012	(6.54)	(1.77)	(3.27)	(1.47)
2013	(3.36)	(0.91)	(1.68)	0.01
2014	(3.02)	(0.82)	(1.52)	0.13
2015	0.03	0.00	0.18	1.53
2016	0.05	0.00	0.35	1.19
2017	0.05	0.01	0.40	1.19
2018	0.05	0.02	0.46	1.19
2019	0.06	0.04	0.46	1.19
2020	0.06	0.04	0.46	1.19
2021	0.06	0.04	0.46	1.19
2022	0.06	0.04	0.46	1.19
2023	0.06	0.04	0.46	1.19
2024	0.06	0.04	0.46	1.19
2025	0.05	0.04	0.46	1.19
2026	0.05	0.04	0.46	1.19
2027	0.05	0.04	0.46	1.19
2028	0.04	0.04	0.46	1.19
2029	0.02	0.04	0.46	1.19
2030	0.01	0.04	0.46	1.19
EIRR	**Negative**	**Negative**	**Negative**	**Negative**

() = negative, EIRR = economic internal rates of return.
Source: Project Completion Review mission computations.