

ASIAN DEVELOPMENT BANK

PCR:INO 26190

PROJECT COMPLETION REPORT

ON THE

**CAPACITY BUILDING PROJECT IN THE
WATER RESOURCES SECTOR
(Loan 1339-INO)**

IN

INDONESIA

August 2005

CURRENCY EQUIVALENTS

Currency Unit – rupiah (Rp)

		At Appraisal (August 1994)	At Project Completion (June 2002)
Rp1.00	=	\$0.000462	\$0.000111
\$1.00	=	Rp2,165	Rp9,045

ABBREVIATIONS

ADB	–	Asian Development Bank
BAPPENAS	–	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
DGWR	–	Directorate General of Water Resources
MPW	–	Ministry of Public Works
NGO	–	nongovernment organization
PAMST	–	Policy Analysis and Management Support Team
PCR	–	Project Completion Report
RRP	–	Report and Recommendation of the President
TA	–	technical assistance
WATSAL	–	Water Sector Adjustment Loan
WATSAP	–	water sector adjustment program
WRDM	–	water resources development and management

NOTES

- (i) The fiscal year (FY) of the Government ends on 31 March.
- (ii) In this report, "\$" refers to US dollars.

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BASIC DATA

A. Loan Identification

1.	Country	Indonesia
2.	Loan Number	1339
3.	Project Title	Capacity Building Project in the Water Resources Sector
4.	Borrower	Republic of Indonesia
5.	Executing Agency	Directorate General of Water Resources
6.	Amount of Loan	\$27,721,000
7.	Project Completion Report Number	PCR: INO 887

B. Loan Data

1.	Appraisal			
	– Date Started		24 July 1994	
	– Date Completed		05 August 1994	
2.	Loan Negotiations			
	– Date Started		07 November 1994	
	– Date Completed		08 November 1994	
3.	Date of Board Approval		06 December 1994	
4.	Date of Loan Agreement		10 January 1995	
5.	Date of Loan Effectiveness			
	– In Loan Agreement		03 April 1995	
	– Actual		03 April 1995	
	– Number of Extensions		0	
6.	Closing Date			
	– In Loan Agreement		30 June 2000	
	– Actual		29 November 2002	
	– Number of Extensions		2	
7.	Terms of Loan			
	-- Commitment Charge		0.75%	
	-- Service Charge		0.00%	
	-- Interest Rate		0.00%	
	-- Maturity (number of years)		25 years	
	-- Grace Period (number of years)		5 years	
8.	Disbursements			
	a. Dates			
		Initial Disbursement	Final Disbursement	Time Interval
		1 June 1995	29 November 2002	90 months
		Effective Date	Original Closing Date	Time Interval
		03 April 1995	30 June 2000	62 months
			Final Closing Date	Time Interval
			29 November 2002	92 months

b. Amount (\$'000)

Category	Original Allocation	Last Revised Allocation	Amount Canceled	Amount Disbursed	Undisbursed Balance ^a
Civil Works	2,455	940	1,515	704	236
Equipment & Vehicles	6,940	5,067	1,873	4,971	96
Consulting Services	4,417	5,114	(697)	5,103	11
Training-Management Development Program	1,536	3,023	(1,487)	2,431	592
Training – Water Resources Specialist Education Program	6,085	1,853	4,232	1,823	30
Other Training	1,529	349	1,180	309	40
Interest and Commitment Charge During Implementation	3,532	3,000	532	3,000	0
Unallocated	1,227	54	1,173	0	54
Total	27,721	19,400	8,321	18,341	1,059

^a The undisbursed loan balance of \$1.059 million at loan closing was cancelled on 29 November 2002.

9. Local Costs (Financed)	
- Amount (\$ '000)	2,132
- Percent of Local Costs	31%
Percent of Total Cost (actual)	9%

C. Project Data

1. Project Cost (\$'000)

Cost	Appraisal Estimate	Actual
Foreign Exchange Cost	22,535	16,209
Local Currency Cost	23,721	6,741
Total	46,256	22,950

2. Financing Plan (\$'000)

Cost	Appraisal Estimate	Actual
Implementation Costs		
Borrower-Financed	18,534	4,609
ADB-Financed	24,189	15,341
Other External Financing	0	0
Total	42,723	19,950
Interest During Construction Costs		
Borrower-Financed	3,360	0
ADB-Financed – Service Charge	3,532	3,000
Other External Financing	0	0
Total	3,532	3,000

3. Cost Breakdown by Project Component (\$'000)

Component	Appraisal Estimate	Actual
1. Strengthening National Framework	900	4,969
2. Strengthen Regional Capacity	20,700	6,609
3. Strengthen DGWR	14,700	7,786
Base Cost	35,600	19,365
Project Administration Support	2,300	599
Contingencies	4,100	0
Interest During Construction	3,500	3,000
Recurrent Costs	0	173
Taxes and Duties	0	412
Total Project Cost	46,200	22,950

4. Project Schedule

Item	Appraisal Estimate	Actual
Date of Contract with Consultants		
Package 1	3 rd qtr 1995	August 1996
Package 2	3 rd qtr 1995	August 1996
Package 3 (MDP)	4 th qtr 1996	March 1998
Package 4 (SP-1)	1 st qtr 1996	February 1997
Package 5	-	May 2001
Package 6	-	November 1999
Package 7	-	April 2000
Civil Works Contract		
Date of Award	2 nd qtr 1996	January 1996
Completion of Work	4 th qtr 2000	December 2001
Equipment and Supplies		
Dates		
First Procurement	2 nd qtr 1995	April 1997
Last Procurement	1 st qtr 1997	December 2001
Start of Operations		
Beginning of Start-Up	3 rd qtr 1995	January 1996
Other Milestones		
First Partial Cancellation		16 July 1998
Second Partial Cancellation		24 September 1999
Third Partial Cancellation		18 November 1999
Fourth Partial Cancellation		6 October 2000

5. Project Performance Report Ratings

Implementation Period	Project Classification	
	Last	Current
From December 1995 to December 1996		AAA
From January 1997 to January 1998	AAA	AAA

AAA = project classified as satisfactory in physical progress, project costs and compliance with covenants

	Development Objectives	Implementation Progress
From February 1998 to November 1998	U	U
December 1998 to February 1999	S	U
March 1999 to July 1999	S	PS
August 1999 to July 2000	S	PS
August 2000 to September 2001	S	S
October 2001 to June 2002	S	S

AAA = project classified as satisfactory in physical progress, project costs and compliance with covenants. PS = partly satisfactory, S = satisfactory, U = unsatisfactory

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members ^a
Fact-Finding Mission	2–20 May 1994	3	57	a, b, c
Appraisal Mission	24 Jul–5 Aug 1994	6	78	a, b, d, e, f, g
Inception Mission	28 Nov–2 Dec 1995	1	5	d
Project Review 1	6–17 May 1996	1	12	d
	13–14 May 1996	1	2	m
Project Review 2	18–26 Nov 1996	1	9	d
	20–22 Nov 1996	1	3	h
Project Review 3	11–19 Mar 1997	3	9	d
	16–19 Mar 1997		4	d
	13–16 Mar 1997		4	i
Project Review 4	10–19 Sep 1997	2	20	d, j
Mid Term Review	9–20 Feb 1998	3	36	d, k, l
Project Review 5	1–7 Dec 1998	2	14	l, j
Project Review 6	20–28 Apr 1999	1	9	l, j
Project Review / Preparatory Mission for 1999 Portfolio Review ^b	26–28 Jul 1999	2	6	l, j
Project Review 7	10–21 Jul 2000	2	12	l, j
Project Review 8	17–25 Sep 2001	2	18	l, j
Project Review 9	29 May–7 Jun 2002	2	20	l, j
Project Completion ^c		2		d, j

^a a – senior sector planning specialist; b – irrigation/rural development specialist; c – human resources consultant; d – project economist; e – programs officer; f – counsel; g – program management consultant; h – capacity building consultant; i – senior project economist; j – assistant project analyst; k – rural development specialist; l – senior project specialist; m – manager

^b Related to the spring cleaning activity carried out by the Bank in 1999.

^c The project completion report was prepared by C. I. Morris, Water Resources Specialist (Mission Leader), and B. Perlas, Asst. Project Analyst.

Source: Asian Development Bank records.

INDONESIA

CAPACITY BUILDING PROJECT IN THE WATER RESOURCES SECTOR (as completed)



WATER RESOURCES DATA CENTER PILOT PROVINCES

1. Nanggroe Aceh Darussalam
2. West Sumatra
3. Jambi
4. Riau

CORE/WATER RESOURCES DATA CENTER PILOT PROVINCE

North Sumatra

MASTERS PROGRAM

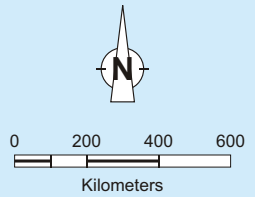
Water Resources Training Center, Bandung

CORE PROVINCES

1. Bali
2. West Nusa Tenggara
3. South Sulawesi

- Core Provinces
- Other Provinces
- Water Resources Data Center Pilot Province
- Core/Water Resources Data Center Pilot Province
- Water Resources Training Center, Bandung
- National Capital
- Provincial Capital
- Provincial Boundary
- International Boundary

Boundaries are not necessarily authoritative.



I. PROJECT DESCRIPTION

1. On 6 December 1994 the Asian Development Bank (ADB) approved a loan of \$27.7 million to the Government of Indonesia (the Government) to finance 60% of the total project cost of \$46.2 million of the Capacity Building Project in the Water Resources Sector (the Project). The goal of the Project was to strengthen the institutional capacity of the national and provincial governments for the sustainable and economic management of water resources for multisectoral uses, with emphasis on integrated water resources management in river basins. The Project scope comprised (i) operational policy making; (ii) strengthening of the institutional framework for coordination; (iii) strengthening of management systems and processes; and (iv) improvement of the technical standards and practices, and the human resources systems and skills, of water resources management agencies. This approach was consistent with the Government's policy and strategy¹ and ADB's Country Operational Strategy for Indonesia.²

2. The project documentation consisted of a report and recommendation of the President (RRP).³ The strategic development objectives classification of the Project was social concerns, primary – human development. The project logical framework, as revised during the midterm review, is in Appendix 1, and a detailed list of planned activities is in Appendix 2. The Project had three components: (i) strengthening the national policy and coordination framework [component 1], (ii) strengthening the capacity of regional institutions for multisectoral water resources development and management [component 2], and (iii) strengthening the capacity of the Directorate General of Water Resources Development (DGWR⁴) under the Ministry of Public Works (MPW) [component 3]. The provinces targeted by the Project are shown on the project map.⁵

3. The DGWR was the executing agency and the Project was implemented by national and provincial implementation units. The loan took effect on 3 April 1995 and was closed on 30 June 2002 after two extensions totaling 24 months granted by ADB. The original loan amount was later reduced to \$19.4 million after potential savings from the loan proceeds were canceled in 1998 (\$3.9 million) and 1999 (\$4.4 million). The Government completed a comprehensive project completion report (PCR), which was submitted to the ADB in September 2002. The Government found the overall implementation of the Project satisfactory, while highlighting key constraints during implementation and improvements that could be made in capacity building to make it more effective. These observations are included in this PCR.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

4. The desired project impact was consistent with the overall development priorities of the Government and ADB's support to the water resources sector in Indonesia. The Project remained highly relevant throughout the implementation period, and some of its activities

¹ Water Resources Development Strategy and Policy Statement of the Directorate General of Water Resources, dated 16 May 1994.

² ADB. 1994. *Indonesia: Country Operational Strategy*. Manila.

³ ADB 1994. *Report and Recommendations of the President to the Board of Directors on a Proposed Loan to the Republic of Indonesia for the Capacity Building Project in Water Resources Development*. Manila (Loan No. 1339-INO, for \$27.71 million, approved on 6 December 1994).

⁴ The acronym "DGWRD" was in use at the time of appraisal and for part of the Project.

⁵ The provinces selected were generally those that have received ADB support to the water resources sector.

became particularly significant in supporting the water resources policy reforms of the Government in the late 1990s (para. 11).

5. Water Resources Law No. 11/1974 defined the Government's commitment to sustainable water resources management in river basins, and the second 25-year development plan (1994/95 to 2019/19) identified its key concerns in the water resources sector. During the Five-Year Development Plan period (1988/89 to 1993/94), the Government began policy, strategy, and institutional reforms in multisectoral water resources planning, development, and management. Key Government initiatives that were supported during project appraisal and later incorporated in the project design included (i) the elevation of water resources from a subsector to a sector;⁶ (ii) the restructuring of DGWR to make it more responsive to the needs of water stakeholders in the provinces and river basins; (iii) the proclamation of DGWR's new Policy and Strategy on Water Resources Development, which clearly defined its commitment to integrated river basin development and management; (iv) the decentralization of management, administrative, and functional activities in the water resources sector to provinces, districts, and river basin organizations; (v) the establishment and strengthening of multisectoral water resources management committees in the provinces and river basins; (vi) the implementation of the Clean Rivers Program of the National Environmental Agency, and DGWR's pilot water quality monitoring projects; and (vii) the launching of DGWR's programs for efficient irrigation system operation and maintenance, improved water management, beneficiary participation, and public-private partnership in the water sector.

6. The purpose of the Project was consistent with ADB's 1994 Country Operational Strategy for Indonesia footnote 2), which backed the Government's development objectives of efficient, equitable, and environmentally sustainable growth by supporting growth, human resources development, and sustainable use of natural resources. The latest Country Strategy and Program Update (2005) continues to support the medium-term needs of the economy. It stresses (i) improvements in governance, (ii) decentralization, to meet local needs, (iii) human development, (iv) environmental management and sustainable natural resources development, and (v) improvements in long-term growth prospects and economic potential. At appraisal, sustainable integrated water resources management was constrained by the limited capacity of water resources implementing agencies.⁷ Project outcomes were therefore appropriately designed to strengthen the overall policy and institutional framework and improve the capacity of specific organizations. The Project did not establish mechanisms for monitoring the direct impact of the Project, and DGWR has no internal integrated water resources management monitoring and evaluation systems. Qualitative observations directly link the desired project outcomes with the development objectives of the Government.

7. ADB financed an advisory technical assistance (TA) for Human Resources Development in the Water Resources Sector from September 1993 to May 1994.⁸ During the implementation of the TA, the Government and ADB agreed in principle to the design of a proposed capacity-building investment project. Adjustments in TA activities to include additional project design outputs left little time for comprehensive dialogue with participating national and provincial water resources agencies. Some of the delays in project start-up (para. 30) could have been reduced

⁶ Including the formation of a separate Bureau for Water Resources and Irrigation in the National Development and Planning Agency (BAPPENAS).

⁷ Despite gains over the last decade, this is still true. Integrated water resources management capacity building is recognized by the Government as a long-term development objective in current policy and planning programs.

⁸ ADB. 1994. *Technical Assistance to Indonesia for the Human Resources Development in the Water Resources Sector*. Manila (TA No. 1859-INO, for \$600,000, approved on 29 March 1993).

if a more comprehensive stakeholder dialogue had been undertaken during preparation.⁹ Current project design in Indonesia allows significantly more time for extensive stakeholder consultations.

8. Two fundamental transformations in the MPW structure in the late 1990s¹⁰ were severely disruptive to project activities, but a flexible approach by the Government and ADB led to adjustments in the outputs and implementation schedule of the Project.

B. Project Outputs

9. The project documents describe the scope of the three project components. Appendix 3 assesses in detail the results achieved in each component in relation to the targets. The following paragraphs summarize the project outputs.

1. Component 1: Strengthening the National Policy and Coordination Framework

10. At appraisal, the Project was designed to achieve two key outputs: (i) the establishment of a national framework for water resources coordination; and (ii) the setting of policies and guidelines for water resources management. The coordination framework, under the direction of the MPW, was to be based on an existing water law (No. 11/1974). Accordingly, a proposal was prepared for the creation of a national policy team under the minister of public works with its secretariat in DGWR. The secretariat was to be supported by three working groups (management, policy planning, and data and information). Decree No. 73/KPTS/A/1977 of 27 October 1997, issued by the director general of water resources development, created the secretariat, and several studies and guidelines on water resources policy and regulations were produced (Appendix 3). A draft national water resources policy was prepared in early 1998 and submitted to BAPPENAS for review and finalization through interministerial and public consultations.

11. In an effort to mobilize external assistance to overcome its deteriorating balance of payments, the Government in May 1998 began discussions with the World Bank for a quick-disbursing fiscal-support Water Sector Adjustment Loan (WATSAL).¹¹ The Government established a water sector adjustment program (WATSAP) to formulate a comprehensive policy and a higher-level coordination framework for the multisectoral use of water resources.¹² Like the ADB Project, WATSAP was expected to improve (i) the national institutional framework for water resources development and management, (ii) the organizational and financial framework for river basin management, (iii) regional water quality management, and (iv) irrigation management policy. In 1998 ADB agreed to the Government's request to include activities in the Project that would specifically support WATSAP. The new activities would focus on establishing the national coordination framework and preparing a comprehensive water resources policy. Presidential Decree No. 9 of 14 January 1999 created a nine-member interministerial coordination team for river use and sustainable watershed management. The coordination team was assisted by a ministerial-level steering committee headed by

⁹ There is a strong correlation between stakeholder "buy in" and success in implementing capacity-building projects. Wide stakeholder buy-in should be achieved before a project starts; otherwise, delays in implementation are likely.

¹⁰ The MPW was divided in 1998 into the State Ministry of Public Works and the Ministry of Human Settlements and Regional Development, which were combined again, after a further change in the central Government in 2001, into the Ministry of Human Settlements and Regional Infrastructure.

¹¹ The \$300 million Water Sector Adjustment Loan was approved in May 1999.

¹² By the late 1990s, the Government water sector reforms (para. 5) were collectively referred to as WATSAP.

BAPPENAS with members from various ministries, a director general-level executive committee with members from key ministries and provinces, and four working groups, one for each of the four WATSAP objectives.

12. The Project provided assistance in preparing technical papers and preliminary drafts of a comprehensive national water resources policy, including a new draft water law. The drafts were improved through public consultations, and the final version of the policy was issued under a ministerial decree.¹³ For the first time, Indonesia had a comprehensive set of national policies for sustainable water resources management and improved sector performance. The draft water law was reviewed by an interministerial team led by MPW and sent in revised form to the Minister of Justice on 17 May 2002 for parliamentary approval. The new Water Law No. 7/2004 was passed in January 2004.

13. By a presidential decree of 5 December 2001, the interministerial coordination team was reconstituted with the coordinating minister for the economy as the chairperson, the state minister for national planning as vice chairperson, and the minister for human settlements and regional infrastructure as chairperson for routine meetings. The team has two secretaries: the BAPPENAS deputy for production/infrastructure and the director general of water resources development. This coordinating team is viewed as the forerunner of national water resources council to be established under the new water law. The water law provides for the inclusion of nongovernment representatives and other stakeholders in the council.

14. A number of government regulations and ministerial decrees were needed to replace or revise legislation in support of the national water resources policy. Twelve priority government regulations and five ministerial decrees were identified, and the Project provided technical assistance in drafting many of these. Government regulations on irrigation management (No. 77/2001) and on water quality (No. 82/2001) were issued. Other priority government regulations and decrees were prepared and will be processed once the new water law takes effect.¹⁴ These cover irrigation management, irrigation commissions, water resources management, river management, swamp development, groundwater management, watershed management, clean water management (for water supply), establishment of a river basin corporation, financing of the river basin corporation, water use rights, stakeholder participation, and strengthening of the river basins of Brantas and Citarum.

2. Component 2: Strengthening the Capacity of Regional Institutions

15. The component was designed to strengthen the capacity of selected provinces for water resources planning and management, including the monitoring of water quality. The component focused on four outer island provinces: Bali, North Sumatra, South Sulawesi, and West Nusa Tenggara. Four other outer island provinces—Maluku, Papua, Southeast Sulawesi, and South Kalimantan—were also selected to receive support for the establishment of hydrometeorological infrastructure under this component. In 1999, the scope of the hydrometeorological data subcomponent was expanded with the transfer of the water resources data management component of Loan 1579-INO: Northern Sumatra Irrigated Agriculture Sector Project to the Project. River maintenance, which was confirmed in the first few years to have no direct relation to water quality, was dropped from the Project, while other activities under the WATSAP, covering the preparation of legal instruments for national hydrology management, were added.

¹³ Ministerial Decree No. 14/M.EKON/12/2001 dated 10 December 2001 of the coordinating minister for the economy.

¹⁴ The new Water Law no.7/2004 is now in the final stages of hearings by the constitutional review court following challenges by Indonesian nongovernment organizations (NGOs).

16. To improve coordination in water resources management, provincial water resources committees were established in all the four core provinces. Similarly, a pilot basin water management committee was formed for water resources management in Jeneberang river basin in South Sulawesi. The operating performance of these provincial and basin committees was mixed. Provincial committees in Bali, Nusa Tenggara Barat, and South Sulawesi are still active, at least partially, and are gradually expanding their activities. The North Sumatra provincial water resources committee and the Jeneberang basin water management committee, on the other hand, are not considered sustainable without further inputs. These various water committees largely had government officials as members. They will be replaced under the new water law by multi-stakeholder water councils.

17. A total of 472 units of hydrometeorological data observation and collection stations were upgraded and 37 new units were built. Eighty data loggers were procured and 59 were installed by the end of the Project for the direct downloading of data in digital form. The installation of the remaining 21 data loggers was delayed partly because of the lack of local budget and experienced staff in the field and the inadequate inventory of spare parts. Some of the installed loggers developed technical problems and needed repair and replacement of parts. Table 1 summarizes the status of the hydrometeorological networks in the target provinces, before (1997) and after the Project.

Table 1: Status of the Provincial Hydrometeorological Network

Facility	Name of Province																Sum	Ave
	North Sumatra		Bali		NTB		South Sulawesi		SE Sulawesi		South Kali'ten		Maluku		Irian Jaya			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
AWLR 1997	52	92	43	100	30	47	53	73	16	63	39	56	21	96	28	57	282	75
2002	51	51	53	5	26	10	44	16	19	42	26	10	18	73	31	40	268	28
Staff 1997	15	80	3	100	0	0	24	46	0	0	15	100	8	100	2	100	67	76
Guage 2002	12	0	2	0	0	0	38	8	0	0	0	0	5	0	0	0	57	5
ARR 1997	28	82	14	86	26	47	22	86	26	88	35	100	13	100	23	57	187	80
2002	28	36	20	0	26	10	17	59	28	46	26	0	13	30	16	5	174	23
Rain 1997	13	46	6	0	0	0	40	56	0	0	2	100	1	100	2	50	64	51
Guage 2002	7	0	6	0	0	0	44	0	0	0	10	0	1	30	7	5	75	1
Climate 1997	13	100	7	86	6	100	18	89	9	100	14	100	8	100	14	93	89	96
Station 2002	13	0	9	0	7	20	18	20	9	25	9	0	8	40	15	25	88	16

AWLR -- automatic water level recorder; ARR - automatic rain recorder

"%" shows the percentage of damaged stations.

^a All functional, although 10 have to be relocated.

18. The Project made possible the timely upgrading of provincial hydrometeorological networks and training of provincial water resources staff in data collection and processing. Responsibility for hydrological data processing was devolved to provincial hydrological units under the provincial water resources services. In Bali, with limited funds, data collection and management is commendable. North Sumatra, on the other hand, has a higher budget and yet has had limited success in forming a unit under the provincial water resources service that can routinely produce hydrological data. The experience in other provinces is satisfactory.

19. The consultants prepared a spatial geographic information system database together with profiles of water demand and availability in selected basins for each core province. A decision support system for water allocation was introduced as a pilot initiative for the Ayung Basin in Central Bali. Provincial and river basin staff were trained to use various software and to perform data measurements, data processing, and map development. Staff movements have kept the databases and decision support systems from being fully maintained in all provinces. Human resources systems, introduced to help make the training more sustainable, were not always successful. The support given by the Project to river basin management units was considered a beneficial first step in their long-term sustainable development.

20. The activities transferred from the Northern Sumatra Irrigated Agriculture Sector Project included the establishment of a Water Resources Data Center at the DGWR headquarters in Jakarta. The data warehouse contains computer hardware and software, including 2 servers and 13 workstations. The Water Resources Data Center is fully functional, with improved staffing and funding. Fiber-optic connections were provided to 25 workstations serving key offices within MPW. Computers and ancillary equipment installed in the five provinces of Northern Sumatra Irrigated Agriculture Sector Project (Aceh, Jambi, North Sumatra, Riau, and West Sumatra) and one district in each province will serve their data-processing needs and will eventually feed into the data center. Internet and intranet access is through the MPW local area network and is prohibitively slow. The Water Resources Data Center was successfully completed in the last two years of the Project. Additional support is planned, to promote free flow of information throughout DGWR, with local governments, and with society at large.

3. Component 3: Strengthening the Capacity of DGWR

21. This component was aimed at strengthening the capacity of DGWR, the national sectoral agency, in (i) policy review and management at the central office, (ii) provision of technical support to regional agencies, (iii) project design and implementation, (iv) human resources management and development, and (v) provision of technical support for private sector participation in the sector.

22. Activities initiated to strengthen policy and management at the central office included (i) establishing a policy analysis and management support team (PAMST); (ii) introducing a results-oriented management system; (iii) training in-house advisers to help improve management practices in the national and regional sectoral agencies; and (iv) designing a public awareness campaign in water resources management. A PAMST was set up by the DGWR in December 1996 under a decision letter, No. 99/KPTS/A/1996, with the director general as the chairman. The PAMST gave guidance to the project management team, and much of the achievements from October 1996 to February 1998 can be attributed to its close monitoring of the project activities. Although the PAMST itself no longer exists, the DGWR regularly forms productive ad-hoc committees and working groups (in-house or multi-stakeholder) to address key technical and managerial issues.

23. Results-oriented management guidelines were issued and discussed in workshops with senior managers, who found the new management concepts difficult to implement in the old DGWR setup. Seventeen in-house advisers were trained, but by the end of the Project only three (one in DGWR and two in provincial water resources services offices) were functioning. Transfers and promotions depleted the pool of in-house advisers. A public awareness campaign was designed and materials were prepared by the University of Indonesia from May to November 2001, and campaigns were carried out in the Ciliwung and Brantas river basins from

December 2001 to March 2002. The campaign drew significant support from various NGOs, educational institutions, and local governments and has succeeded in creating awareness among local communities and government officials of the need to protect and conserve water resources for social and economic benefit.

24. The technical support provided to provincial and district water resources services included staff training and the development of management information systems, including data management procedures and decision support systems for resource allocation and monitoring. A subdirectorates of Hydrology was created within DGWR to provide increased focus on data generation and compilation. Training was conducted to increase the capacity of DGWR central office staff to prepare and appraise water resources projects, particularly their social, financial, and economic aspects. An action plan to upgrade and strengthen the personnel division of DGWR was prepared in 1998. Human resources management systems in the personnel subdivisions of provincial water resources services were reviewed and improvements were recommended. A total of 67 staff members of the national and regional water agencies underwent the two-year water resources specialist program jointly run by the MPW Staff Training Center and the Institute of Technology, Bandung. In 1999/2000, 66 staff were awarded master's degrees, 30 more obtained their master's degrees in May 2002. In 2001, a ministerial decree (No. 405/KPTS/M/2001) upgraded the status of the Staff Training Center in Bandung to a formal administrative unit for an education program leading to a master's degree in water resources, offered in cooperation with the Institute of Technology, Bandung. The training program has remained active with Government funding and continues to produce some 30 graduates a year.

C. Project Costs

25. On completion, the Project cost a total of \$22.95 million, compared with \$46.20 million at appraisal. The ADB loan provided \$18.34 million of foreign exchange and local cost financing, accounting for 80% of the project cost, versus 60% at appraisal. The Rp31.42 billion (\$4.61 million equivalent) of local cost financing provided by the Government made up 20% of project financing, versus 40% at appraisal. There were no major shifts between foreign and local cost during implementation.

26. The total project costs were below the appraisal estimate in US dollar terms partly because of a 317% depreciation in the rupiah between appraisal and project completion. During project implementation, a weakening of the Government's fiscal position as a result of the Asian financial crisis prompted ADB to reduce the required counterpart funding from the Government. Funding was significantly below the appraisal estimate for the following activities: civil works,¹⁵ training, and project administration support. Loan proceeds were canceled four times between July 1998 and October 2000.

27. Of the total project costs, Rp11.614 billion (\$1.377 million equivalent) was used for civil works, Rp22.454 billion (\$4.971 million equivalent) for equipment and materials, Rp22.360 billion (\$6.812) for consulting services, Rp33.868 billion (\$5.607 million) for the management development and water resources specialist education programs and other training, and Rp8.594 million (\$1.010 million) for project administrative support and taxes. Appendix 4 summarizes the project costs, yearly expenditures by component, and yearly expenditures of ADB and the Government by category.

¹⁵ Cancellation of hydrometeorological (Appendix 9)

D. Disbursements

28. A total of \$18.341 million, or 66% of the loan allocation at appraisal, was disbursed from the ADB loan. The final disbursements were made in November 2002. Disbursements were slow during the first 3 years of the Project, because the delayed start of the Project slowed the pace of contract awards. During this period, \$0.097 million was disbursed in year 1, \$2.350 million in year 2, and \$1.935 million in year 3. Disbursements picked up in the fourth to sixth years of implementation, mainly because of timely equipment procurement, consulting services, and training.

29. During the implementation period, the imprest fund facility was used to good effect, with only slight problems in the submission of withdrawal applications to ADB. The audited financial statements for the Project for fiscal years 1997 to 2000, except for FY2001 and FY2002, were submitted on schedule as requested.

E. Project Schedule

30. At appraisal, a 5-year project was agreed upon, with implementation scheduled for completion in June 2000. Appendix 5 compares the planned implementation schedules in the project administration memorandum with the actual project implementation. The original implementation schedule envisaged a slow start-up with the establishment of the central project office and provincial project implementation units and consultant recruitment among the key activities in year 1. As mentioned, progress was very slow during the first 3 years. By 1998 the Project, by the estimates of the midterm review mission, was a year behind schedule. The slow implementation at the start was attributed primarily to (i) lack of consensus in DGWR about the overall goal of the Project, arising from poor understanding of the Project's design; and, particularly, (ii) lack of ownership, commitment, and high-level policy and management support (para. 7).

31. In 1998, progress was reclassified as unsatisfactory to reflect delays in implementing the Project and making it operational. Progress was further hampered in 1998 and early 1999 by the reorganization of the MPW (para. 8). Increased inputs by the ADB midterm mission coincided with a high-level commitment by the executing agency to water resources reform and the Project. By 2000, the Project was progressing satisfactorily, implementation had speeded up, and the Project was expected to achieve most of its major development objectives. The Project was completed on 29 November 2002.

F. Implementation Arrangements

32. Detailed roles and responsibilities were designed during appraisal for the agencies involved in project implementation (Appendix 6) and no major changes were made during implementation. The central project office was established in July 1995, with seven senior members, including a project coordinator. The original members were not appointed full time; it was only in 1998 that a full-time head was put in place. Four project managers were also named to assist the central project office with project administration and budgeting. It was agreed¹⁶ that the PAMST would function as the project steering committee. The PAMST worked closely with the WATSAP implementation committees (para. 11). The secretary general of DGWR played an active role in project coordination.

¹⁶ Outputs from the National Project Coordination Workshop from 13 to 15 May 1996.

33. In-house advisors, considered key to project implementation, were not mobilized until 1997—some 2 years after the appraisal target. DGWR could not assure senior staff members of a career path after the Project or offer enough incentives to attract them to serve as advisors.¹⁷ The appointed (junior) advisors nonetheless gave valuable support in project implementation by providing (i) key communication links across DGWR and to the provinces, and (ii) an effective mechanism for training and information dissemination.

34. BAPPENAS was effective in interagency and NGO coordination in component 1 activities as part of the WATSAP initiative (Appendix 3, Output 1.1). Provincial governments in all project provinces established water resources management committees (Appendix 3, Output 2.1).

G. Conditions and Covenants

35. The Government has complied with most of the loan covenants (Appendix 7). The major compliance difficulties were noted in (i) the timely provision of enough counterpart funds, (ii) the development of a national water resources coordination framework (by the end of the eighteenth month of project implementation), and (iii) the provision of suitably qualified in-house advisers (within 3 months of loan effectivity).

36. Inadequate counterpart funding continued to be an issue throughout the Project, particularly for regional activities, including the operation and maintenance of hydrometeorological stations. Fiscal constraints brought about by the economic crisis were partly responsible. ADB allowed a reduction in Government financing as part of a general adjustment of policy to ease the fiscal burden. But utilization of the limited Government funds could have been maximized with more intensive stakeholder involvement during project design, decentralized funding, and increased training in budgetary mechanisms.

37. The first in-house advisers were mobilized in late 1997; some 2 years after the loan took effect. Although the Government gave its assurances during appraisal (RRP, para. 62), the strategy for compliance appears to have been poorly planned. It is suggested that if a key activity is required during year 1 of a project it should be made a condition of loan effectivity.

38. ADB agreed to do without a project steering committee since the regular meetings of the PAMST would achieve the same results and moreover reduce duplication of committees and meetings.

39. The Government has agreed to assess the post-Project compliance of in-house advisers and similar mechanisms with the requirement to continuously improve water resources management and water quality monitoring by DGWR and regional agencies. The National Water Resources Council has not complied with the requirement to undertake a benefit monitoring evaluation of the Project between 12 and 24 months after its completion. ADB has also not received the audited financial statements and accounts for 2001 and 2002.¹⁸

¹⁷ The fact that such Government “functional” positions are generally viewed as demotions or career-holding positions was not recognized during appraisal.

¹⁸ DGWR agreed during the PCR wrap-up meeting (i) to forward audit reports to ADB without delay; (ii) to prepare within 6 months, a benefit evaluation of the Project, in consultation with ADB; and (iii) within 3 months, to prepare a discussion paper on the lessons learned from the experience of using in-house advisers in the Project.

H. Consultant Recruitment and Procurement

40. Consulting firms (in seven procurement packages) and an individual consultant put in a total of 379 person-months of international and 1,318 person-months of domestic consultants' services (Appendix 8). These totals exceeded the appraisal estimate of 176 person-months of international and 647 person-months of domestic consultants' services because of (i) errors in calculating consulting person-months during appraisal, (ii) inefficient use of consulting services in the first few years of the Project, (iii) extension of the Project period by 2 years, (iv) need for additional inputs in formulating a more comprehensive water policy and a higher-level national coordination framework, and (v) the addition of public awareness campaign and water resources data management outputs to the Project during the midterm review. Consultants were recruited according to ADB's *Guidelines on the Use of Consultants*.

41. Civil works were procured through local competitive bidding (Appendix 9). Equipment and vehicles were procured centrally through a mix of international shopping, local and international competitive bidding, and direct purchase (Appendix 10). Equipment was not delivered until 1998, year 3 of the Project. Delays were experienced because of the lack of familiarity of central project office with ADB procedures for procurement and budget planning, and, from 1997, wide fluctuations in dollar exchange rates. In some cases, inappropriate hydrometeorological equipment was selected; costly errors like these could have been avoided if end users had been consulted. All procurement was carried out according to ADB's *Guidelines on Procurement*.

I. Performance of Consultants, Contractors, and Suppliers

42. All consultants made significant contributions to the Project. Particularly good results were achieved through consulting packages 5 and 7. Provincial training consultants, however, were often retired government staff who were not always familiar with modern on-the-job training techniques. In light of the significant budget allocated to consultants, those hired should be expected to give value for money and should not merely substitute for local capacity. The consultants' performance should have been monitored to ensure this, but no detailed monitoring of performance was done. However, the areas of service provision were generally appropriate for outsourcing although having more counterpart agency staff working alongside the consultants to gain from their experience would have improved Project efficacy.

43. Significant delays and inefficiencies were caused by the lack of understanding of the project design by the key package 1 consultants and their inability to field appropriate staff early in the Project. Routine quarterly reporting was of very poor quality at the start and did not convey adequately the status of activities or key issues to DGWR or ADB. The team leader was changed three times between 1996 and 1999, the first replacement taking place 8 months into the Project at the request of ADB. The performance of the Package 1 consultants improved significantly in the final years of project implementation mainly because of the use of more suitable personnel.

J. Performance of the Borrower and the Executing Agency

44. The performance of the Borrower and the executing agency was satisfactory. The central project office was established on time and was staffed in general by capable personnel throughout the project implementation. But the central project office staff was not complete until December 1996, when the first full-time head was appointed. The slow start was partly due to the lack of high-level commitment from senior DGWR managers and poor understanding and

differences of opinion in capacity building (para. 7). Also, since the project design required the rapid deployment of senior in-house advisers, DGWR's difficulties in mobilizing in-house advisers significantly affected project execution. Alternative mechanisms might have been more appropriate. Adjustments were made in project management support to the central project office in June 1999 with the appointment of an intermittent consultant adviser.

45. The two MPW reorganizations during project implementation added to the national workload of the central project office and significantly hampered project progress. The Project succeeded in significantly strengthening national and provincial capacity to deal with water resources policy and legal issues. Project activities had less impact than expected on water resources management in the provinces but can be considered satisfactory in light of the external factors (para. 8) at the national level during implementation.

K. Performance of the Asian Development Bank

46. The performance of ADB was satisfactory. The summary of missions in the basic data shows that ADB fielded missions twice a year during the early troubled part of the Project and visited three core provinces. On nine missions (183 days) ADB used five different mission leaders, all of them with extensive experience in the Indonesian water resources sector. ADB did not have in-house capacity-building specialists but recruited specialist consultants as required. Mission reviews fulfilled the proposed requirement for annual tripartite performance reviews.

47. ADB devised a very detailed project output monitoring system, which provided detailed lists of issues and time-bound action plans for DGWR. The ADB gave extensive and detailed advice to both DGWR and the consultants in the lead-up to the midterm review.

III. EVALUATION OF PERFORMANCE

A. Relevance

48. The Project was rated relevant. The capacity of national and provincial agencies to manage the increasingly scarce resources of the country is becoming ever more important as Indonesia struggles to achieve sustainable development within a fragile environment. The Project was consistent with the Government's development objectives and ADB's country strategy of building capacity in the natural resources sector. It was designed to provide a reasonably comprehensive set of interlinked activities to achieve its purpose. Implementation took capacity weaknesses into account, and the design was flexible enough to allow successfully adjustments when required.

B. Efficacy in Achievement of Purpose

49. The Project was efficacious. Most of the outputs identified during appraisal or added during the midterm review were achieved. Significant achievements were accomplished in the development of regulations, including the drafting of a new water law and more than 15 detailed presidential or ministerial follow-on regulations with appropriate multi-stakeholder consultation. More than 20 provincial regulations governing the establishment of new government organizations or water resources committees were issued. The significance of these Project supported activities is recognized as improving water resources management capacity and the increasing capacity to prepare such legislation.

50. Consultants provided on-the-job and traditional classroom training, as well as significant outputs in studies, guidelines, and human resources and information systems. While direct outcomes and impact are difficult to measure—and here the lack of effective monitoring systems and project benchmarking are a constraint—the capacity-building activities clearly strengthened key water resources management processes in Indonesia,¹⁹ whether directly or indirectly.

51. Provincial hydrometeorological facilities (buildings and equipment) were provided in the four core provinces under the Project, together with extensive training in hydrological data processing. Sizable annual data books, including new monitoring data on water quality, continue to be produced in three of the four provinces. These data are used by Government agencies and are made available to technical schools, the public, and consultants. Water resources information systems provided for selected river basins, although not fully operational, are a start for river basin management in the provinces.

52. Extensive training activities left behind an in-house training capacity to meet future training needs. With funding from the Project, more than 260 graduates successfully completed the two-year master's degree program for water resources specialists at the MPW training center. The program, now directly funded by the Government, produces about 30 graduates a year among Government employees nationwide, adding valuable expertise to provincial water resources services throughout Indonesia.

53. Public awareness and the participation of NGOs have increased significantly in the water resources sector since project appraisal.²⁰ The experience of Government officials and the availability of tools for disseminating water resources information and engaging stakeholder commitment have increased as a result of project activities.

C. Efficiency in Achievement of Outputs and Purpose

54. Overall, however, the Project was rated less efficient. Start-up was slow and the Project by midterm was estimated to be some 2 years behind schedule. Considerable effort by DGWR and ADB to accelerate project activities ran up against political events that led to the reorganization of MPW and the effective loss of the original executing agency. Between 1999 and 2002, political stability and the continued strong commitment of the Government to water resources reform provided a conducive environment for project execution.

55. No financial and economic or other cost-effectiveness measures were used to gauge the efficiency of project investments. Training was done at the Government's standard unit rates²¹, which were considered cost-effective.²² The Project took longer to complete than anticipated at appraisal, but with minimal effect on project purpose because of the nature of the activities. Flexibility of project management allowed other capacity-building programs (public awareness campaign and water resources data centers) to be added midterm; these had high DGWR commitment and were very beneficial.

¹⁹ Such outputs as increased stakeholder commitment and capacity to prepare complex regulations, and availability of annual data books.

²⁰ Since decentralization, DGWR has responded proactively to the demands of civil society with an increased budget allocation for public awareness campaigns, information dissemination, and participatory development.

²¹ To optimize budget utilization, BAPPENAS issued guidance on acceptable unit rates to be adopted for training activities.

²² No value-for-money analysis or comparison of outcome and costs is available.

D. Preliminary Assessment of Sustainability

56. Project outcomes, particularly relating to policy reform, provincial strengthening, and stakeholder participation, are likely to be sustainable. Capacity building is a continuous process, and continued support for strengthening activities boosts the sustainability of earlier initiatives. Immediate and long-term benefits will result from these key project outcomes (i) an operational national water resources council; (ii) stronger capacity to draft multisectoral regulations and guidelines, using inclusive participatory approaches; (iii) increased multi-stakeholder participation in water resources management; (iv) decentralization of water resources management; (v) the water resources specialists program, which is providing the Government with a steady supply of qualified staff for the sector; (vi) growing cadre of water resources management trainers; and (vii) installed and operational hydrometeorological stations.

57. The National Water Resources Policy (para. 12) and Water Law No. 7/2004 provide a comprehensive set of national policies for sustainable water resources management. Supporting legislation, developed under the Project (para. 14), provides for a more inclusive, holistic approach to water resources management within a decentralized, regulated framework with multi-stakeholder participation. The increasing allocation of funds to water resources planning and management in Indonesia illustrates the growing importance the Government is giving to the sector. The Project has increased stakeholder awareness of the importance of the sector and the skills of water resources managers. This improved capacity will lead to increased dialogue, more effective management and sustainability of resources.

E. Environmental, Sociocultural, and Other Impacts

58. Impacts were significant. Improving the water resources management capacity of national and local Government institutions supports the Government's strategic commitment to sustainable environmental growth and the Millennium Development Goals. Project activities with stakeholder participation have increased equal gender opportunities, good governance, and community awareness, and improved the environment and the lives of the poor.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

59. The Project is rated successful. While implementation was slow, especially at the start, and considered unsatisfactory at the midterm review, it later speeded up and significant high-profile outputs relating to national water resources coordination and policy development were achieved by project end. These project outputs have far-reaching impact and show clear signs of increased stakeholder participation and water resources management decentralization.

60. Although a number of project outputs did not become fully operational, the Project achieved a significant number of outcomes as conceived during appraisal. The project activities improved processes and set in motion the long-term strengthening of national and provincial institutions engaged in water resources management. The Project cost less than expected largely because of exchange rate variations and cost savings in some activities. Project implementation arrangements were appropriate and adequately flexible to allow adjustment during implementation to optimize impact. However, government ownership at the start was low and the quality of consulting services and institutional support received was less than conceived. Project design might have been improved with more stakeholder involvement.

Training activities met appraised targets and their continuation after the Project has increased the likelihood of project sustainability.

B. Lessons Learned

61. The Project was intended to be the first of a series that would address the concerns of the water resources sector and initiate capacity building (RRP para. 11). There will be other projects, and they will benefit from the following prioritized list of lessons learned from this one:

- (i) Project implementation, particularly coordination, was complex. A more focused, compartmentalized approach to project implementation with specific implementing units (within DGWR) held responsible for delivering simple, measurable outputs/impacts might have helped avoid some delays in early project implementation. In addition, if consultations and the preparation of implementing units had been allocated more time in the project design phase, DGWR might have been more ready.
- (ii) Early Project implementation was delayed due to a number of factors including poor consultant performance. If quality assurance procedures, closely monitoring delivery of outputs from consulting services had been in place, better value for money may have been achieved.²³
- (iii) The Project was designed before top-down decentralization took place. A closer understanding of the characteristics, strengths, and weaknesses of local government would have led to a more tailored approach to activity design and program distribution.
- (iv) The ability of the Project to adjust when challenged by external factors was important in increasing implementation efficiency. Close monitoring and flexibility by the Government and ADB optimized the use of project resources.
- (v) Public awareness campaigns introduced through the Project have proved to be successful, low-cost, large-impact initiatives in water resources management.
- (vi) Project experience confirms a commonly held view that traditional classroom training has limited application; various forms of on-the-job training brought to the trainees, while more time-consuming and expensive, and requiring skilled delivery, is generally more beneficial and of better value.
- (vii) New management systems (e.g., results-oriented management) should be carefully integrated to improve planning and management systems. Often, new techniques are best used to enhance and develop existing practices. Poor translation of “new” ideas can cause suspicion and non-acceptance during Project implementation.

C. Recommendations

1. Project-Related

62. Project-related recommendations include:

- (i) DGWR should ensure that the voluminous training materials, guidelines, manuals, and reports produced under the Project are translated, archived, and distributed widely.²⁴ Target completion: 2006.
- (ii) The proposed reorganization of DGWR in June 2005 is thought to conform closely to organizational recommendations proposed during the Project. The DGWR and BAPPENAS should review earlier project work and determine, in light of the new

²³ The DGWR has new (post-Project) guidelines for monitoring and assessing the performance of consultants.

²⁴ Web mounting via the water resources data center would be appropriate.

- organizational changes, the requirements for further development of human resources management (output 3.4) including manpower planning, performance appraisal, promotion, and incentives management. Target completion: 2005.
- (iii) The operation and maintenance of the hydrometeorological network should be an expenditure priority ahead of ambitious expansion plans. DGWR should monitor annually (a) budget allocations for hydrometeorological network operation, and (b) the performance of their hydrometeorological systems.
 - (iv) Central Government funding for the master's degree program in water resources should continue, in accordance with assessed needs.
 - (v) ADB and DGWR should jointly review the water resources data center activities included in the recently signed Participatory Irrigation Sector Project Loan²⁵ and, if appropriate, adjust activities to take into account recent lessons learned in the Project and the current requirements for data bases and decision support systems in water resources management. Target completion: 2006.
 - (vi) DGWR should provide increased training and support for hydrological data collection, data processing, and management information system to provincial and district water resources services. DGWR should also monitor the production and quality of hydrology yearbooks.
 - (vii) ADB may field a project performance audit report mission in early 2008.
 - (viii) Additional support through a Water Resources Capacity Building in the Decentralized Environment advisory technical assistance should be considered.

2. General

63. General recommendations from implementation of the Project are:

- (i) The success of capacity building is highly dependent on strong commitment from the target individuals, managers, and institutions. Stakeholder ownership is essential during project design; ADB and the Government should ensure that all future project design allows enough time for adequate stakeholder participation.
- (ii) Capacity-building programs are long-term commitments. ADB and the Government should review the need for follow-up integrated water resources management and capacity-building programs.
- (iii) There is often a lag between project design and the start of implementation. ADB and the Government should effectively use this period to encourage continued stakeholder consultations and to establish and prepare implementing organizations.
- (iv) With the introduction of new concepts and new technology, a high level of provincial activities, and the limited success of the in-house adviser approach, consultants played a very important role in the Project. As part of a holistic approach to capacity building, increased outsourcing of activities and strengthening of local consulting capacity (including NGOs, universities, civil society) should be carefully considered.
- (v) Capacity-building projects often focus on easy-to-monitor activities and outputs (training days, equipment purchases) rather than less tangible outcomes (good-quality hydrological databases, effective river basin management) that reflect increased capacity. There is a need to continue to search for and focus on the real indicators of project outcomes.

²⁵ ADB. 2003. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Indonesia for the Participatory Irrigation Sector Project*. Manila. (Loan Nos. 2064-INO(SF)/2065-INO, for \$130 million, approved on 19 December 2003)

PROJECT FRAMEWORK

Design Summary	Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Goal To strengthen capacity of national and provincial institutions for sustainable, multisectoral, and economic management and use of water resources in river basins</p>	<ul style="list-style-type: none"> • Water resources effectively, efficiently, and equitably allocated across sectors and regions in support of the Sixth Five-Year Development Plan goals and targets • Improved water quality standards and monitoring • Cost recovery allocation and collections meet or approach O&M and management financing needs 	<p>National development monitoring and project implementation reports</p>	
<p>Objective To strengthen (i) operational policymaking, (ii) institutional framework for coordination, (iii) management systems and processes, (iv) technical standards and practices, and (v) human resource systems and skills of water resources management agencies, for both integrated and coordinated water resources planning and allocation based on river basin units, and for improved water quality monitoring and management</p>	<ul style="list-style-type: none"> • Water resources database, allocation systems, and regulatory coordinating bodies established and functional • Water quality standards, monitoring and regulatory procedures established and operational • Design and project management skills, standards, supervision streamlined and improved • Systems for increasing beneficiary participation reviewed and upgraded 	<p>Database and provincial water resources management committee (PWMC) reports</p> <p>Quality standards, regulations, and monitoring reports</p> <p>New standards, project and skills training reports</p> <p>Database, procedures, and cost recovery reports</p> <p>Water users associations evaluations and project reports</p>	<p>Enactments establishing standards, coordinating bodies, etc., provided</p> <p>Supporting personnel and budget provided and sustained</p>
<p>Component 1 and Outputs Strengthening the National Policy and Coordination Framework 1.1 Framework for national water resources coordination is established</p>	<ul style="list-style-type: none"> • Concerned agencies agree to establish a national water resources development management (WRDM) coordination team • Concerned agencies agree on the composition, terms of reference, operating procedures, and establishment of the secretariat and working group(s) of the national WRDM coordination team • Government issues regulation establishing 		

Design Summary	Targets	Monitoring Mechanisms	Assumptions and Risks
	national WRDM coordination team and its secretariat and working group(s) <ul style="list-style-type: none"> • WRDM coordination procedures established • WRDM coordination system made operational • Capacity-building needs in WRDM policy identified 		
<p>1.2 Water sector management guidelines are established</p> <p>Component 2 and Outputs: Strengthening Capacity of Regional Institutions for Integrated Water Resources Development and Management</p> <p>2.1 Water resources planning and management strengthened in selected provinces</p>	<ul style="list-style-type: none"> • National WRDM database and management system established in DGWR and MPW to monitor and manage demand and supply in river basin and in sectors • Review of WRDM operating policies and strategies and applicable regulations begun, to improve demand and supply management • National WRDM policies and strategies revised • Regulations implementing applicable policies issued <ul style="list-style-type: none"> • PWMC established and operationalized (based on MPW Decree No. 67/93) • Basin water resources management committee (BWMC) established in selected basins and operationalized • WRDM database and management system developed and established in the provinces • WRDM database and management system developed for river basins and established in selected river basins • Hydrometeorological networks upgraded, facilities and equipment procured and hydrology 	<p>National WRDM database report and operation manual</p> <p>WRDM operating policies and strategies report</p> <p>WRDM regulations</p> <p>Manual for WRDM provincial coordination (for PWMC/ BWMC), meeting minutes</p> <p>WRDM database project reports, operating manual</p> <p>Hydrometeorological Project reports, operation manual, training reports</p> <p>Water allocation operation manual, water allocation and water accounting reports</p> <p>Training program, training reports</p>	<p>Availability of data from participating agencies</p> <p>High-level management support and mid-level commitment</p> <p>Provincial government, budgetary and personnel support extended to establishment of coordination systems, database and in implementing coordinating and technical units</p> <p>Necessary policy and technical guidelines/support provided by DGWR</p> <p>Qualified personnel available for training and DGWR training support provided</p>

Design Summary	Targets	Monitoring Mechanisms	Assumptions and Risks
2.2 Water quality management strengthened in selected provinces	<ul style="list-style-type: none"> unit staff trained • Water allocation system and procedures developed and operationalized in selected river basins on pilot basis • Water accounting system for use in cost recovery developed and established • Staff skill upgraded in concerned agencies • Water quality standards disseminated by DGWR to concerned provincial agencies • Water quality database and monitoring system developed and operationalized in each province as part of WRDM database • Water quality monitoring system developed and operationalized in pilot river basins • Water quality coordination with other agencies through PWMC and BWMC • Staff skills in concerned agencies improved 	<p>Water quality monitoring operational guidelines, project/program reports</p> <p>Water quality database operation manual, project reports</p> <p>Water quality coordination procedure document</p> <p>Training program, training reports</p>	<p>Water quality standards issued and adapted to local conditions in a timely manner</p> <p>Budget and personnel support provided by local government</p> <p>PWMCs established and functional</p> <p>Personnel available for training and committed to new functions</p>
<p>Component 3 and Outputs: Strengthening Capacities of DGWR</p> <p>3.1 Policy analysis and management systems strengthened in DGWR</p> <p>3.2 Processes for technical support to provincial agencies</p>	<ul style="list-style-type: none"> • PAMST set up to act as the Steering Committee for the project • Results oriented management (ROM) systems established and operationalized • Fifteen in-house advisers selected, trained and placed in DGWR and provincial water resources agencies to support institutionalization of ROM systems and to assist in capacity building activities • Public awareness campaign (PAC) in WRDM planned, designed, and implemented on a pilot basis in selected basins • Processes and procedures for dissemination of WRDM 	<p>DGWR regulation to establish PAMST</p> <p>PAMST functioning, minutes of meeting</p> <p>ROM reports, operational guidelines</p> <p>DGWR appointment of in-house advisers, adviser training reports, project reports, progress/status reports of advisers, handover report</p> <p>PAC planning and design report, campaign implementation report</p> <p>Policy dissemination operational guidelines report</p>	<p>National WRDM policy formulation and implementation mechanisms clearly defined</p> <p>High-level management support and mid-level interest and commitment</p> <p>High-level management support and functional positions established</p> <p>High-level institutional support and mid-level interest and commitment</p>

Design Summary	Targets	Monitoring Mechanisms	Assumptions and Risks
<p>strengthened</p> <p>3.3 Project design and implementation capacities of DGWR strengthened</p>	<p>policies to provincial agencies streamlined and policy dissemination undertaken with implementation guidelines</p> <ul style="list-style-type: none"> • MIS upgraded between DGWR Directorates and provincial agencies in WRDM • Program implementation strategies upgraded and disseminated by DGWR to provinces in WRDM activities • Extend ROM Systems to provincial water resources agencies • Staff skills of the DGWR and Directorates strengthened • Current procedures for project appraisal in DGWR reviewed and upgraded • In-house training capacities for project appraisal specifically in environmental assessments, social analysis, economic analysis, and project benefit monitoring and evaluation established • Procedures for involving beneficiaries established • Strengthen training capacities for above 	<p>MIS upgrade report and operating manual</p> <p>WRDM Program implementation operational guidelines</p> <p>ROM operational guidelines, training reports, project report</p> <p>Training program and training reports for strengthening staff skills in DGWR</p> <p>Project appraisal guidelines, Implementation Techniques</p> <p>Beneficiaries involvement procedures report</p> <p>Training Capacity report</p>	<p>Reorganization of DGWR proceeds as planned</p> <p>Implementation strategies developed and confirmed</p> <p>Relevant expertise is available or upgraded by project</p> <p>Qualified staff available and committed to training</p> <p>Top Management support</p> <p>Cooperation of MPW training is obtained</p>
<p>3.4 Human resources management strengthened</p>	<ul style="list-style-type: none"> • Human resources management (HRM) systems upgraded (to support DGWR's mandate) in areas such as: staff planning, recruitment, placement, job rotation, transfers and promotion • Career path development and manager succession program established for DGWR and provincial water resources services • Review/revise career path development and manager succession program after the first cycle • Staff skills of the Personnel Division of 	<p>HRM system reports, HRM system operational guidelines</p> <p>Career path development report, Manager succession program report, operational guidelines</p> <p>monitoring report</p> <p>HRM system training program, training reports</p>	<p>High level policy commitment to establishing and implementing rational HR policies</p> <p>High-level commitment and availability of interested and qualified staff</p> <p>Qualified staff available and committed to training</p>

Design Summary	Targets	Monitoring Mechanisms	Assumptions and Risks
3.5 Human resources development strengthened	DGWR and Personnel Subdivisions of provincial water resources services upgraded <ul style="list-style-type: none"> • A more operations-responsive system established and operationalized for identification and analysis of training needs of both DGWR and PWRS agencies • Water Resources Specialist Education Program strengthened • Training capacity in water resources development strengthened at central and provincial levels • In-house manager development program established in MPW in coordination with the Training Institute of MPW (LAN) 	Operational guidelines, project reports Operational guidelines, project reports Performance Improvement Plan, project reports, handover report Capacity building needs report, training reports, project reports Operational guidelines, project reports	High-level commitment to establishing rational HRM policies Agreement reached on common elements to be shared by MPW and Ministry of Home Affairs Qualified MPW/DGWR training staff available and committed to support role in training design Qualified MPW/DGWR training staff available and committed to support role in training design
3.6 Technical support for the private sector strengthened	<ul style="list-style-type: none"> • Areas of private sector participation in the water resources sector reviewed and defined • Information systems on private sector investment opportunities in water resources sector strengthened • Consultation mechanism between government agencies and private sector organization reviewed and strengthened • Procedures and systems to improve private sector participation in water resources sector with a plan of action developed • Training system and methods for private sector organization reviewed and strengthened 	Private sector participation report Information System Guidelines, project report Operational guidelines for consultation and participation of private sector Training system report	MPW and LAN agreement on structure, content and management of program Private sector organizations agree on nature of expanded role and consultative mechanisms Private sector financial support and personnel participation provided

BWMC - basin water resources management committee; DGWR – Directorate General of Water Resources; HRM – human resources management; LAN – Public Sector Administration Training Institute; MIS – management information system; MPW – Ministry of Public Works; O&M - operation and maintenance; PAC – public awareness campaign; PAMST - Policy Analysis and Management Systems Team; PWMC – Provincial Water Resources Management Committee; PWRS - Provincial Water Resources Services; ROM – results-oriented management; WRDM – water resources development and management.

PROJECT ACTIVITIES

PAM ACTIVITY LIST	REVISED ACTIVITY LIST
Component 1 – Strengthening National Policy and Coordination Framework	
<p>1.1 National water resources institutional framework</p> <p>1.1.1 Obtain agreement on national coordinating water resources framework</p> <p>1.1.2. Complete coordinating framework procedures</p> <p>1.1.3. Establish and operationalize coordination procedures</p> <p>1.1.4 Identify capacity-building needs across sectors at national level</p> <p>1.2 National operational management guidelines</p> <p>1.2.1. Establish national database system to monitor demand and supply</p> <p>1.2.2. Initiate review of water resources operating policies and regulations</p> <p>1.2.3. Establish national water resources management guidelines for all agencies</p>	<p>1.1 National water resources institutional framework</p> <p>1.1.1 Obtain concurrence on national WRDM coordination</p> <p>1.1.2 Operationalize national WRDM coordination</p> <p>1.1.3. Identify WRDM capacity-building needs at national level</p> <p>1.2 National operational management guidelines</p> <p>1.2.1. Establish national database system for WRDM</p> <p>1.2.2. Initiative review of WRDM operating policies and regulations</p> <p>1.2.3. Establish national WRDM coordination roles for agencies</p>
Component 2 – Strengthening Capacity of Provincial Institutions	
<p>2.1. Water resources planning and management</p> <p>2.1.1. Establish and operationalize water management committees at province and river basin levels</p> <p>2.1.2. Upgrade hydrometeorological networks and train hydrology unit.</p> <p>2.1.3. Establish water resources database by river basin</p> <p>2.1.4. Establish and operationalize water allocation and accounting systems in provinces</p> <p>2.1.5. Upgrade staff skills in concerned agencies</p> <p>2.2. Water quality management</p> <p>2.2.1. Upgrade and strengthen preventive river maintenance system</p> <p>2.2.2. Disseminate water quality standards to concerned provincial agencies</p> <p>2.2.3. Operationalize water quality database and monitoring system in provinces</p> <p>2.2.4. Establish water quality coordination with all stakeholders through PWWCs</p> <p>2.2.5. Upgrade staff skills in agencies concerned</p>	<p>2.1. Water resources planning and management</p> <p>2.1.1. Establish and operationalize water management committees at province and river basin levels</p> <p>2.1.2. Upgrade hydrometeorological networks and train hydrology unit</p> <p>2.1.3. Establish WRDM database</p> <p>2.1.4. Establish water allocation and water accounting system</p> <p>2.1.5. Implement water allocation operation in pilot basin</p> <p>2.2. Water quality management</p> <p>2.2.1. Disseminate water quality standards to provincial agencies</p> <p>2.2.2. Operationalize water quality monitoring and database in provinces</p> <p>2.2.3. Strengthen water quality monitoring and database in provinces</p> <p>2.2.4. Upgrade staff skills in PWRS agencies</p>
Component 3 – Strengthening Capabilities of DGWR	
<p>3.1. Policy and management system in central DGWR</p> <p>3.1.1. Set up PAMST</p> <p>3.1.2. Establish and operationalize results-oriented management system in DGWR</p> <p>3.1.3. Select, train and place 20 in-house advisers in DGWR</p> <p>3.2. Technical support to provincial agencies</p> <p>3.2.1. Disseminate new water resources management and water quality policies to provincial water resources agencies</p> <p>3.2.2. Upgrade management information system between new directorates of DGWR and provincial agencies</p> <p>3.2.3. Upgrade implementation strategies and disseminate to provincial agencies</p>	<p>3.1. Policy and management system in central DGWR</p> <p>3.1.1. Set up PAMST</p> <p>3.1.2. Establish and operationalize results-oriented management system in DGWR and provinces</p> <p>3.1.3. Select, train and place 20 in-house advisers</p> <p>3.1.4. Design and initiate PAC</p> <p>3.2. Technical support to PWRS agencies</p> <p>3.2.1. Disseminate WRDM in DGWR</p> <p>3.2.2. Upgrade management information system</p> <p>3.2.3. Upgrade implementation strategies of DGWR and disseminate to provincial</p>

PAM ACTIVITY LIST	REVISED ACTIVITY LIST
<p>3.2.4. Extend ROM systems to provincial agencies</p> <p>3.2.5. Upgrade DGWR staff skills</p> <p>3.3. Project design and implementation capacities strengthened</p> <p>3.3.1. Establish in-house training capacity for economic, social, environmental analyses and benefit monitoring and evaluation</p> <p>3.3.2. Review and strengthen systems for contractor supervision and management</p> <p>3.3.3. Review and strengthen process for involving beneficiaries</p> <p>3.4. Human resources management</p> <p>3.4.1. Upgrade human resources management system</p> <p>3.4.2. Establish functional positions in coordination with State Ministry of Administrative Reforms</p> <p>3.4.3. Upgrade staff skills of the personnel divisions of DGWR and provinces</p> <p>3.5. Human resources development</p> <p>3.5.1. Establish career path development and manager succession program</p> <p>3.5.2. Establish and operationalize more operations-responsive system for training and needs assessment</p> <p>3.5.3. Strengthen "Bipowered water resources Specialist Education Program"</p> <p>3.5.4. Strengthen training capacity in WRDM at central and provincial levels</p> <p>3.5.5. Establish in-house management program in MPW</p> <p>3.6. Technical support for the private sector</p> <p>3.6.1. Strengthen water resources sector information system for the private sector</p> <p>3.6.2. Develop and adopt mechanisms for more active private sector involvement</p> <p>3.6.3. Review and strengthen systems and methods for training private sector and WUAs.</p>	<p>agencies</p> <p>3.2.4. Extend ROM systems to PWRS agencies</p> <p>3.2.5. Upgrade staff skills.</p> <p>3.3. DGWR capacity for project design and implementation strengthened</p> <p>3.3.1. Establish in-house training capacity for project appraisal</p> <p>3.3.2. Strengthen process for involving beneficiaries</p> <p>3.4. Human resources management</p> <p>3.4.1. Upgrade human resources management system</p> <p>3.4.2. Establish career path development and manager succession program</p> <p>3.4.3. Upgrade staff skills of the personnel units of DGWR and PWRS</p> <p>3.5. Human resources development</p> <p>3.5.1. Develop and implement an operational and responsive training needs assessment system</p> <p>3.5.2. Strengthen central and PWRS training capacity in WRDM</p> <p>3.6. Technical support for the private sector</p> <p>3.6.1. Strengthen water resources sector information system for the private sector</p> <p>3.6.2. Establish consultation mechanisms for active private sector participation in water resources sector</p> <p>3.6.3. Strengthen training system and program for private sector</p> <p>3.7. Establish management development program in MPW</p> <p>3.8. Strengthen "Bipowered water resources Specialist Education Program"</p>

DGWR – Directorate General of Water Resources; MPW – Ministry of Public Works; PAC - public awareness campaign; PAMST – policy analysis and management support system; PWMC – provincial water resources management committee; PWRS - provincial water resources service; ROM – results-oriented management; WQ – water quality; WRDM – water resources development and management.

Source: Asian Development Bank Midterm Review Aide Memoire, February 1998.

PROJECT OUTPUTS

Component 1: Strengthening of National Policy and Coordination Framework	
Output 1.1: National Water Resources Institutional Framework	
Planned Outputs	Actual Outputs
<p>1.1.1. Agreement on operating procedures for national water resources coordination framework</p> <p>1.1.2. National water resources coordination framework operationalized</p> <p>1.1.3. Capacity building needs identified</p> <p>Additional WATSAL Activities</p> <p>1.1.4. Water resources reform policy prepared</p> <p>1.1.5. Draft of presidential decree regarding the National Water Resources Council prepared</p> <p>1.1.6. Revision of draft law on water resources development prepared</p>	<p>1.1.1. Agreement on operating procedures reached with previous DGWR organization; this initial agreement has led to the preparation of guidelines on framework (see 1.1.2)</p> <p>1.1.2. Guideline "Strengthening National Policy and Coordination Framework" prepared by package 1 consultants to the Project CBP-1 in 1998, but procedures not operationalized. Academic paper for the National Apex Body for Water Resources also prepared by CBP-1, and the guidelines and academic paper were used to prepare the draft presidential decree (see 1.1.5)</p> <p>1.1.3. A training needs assessment was completed in December 1997 and a more detailed assessment was carried out in mid-1998</p> <p>1.1.4. CBP-1 assisted working group in drafting National Policy for Water Resources Management and academic paper for draft presidential decree for National Policy for Water Resources. The draft of the presidential decree was sent to the deputy of the cabinet secretary on law and regulations on 4 May 2001, and was issued as Ministerial Decree No. KEP-14/M.EKON/ 12/2001 by the coordinating minister for the economy on 10 December 2001, Guideline on National Policy for Water Resources</p> <p>1.1.5. CBP-1 assisted DGWR in drafting presidential decree for Establishment of National Apex Body for Water Resources. The draft of the presidential decree was sent to the deputy of the cabinet secretary on law and regulations on 4 May 2001, and was issued as Presidential Decree No 123/2001 on 5 December 2001, concerning the national coordination team for water resources management. This was followed by Ministerial Decree No. KEP-15/M.EKON/ 12/2001 from the coordinating minister for the economy on 10 December 2001, concerning the setting up of a secretariat for the national coordination team for water resources management</p> <p>1.1.6. CBP-1 assisted working group in preparing a technical paper and a draft law for water resources and several draft regulations. The draft law was originally sent to the head of commission IV of the People's Consultative Assembly on 23 February 2001, but was revised under the new minister MPW with assistance from CBP-1, and was resubmitted to the president on 17 May 2002. A new water law No. 7 2004 was passed in January 2004</p>
Output 1.2 : National Operational Management Guidelines	
Planned Outputs	Actual Outputs
<p>1.2.1. National database system established to monitor water supply and demand</p>	<p>1.2.1. Guidelines prepared on how to establish a monitoring system for water supply and demand, used in the preparation of the technical paper on management information system (see 1.2.4. below)</p>

Planned Outputs	Actual Outputs
<p>1.2.2. Studies initiated to review water resources policies and regulations</p> <p>1.2.3. Studies initiated to review water resources policies and regulations</p> <p>1.2.4. National water resources management guidelines established</p>	<p>1.2.2. Guidelines prepared on how to establish a monitoring system for water supply and demand, used in the preparation of the technical paper on MIS (see 1.2.4.)</p> <p>1.2.3. Guidelines prepared on how to establish a monitoring system for water supply and demand, used in the preparation of the technical paper on MIS (see 1.2.4.)</p> <p>1.2.4. Studies on water resources policy and regulations were prepared in 1997 and were approved by DGWR. These studies have led to drafts of new policy and regulations (see 1.1.)</p>
<p>Additional WATSAL Activities</p> <p>1.2.5. Technical paper on MIS for National Water Resources prepared</p> <p>1.2.6. General design of national information system prepared</p> <p>1.2.7. Local area network system installed</p> <p>1.2.8. Staff trained to operate local area network system</p>	<p>1.2.5. Draft national water management guidelines including operating policies and strategies were compiled and approved by DGWR in 1997</p> <p>1.2.6. Technical paper on MIS completed and used in the design of the central and provincial MIS system (see 1.2.5.)</p> <p>1.2.7. General design for MIS completed and used in the detailed design and implementation of the central MIS data warehouse implemented by package-7 consultants (see 2.1.6. and 2.1.7.)</p> <p>1.2.8. Local area network system designed for previous DGWR organization but the system was not procured through the CBP-1. Local area network improvements were then designed and installed through package-7 consultants (see 2.1.8.)</p> <p>1.2.9. Government staff members have just begun to operate the local area network system without guidance from consultants (see 2.1.11.)</p>
Component 2: Strengthening Capacity of Regional Institutions for Integrated Water Resources Development and Management	
Output 2.1. : Water resources planning and management strengthened in selected provinces	
Planned Outputs	Actual Outputs
<p>2.1.1. Water management committees established (on the basis of prior governors' decrees) and operationalized in provinces and river basins as required. Project provinces are : (i) North Sumatra, (ii) South Sulawesi, (iii) Bali, and (iv) West Nusa Tenggara (NTB)</p> <p>2.1.2. Hydrometeorological networks upgraded, facilities and equipment procured, and hydrology unit staff trained in four above provinces as well as in (i) South Kalimantan, (ii) South East Sulawesi, (iii) Irian Jaya, and</p>	<p>2.1.1. PWMCs have been activated in three provinces: NTB, Bali, and South Sulawesi., with operational secretariats established in NTB and South Sulawesi. Basin water management committee established for Jeneberang basin in South Sulawesi, and two meetings held in 1999. Further inputs are considered necessary before the committees are judged to be sustainable. The two stronger PWMCs at NTB and South Sulawesi were keen to strengthen their organizations and more activities were planned; it appears they will continue to be active. The other two PWMCs in North Sumatra and Bali and the pilot BWMC were not considered sustainable unless further inputs are provided. A unit for basin management was established as a forerunner of BWMC in NTB. A temporary unit in Bali was activated in May 2000. Water Operational Center maintained in NTB, not developed into a BWMC. Three BWMC have been set up in South Sulawesi at Jeneberang, Sadang, and Walanae-Cendranae, and six new Balai are being established in North Sumatra in 2002</p> <p>2.1.2. A total of 472 units of hydrometeorological data observation and collection stations have been upgraded and 37 new stations built. A total of 79 data loggers were procured and 45 have been installed for direct downloading of water-level data in digital form.</p>

<p>(iv) Maluku</p> <p>2.1.3. Water resources database established by river basin</p> <p>2.1.4. Water allocation and accounting system established in each province</p> <p>2.1.5. Water allocation operation implemented in pilot basins</p> <p>Additional WATSAP Activities</p> <p>2.1.6. Legal instruments for national hydrology management prepared</p>	<p>Training materials and operating guidelines prepared. Staff trained in the use of MapInfo software and in field data collection for the river basin database down to the field level. Staff members are capable of using simple global positioning system for survey positioning</p> <p>2.1.3. Provincial spatial geographic information system database in MapInfo software developed by consultants in four provinces mentioned in 2.1.1. to support water resources planning activities, including information on level of development and availability of data such as location of station, catchment and basin area, and administrative boundaries. Design standards and operating guidelines provided and understood. This provided a start to establishing river basin databases but sustainability remained a problem because of a lack of routine budgets, and limited capacity of staff.</p> <p>2.1.4. Water demand and availability profiles of selected pilot basins prepared for each province. Water management units ready for establishment of BWMC. Data support systems for water allocation introduced as a pilot initiative in the Ayung Basin in central Bali. Eight staff members trained in the use of the model (April 1999). A training workshop on HydrOper software was organized in Bandung in February/ March 2000 and attended by 11 staff members, one from each province mentioned in 2.1.1., five from Balai PSDA in Java, and two from the central Government. A two-day workshop was attended by basin managers (head of BWMC in Java), representatives of (sub) PWRS in the four provinces where BWMC do not exist, and central Government staff.</p> <p>2.1.5. Training provided in Hymos software operation, Data support systems software operation, hydrometeorological measurements, map development using MapInfo, and database development using Tideda software. Some staff members in three core provinces can now use Tideda for data processing. Staff members have new skills but need to practice them' otherwise these skills will be lost. Only limited operations have taken place to date</p> <p>2.1.6. Technical paper I on present and future framework for hydrology management in DGWR and Puslitbang Air Bandung was published on 14 December 2000. Academic paper II on guidelines for inter-agency cooperation and formation of national hydrology network was published on 18 October 2000. Decree of director general on future hydrology management was issued on 2 August 2000. Implementation plan for WATSAP Hydrology Program was published on 15 January 2001</p>
<p>Improvement of Water Resources Data Management (transfer from ADB Loan No.1579-INO)</p>	
<p>2.1.7. MIS data warehouse designed for five provinces : (i) Aceh, (ii) North Sumatra, (iii) West Sumatra, (iv) Riau, and (v) Jambi</p>	<p>2.1.7. Meetings held in Jakarta, five provinces, and five pilot districts, and user requirements established. Information was collected and inventory made of databases built. Review and evaluation of data management process complete. Data warehouse designed and user needs established.</p>

2.1.8. MIS data warehouse procured and commissioned. WRDC established	2.1.8. Data warehouse (WRDC) procured and installed by CBP-7 consultant in DGWR office under DGWR, with two-server system and nine workstations. Center is operational
2.1.9. Local area network improved and system operational	2.1.9. Local area network system improvements completed and commissioned, including fiber-optic connection, high-speed switches, and 25 workstations. Ministry staff are now operating the local area network system
2.1.10. Website established	2.1.10. Web site designed and operational, connected through WRDC established within MPW domain http://sda.KIMPRASWIL.go.id
2.1.11. Computer equipment installed in five provinces and five pilot districts	2.1.11. Computers and ancillary equipment installed (five in provinces, five in districts)
2.1.12. Staff trained	2.1.12. Training of staff at central, provincial, and pilot district levels completed.
Output 2.2 : Water quality management strengthened in selected provinces	
Planned Outputs	Actual Outputs
2.2.1. Preventive river maintenance system upgraded and strengthened	2.2.1. This activity was deleted from CBP-2 by the Directorate of Water Resources as river maintenance has no direct relationship to water quality
2.2.2. Water quality standards disseminated by DGWR to concerned regional agencies	2.2.2. National water quality standards were disseminated by DGWR to regional agencies through a seminar held in Makasar in December 1998
2.2.3. Water quality database and monitoring system operationalized in each province	2.2.3. Water quality testing equipment was supplied to the four core provinces in 1999 and 2000. This included a mobile water quality laboratory as a fully equipped bus. The database and monitoring system was operationalized. The software used is MS Access and the database includes field sampling documentation, results of in-situ measurements, and laboratory analysis. Water quality monitoring is being carried out regularly by the hydrology units in South Sulawesi (15 points), Bali (60 points), and NTB (30 points). In North Sumatra the system is not considered sustainable yet partly because of insufficient operating budget and low capacity of staff
2.2.4. Water quality monitoring coordination strengthened at provincial level	2.2.4. The regional and provincial environmental agencies in four provinces committed to cooperate with the PWRS in water quality management. Coordination between PWRS and local environmental agency for Luppereng, Jeneberang, and Talo basins was carried out through clean rivers program in South Sulawesi. A coordination meeting was held with the Bone regency government of South Sulawesi province for Luppereng basin. The coordination workshop at provincial level was held to help the provincial water management committee integrate water quality aspects into their operation. Procedures were prepared for improved water quality coordination to institutionalize the water quality subcommittee of the provincial water management committee in South Sulawesi
2.2.5. PWRS staff skills upgraded	2.2.5. Water quality monitoring guidelines were prepared. Staff were trained to carry out the water quality monitoring program in the selected pilot basins after delivery of equipment in August 1999. In South Sulawesi the monitoring program was implemented through on-the-job training. Continuous field training was provided. A water quality seminar was held in South Sulawesi in December 1998 and a coordination workshop was held in April 2000. In-class training was provided in

	<ul style="list-style-type: none"> a. basics of water quality DGWR Research Center management in February 1999 b. water quality data interpretation and reporting by DGWR Research Center in December 2000 c. introduction to water quality management (in South Sulawesi)
Component 3: Strengthening Capacity of DGWR	
Output 3.1: Policy and Management System in Central DGWR	
Planned Outputs	Actual Outputs
3.1.1. PAMST set up	3.1.1. The PAMST team was set up and was active from December 1996 to March 1999 but was inactive thereafter because of the MPW and DGWR reorganization although Secretary, DGWR played an active role in coordination. A decision letter was issued by the director general on 15 April 2002 and the PAMST was re-activated. The first meeting was held at the end of April 2002.
3.1.2. ROM system established	3.1.2. Guidelines and workshops were introduced at central level and managers understood the ROM process but some found it difficult to visualize its implementation within the DGWR framework
3.1.3. Twenty in-house advisers in place	3.1.3. Seventeen in-house advisers at central and provincial levels went through training, including 3 months at Asian Institute of Technology in Bangkok, but many moved on to other positions and were not effective in giving guidance to the Project. The most active in-house advisers were in Jakarta, South Sulawesi, and Bali
3.1.4. Public awareness campaign in water conservation and quality maintenance implemented	3.1.4. Preparation activities started in 1999 by PT Istaka AMS. Public awareness campaign designed and materials prepared by the University of Indonesia from May to November 2001. Their contract was extended to carry out some trials in 2001/2002. Trials were successfully held in the river basins Ciliwung and Brantas. Other provinces have expressed interest in this important new activity
Output 3.2: Technical Support to Provincial and District Agencies	
Planned Outputs	Actual Outputs
3.2.1. New policies in water resources management and water quality disseminated to provincial and district water resources agencies with implementation guidelines	3.2.1. Dissemination of information on management and water quality started and concepts understood, but new drafts of water resources policy, regulations, water quality guidelines, and MIS were prepared toward the end of phase 1 of CBP-1 in 2000/2001. With the introduction of regional autonomy, further dissemination was needed. Dissemination of water resources reform was included in Addendum No. 3 of CBP-1 and this was implemented in 2001/2002
3.2.2. Management information system between the new directorates of DGWR and provincial agencies upgraded in areas such as status of water resources, water allocation by sector	3.2.2. Provincial management information systems starting to be developed but central data warehouse only recently in place and provincial and central systems just installed. Provincial databases have been built by CBP-7 in five provinces; Aceh, North Sumatra, Jambi, West Sumatra, and Riau. Data collection and strengthening in eight provinces was included in Addendum No. 3 of CBP-1 and in provincial training programs and was implemented in 2001/2002
3.2.3. Implementation strategies upgraded and disseminated by DGWR to regional agencies	3.2.3. Central level has disseminated implementation strategies
3.2.4. ROM system extended to provinces and districts	3.2.4. Workshops held in provinces and concepts understood in NTB, North Sumatra, and Bali but in general ROM principles not being applied. In NTB

3.2.5 DGWR and PWRS staff skills upgraded	ROM was used by the hydrology unit in 2000 with good results, but discontinued in 2001 because of changes in management. In South Sulawesi ROM is understood and starting to be applied in some projects 3.2.5. A subdirectorate of hydrology was created in 2000. Skills of staff of the previous DGWR organization were enhanced
Output 3.3: Project Design and Implementation Capacities of DGWR	
Planned Outputs	Actual Outputs
3.3.1. In-house training capacities for project appraisal established	3.3.1. Project appraisal capabilities of previous DGWR staff members were strengthened during the first part of the program using project analysis training materials. Emphasis was given to social, financial, and economic aspects in addition to engineering design
3.3.2. Systems for contractor supervision and management strengthened	3.3.2. No construction supervision as this work element was deleted from CBP-1's scope of work and instead was undertaken through a separate quality assurance project outside of ADB loan
3.3.3. Processes involving beneficiaries strengthened	3.3.3. Beneficiary participation and bottom-up process reported on. Bottom-up process is now widely known, and the process is starting to be implemented. Bottom-up public participation in water resources planning was undertaken through Addendum No.3 of CBP-1 in 2001/2002
Output 3.4. Human Resources Management	
Planned Outputs	Actual Outputs
3.4.1. Human resources management system upgraded	3.4.1. A review and assessment report on the personnel division of DGWR was prepared in early 1998. An action plan to upgrade and strengthen the personnel division was prepared in mid-1998 and included initiatives on human resources information database system, manpower planning, job analysis, recruitment, and performance appraisal. Human resources management systems in the personnel subdivisions of provincial agencies were reviewed and recommendations were made for their improvement
3.4.2. Career path development and manager succession program established in DGWR and provincial agencies	3.4.2. Draft guidelines and proposals for employee career path development and manager succession program were completed in 1997/1998. Proposals accepted by previous personnel division of DGWR and starting to be partly adopted, but not followed up through new organization
3.4.3. Career path development and manager succession program established in DGWR and provincial agencies.	3.4.3. Draft guidelines and proposals for employee career path development and manager succession program were completed in 1997/1998. Proposals accepted by previous personnel division of DGWR and starting to be partly adopted, but not followed up through new organization
3.4.4. Staff skills of personnel division upgraded	3.4.4. Training needs of all directorates of the previous DGWR, including the secretariat of the director general and the personnel division of DGWR, were assessed. A draft training plan was prepared in mid-1998. On-the-job training was given in personnel information system and job analysis, but has not been applied in manpower planning
Output 3.5: Human Resources Management	
Planned Outputs	Actual Outputs
3.5.1. A system more responsive to training needs	3.5.1. Draft operating guidelines for identifying and

<p>established</p> <p>3.5.2. Training capacities strengthened in water resources development at center and PWRS</p>	<p>analyzing training needs were prepared in 1997. Staff members responsible for administering training needs in each directorate were trained. Questionnaires for assessing training needs were used in directorates of DGWR and selected provinces in early 1998. No further work on training needs was carried out after reorganization of water resources services until 2001, when provincial training consultants were appointed. In most provinces the training needs assessment was limited to on-the-job training, which could be carried out in the remaining period of the Project. However, in the province of NTB a more comprehensive training needs assessment was prepared, and this is being used to propose further training from other funding sources after the Project.</p> <p>3.5.2. Reports were prepared in 1997/1998 on</p> <ol style="list-style-type: none"> (1) review and assessment of training objectives of central and Provincial institutions (2) short-range improvement plan of the DGWR personnel division, (3) guidelines on preparation of training budgets <p>Training of staff to improve their capacity in managing human resources was planned but only partially implemented because of reorganization of water resources services</p>
Output 3.6: Technical Support for the Private Sector	
Planned Outputs	Actual Outputs
<p>3.6.1. Information system for the private sector strengthened</p> <p>3.6.2. Consultation mechanisms between government agencies and private sector established</p> <p>3.6.3. Methods for training private sector agencies strengthened</p>	<p>3.6.1. Information system proposed for private sector use but not implemented</p> <p>3.6.2. A consultative mechanism for active stakeholder participation was proposed but not yet implemented. Work on stakeholder participation was included as part of CBP-1's assignment in Addendum No.3 on public consultation and involvement of stakeholders in river basin committees. Stakeholder participation was carried out only under the active PWMC in the provinces of South Sulawesi, Bali, and NTB</p> <p>3.6.3. During ADB's mission of February 1998 it was recognized that many barriers to achieving the objectives of public-private partnerships remained. Training programs for the private sector were deleted from CBP-1's scope of work</p>
Output 3.7: Management Development Program	
Planned Outputs	Actual Outputs
<p>3.7. In-house management development program established</p>	<p>3.7. The responsibility for the in-house management development program was assigned in 1997 to package-3 consultants through the Directorate of Training for Water Resources. The consultant was demobilized in June 2000, and work in 2001 was carried out by force account under the project manager for CBP-3. Outputs to date have included:</p> <p>Output 1: Preparation and testing of training modules</p> <ol style="list-style-type: none"> (1) DGWR task sector definition (2) definition of roles and responsibilities (3) design of training needs assessment (4) draft management development program plan (5) preparation of training modules (6) results of module pilot testing <p>Output 2: Management development planning organizationally and institutionally anchored in MPW</p> <ol style="list-style-type: none"> (1) institutional assessment for MPW training units

	<ul style="list-style-type: none"> (2) institutional needs assessment of management development plan capacity building (3) establishment of Resource Information Center at MPW (4) design of 5-year management development training plan (5) training of trainers in foreign aid administration, project preparation, project control, and cash Management <p>Output 3: Training of In-House Advisers</p> <ul style="list-style-type: none"> (1) preparation of training plan (2) training in basic management by Institute of Management, University of Indonesia, in Nov–Dec 1999 (3) training in English Language, Language Training Institute, Jan–March 2000 (4) overseas training in water resources management at Asian Institute of Technology, Bangkok, March–May 2000
Output 3.8: Water Resources Specialist Education Program	
Planned Outputs	Actual Outputs
3.8.1. Water Resources Specialist Education Program strengthened	<p>3.8.1. Work initially undertaken through CBP-1 included:</p> <ul style="list-style-type: none"> (1) improvements in admission testing to improve student selection (2) procurement of 61 computers (3) identification of laboratory requirements <p>Responsibility for the Specialist Education Program was then placed in package 4 with implementation through the Institute of Technology Bandung. Survey and laboratory equipment was purchased in 1999/2000.</p> <p>A total of 67 students underwent the 2-year Specialist Program in 1999/2000 and 66 were awarded master's degrees in 2001.</p> <p>In 2001 the training center in Bandung was given the status of Balai for masters degree education program, in cooperation with Institute of Technology (No. 405/KPTS/M/2001) as part of the new organization under MPW.</p> <p>Forty-eight students completed the 2000/2001 master's degree program in May 2002. Funding was provided from Loan No.1339-INO (91%) and rupiah counterpart funds (9%).</p> <p>Fifty-seven other students have passed entrance exams and were tentatively selected to take the 2-year master's degree program starting in 2001. This batch of students could not be funded through the ADB loan No. 1339-INO as the 2001–2003 program extends beyond the ADB closing date</p>

BWMC – basin water resources management committee; CBP-1 – Capacity Building Package 1 [consultants engaged under the Project]; DGWR – Directorate General of Water Resources; DSS –data support system; PAMST – policy analysis and management support system; PWMC – provincial water resources management committee; PWRS – provincial water resources service; ROM – results-oriented management; WATSAP – water sector adjustment program; WRDC – water resources data center.

Source: Asian Development Bank Midterm Review Aide Memoire, February 1998.

SUMMARY OF PROJECT COSTS

**Table A4.1: Summary of Project Costs
(\$ '000)**

Category	Appraisal			Actual		
	Foreign	Local	Total	Foreign	Local	Total
I. Investment Costs						
1. Civil Works	1,690	4,681	6,371	352	1,025	1,377
2. Equipment	8,325	176	8,501	4,647	324	4,971
3. Consulting Services	2,866	3,987	6,853	4,169	2,642	6,811
4. Training						
- Management Development Program	1,466	294	1,760	2,214	994	3,208
- Water Resources Specialist Education Program	4,140	772	4,912	1,696	208	1,904
- Other Training	431	3,492	3,923	131	364	495
5. Project Administration Support	0	3,839	3,839	0	599	599
II. Recurrent Costs						
Base Cost	0	3,120	3,120	0	173	173
Taxes and Duties	18,918	20,361	39,279	13,209	6,329	19,538
Interest During Construction	0	3,360	3,360	0	412	412
Total	3,617	0	3,617	3,000	0	3,000
	22,535	23,721	46,256	16,209	6,741	22,950

Sources: Asian Development Bank's Loan Financial Information System data and Government records.

**Table A4.2: Yearly Expenditures by Component
(\$'000)**

Items	1995	1996	1997	1998	1999	2000	2001	2002	Total
Component 1			836	366	525	1,131	956	1,155	4,969
Civil Works			0	0	0	0	39	0	39
Equipment			63	11	135	369	24	91	693
Consulting Services			625	315	350	544	455	565	2,854
Management Development Program			140	0	0	78	365	437	1,020
Other Training			8	0	0	100	33	22	163
Project Admin. Support			0	40	40	40	40	40	200
Component 2			569	483	1,564	1,746	1,347	899	6,609
Civil Works			45	7	119	276	153	151	751
Equipment			255	188	935	597	366	104	2,445
Consulting Services			0	268	492	377	283	264	1,684
Management Development Program			0	0	0	0	0	64	64
Water Resources Special Education Program			254	0	0	387	476	235	1,352
Other Training			0	0	0	62	29	21	113
Project Admin. Support			15	20	18	47	40	60	200
Component 3			1,138	1,138	1,911	1,319	1,228	1,457	7,786
Civil Works			22	35	145	50	180	155	587
Equipment			24	134	726	386	431	131	1,832
Consulting Services			707	304	317	296	279	370	2,273
Management Development Program			0	271	387	464	266	736	2,124
Water Resources Special Education Program			127	207	218	0	0	0	552
Other Training			3	3	92	83	22	16	219
Project Admin. Support			11	23	26	40	50	49	199
Total (Components 1 to 3)			2,299	1,826	4,000	4,196	3,531	3,511	19,365
Recurrent Costs			8	28	42	56	18	21	173
TOTAL BASE COST			2,307	1,854	4,042	4,252	3,549	3,532	19,538
Interest During Construction	24	97	263	439	560	713	893	11	3,000
Taxes and Duties			0	0	0	0	0	0	412
GRAND TOTAL	24	97	2,691	2,293	4,602	4,577	4,830	3,543	22,950

Sources: Asian Development Bank's Loan Financial Information System data and Government records.

**Summary of Expenditures
(\$'000)**

Items	\$	%
Civil Works	1,377	7
Equipment	4,971	26
Consulting Services	6,812	35
Management Development Program	3,207	16
Water Resources Special Education Program	1,904	10
Other Training	495	2
Project Administration Support	599	3
Recurrent Costs	173	1
TOTAL	19,538	100

Sources: Asian Development Bank's Loan Financial Information System data and Government records.

Table A4.3: Yearly Loan Disbursements, FY 1996/1997-2002
(\$ '000)

Category	1995	1996	1997	1998	1999	2000	2001	2002	Total
1. Civil Works	0	0	45	7	119	173	185	175	704
2. Equipment	0	0	342	333	1,797	1,352	821	326	4,971
3. Consulting Services	0	0	1,192	757	581	818	829	926	5,103
4. Training									
- Management Development Program	0	0	0	192	342	464	456	977	2,431
- Water Resources Specialist Education Program	0	0	380	205	215	370	438	215	1,823
- Other Training	0	0	8	2	45	183	44	27	309
5. Project Administration Support	0	0	0	0	0	0	0	0	0
Base Cost	0	0	1,967	1,496	3,099	3,360	2,773	2,646	15,341
6. Interest During Construction	24	97	263	439	560	713	893	11	3,000
7. Unallocated	0	0	0	0	0	0	0	0	0
Total	24	97	2,230	1,935	3,659	4,073	3,666	2,657	18,341

Source: Asian Development Bank's Loan Financial Information System data.

Table A4.4: Government Countepart Funding, FY 1996/1997-2002
(\$ '000)

Category	1995	1996	1997	1998	1999	2000	2001	2002	Total
1. Civil Works	0	0	22	35	145	154	187	130	673
2. Equipment	0	0	0	0	0	0	0	0	0
3. Consulting Services	0	0	140	130	578	399	188	274	1,709
4. Training									
- Management Development Program	0	0	140	79	45	78	175	259	776
- Water Resources Specialist Education Program	0	0	1	2	3	17	38	20	81
- Other Training	0	0	3	1	47	62	40	33	186
5. Project Administration Support	0	0	26	83	84	127	130	149	599
6. Recurrent Costs	0	0	8	28	42	56	18	21	173
7. Taxes and Duties	0	0	0	0	0	0	0	0	412
Total	0	0	340	358	944	893	776	886	4,609

Source: Government estimates.

Activity	1995				1996				1997				1998				1999				2000				2001				2002			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Additional WATSAL NI-4 Activities																																
f. Prepare legal instruments for National Hydrology Management																																
Additional Activities transferred from NSIASP																																
g. Design information system data warehouse (WRDC) for 5 provinces																																
h. Procure and install WRDC equipment																																
i. Improve WRDC system within DGWR																																
j. Establish website for WRDC																																
k. Install MIS computer in 5 provinces and 5 districts																																
l. Training of staff in use of WRDC system																																
2 Water Quality Management Strengthened in Selected Provinces																																
a. Upgrade and strengthen preventive river maintenance system																																
b. Disseminate water quality standard to concerned provincial agencies																																
c. Operationalize water quality database & monitoring systems in provinces																																
d. Establish water quality coordination with stakeholders through provincial water management committees																																
e. Upgrade staff skills in agencies concerned																																
Component 3. Strengthening Capabilities of DGWRD																																
1 Policy and Management Systems in Central DGWR																																
a. Set up Policy Analysis and Management Systems Team																																
b. Establish & operationalize result-oriented management system in DGWR																																
c. Select, train and place 20 In-house Staff Adviser in DGWR																																
d. Design and implement Public Awareness Campaign																																
2 Technical Support to Provincial and District Agencies																																
a. Disseminate new water resources management and water quality policies to provincial and district water resources agencies																																
b. Upgrade information systems between new directorate of DGWR and provincial agencies																																
c. Upgrade implementation strategies & disseminate to provincial agencies																																
d. Extend ROM to provincial and district agencies																																
e. Upgrade staff skills of DGWRD directorates for technical support to provinces.																																
3 Project Design and Implementation Capabilities																																
a. In-house training capacities established for project appraisal																																
b. Systems for contractor supervision reviewed and strengthened																																
c. Processes for involving beneficiaries strengthened																																

Activity	1995				1996				1997				1998				1999				2000				2001				2002			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
4 Human Resources Management																																
a. Upgrade human resources management system																																
b. Establish career path development and manager succession program																																
c. Upgrade staff skills of the Personnel Divisions of DGWR and provinces																																
5 Human Resources Development																																
a. Establish and operationalize more operations - responsive system for training needs assessment																																
b. Strengthen training capacity in water resources development at central and provincial levels.																																
6 Technical Support for the Private Sector																																
a. Strengthen water resources Sector Information system for the private sector																																
b. Establish consultative mechanisms between government agencies and private sector																																
c. Review and strengthen systems and methods for training private sector and water user associations																																
7 Establish in-house management development program in MPW																																
8 Strengthen Bipowered Water Resources Specialist Education Program																																

DGWR - Directorate General of Water Resources; MPW - Ministry of Public Works; NSIASP - Northern Sumatra Irrigated Agriculture Sector Project; WATSAP - water sector adjustment program; WRDC - water resources data center

Key  At Appraisal
 Actual

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2002), prepared by IndoConsult and Associates on behalf of the Government of Indonesia.

AGENCIES INVOLVED IN WATER RESOURCES MANAGEMENT AND USE

No.	Water Resources Sector Activities and Responsibilities	Ministry of Public Works			Ministry of Agriculture			Ministry of Forestry			Ministry of Mining			Ministry of Industry			Ministry of Transport			Ministry of Environment			Ministry of Health			Ministry of Secretary and Defense			National Planning Board			Ministry of Home Affairs			National Land Agency		
		Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth	Pro	Us	Oth			
1.	Overall water resources and water quality management (instream) and administration of surface water coordination policy	■	■	■																																	
2.	Overall management and guidance of irrigation	■			■	■	■																														
3.	Management of catchment areas or upper river basin areas							■	■	■																											
4.	Water use management power generation and management of groundwater							■	■	■																											
5.	Water use management for industry and industrial wastewater and pollution mitigation										■	■	■																								
6.	Water and resource use management for water transportation													■	■	■																					
7.	Pollution control of wastewater from industries (offstream pollution)																■	■	■																		
8.	Water quality standard management for various purposes																■	■	■	■	■	■															
9.	Water and resources policy for national security and defence																			■	■	■															
10.	Budget planning and programming for water resources development and management																						■	■	■												
11.	Control and coordination of coadministration and autonomous tasks related to water resources management																									■	■	■									
12.	Land provision and administration in water resources areas																															■	■	■			

Notes: Provider (Pro) = Water resources provider for concerned use.
 User (Us) = Water resources user for related purpose.
 Other (Oth) = Administration, management, and supervision.
 Black ■ = Task Obligation

Source: Asian Development Bank Back-to-Office Report of the Midterm Review, February 1998.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Loan Covenant	Reference in Loan Agreement	Status of Compliance
A. Covenants Relating to Implementation		
1. The Borrower shall make available, promptly as needed, the funds, facilities, services, land, and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.	Loan Agreement, Section 4.02	Complied with
2. The Borrower shall maintain, or cause to be maintained, records and accounts to identify the goods and services and other items of expenditure financed out of the proceeds of the Loan, and to record the progress of the Project.	Loan Agreement, Section 4.06 (a)	Complied with
3. The Borrower shall maintain separate records and accounts, have such accounts audited annually and furnish the Asian Development Bank (ADB) with a copy of the audited reports.	Loan Agreement, Section 4.06 (b)	Complied with. The audited financial statement reports for FY2001 and FY2002 have not been submitted as of the PCR review date
4. The Borrower shall prepare semi-annual progress reports for submission to ADB.	Loan Agreement, Section 4.07 (b)	Complied with
5. The Borrower shall prepare a Project Completion Report for submission to ADB at the latest 6 months after the completion of the Project.	Loan Agreement, Section 4.07 (c)	Complied with
6. The Borrower shall establish a Special Account with an initial deposit that shall not exceed \$1.0 million.	Loan Agreement, Schedule 3, para. 10 (a)	Complied with
7. The Borrower shall engage project consultants and furnish copies of the relevant contracts to ADB.	Loan Agreement, Schedule 5, para. 3 (c)	Complied with
8. DGWR shall establish a central project office and appoint a project coordinator.	Loan Agreement, Schedule 6, paras. 2 and 3	Complied with
9. A project steering committee, chaired by the director general of DGWR and comprising the assistant to the minister of MPW on human resources development as deputy chairman, heads of departments and concerned divisions of DGWR, the chief of MPW training department, and representatives of other concerned agencies, shall meet quarterly to review the progress of the Project in achieving its intended outputs and targets.	Loan Agreement, Schedule 6, para. 4	Complied with up to 1999, then no meetings held in 2000 and 2001. PAMST was reactivated in April 2002 and a final project review workshop was held in June 2002
10. Within 3 months after the Effective Date, the director general of DGWR shall provide ADB with the names and qualifications of DGWR staff selected for training and placement as in-house advisers under the Project.	Loan Agreement, Schedule 6, para. 5	Complied with
11. By the end of the eighteenth month of project implementation, the Government shall ensure that a national policy and coordination framework has been developed, and is supported by BAPPENAS.	Loan Agreement, Schedule 6, para. 6	Complied with.

Loan Covenant	Reference in Loan Agreement	Status of Compliance
12. Within 12 months after the Effective Date, and at least two months prior to the commencement of component 2 of the Project in a targeted province, the Borrower shall cause a provincial implementation unit to be established and an experienced provincial project manager to be appointed within the Provincial Water Resources Services.	Loan Agreement, Schedule 6, para. 7	Complied with
13. Within 6 months after the commencement of component 2 of the Project in a targeted province, the Borrower shall ensure that the governor of such province issues an appropriate decree establishing a water management committee for the province chaired by a representative of the governor.	Loan Agreement, Schedule 6, para. 8	Complied with
14. The Borrower and ADB shall jointly conduct an initial project assessment at the end of the first year of project implementation.	Loan Agreement, Schedule 6, para. 10 (a)	Complied with. The Borrower and ADB reviewed the Project in September 1997 after submission of the first annual report
15. The Borrower and ADB shall jointly conduct a midterm review during the third year of Project implementation.	Loan Agreement, Schedule 6, para. 10 (b)	Complied with. The midterm review was held in February 1998
16. The Borrower shall provide on a timely basis, the financing required for satisfactory operation and maintenance of the hydrometeorological networks established or upgraded under the Project.	Loan Agreement, Schedule 6, para. 12	
17. The Borrower shall ensure that all civil works carried out under the Project to establish or upgrade hydrometeorological networks in the targeted provinces are conducted in compliance with applicable environmental laws and regulations of the Borrower.	Loan Agreement, Schedule 6, para. 13	Complied with
B. Post Project Implementation Loan Covenants		
18. Twelve to fourteen months after Project completion, the national water resources coordination framework shall undertake a benefit evaluation of the Project in consultation with ADB.	Loan Agreement, Schedule 6, para. 11	Not complied with
19. DGWR shall continue to train and assign qualified and motivated staff to work as in-house adviser following completion of the Project.	Loan Agreement, Schedule 6, para. 14	Not complied with

BAPPENAS – National Development Planning Agency; DGWR – Directorate General of Water Resources; MPW – Ministry of Public Works; PCR – project completion report

Source: Asian Development Bank.

SUMMARY OF CONSULTING SERVICES

Expertise	International		Domestic		Schedule of Completion	
	Appraisal ^a	Actual	Appraisal	Actual		
	Person-Months		Person-Months		Original	Actual
Package 1. Policy, Human Resources Management and Institutional Development	92	135	206	472	30-Jun-00	25-Jun-02
Package 2. Provincial Water Resources Planning, Hydromet and Water Quality Team	84	100	441	538	08-Feb-00	15-May-02
Package 3. Management Development Program	0	37	0	87	02-Mar-00	15-Jun-00
Package 4. Capacity Strengthening of Water Resources Specialist Education Program	0	60	0	15	30-Jul-99	28-Feb-00
Package 5. Public Awareness Campaign (Pre-Phase I)	0	0	0	88	02-May-99	02-May-99
Package 6. Hydrology Advisory Services Capacity Building Project	0	12	0	0	18-Nov-00	18-Nov-00
Package 6. The Improvement of Water Resources Data Management	0	35	0	118	16-Apr-02	16-Apr-02
Total	176	379	647	1318		

a The figures quoted in the Report and Recommendation of the President do not include p-m in Packages 3 and 4 consultancies and underestimated the overall consulting services required. Appraisal estimated the required services at 176 p-m for international consultants and 647 p-m for domestic consultants.

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2002) prepared by IndoConsult and Associates on behalf of the Government of Indonesia.

SUMMARY OF CIVIL WORKS

Description	Per Appraisal (No.)	Actual (No.)
1. Component 2. Strengthen Regional Capacity (Water Resources Planning and Management)		
- Offices for Hydrology Unit	5	4 ^a
- New Automatic Water Level Recorder Stations	20	22
- New Manual Staff Gauge (MSG) Stations	20	0
- New Automatic Rain Recorder (ARR) Stations	20	12
- New Climate Stations	15	3
- Repair of Stations	570	472
- New Telemetry Network	1	2
2. Component 3. Strengthen DGWR (Human Resources Dev.)		
- Bipowered Staff Housing and Rehabilitation	1	1

^a Three offices built and one office upgraded.

Source: Capacity Building Project for the Water Resources Sector Completion Report (June 2002), prepared by IndoConsult and Associates, on behalf of the Government of Indonesia.

LIST OF EQUIPMENT PROCURED

Description	No. of Provinces Receiving				Delivery Date	
	At Appraisal		Actual		At	
	Core	Other	Core	Other	Appraisal	Actual
1. Personal computers	4	4	4	4	1996/97	1999
2. Spare parts	4	4	4	4	1996/97	1999
3. Hydrometeorological equipment	4	4	4	4	1998/99	1999
4. Motorcycles	4	4	4	4	1998/99	1999
5. Water quality equipment	4	4	4	4	1998/99	1999
6. Water quality equipment	4	4	4	4	1998/99	1999
7. Vehicle 2-wheel drive	4	4	4	4	1998/99	1999
8. Vehicle 4-wheel drive	4	4	4	4	1998/99	1999
9. Training equipment	4	4	4	4	a	2000
10. Computer peripherals	4	4	4	4	a	2000
11. Multiparameter water quality equipment	4	4	4	4	a	2000
12. Digitized hydrometeorological equipment	4	4	4	4	a	2000
13. Hydrometeorologicalic maintenance equipment	4	4	4	4	a	2000
14. Hydrology computers	4	4	4	4	a	2000

^a Required additional equipment determined after the February 1998 midterm review mission.

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2002), prepared by IndoConsult and Associates on behalf of the Government of Indonesia.

SUMMARY OF TRAINING UNDERTAKEN

Table A11.1: Summary of Training for the Provincial and District Levels

Province	Basin Water Resources Management Plan				Irrigation Operation and Maintenance				Human Resources Management/ Human Resources Development			
	No. of Participant		No. of Stakeholder		No. of Participant		No. of Stakeholder		No. of Participant		No. of Stakeholder	
	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual
North Sumatra	12	90	90	60	50	266	0	0	10	30	50	20
Bali	10	60	0	0	45	120	0	0	20	20	0	0
West Nusa Tenggara	12	136	75	75	30	136	0	0	0	0	0	0
South Sulawesi	20	20	20	20	20	50	20	40	81	57	100	225
Southeast Sulawesi	10	10	0	100	45	108	0	0	10	4	0	0
South Kalimantan	10	15	0	0	45	150	0	0	0	0	0	0
Maluku	0	0	0	0	0	0	0	0	10	5	0	0
Irian Jaya	0	0	0	0	0	0	0	0	10	4	0	0
Total		331	185	255	235	830	20	40	141	120	150	245

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2004), prepared by IndoConsult and Associates on behalf of the Government of Indonesia.

Province	Management Information System-Hydrology				Legal Aspect				Provincial and River Basin Water Resources Committees			
	No. of Participant		No. of Stakeholder		No. of Participant		No. of Stakeholder		No. of Participant		No. of Stakeholder	
	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual
North Sumatra	30	33	0	0	0	0	100	64	15	32	0	0
Bali	10	20	0	0	0	0	100	40	0	0	100	30
West Nusa Tenggara	40	10	0	0	100	70	0	0	25	0	30	140
South Sulawesi	40	50	50	20	100	75	0	0	20	50	20	25
Southeast Sulawesi	10	8	0	0	0	0	100	180	0	0	0	0
South Kalimantan	10	15	0	0	0	0	100	40	0	0	0	0
Maluku	10	6	0	0	0	0	100	40	0	0	0	0
Irian Jaya	30	78	0	0	0	0	0	0	0	0	0	0
Total	180	220	50	20	200	145	500	364	60	82	150	195

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2004), prepared by IndoConsult and Associates on behalf of the Government of Indonesia.

Table A11.2: Summary of Staff Trained Under the Water Resources Specialist Program Per Province

Province	1996/97	1997/98	1998/99	1999/00	2000/01	Total
	Water Resources Specialist Education Program				Masters Program	
Core Provinces						
1 North Sumatera	0	0	2	1	2	5
2 South Sulawesi	2	3	7	5	4	21
3 Bali	0	0	6	1	0	7
4 Nusa Tenggara Barat	2	0	3	6	4	15
Non-Core						
5 South Kalimantan	0	0	0	0	2	2
6 South East Sulawesi	0	0	0	2	1	3
7 Maluku	0	1	1	1	2	5
8 Irian Jaya	0	1	0	1		2
Total	4	5	19	17	15	60

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2004), prepared by IndoConsult and Associates on behalf of the Government of Indonesia.

**Table A11.3: Profile of Water Resources Specialist Program/Magister Program
(by Province)**

Province	1996/97	1997/98	1998/99	1999/00	2000/01	Total
	Water Resources Specialist Education Program				Masters Program	
DGWR (Jakarta)	1	3	5	5	2	16
Aceh	2	1	10	4	6	23
North Sumatra	0	0	2	1	2	5
West Sumatra	1	3	2	5	3	14
South Sumatra	0	0	1	0	3	4
Riau	0	0	1	1	0	2
Jambi	1	0	0	2	0	3
Bengkulu	0	0	1	2	0	3
Lampung	0	0	1	0	3	4
West Java	0	1	3	0	3	7
Central Java	12	7	5	11	1	36
East Java	7	6	5	7	5	30
Yogyakarta	0	0	0	1	1	2
West Kalimantan	0	2	2	0	1	5
Central Kalimantan	1	1	0	0	3	5
South Kalimantan	0	0	0	0	2	2
East Kalimantan	0	0	0	0	0	0
North Sulawesi	0	0	2	7	1	10
Central Sulawesi	2	0	0	4	0	6
South Sulawesi	2	3	7	5	4	21
Southeast Sulawesi	0	0	0	2	1	3
Bali	0	0	6	1	0	7
West Nusa Tenggara	2	0	3	6	4	15
East Nusa Tenggara	2	3	0	0	0	5
East Timor	0	0	0	1	0	1
Maluku	0	1	1	1	2	5
Irian Jaya	0	1	0	1	0	2
Universities	0	0	5	0	1	6
Total	33	32	62	67	48	242

DGWR - Directorate General of Water Resources

Source: Capacity Building for the Water Resources Sector, Project Completion Report (June 2004), prepared by IndoConsult and Associates on behalf of the Government of Indonesia.