

表

**表 1.1 作業工程**

**Phase I : Review of Present Situations and Formulation of the Capacity Improvement Plans for Field Offices**

1st Field Work in the Philippines (20<sup>th</sup> August 2000 to 2<sup>nd</sup> March 2001)

- (1) Explanation and Discussion on the Inception Report
- (2) Preparation of the Technology Transfer Plan
- (3) Investigations and Analyses of the Macro-framing Plans
- (4) Investigations and Analyses of the Studies and Projects Implemented by the Donor Countries and International Institutions
- (5) Grasp of the Present Situations in the Entire NIA's Management System
- (6) Formulation of the Capacity Improvement Plan for NIA Field Offices
- (7) Preparation of the Progress Report
- (8) Implementation, Monitoring and Revision of the Capacity Improvement Plan for Field Offices
- (9) Analyses of the NIA Central Office Management System
- (10) Investigations on the Irrigation Systems
- (11) Conduct of the Farmer Beneficiaries' Intention Survey
- (12) GIS Planning and Its Establishment
- (13) Preparation and the Draft Interim Report
- (14) Explanation and Discussion of the Draft Interim Report

1st Home Work in Japan (5 March to 19 March 2001)

- (1) Upgrading of the Interim Report

**Phase II : Formulation of the NIA's Management System Strengthening Plan**

2<sup>nd</sup> Field Work in the Philippines (3<sup>rd</sup> June to 16<sup>th</sup> August 2001)

- (1) Discussion of Interim Report
- (2) Continued Implementation of the Capacity Improvement Plan at the Application Offices
- (3) GIS Training at Central Office and UPRIIS
- (4) Preparation of the Public Relations (PR) Tools
- (5) Formulation of the NIA's Management System Strengthening Plan
- (6) Preparation of the Draft Final Report
- (7) Discussion of the Draft Final Report
- (8) Submission of the Final Report

3<sup>rd</sup> Field Work in the Philippines (10<sup>th</sup> to 24<sup>th</sup> October 2001)

- (1) Technology Transfer and Holding of the Seminar

**表 1.2 政府機関間調整委員会 (IACC) 及び NIA 内部タスクフォース (ITF) のメンバーリスト**

(1) Inter-Agency Coordination Committee (IACC)

Member Agencies	Representatives (Official Members)
1) Department of Agriculture (DA)	Undersecretary, DA
2) Department of Agrarian Reform (DAR)	Undersecretary, DAR
3) Department of Public Works and Highways (DPWH)	Undersecretary, DPWH
4) Department of Interior and Local Government (DILG)	Undersecretary, DILG
5) National Economic and Development Authority (NEDA)	Undersecretary, NEDA
6) Department of Budget and Management (DBM)	Undersecretary, DBM
7) Others	Representative

(2) Internal Task Force (ITF)

Name	Membership
1) Advisory Team	
1)-1 Deputy Administrator	Chairman
1)-2 Assistant Administrator for Project Development and Implementation (PDI)	Member
1)-3 Assistant Administrator for Operation and Equipment Management (SO EM)	Member
1)-4 Assistant Administrator for Finance and Management (FM)	Member
1)-5 Assistant Administrator for Administrator Services (AS)	Member
2) Task Force Team	
2)-1 Manager of Corporate Planning Staff	Team Leader
2)-2 Manager of Project Development Department (PDD)	Member
2)-3 Manager of Design and Specifications Department (DSD)	Member
2)-4 Manager of Construction Management Department (CMD)	Member
2)-5 Manager of Institutional Development Department (IDD)	Member
2)-6 Manager of Equipment Management Department (EMD)	Member
2)-7 Manager of Systems Management Department (SMD)	Member
2)-8 Manager of Controllership Department (CD)	Member
2)-9 Manager of Management Services Department (MSD)	Member
2)-10 Manager of Treasury Department (TD)	Member
2)-11 Manager of Personnel and Records Management Department (PRMD)	Member
2)-12 Manager of Legal Department (LD)	Member
2)-13 Manager of Procurement and Physical Resources Department (PPRD)	Member

表 1.3 作業監理委員会メンバー、JICA フィリピン事務所代表、及び JICA 専門家のリスト

(1) Advisory Committee Members

Name	Position
1) Mr. Katsumi Nozawa	Leader of the Advisory Committee for the Study on Strengthening of NIA's Management System
2) Mr. Katsuhiko Yamauchi	Member of the Advisory Committee
3) Mr. Shigeo Ishida	“ “
4) Mr. Masaaki Hanai	“ “
5) Mr. Iwao Wada	“ “
6) Mr. Ieko Kakuta	“ “

(2) JICA Philippines Office Representatives

Name	Position
1) Mr. Motofumi Kohara	Deputy Resident Representative
2) Mr. Tetsuji Iida	Assistant Resident Representative

(3) JICA Experts

Name	Position
1) Mr. Kanezo Takeuchi	JICA Expert to NIA
2) Mr. Toshiyuki Yoshioka	JICA Expert to NIA
3) Mr. Takahiro Ota	Advisor, PDS-DA

表 1.4 JICA調査団及びカウンターパートのリスト

No.	JICA Study Team	Counterpart Personnel (GOP)
1.	Mr. Toshikazu TAI Team Leader/ Institutional Development	- Mr. Dominador D. PASCUA Manager, Corporate Planning Staff, NIA
2.	Mr. Fumihiko FURUICHI Deputy Leader/ Organization & Institutions	- Mr. Guillermo C. MERCADO Management Systems Development Chief, Officer-in-Charge, Organization and Methods Division, MSD
3.	Mr. David C. ROCO Finance and Accounting	- Mr. Ariel P. CASTRO Manager, Revenue Generation Services Division, Treasury Department - Ms. Virginia R. ATIENZA Manager, General Accounting Division, Controllership Department
4.	Mr. Masami SUGIMOTO Auditing	- Mr. Romeo G. NATIVIDAD Management Systems Development Chief, Officer-in-Charge, Management Audit Division, MSE - Ms. Corazon P. GARCIA Sr. Management Analyst, MSD
5.	Mr. Takayoshi YAMAZAKI Agriculture/ Irrigation Policy	- Ms. Leonor P. FERNANDEZ Senior Corporate Planning Analyst, Corporate Planning Staff
6.	Mr. Takao OZAKI Corporate Management	- Ms. Anabelen J. LANDICHO Corporate Planning Specialist, Corporate Planning Staff
7.	Mr. Virgilio E. CABEZON Operations Management	- Mr. Roberto V. Dela CRUZ Supervising Engineer, NIA Region 3 - Mr. Basilio LOZANO (Substitute in Manila), Senior Economist A, Research & Development Division, SMD
8.	Mr. Shinichi HAMADA Irrigation Facilities	- Mr. Basilio LOZANO Senior Economist A, Research & Development Division, SMI
9.	Mr. Wenhao SHA / Mr. Takeshi TOYOOKA Geographic Information System (GIS)	- Mr. Celso BERNARDO Senior Engineer, Operations & Management Division, SMD - Mr. Reynaldo BALOLOY Principal Engineer A, Irrigation Waterhed and Environmental Division
10.	Mr. Masahiro OSEKO Participatory Approach	- Ms. Martha CAMADA Technician Assistant, Office of the Deputy Administrator
11.	Mr. Janakiraman K. KUMAR System Engineer	- Mr. Julius U. CABAUTAN Management Information Design Specialist, Management Information Systems Division, Corporate Planning Staff
12.	Mr. Atsushi FUJINO / Miss Sayaka HARA Logistics	- Ms. Rosalin C. MANGAHAS Statistician, Corporate Planning Staff

表 2.1 灌漑開発関連の外国借款及び資本支出、1969～1999年 (1/2)

Year	Loan	Project	Loan Amount (million US\$)	Capital Releases (million PHP)	% Foreign	% Local
1969	ADB	Cotabato Irrigation	2.50	188.6	n.a.	n.a.
1970	WB	Upper Pampanga River Project	34.0	168.0	n.a.	n.a.
1971			-	356.7	-	-
1972			-	568.4	-	-
1973	ADB	Angat-Magat Integrated Irrigation Development	9.6	901.3	n.a.	n.a.
	ADB	Davao del Norte Irrigation	4.2	-	n.a.	n.a.
1974	WB	Aurora Penaranda Irrigation Project	68.0	901.3	n.a.	n.a.
	ADB	Agusan del Sur Irrigation Project	5.8	901.3	n.a.	n.a.
1975	WB	Tarlac Irrigation System Improvement Project	17.0	1,889.8	n.a.	n.a.
	WB	Rural Infrastructure Project	25.0	-	-	-
	ADB	Pulangui River Irrigation	13.5	-	-	-
	ADB	Laguna de Bay Development	27.5	-	-	-
1976	WB	Magat River Irrigation Project	42.0	1,795.1	17.3	82.7
	WB	Chico River Irrigation Project	50.0	-	-	-
	ADB	Second Davao del Norte Project	15.0	-	-	-
1977	WB	Jalaur River Irrigation Project	15.0	1,801.6	23	77
	WB	National Irrigation System Improvement Project I	50.0	-	-	-
	WB	Mindoro River Development Project	15.0	-	-	-
	ADB	Tago River Irrigation	22.0	-	-	-
1978	WB	National Irrigation System Improvement Project	65.0	1,889.8	23.5	76.5
	WB	Samar River Development Project	28.0	-	-	-
	WB	Magat River Development Project II	150.0	-	-	-
	ADB	Allah River Irrigation	23.5	-	-	-
	ADB	Second Agusan Irrigation	14.0	-	-	-
	OECD	CIADP	49.3	-	-	-
1979	WB	Magat River Development Project III	21.0	2,937.2	35.6	64.4
	ADB	Bukindon Irrigation	15.0	-	-	-
	ADB	Third Mindanao Irrigation Study	1.70	-	-	-
	ADB	Bicol River Basin Irrigation Development	41.0	-	-	-
	OPEC	Bukindon Irrigation	3.5	-	-	-
	IFAD	Magat River Development Project III	10.0	-	-	-
1980	WB	Philippine Medium Scale Irrigation Project	71.0	2,937.2	35.5	64.4
	ADB	Second Laguna de Bay Irrigation	20.0	-	-	-
1981	WB	Watershed Management and Erosion	38.0	2,307.5	44	56
	ADB	Palawan Integrated Area Development	47.0	-	-	-
	OPEC	Laguna de Bay Project	7.5	-	-	-
1982	WB	Communal Irrigation Development Project I	71.1	2,046.7	38	62
	ADB	Third Davao del Norte Irrigation	45.3	-	-	-
	IFAD	Communal Irrigation Development Project I	12.0	-	-	-

表 2.1 灌漑開発関連の外国借款及び資本支出、1969～1999年 (2/2)

Year	Loan	Project	Loan Amount (million US\$)	Capital Releases (million PHP)	% Foreign	% Local
1983	ADB	Special Assistance for Selected Bank Projects	30.2	1,618.9	53	47
	ADB	Irrigation Sector	36.8	-	-	-
	ADB	Fourth Mindanao Irrigation Study	1.5	-	-	-
	OECF	Bohol Irrigation	40.0	-	-	-
1984	ADB	Allah River Irrigation (Supplementary)	27.9	810.1	83.6	16.4
1985			-	876.9	63.3	36.7
1986	ADB	Special Project Implementation Assistance	30.2	554.3	53.5	46.5
	ADB	Highland Agricultural Development	18.8	-	-	-
1987			-	-	-	-
1988	WB	Irrigation Operations Support Project I	45.0	n.a.	-	-
	ADB	Sorsogon Integrated Area Development	3.7	n.a.	-	-
1989			-	-	-	-
1990	ADB	Palawan Integrated Area Development	13.9	n.a.	-	-
	ADB	Irrigation Systems Improvement Project I	29.0	-	-	-
	OECF	Malitubog-Mari dagao Irrigation Project	38.9	-	-	-
1991	WB	Communal Irrigation Development Project II	46.2	n.a.	-	-
	OECF	Pampanga Delta Irrigation Project	68.3	n.a.	-	-
1992	ADB	Kabulnan Irrigation and Area Development Project	48.0	-	-	-
	IFAD	Visayas Communal Irrigation and Participatory Project	15.1	-	-	-
1993	WB	Irrigation Operations Support Project II	51.3	n.a.	-	-
1994			-	-	-	-
1995	WB	Water Resources Development Project	54.7	n.a.	-	-
	ADB	Irrigation Systems Improvement Project II	30.0	-	-	-
1996	OECF	Lower Agusan Development Project	40.3	n.a.	-	-
1997	WB	Water Resources Development Project	54.7	n.a.	-	-
	OECF	Tarlac Groundwater Irrigation System Reactivation Project	-	n.a.	-	-
1998	OECF	Central Luzon Improvement Project	103.9	-	-	-
1999	ADB	Southern Philippines Irrigation Project	60.0	n.a.	-	-
Total Lending for 1969-1999			2,001.3	-	-	-

Sources: Svendsen et al, 1990, World Bank, 1992 and NIA, 1999. This does not include 56 million dollars in grants from agencies such as USAID and JICA. Loan amount reflects the portion of the loan used for irrigation project component.

表 2.2 農務省(DA)及び NIA が実施中の外国支援灌漑プロジェクト・プロフィール (1/3)

Project Title (Duration) / Description		Project Location	Fund Source / Cost (PHP1,000)
1.	Malitubog-Maridagao Irrigation Project (1990-2001) Construction of diversion dam and irrigation and drainage facilities to irrigate 6,502 ha of land in order to improve the living condition and increase farmers' income in Central Mindanao	<u>Region 12</u> North Cotabato (Pikit, Carmen); Maguindanao (Pagalungan)	OECF Loan PH-112 LP – 1,024,678 GOP – 978,837 TPC – 2,003,515
2.	Pampanga Delta Irrigation Project (1991-2001) Construction of diversion dam, pumping station, irrigation and drainage canals, on-farm facilities and other project facilities to irrigate 10,270 ha	<u>Region 3</u> Pampanga (Arayat, Sta. Ana, Mexico, San Luis, San Simon, Candaba)	OECF Loan PH-123 LP – 2,107,330 GOP – 755,730 TPC – 2,863,060
3.	Lower Agusan Development Project (1996-2002) To irrigate 8 existing CIS covering 840 ha and extend irrigation benefits to 7,152 ha of new area for a total of 7,992 ha	<u>Region 13</u> Agusan del Sur (Butuan City and Buenvista)	OECF Loan PH-153 LP – 979,210 GOP – 325,150 TPC – 1,304,360
4.	Tarlac Groundwater Irrigation System Reactivation Project (1997-2003) Construction of diversion dam and irrigation and drainage facilities to irrigate 6,502 ha of land in order to improve the living condition and increase farmers' income in Central Mindanao	<u>Region 3</u> Tarlac (Panique, Pura, Ramos, Gerona, Tarlac, Victoria, Capas, La Paz, Concepcion, Mondaca)	OECF Loan LP – 450,000 GOP – 173,600 TPC – 623,600
5.	Casecnan Multi-Purpose Irrigation Project (1998-2003) Improving the existing drainage facilities in the UPRIIS. The scheme will make available additional 301.9 million cum of water annually conveyed through DC and existing canal networks of UPRIIS. Also expected to be achieved through the project is the improving of institutional concerns of NIA	<u>Regions 2 &amp; 3</u> Nueva Vizcaya, Nueva Ecija, Bulacan	OECF Loan LP – 2,882,286 GOP – 1,784,000 TPC – 4,666,286
6.	Bohol Irrigation Project – Stage II (2000 – 2008) Construction of an earth fill dam across Bayongan River, diversion canal, main canal and laterals, drainage and road networks, development of on-farm facilities including land development, relocation and resettlement of families affected by dam construction and reservoir, preparation of water management plan including water measurement and communication network to irrigate 4,550 ha of new area and 750 hectares of rehabilitation area.	<u>Region 7</u> Municipalities of Ubay, San Miguel and Trinidad in the Province of Bohol	JBIC (Ex OECF) Loan LP – 1,636,000 GOP – 748,000 TPC – 2,384,000



表 2.2 農務省(DA)及びNIAが実施中の外国支援灌漑プロジェクト・プロフィール (2/3)

Project Title (Duration) / Description		Project Location	Fund Source / Cost (PHP1,000)
7.	<p>Communal Irrigation Development Project – Phase II (1991-1999)</p> <p>To rehabilitate and upgrade 117 existing CIS covering 18,016 ha and extend irrigation benefits to 13,449 ha of new areas through the construction of 93 new CIPs. The Project will directly benefit 30,000 farm families and irrigators of nearby 3,000 NIA assisted small schemes. I would also support development of communal irrigation associations. The Project would cover technical assistance aimed to strengthen NIA’s capability to assess micro-catchment and improved IA financial systems.</p>	<u>Regions 2,4,5,6,8,9,11,12 &amp; 13</u>	<p>WB-IBRD Loan 3261-PH LP – 3,723,130 GOP – 1,383,400 TPC – 5,106,530</p>
8.	<p>Irrigation Operations Support Project II (IOSP-II: 1993-2000)</p> <p>The Project will (a) improve 17 NISs, construct 3 sediment extruders and improved water structures and prevent erosion in critical areas; (b) support improve system level O&amp;M services; (c) strengthen existing IAs and provide O&amp;M equipment and materials; and (d) improve agricultural support services.</p>	<u>Regions 2, 3,4, 6, 9, 12 and 13</u>	<p>WB-IBRD Loan 3607-PH LP – 1,785,781 GOP – 549,113 TPC – 2,334,894</p>
9.	<p>Water Resources Development Project (WRDP: 1997-2001)</p> <p>To implement a broad policy and institutional framework in the water sector; formulate a national water resources management strategy; adopt a river basin approach, integrating land use policies and agricultural practices with water management; prepare and implement catchment management plans to improve upstream watersheds for sustaining irrigation and other projects; improve performance of existing NIS and emphasize decentralized management with participation of stakeholders and greater cost recovery.</p>	<u>Regions 2, 3,4, 6, 9, 12 and 13</u>	<p>WB-IBRD Loan 4220-PH LP – 1,670,148 GOP – 748,075 TPC – 2,418,223</p>
10.	<p>Kabulnan Irrigation and Area Development Project – Irrigation and Agri-Extension Component (1992-2000)</p> <p>The Project will (a) improve 17 NISs, construct 3 sediment extruders and improved water structures and prevent erosion in critical areas; (b) support improve system level O&amp;M services; (c) strengthen existing IAs and provide O&amp;M equipment and materials; and (d) improve agricultural support services.</p>	<p><u>Region 12</u> Maguindanao (Ampatuan, Maganoy, Datu Piang)</p>	<p>ADB 1136-PHI LP – 1,128,932 GOP – 642,994 TPC – 1,771,926</p>
11.	<p>Irrigation Systems Improvement Project (ISIP-II: 1997-2002)</p> <p>The Project will (a) improve 17 NISs, construct 3 sediment extruders and improved water structures and prevent erosion in critical areas; (b) support improve system level O&amp;M services; (c) strengthen existing IAs and provide O&amp;M equipment and materials; and (d) improve agricultural support services.</p>	<p><u>Regions 8</u> Leyte (Alangalang, San Miguel, Palo, Sta. Fe, Pastrana, Dagami, Tabon, Dulag, Burauen, Julita, Ormoc, Abuyog, Javier)</p>	<p>ADB 1365/1366-PHI LP – 750,000 GOP – 422,100 TPC – 1,172,100</p>

表 2.2 農務省 (DA) 及び NIA が実施中の外国支援灌漑プロジェクト・プロフィール (3/3)

Project Title (Duration) / Description		Project Location	Fund Source / Cost (PHP1,000)
12.	Visayas Communal Irrigation and Participatory Project (1992-2000) Rehabilitation of existing CIS comprising about 7,700 ha and construction of CIPs having 3,250 ha. Strengthening the implementation capacity of NIA's field offices and capability of IA's in the design, construction and O&M of irrigation systems.	<u>Regions 6.7 &amp; 8</u>	IFAD Loan 302-PH LP – 457,230 GOP – 118,350 TPC – 575,580
13.	Southern Philippines Irrigation Sector Project (SPISP) (2000-2006) The Project will construct and improve small to medium scale irrigation system, strengthen irrigation operation and maintenance through beneficiary participation and institutional capacity of executing agencies. In the Southern Philippines, the Project will develop irrigation and drainage facilities covering about 18,000 ha for intensive cultivation of rice and other crops, and will benefit about 10,000 farm households, about 44% of which have income below the poverty threshold.	<u>Regions 6, 7, ARMM, CARAGA</u>	ADB 1668 PHI <u>NIA-US\$</u> LP – 58,362 MDF – 1,638 (NIA)TPC–60 <u>Counterpart-PHP</u> LP – 43,273 MDF – 961 TPC – 44,234

Source: Project Profile Data from NIA.

表2.3 システム別の灌漑サービス面積及び管区別ポテンシャル灌漑面積の分布状況

(Unit: ha)

Region	Irrigation Service Area of the Irrigation System				Potential Irrigable Land	% of Irrigated Land
	NIS	CIS	PIS	Total		
CAR	17,551	30,538	22,912	71,001	99,650	71.3%
1	55,872	89,267	27,329	172,468	277,180	62.2%
2	136,792	36,374	23,095	196,261	472,640	41.5%
3	169,335	66,561	14,901	250,797	482,230	52.0%
4	52,706	50,268	23,616	126,590	263,590	48.0%
5	20,496	65,835	29,484	115,815	239,660	48.3%
6	52,216	17,312	5,499	75,027	197,250	38.0%
7	5,373	17,317	2,539	26,168	50,740	51.6%
8	15,870	25,445	4,466	45,781	84,380	54.3%
9	15,162	17,867	1,972	35,001	76,500	45.8%
10	23,196	16,034	2,764	41,994	155,330	27.0%
11	52,486	20,035	10,076	82,597	249,990	33.0%
12	43,082	18,310	2,231	63,623	314,900	20.2%
13	18,412	14,904	3,316	36,632	162,300	22.6%
Total	678,549	486,067	174,200	1,338,816	3,126,340	42.8%
	50.7%	36.3%	13.0%	100.0%		

Source: NIA CORPLAN (1999)

表 2.4 国営及び共同灌漑システムの開発状況、1964～1999年

(Unit: 1,000 ha)

Year	NIS	CIS	Total	Year	NIS	CIS	Total
1964	217.5	n.a	217.5	1982	549.3	634.8	1,184.1
1965	217.5	n.a	217.5	1983	554.7	648.8	1,203.5
1966	217.5	n.a	217.5	1984	567.2	658.8	1,226.0
1967	288.5	n.a	288.5	1985	595.9	665.1	1,261.0
1968	305.7	n.a	305.7	1986	600.5	668.8	1,269.3
1969	336.8	n.a	336.8	1987	618.0	673.1	1,291.1
1970	349.0	n.a	349.0	1988	617.0	684.6	1,301.6
1971	349.1	n.a	349.1	1989	621.0	695.9	1,317.9
1972	349.1	n.a	349.1	1990	637.3	714.8	1,352.1
1973	350.2	429.0	779.2	1991	645.8	724.5	1,370.3
1974	355.0	449.0	804.0	1992	646.5	734.1	1,380.6
1975	396.3	470.0	866.3	1993	646.5	741.4	1,387.9
1976	435.9	493.0	928.9	1994	651.8	442.0	1,093.8
1977	455.9	519.0	974.9	1995	651.8	474.3	1,126.1
1978	463.7	538.0	1,001.7	1996	651.8	488.5	1,140.3
1979	472.1	552.0	1,024.1	1997	662.7	491.4	1,154.1
1980	491.7	580.0	1,071.7	1998	678.5	491.4	1,169.9
1981	514.3	602.1	1,116.4	1999	678.6	486.1	1,164.7

Note: \* These figures might be modified after the supplemental inventory survey conducted by JICA Study Team.

Source: Svendsen 1990 and NIA 1999. Note that there was a major reassessment of functioning system 1994 that reduced the number of communals by 40%.

表2.5 承認予算額と実際の支出額、1975～2000年

(Unit: million PHP)

Year	APPROVED BUDGET						ACTUAL RELEASES AND AVAILMENTS						Conversion Rates Used \$1.00=	Converted Actual Release*
	Equity/ GOP	Forex	CIP Approp.	Corp. Funds	Others	Total	Equity/ GOP	Forex	CIP Approp.	Corp. Funds	Others	Total		
FY 75-76	174.87	124.50	60.00	-	448.03	807.40	145.17	155.88	29.96	-	447.36	778.37	P7.50	4,253.4
Jul-Dec 76	100.00	129.75	40.00	-	208.81	478.56	88.00	49.85	36.46	-	206.90	381.21	P7.50	2,083.1
1977	100.00	414.00	60.00	-	690.61	1,264.61	100.00	193.14	59.14	-	536.81	889.09	P7.50	6,858.4
1978	100.00	937.50	15.31	-	690.61	1,743.42	25.00	222.57	15.31	-	669.41	932.29	P7.50	5,094.4
1979	150.00	615.53	23.25	-	1,396.24	2,185.02	100.00	820.88	23.25	-	1,363.45	2,307.58	P7.50	12,609.7
1980	200.00	774.45	150.00	-	1,116.50	2,240.95	349.50	761.14	134.70	-	897.34	2,142.68	P7.50	11,708.6
1981	671.00	864.45	120.00	-	1,084.86	2,740.31	447.20	907.10	109.52	-	798.46	2,262.28	P7.50	12,362.2
1982	1,145.00	1,108.95	150.00	-	460.18	2,864.13	1,559.60	663.82	124.95	-	-	2,348.37	P7.50	12,832.6
1983	950.00	1,732.40	125.00	-	-	2,807.40	760.00	1,075.20	122.50	-	-	1,957.70	P10.00	8,023.4
1984	760.00	1,350.00	100.00	-	-	2,210.00	205.00	1,494.00	88.20	-	-	1,787.20	P18.00	4,070.4
1985	330.00	1,213.92	75.00	291.00	-	1,909.92	149.00	997.80	71.10	452.61	-	1,670.51	P18.00	3,805.3
1986	137.00	1,179.15	151.03	215.33	-	1,682.51	303.82	925.04	151.03	399.91	-	1,779.80	P21.00	3,476.2
1987	400.00	1,418.80	400.03	60.02	24.56	2,303.41	400.00	788.30	370.04	18.42	24.56	1,601.32	P20.90	3,139.8
1988	812.00	1,356.83	420.00	64.50	94.45	2,747.78	812.00	776.20	420.00	14.52	94.45	2,117.17	P21.00	4,135.1
1989	526.71	1,528.11	391.24	62.00	122.68	2,630.74	526.71	759.75	391.24	91.96	122.68	1,892.34	P21.75	3,570.5
1990	779.30	2,129.46	508.03	65.00	583.19	4,064.98	701.37	1,253.57	457.22	63.50	583.19	3,058.85	P22.25	5,633.2
1991	886.50	1,176.52	236.83	-	977.05	3,276.90	811.78	536.68	224.99	-	977.05	2,550.50	P24.90	4,201.8
1992	961.81	897.90	-	-	552.88	2,412.59	868.26	455.10	-	-	483.98	1,807.34	P30.00	2,469.0
1993	1,108.53	1,092.29	-	-	651.72	2,852.54	1,108.53	982.25	-	-	351.35	2,442.13	P30.00	3,336.2
1994	1,291.63	930.54	-	-	472.43	2,694.60	1,121.38	989.77	-	-	472.43	2,583.58	P29.00	3,654.3
1995	2,063.55	1,097.35	-	-	1,237.64	4,398.54	1,870.12	1,107.25	-	-	1,237.64	4,215.01	P25.00	6,909.9
1996	1,537.58	1,766.24	-	-	3,018.00	6,321.82	1,387.82	1,589.61	-	-	3,004.19	5,981.62	P25.00	9,805.9
1997	2,418.62	1,593.71	-	-	1,432.04	5,444.37	2,219.41	1,425.44	-	-	1,432.04	5,076.89	P28.50	7,304.9
1998	2,850.51	2,005.45	-	-	1,693.98	6,549.94	2,230.97	1,416.84	-	-	1,658.06	5,305.87	P27.57	7,895.6
1999	2,954.51	1,524.96	-	-	1,100.90	5,580.37	2,954.51	1,524.96	-	-	1,074.50	5,553.97	P40.00	5,775.7
2000	4,010.15	1,754.00	-	-	200.00	5,964.15	3,085.15	1,754.00	-	-	200.00	5,039.15	P41.00	5,039.2

Note: \* is converted by using conversion rate of US\$ at constant 2000.

Source: MISD / CORPLAN

表 2.6 灌漑開発プログラム(試案)、2001～2010年

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total 2001-2010
<b>FUNDING REQUIREMENTS</b> (In Billion Pesos)											
On-going Projects	2.560	7.213	7.857	5.841	8.791	7.695	6.828	6.121	1.961	0.610	55.477
Pipeline Projects	0.000	0.287	1.930	4.930	9.310	9.368	9.230	12.183	12.913	14.227	74.378
Other Programs *1	0.418	4.051	4.319	4.606	4.936	5.271	5.628	6.013	6.427	6.873	48.542
Agrarian Reform Projects	1.240	3.250	4.799	2.398	0.000	0.000	0.000	0.000	0.000	0.000	11.687
<b>Total</b>	4.218	14.801	18.905	17.775	23.037	22.334	21.686	24.317	21.301	21.710	190.084
<b>PHYSICAL TARGETS (ha)</b>											
<b>I. National Irrigation Projects (NIPs)</b>											
On-going Projects											
New Area Generation	27,622	17,538	33,798	16,457	14,000	14,715	11,349	16,700	0	0	152,179
Area for Rehabilitation	21,538	37,175	17,048	13,265	11,668	11,000	12,662	14,000	0	0	138,356
Pipeline Projects											
New Area Generation	0	0	2,800	1,890	6,500	13,890	18,250	19,408	20,380	16,195	99,313
Area for Rehabilitation	0	0	3,525	5,000	24,673	5,805	8,204	6,775	7,829	9,420	71,231
Sub - Total (I)											
New Area Generation	27,622	17,538	36,598	18,347	20,500	28,605	29,599	36,108	20,380	16,195	251,492
Area for Rehabilitation	21,538	37,175	20,573	18,265	36,341	16,805	20,866	20,775	7,829	9,420	209,587
<b>II. Other Projects (CIP, SRIP, CARP-IC, Agrarian Reform and NIS/CIS Rehabilitation Projects)</b>											
On-going Projects											
New Area Generation	24,097	38,703	29,242	21,045	17,332	18,172	17,971	18,771	13,096	0	198,429
Area for Rehabilitation	8,647	66,671	31,841	13,140	7,731	7,127	5,990	6,600	0	0	147,747
Pipeline Projects											
New Area Generation	0	1,000	2,500	4,255	1,400	2,300	3,390	4,025	2,750	5,245	26,865
Area for Rehabilitation	0	0	0	6,500	39,000	82,000	82,000	82,050	82,000	83,000	456,550
Sub - Total (II)											
New Area Generation	24,097	39,703	31,742	25,300	18,732	20,472	21,361	22,796	15,846	5,245	225,294
Area for Rehabilitation	8,647	66,671	31,841	19,640	46,731	89,127	87,990	88,650	82,000	83,000	604,297
<b>Grand Total (I &amp; II)</b>											
<b>New Area Generation</b>	51,719	57,241	68,340	43,647	39,232	49,077	50,960	58,904	36,226	21,440	476,786
<b>Area for Rehabilitation</b>	30,185	103,846	52,414	37,905	83,072	105,932	108,856	109,425	89,829	92,420	813,884

Note: \*1: Includes O&M Subsidy for NISs, Allocation for non-power costs of San Roque Multipurpose Project (SRMP-MOA), Water Delivery Fee for the Casecanan MIPP-BOT, and Allocations for Irrigation Research and Development.

Source: NIA CORPLAN

表2.7 灌漑サービス面積と灌漑面積

(Unit: ha)

Region	NIS					CIS					PIS					Total				
	Number	Irrigation Service Area	Irrigated Area			Number	Irrigation Service Area	Irrigated Area			Number	Irrigation Service Area	Irrigated Area			Irrigation Service Area	Irrigated Area			
			Wet Season	Dry Season	Total			Wet Season	Dry Season	Total			Wet Season	Dry Season	Total		Wet Season	Dry Season	Total	
CAR	1	17,551	9,877	9,687	19,564	947	30,538	16,835	12,798	29,633	1,293	22,912	18,972	14,087	33,059	71,001	45,684	36,572	82,256	
Region 1	26	55,872	38,931	22,222	61,153	1,315	89,267	71,906	30,144	102,050	799	27,329	25,305	6,906	32,211	172,468	136,142	59,272	195,414	
Region 2	16	48,422	21,629	27,493	49,122	1,566	36,374	24,248	22,721	46,969	344	23,095	18,700	16,435	35,135	107,891	64,577	66,649	131,226	
Region 3	13	66,803	38,657	35,307	73,964	383	66,561	25,777	19,401	45,178	116	14,901	10,321	2,830	13,151	148,265	74,755	57,538	132,293	
Region 4	46	52,706	37,952	27,953	65,905	533	50,268	30,137	8,334	38,471	348	23,616	12,524	10,285	22,809	126,590	80,613	46,572	127,185	
Region 5	15	20,496	16,894	17,276	34,170	669	65,835	20,305	14,455	34,760	507	29,484	11,130	9,138	20,268	115,815	48,329	40,869	89,198	
Region 6	13	52,216	42,580	34,318	76,898	185	17,312	11,649	9,467	21,116	139	5,499	2,977	2,689	5,666	75,027	57,206	46,474	103,680	
Region 7	1	5,373	3,200	2,775	5,975	272	17,317	10,089	5,747	15,836	121	2,539	1,938	1,184	3,122	25,229	15,227	9,706	24,933	
Region 8	16	15,870	11,964	9,071	21,035	222	25,445	9,509	8,626	18,135	90	4,466	2,407	2,367	4,774	45,781	23,880	20,064	43,944	
Region 9	4	15,162	11,836	11,020	22,856	184	17,867	14,253	11,824	26,077	30	1,972	1,832	1,349	3,181	35,001	27,921	24,193	52,114	
Region 10	5	23,196	13,442	13,364	26,806	99	16,034	7,801	7,581	15,382	39	2,764	1,789	1,261	3,050	41,994	23,032	22,206	45,238	
Region 11	15	52,486	46,024	46,024	92,048	104	20,035	12,703	11,867	24,570	53	10,076	5,052	4,320	9,372	82,597	63,779	62,211	125,990	
Region 12	10	43,082	33,731	29,817	63,548	75	18,310	11,060	7,433	18,493	45	2,231	1,764	1,417	3,181	63,623	46,555	38,667	85,222	
Region 13	6	18,412	13,455	13,251	26,706	138	14,904	6,973	5,254	12,227	77	3,316	802	20	822	36,632	21,230	18,525	39,755	
MRIIS	4	88,370	75,272	77,214	152,486	-	-	-	-	0	-	-	-	-	0	88,370	75,272	77,214	152,486	
UPRIIS	4	102,532	76,155	75,974	152,129	-	-	-	-	0	-	-	-	-	0	102,532	76,155	75,974	152,129	
Total	195	678,549	491,599	452,766	944,365	6,692	486,067	273,245	175,652	448,897	4,001	174,200	115,513	74,288	189,801	1,338,816	880,357	702,706	1,583,063	
	Cropping Intensity		139%			Cropping Intensity		92%			Cropping Intensity		109%			Cropping Intensity		118%		

Data Source: NIA CORPLAN (1999)

表 2.8 フィリピンの米需給予測、2000～2010年

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Yield (Mt/ha)											
- Irrigated	3.69	3.73	3.78	3.82	3.87	3.92	3.96	4.01	4.06	4.11	4.16
- Rainfed	2.23	2.24	2.26	2.27	2.28	2.30	2.31	2.33	2.34	2.35	2.37
2. Annual Paddy Planted Area (1,000ha)											
- Irrigated	1,583.65	1,682.44	1,786.04	1,913.53	2,011.29	2,108.70	2,224.28	2,346.62	2,485.81	2,595.14	2,688.02
- Rainfed	1,787.00	1,766.66	1,710.53	1,661.38	1,599.90	1,531.45	1,464.14	1,415.44	1,387.30	1,360.46	1,332.71
3. Paddy Production (1,000MT)											
- Irrigated	5,843.66	6,282.69	6,749.62	7,318.17	7,784.36	8,259.30	8,816.56	9,413.09	10,091.11	10,661.33	11,175.42
- Rainfed	3,985.01	3,963.28	3,860.39	3,771.96	3,654.17	3,518.82	3,384.36	3,291.41	3,245.32	3,201.65	3,155.16
Total	9,828.67	10,245.97	10,610.01	11,090.13	11,438.53	11,778.12	12,200.92	12,704.51	13,336.44	13,862.98	14,330.58
4. Seeds, Feeds, Wastes (9.5%)	933.72	973.37	1,007.95	1,053.56	1,086.66	1,118.92	1,159.09	1,206.93	1,266.96	1,316.98	1,361.40
5. Paddy for Consumption (1,000MT)	8,894.94	9,272.60	9,602.06	10,036.57	10,351.87	10,659.20	11,041.84	11,497.58	12,069.47	12,545.99	12,969.17
6. Milling Recovery Rate (%)	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
7. Rice for Consumption (1,000MT)	5,870.66	6,119.92	6,337.36	6,624.14	6,832.23	7,035.07	7,287.61	7,588.40	7,965.85	8,280.36	8,559.65
8. Demand											
- Population (Million)	76.32	77.91	79.51	81.13	82.77	84.43	86.10	87.79	89.49	91.21	92.94
- Per Capita Consumption (kg)	90.8	91.3	91.9	92.5	93.1	93.7	94.3	94.8	95.4	96.0	96.7
- Total Demand (1,000MT)	6,927.43	7,116.07	7,308.42	7,504.49	7,704.32	7,907.91	8,115.30	8,326.48	8,541.49	8,760.33	8,983.02
<b>9. Surplus/Deficit (1,000Mt)</b>	<b>-1,056.77</b>	<b>-996.16</b>	<b>-971.06</b>	<b>-880.36</b>	<b>-872.09</b>	<b>-872.84</b>	<b>-827.68</b>	<b>-738.08</b>	<b>-575.64</b>	<b>-479.98</b>	<b>-423.37</b>

Note: Year 2000 figures based on 1999 yearend data

Source: JICA Study Team



表2.9 小規模灌漑開発支援プログラム (BSPP) の進捗状況

(2000年12月現在)

Region	Sub-Allotment Advice (SAA) (PHP95.0M) PHP1,000	Expenditures			Total PHP1,000	Accomplishments		Remarks	
		DA PHP1,000	LGU PHP1,000	IA PHP1,000		Physical % (On-going)	Financial %	Completed CIS Ha/FB*	Ongoing CIS Ha/FB*
CAR	15,000,000	4,789,149	2,455,930	677,824	7,922,903	47.31	52.82	11	23
1	12,784,000	2,086,592	3,034,771	721,431	5,842,794	31.37	45.70	0	10
2	6,000,000	577,219	107,965	247,301	932,485	71.33	15.54	1	3
3	6,000,000	0	0	0	0	0.00	0.00	0	1
4	6,000,000	9,975,166	0	496,949	10,472,115	28.64	174.54	1	8
5	7,216,000	757,410	80,825	88,314	926,549	41.19	12.84	0	1
6	18,000,000	0	0	0	0	0.00	0.00	0	0
8	6,000,000	0	0	0	0	0.00	0.00	0	0
9	6,000,000	0	0	0	0	0.00	0.00	0	0
10	6,000,000	791,810	0	0	791,810	3.21	13.20	0	1
11	0	0	0	0	0	0.00	0.00	0	0
12	0	0	0	0	0	0.00	0.00	0	0
13	6,000,000	0	0	0	0	0.00	0.00	0	0
Total	95,000,000	18,977,346	5,679,491	2,231,819	26,888,656	31.54	28.30	13	47

**Program Summary**

Overall	Number		Area		Farmer Beneficiaries (FB)	
	CIP	CIS	CIP	CIS	CIP	CIS
1. W/ Memo. of Agreement (MOA)	29	301	2,148	20,275	1,938	21,782
2. MOA under Preparation	7	20	1,471	2,247	1,513	2,141
3. Municipal/ LGU Commitment	6	68	328	5,605	254	3,879
4. For Validation	10	107	1,215	7,824	631	6,207
Total	52	496	5,162	35,951	4,336	34,009

- No. of Projects ( CIP/CIS )	=	548
- Area (ha)	=	41,113 ha
- Beneficiaries ( CIP/CIS )	=	38,345
- Total Project Cost	=	1,303,832,396

Note: \* FB = Farmer Beneficiary

Source: DA

表 3.1 雇用形態別のNIA人員配置状況

(December 2000)

Responsibility Center	Monthly			Daily			Total
	Permanent	Temporary	Sub-Total	COB	Project	Sub-Total	
<b>I. NIA Proper</b>							
1) Central Office	591	6	597	28	99	127	724
2) Region 1	303	1	304	8	224	232	536
3) Region 2	243	5	248	113	351	464	712
4) Region 3	474	6	480	2	155	157	637
5) Region 4	451	7	458	96	118	214	672
6) Region 5	226	0	226	21	148	169	395
7) Region 6	374	0	374	49	305	354	728
8) Region 7 & 8	262	0	262	25	644	669	931
9) Region 9	166	0	166	3	207	210	376
10) Region 10	200	0	200	15	138	153	353
11) Region 11	375	5	380	127	357	484	864
12) Region 12	307	0	307	37	372	409	716
13) UPRIS	515	9	524	35	232	267	791
14) MRIIS	505	12	517	172	46	218	735
15) CAR	105	0	105	18	139	157	262
16) CARAGA (Region 13)	126	4	130	30	206	236	366
Sub-Total	5,223	55	5,278	779	3,741	4,520	9,798
Responsibility Center	Monthly Co-Terminus		Daily			Total	
<b>II. Projects</b>							
1) Abulog Apayao Irrig. System Irrig. Project		9		61		70	
2) Addalam Irrigation Project		10		27		37	
3) Balog-Balog Multi-Purpose Project		30		527		557	
4) Bohol Irrigation Project		11		51		62	
5) Casecnan Multi-Purpose Irrig. Power Project		52		467		519	
6) Communal Development Project II		56		4		60	
7) Comprehensive Agrarian Reform Project		187		36		223	
8) Irrigation Systems Improvement Project		30		39		69	
9) Kabulnan Irrigation Area Dev't Proj.		77		290		367	
10) Lower Agusan Development Project		26		168		194	
11) Malitubog-Maridagao Irrigation Project		51		259		310	
12) Pampanga Delta Dev't Project-IC		89		185		274	
13) Rehab of Areas Affected by Mt Pntbo Eruption		7		8		15	
14) Southern Phils. Irrigation System Project		1		28		29	
14) San Roque Multi-Purpose Irrig. & Power Proj.		9		24		33	
15) Small River Irrigatin Project		24		145		169	
16) Tarlac Groundwater Irrig Sys Reactivation Proj.		6		3		9	
17) Visayas Communal Irrig Participatory Proect.		20		115		135	
18) Water Resources Development Project		31		14		45	
Sub-Total		726		2,451		3,177	
<b>Total (I &amp; II)</b>		<b>6,004</b>		<b>6,971</b>		<b>12,975</b>	

Source : Personnel Division, NIA.

表 3.2 事務所・雇用形態別の人員、1985年 2000年

Office/ Project	1985			1986			1987			1988			1989			1990			1991			1992			
	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	
1. Regular Plantilla																									
1) Central Office	844	138	982	915	370	1,285	920	351	1,271	914	510	1,424	859	431	1,290	869	267	1,136	835	91	926	815	66	881	
2) CAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) Region 1	661	200	861	659	33	692	710	19	729	672	19	691	672	19	691	630	879	1,509	642	483	1,125	565	341	906	
4) Region 2	488	336	824	412	357	769	471	438	909	492	573	1,065	484	573	1,057	483	673	1,156	474	432	906	454	279	733	
5) MRIIS	-	-	-	352	363	715	1,059	316	1,375	778	104	882	748	104	852	714	414	1,128	704	347	1,051	674	313	987	
6) Region 3	824	356	1,180	754	149	903	822	200	1,022	817	146	963	832	63	895	792	1,141	1,933	772	696	1,468	668	269	937	
7) UPRIS	973	219	1,192	921	252	1,173	1,058	104	1,162	1,041	316	1,357	1,055	34	1,089	1,000	1,158	2,158	966	221	1,187	942	202	1,144	
8) Region 4	724	289	1,013	691	380	1,071	726	549	1,275	757	549	1,306	760	542	1,302	715	571	1,286	717	131	848	697	174	871	
9) Region 5	468	244	712	366	182	548	370	30	400	363	30	393	369	30	399	348	574	922	346	553	899	327	521	848	
10) Region 6	648	215	863	615	158	773	635	30	665	625	607	1,232	637	742	1,379	598	1,046	1,644	464	28	492	539	356	895	
11) Region 7 & 8	327	374	701	348	203	551	362	292	654	363	292	655	361	452	813	350	678	1,028	327	328	655	345	1,407	1,752	
12) Region 9	189	156	345	225	82	307	248	31	279	252	31	283	241	30	271	219	881	1,100	220	42	262	212	122	334	
13) Region 10	190	409	599	239	164	403	250	164	414	260	164	424	282	164	446	279	601	880	289	299	588	280	924	1,204	
14) Region 11	418	381	799	263	286	549	398	349	747	399	349	748	398	348	746	362	380	742	442	909	1,351	446	49	495	
15) Region 12	408	805	1,213	355	161	516	377	44	421	379	44	423	374	44	418	362	1,215	1,577	357	741	1,098	342	567	909	
Total	7,162	4,122	11,284	7,115	3,140	10,255	8,406	2,917	11,323	8,112	3,734	11,846	8,072	3,576	11,648	7,721	10,478	18,199	7,555	5,301	12,856	7,306	5,590	12,896	
2. Project Plantilla																									
Total	3,063	7,132	10,195	2,857	6,241	9,098	2,867	4,631	7,498	2,955	5,970	8,925	2,912	5,466	8,378	1,676	3,474	5,150	1,371	2,520	3,891	1,003	2,436	3,439	
Grand Total	10,225	11,254	21,479	9,972	9,381	19,353	11,273	7,548	18,821	11,067	9,704	20,771	10,984	9,042	20,026	9,397	13,952	23,349	8,926	7,821	16,747	8,309	8,026	16,335	

Office/ Project	1993			1994			1995			1996			1997			1998			1999			2000			
	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	Monthly	Daily	Total	
1. Regular Plantilla																									
1) Central Office	760	71	831	726	25	751	698	24	722	684	28	712	675	53	728	634	77	711	632	98	730	597	127	724	
2) CAR	86	112	198	119	172	291	116	175	291	120	237	357	115	251	366	119	219	338	118	165	283	105	157	262	
3) Region 1	461	231	692	433	237	670	408	237	645	391	233	624	378	275	653	341	282	623	326	286	612	304	232	536	
4) Region 2	392	332	724	328	256	584	309	355	664	320	451	771	299	419	718	276	551	827	266	335	601	248	464	712	
5) MRIIS	673	270	943	647	271	918	628	268	896	606	307	913	619	335	954	561	302	863	545	283	828	517	218	735	
6) Region 3	630	143	773	585	186	771	546	139	685	524	137	661	522	182	704	491	218	709	497	215	712	480	157	637	
7) UPRIS	879	129	1,008	811	94	905	758	101	859	717	95	812	685	98	783	609	140	749	547	363	910	524	267	791	
8) Region 4	633	242	875	654	417	1,071	590	99	689	552	307	859	527	275	802	487	342	829	481	263	744	458	214	672	
9) Region 5	312	207	519	292	192	484	274	190	464	264	234	498	260	298	558	240	274	514	234	385	619	226	169	395	
10) Region 6	509	287	796	491	299	790	465	359	824	449	393	842	432	469	901	423	447	870	392	458	850	374	354	728	
11) Region 7 & 8	333	1,057	1,390	315	1,822	2,137	302	559	861	291	531	822	291	663	954	278	723	1,001	272	699	971	262	669	931	
12) Region 9	208	179	387	199	342	541	194	752	946	189	115	304	185	144	329	176	176	352	173	411	584	166	210	376	
13) Region 10	282	1,104	1,386	282	1,233	1,515	292	694	986	291	635	926	241	435	676	358	908	1,266	339	1,026	1,365	200	153	353	
14) Region 11	438	294	732	425	620	1,045	415	1,576	1,991	431	870	1,301	436	1,082	1,518	428	636	1,064	391	686	1,077	510	720	1,230	
15) Region 12	353	469	822	337	166	503	315	393	708	308	389	697	262	358	620	249	487	736	321	555	876	307	409	716	
16) MAGAPIT PI	7	94	101	-	-	-	-	-	-	-	-	-	122	676	798	-	-	-	-	-	-	-	-	-	-
Total	6,956	5,221	12,177	6,644	6,332	12,976	6,310	5,921	12,231	6,137	4,962	11,099	6,049	6,013	12,062	5,670	5,782	11,452	5,534	6,228	11,762	5,278	4,520	9,798	
2. Project Plantilla																									
Total	924	1,844	2,768	604	2,459	3,063	859	1,511	2,370	536	882	1,418	677	1,236	1,913	525	1,501	2,026	581	2,453	3,034	726	2,451	3,177	
Grand Total	7,880	7,065	14,945	7,248	8,791	16,039	7,169	7,432	14,601	6,673	5,844	12,517	6,726	7,249	13,975	6,195	7,283	13,478	6,115	8,681	14,796	6,004	6,971	12,975	

Notes: Data as of December in each year; These data exclude the personnel hired under contractual basis.

\* Figures of Region 13 (CARAGA) are included in those of Region 10 & 11..

Sources: Data from the Personnel Division of NIA

表 3.3 給与等級表

No.	Grade	Position
1.	30	Administrator
2.	29	[None established]
3.	28	Deputy Administrator
4.	27	Assistant Administrators
5.	26	Department, Regional Managers & Irrigation Systems Managers (Technical)
6.	25	Department, Regional Managers & Irrigation Systems Managers (Non-Technical)
7.	24	Division Managers (Central Office, Regions, Irrigation Systems)
8.	22-23	Division Managers (Field Projects)
9.	21	District Managers (Field Irrigation Systems)
10.	18-21	Irrigation Superintendent (Field)
11.	18-21	Provincial Irrigation Engineer (Field)
12.	21-22	Section Chiefs (Central Office – Technical)
13.	21-22	Section Chiefs (Central Office – Procurement)
14.	20-21	Section Chiefs (Central Office – Administration)
15.	21	Section Chiefs (Central Office – Legal)
16.	19-22	Section Chiefs (Central Office – Management Services)
17.	18	Section Chiefs (Central Office – Printing)
18.	17-21	Section Chiefs (Central Office – Accounting)
19.	18-22	Section Chiefs (Field Offices)
20.	16-19	Section Chiefs (Irrigation Systems – Technical)
21.	14-19	Section Chiefs (Irrigation Systems – Administration)
22.	14-18	Professional Technical (Central Office)
23.	12-17	Professional Technical (Field Offices)
24.	12	[Entry Level Professional position]
25.	12	[Lowest Supervisory level position]
26.	1-12	Rank and File Administration, Technical & Support Staff

Source: Data from Personnel Division, NIA

表 3.4 NIA正規職員の定年退職予定表、2000年-2010年

Office/ Project	1999	2000		2001		2002		2003	
	Permanent Personnel (as of Jan. 1, 1999)	No. of Compulsory Retirers (up to Dec. 31, 2000)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2001)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2002)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2003)	Total Permanent Personnel at the End of Year
1) Central Office	629	10	619	8	611	6	605	12	593
2) CAR *	-	-	-	-	-	-	-	-	-
3) Region 1	322	2	320	13	307	3	304	6	298
4) Region 2	379	2	377	2	375	0	375	0	375
5) MRIIS	530	5	525	12	513	5	508	4	504
6) Region 3	479	7	472	8	464	8	456	9	447
7) UPRIS	546	7	539	5	534	7	527	3	524
8) Region 4	475	1	474	2	472	0	472	2	470
9) Region 5	234	3	231	1	230	0	230	0	230
10) Region 6	385	6	379	4	375	8	367	5	362
11) Region 7 & 8	272	5	267	3	264	7	257	9	248
12) Region 9	173	0	173	2	171	1	170	1	169
13) Region 10	334	2	332	3	329	3	326	2	324
14) Region 11	388	4	384	3	381	2	379	3	376
15) Region 12	303	0	303	1	302	0	302	0	302
16) Region 13 *	-	-	-	-	-	-	-	-	-
Total	4,820	44	4,776	59	4,717	44	4,673	44	4,629
Grand Total	5,449	54	5,395	67	5,328	50	5,278	56	5,222

Office/ Project	2003	2004		2005		2006		2007	
	Permanent Personnel (as of Jan. 1, 2003)	No. of Compulsory Retirers (up to Dec. 31, 2004)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2005)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2006)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2007)	Total Permanent Personnel at the End of Year
1) Central Office	593	12	581	15	566	18	548	18	530
2) CAR *	-	-	-	-	-	-	-	-	-
3) Region 1	298	8	290	10	280	10	270	8	262
4) Region 2	375	2	373	4	369	10	359	5	354
5) MRIIS	504	10	494	13	481	7	474	13	461
6) Region 3	447	5	442	6	436	10	426	19	407
7) UPRIS	524	4	520	21	499	18	481	28	453
8) Region 4	470	3	467	11	456	13	443	15	428
9) Region 5	230	0	230	8	222	4	218	5	213
10) Region 6	362	5	357	22	335	14	321	14	307
11) Region 7 & 8	248	3	245	7	238	11	227	17	210
12) Region 9	169	0	169	4	165	3	162	10	152
13) Region 10	324	0	324	3	321	2	319	4	315
14) Region 11	376	3	373	5	368	3	365	13	352
15) Region 12	302	0	302	3	299	4	295	7	288
16) Region 13 *	-	2	-	-	-	-	-	-	-
Total	4,629	45	4,586	117	4,469	109	4,360	158	4,202
Grand Total	5,222	57	5,167	132	5,035	127	4,908	176	4,732

Office/ Project	2007	2008		2009		2010		Summary (1999-2010)	
	Permanent Personnel (as of Jan. 1, 2008)	No. of Compulsory Retirers (up to Dec. 31, 2008)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2009)	Total Permanent Personnel at the End of Year	No. of Compulsory Retirers (up to Dec. 31, 2010)	Total Permanent Personnel at the End of Year	Total No. of Compulsory Retirers	% of Retired Permanent Personnel
1) Central Office	530	18	512	19	493	12	481	148	23.5
2) CAR	-	-	-	-	-	-	-	-	-
3) Region 1	262	16	246	6	240	17	223	99	30.7
4) Region 2	354	3	351	8	343	11	332	47	12.4
5) MRIIS	461	9	452	9	443	13	430	100	18.9
6) Region 3	407	14	393	14	379	8	371	108	22.5
7) UPRIS	453	18	435	24	411	24	387	159	29.1
8) Region 4	428	11	417	12	405	18	387	88	18.5
9) Region 5	213	7	206	13	193	12	181	53	22.6
10) Region 6	307	12	295	13	282	15	267	118	30.6
11) Region 7 & 8	210	13	197	10	187	7	180	92	33.8
12) Region 9	152	7	145	2	143	2	141	32	18.5
13) Region 10	315	1	314	3	311	2	309	25	7.5
14) Region 11	352	8	344	4	340	4	336	52	13.4
15) Region 12	288	6	282	3	279	7	272	31	10.2
16) Region 13	-	-	-	-	-	-	-	-	-
Total	4,202	125	4,077	121	3,956	140	3,816	1,006	20.9
Grand Total	4,732	143	4,589	140	4,449	152	4,297	1,154	21.2

Notes: Compulsory retirement is set at age of 65 years old (birthday).

\* Figures of CAR and Region 13 (CARAGA) are included in those of Region 2 and 10, respectively.

Source: Data from the Personnel Division of NIA

表 3.5 NIA既存人員(定員と現行就労数)と「合理化計画」提案人員数との比較表

Organizational Unit	Number of Existing and Authorized		Streamling Proposal (No. of Pos.)	Difference of Existing and Proposed			
	Positions	Filled		Per No. of Pos.		Per Filled Pos.	
				No.	%	No.	%
<b>I. Central Office</b>							
1. Office of the Corporate Board Secretary	3	3	3	0	0%	0	0%
2. Office of the Administrator	51	23	36	-15	-29%	13	57%
3. Project Development & Implementation (PDI)	306	183	183	-123	-40%	0	0%
4. Systems Operations & Equipment Mgt. (SOEM)	225	119	130	-95	-42%	11	9%
5. Finance and Management (FM)	136	117	118	-18	-13%	1	1%
6. Administrative Services	300	198	209	-91	-30%	11	6%
Total	1,021	643	679	-342	-33%	36	6%
<b>II. Field Offices</b>							
1. Regional Irrigation Offices (RIO) 1-X111,CAR	1,447	963	744	-703	-49%	-219	-23%
2. Provincial Irrigation Offices (PIO)	1,564	915	693	-871	-56%	-222	-24%
3. National Irrigation Systems Offices (NISO)	5,251	2,024	2,571	-2,680	-51%	547	27%
4. MRIIS and UPRIIS Headquarters	209	136	-	-209	-100%	-136	-100%
5. District Offices I-IV	1,651	1,001	808	-843	-51%	-193	-19%
6. Dam and Reservoir Division (DRD)	342	236	208	-134	-39%	-28	-12%
Total	10,464	5,275	5,024	-5,440	-52%	-251	-5%
<b>Grand Total</b>	11,485	5,918	5,703	-5,782	-50%	-215	-4%

Note: Number of Filled/ Authorized as of December 2000

Source: Streamlining Plan Revised January 2000

表 3.6 NIA 運営に係わる承認権限

Particular	Approving Officer
1. Appointment & Designation	
1) Appointment of Division Chief / Department Managers	DA Secretary
2) Designation of all personnel	Administrator
2. Leave of Absence	
1) Administrator, Deputy Administrator	
- One (1) year	DA Secretary
- Less than one (1) year	Undersecretary
2) Assistant Administrators, Dept. Mgrs., Div. Mgrs.	
- One (1) year	Administrator
- Less than one year	Deputy Administrator
- Less than 30 days w/ or w/out pay	Asst. Administrator
3) Personnel below Division Chief	
- One year or more, w/ or w/out pay	Administrator
- Less than one year w/ or w/out pay	Deputy Administrator
- Less than 30 days w/ or w/out pay	Asst. Administrator
3. Grant of Permission to teach, exercise profession, etc.	
- Division Chief / Department Managers	Administrator
- Below Division Chief	Deputy Administrator
4. Procurement	
1) Approval of Award and Contract for Civil Works construction through:	
- Int'l Bidding - Above PHP25M	DA Secretary
- Above PHP20M up to PHP25M	Administrator
- Domestic Bidding - Above PHP20M	DA Secretary
- PHP20 M and Below	Adm/Deputy Adm/AA-PDI/SOEM
- Local Minor and Pacquiao* Contracts	RM/OM/PM/PIO/IS/PE
2) Variation (or change) Orders for Civil Works Contracts	
- Up to PHP3 million per order for the ICB	Administrator
- Up to PHP2 M per order for LCD	AA-PDI/ SOEM
- Up to PHP250 T per order	RM/OM/PM
3) Approval of Award and Contract for Procurement of Supplies, Materials and Services through:	
- Int'l Bidding - Above PHP10M	DA Secretary
- PHP10M and below	Administrator
- Domestic Bidding	
Central Office: Above PHP5M	DA Secretary
PHP5M and Below	Adm/Deputy Adm/AA
Field Office: PHP 2M and below	RIM/OM/PM
- Negotiated Contract (including equipment and public services)	Administrator

Note: \* Pacquiao Contract = Small package of contracts, usually labor contracts with maximum contract amount of PHP50,000.

Source: General Memorandum Order No.2 Series 2000, October 4, 2000 and NIA - MC 15s, 1998.

表 3.7 NIA と IA 間の灌漑管理移転 (IMT) に係わる責任分掌 (1/5)

Major Areas of Concern	Present MTP		Transition		Future (IMT)	
	NIA	IA	NIA	IA	NIA	IA
Maintenance	<ul style="list-style-type: none"> <li>major repair</li> <li>maintain diversion works and parts of MC</li> <li>maintain service roads along MC</li> </ul>	<ul style="list-style-type: none"> <li>minor repair</li> <li>canal clearing/cleaning</li> <li>repair/maintenance</li> </ul>	<p>SMALLER NIS</p> <ul style="list-style-type: none"> <li>provide technical assistance to IAs</li> </ul> <p>LARGER NIS</p> <ul style="list-style-type: none"> <li>Provide technical assistance to IAs</li> <li>Conduct on-the-job training</li> <li>Maintain diversion works &amp; structures / Facilities</li> <li>Coordinate plans &amp; programs</li> </ul>	<ul style="list-style-type: none"> <li>canal &amp; structures maintenance</li> <li>preventive maintenance</li> <li>annual repair</li> <li>provide manpower who would be responsible</li> </ul> <ul style="list-style-type: none"> <li>canal &amp; structures maintenance</li> <li>preventive maintenance</li> <li>annual repair</li> <li>provide manpower who would be responsible</li> </ul>	<p>SMALLER NIS</p> <ul style="list-style-type: none"> <li>provide technical assistance to IAs</li> </ul> <p>LARGER NIS</p> <ul style="list-style-type: none"> <li>maintain diversion works &amp; structures / facilities</li> <li>provide technical assistance to IAs</li> <li>coordinate plans &amp; programs</li> </ul>	<ul style="list-style-type: none"> <li>canal &amp; structure maintenance</li> <li>preventive maintenance</li> <li>annual repair</li> </ul> <ul style="list-style-type: none"> <li>canal structures maintenance</li> <li>preventive maintenance</li> <li>annual repair</li> </ul>
Operation	<ul style="list-style-type: none"> <li>operate diversion works</li> <li>deliver water to IA</li> <li>collaborate with IA in preparation of O&amp;M plan</li> </ul>	<ul style="list-style-type: none"> <li>water distribution</li> <li>monitor, record farm activities</li> </ul>	<p>BOTH SMALLER LARGER NIS</p> <ul style="list-style-type: none"> <li>conduct on-the-job training</li> <li>provide technical assistance</li> <li>provide simple manuals</li> <li>provide control structures</li> <li>jointly w/ IAs, conduct NIS asst. &amp; test run</li> </ul> <p>FOR LARGER NIS</p> <ul style="list-style-type: none"> <li>operate diversion works &amp; main canals</li> </ul>	<ul style="list-style-type: none"> <li>deliver, distribute water</li> <li>provide manpower to be responsible</li> </ul>	<p>FOR SMALLER LARGER NIS</p> <ul style="list-style-type: none"> <li>provide technical assistance to IAs</li> </ul> <p>FOR LARGER NIS</p> <ul style="list-style-type: none"> <li>operate diversion works &amp; main canal</li> </ul>	<ul style="list-style-type: none"> <li>monitor, evaluate O&amp;M plan implementation</li> </ul>



表 3.7 NIA と IA 間の灌漑管理移転 (IMT) に係わる責任分掌 (2/5)

Major Areas of Concern	Present MTP		Transition		Future (IMT)	
	NIA	IA	NIA	IA	NIA	IA
Conflicts	<ul style="list-style-type: none"> <li>facilitate resolution of problems &amp; conflicts beyond IA capacity to resolve</li> </ul>	<ul style="list-style-type: none"> <li>resolve irrigation conflicts among members</li> <li>inform IS on problems and conflicts on operation beyond capacity to resolve</li> </ul>	<ul style="list-style-type: none"> <li>strengthen operation of SMC</li> <li>provide advisory to IA</li> </ul>	<ul style="list-style-type: none"> <li>prepare, implement conflict management plan</li> <li>implement sound strategies to prevent/settle conflicts</li> </ul>	<ul style="list-style-type: none"> <li>provide advisory to IA</li> <li>manage SMC</li> </ul>	<ul style="list-style-type: none"> <li>conflict management plan</li> <li>implement sound strategies to prevent/settle conflicts</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>provide training, holds meetings w/ IA re: operation plans</li> <li>provide guidance to IA (capacity building)</li> </ul>	<ul style="list-style-type: none"> <li>attend trainings</li> <li>make available for training and officials and staff</li> <li>attend meetings</li> </ul>	<ul style="list-style-type: none"> <li>monitor, evaluate training impact</li> <li>initiate, conduct NIA-IA O&amp;M conference, RPWs</li> <li>conduct regular IA evaluation</li> <li>provide advisory on higher level programs (agriculture, Entrepreneurship, etc.)</li> <li>conduct intensive technology transfer</li> <li>conduct thorough IA evaluation</li> <li>turnover all necessary documents</li> </ul>	<ul style="list-style-type: none"> <li>establish efficient record keeping management system</li> </ul>	<ul style="list-style-type: none"> <li>monitor, evaluate training impact</li> <li>initiate, conduct NIA-IA O&amp;M conference, RPWs</li> <li>provide advisory</li> </ul>	<ul style="list-style-type: none"> <li>identify training requirements</li> <li>conduct trainings</li> <li>develop program for entrepreneurship, agric'l, etc.</li> <li>train members</li> <li>conduct regular RPWs (internal to IA)</li> <li>conduct internal evaluation /audit</li> <li>conduct continuing studies for agriculture development &amp; marketing</li> </ul>

表 3.7 NIA と IA 間の灌漑管理移転 (IMT) に係わる責任分掌 (3/5)

NIA-IA Delineation of Responsibilities

Major Areas of Concern	Present / MTP		Full (Full IMT) as per NIA Commitment to Donor	
	NIA	IA	NIA	IA
Maintenance	<ul style="list-style-type: none"> <li>major repair (w/ heavy equipment)</li> <li>maintain diversion works and parts of main canal</li> <li>maintain service road along main canal</li> </ul>	<ul style="list-style-type: none"> <li>minor repair</li> <li>canal clearing &amp; cleaning                             <ul style="list-style-type: none"> <li>grass cutting</li> <li>removal, disposal of silt</li> </ul> </li> <li>repair/maintenance of farm ditches and structures</li> <li>maintenance of lateral and turnout gates</li> <li>canal re-shaping</li> <li>minor repair of service</li> </ul>	<p>SMALL NIS</p> <ul style="list-style-type: none"> <li>provide Technical Assistance to IAs</li> </ul> <p>LARGER NIS</p> <ul style="list-style-type: none"> <li>maintain diversion works and the main canal</li> <li>undertake major repair works at secondary subject to negotiations with IA/CIA</li> <li>provide technical assistance to IAs</li> <li>supervise IAs</li> <li>coordinate plans and programs within NIS</li> </ul>	<ul style="list-style-type: none"> <li>canal &amp; structures maintenance</li> <li>preventive maintenance</li> <li>annual repair</li> </ul> <ul style="list-style-type: none"> <li>maintain IA/CIA headgate, and all structures</li> <li>undertake maintenance and repair works within lateral/IA-CIA coverage</li> <li>develop, implement policies and guidelines to ensure upkeep of structures, facilities</li> </ul>
Operation	<ul style="list-style-type: none"> <li>collaborate w/ IA in preparation of CCP and operation plan</li> <li>operate diversion works and deliver water to IA</li> <li>collaborate of annual O&amp;M budget</li> <li>process weekly farm activities</li> </ul>	<ul style="list-style-type: none"> <li>prepare CCP and operation plan</li> <li>prepare annual O&amp;M budget</li> <li>manage, undertake water distribution to turnouts</li> <li>monitoring, recording of farming activities</li> <li>LIPA preparation/submission</li> <li>submit harvest report</li> </ul>	<p>SMALL NIS</p> <ul style="list-style-type: none"> <li>operate diversion works and deliver water to IA</li> <li>assist IA in the preparation of O&amp;M plan and CCP</li> <li>provide advisory to IA</li> </ul> <p>LARGER NIS</p> <ul style="list-style-type: none"> <li>operate diversion works and main canal</li> <li>prepare overall O&amp;M plan</li> <li>conduct O&amp;M planning &amp; review sessions</li> </ul>	<ul style="list-style-type: none"> <li>operate gates beyond NIA jurisdiction</li> <li>deliver/distribute water to turnouts/farmers</li> <li>prepare O&amp;M plans &amp; CCP</li> <li>monitor/evaluate O&amp;M plan implementation</li> <li>prepare LIPA &amp; harvest reports</li> <li>prepare annual O&amp;M budget</li> <li>prepare O&amp;M plans and budget</li> <li>operate IA/CIA headgate and all gates within coverage</li> <li>deliver, distribute water to IAs/farmers</li> <li>monitor, evaluate O&amp;M plan implementation, including LIPA &amp; harvest reports</li> </ul>

表 3.7 NIA と IA 間の灌漑管理移転 (IMT) に係わる責任分掌 (4/5)

NIA-IA Delineation of Responsibilities

Major Areas of Concern	Present / MTP		Full (Full IMT) as per NIA Commitment to Donor	
	NIA	IA	NIA	IA
Conflicts	<ul style="list-style-type: none"> <li>facilitate resolution of problems &amp; conflicts beyond IA capacity to resolve</li> </ul>	<ul style="list-style-type: none"> <li>resolve irrigation conflicts among members</li> <li>inform IS on problems and conflicts on operation beyond capacity to resolve</li> </ul>	<p>SMALL NIS</p> <ul style="list-style-type: none"> <li>provide advisory to IA</li> </ul> <p>LARGER NIS</p> <p>provide advisory to IA/CIA</p>	<ul style="list-style-type: none"> <li>prepare, implement conflict management plan</li> <li>implement sound strategies to prevent/settle conflicts</li> <li>prepare, implement conflict management plan</li> <li>prepare/implement conflict management strategies</li> </ul>
Collection and Financial Aspect	<ul style="list-style-type: none"> <li>prepare ISF bills</li> <li>records remittance of IAs</li> </ul>	<ul style="list-style-type: none"> <li>distribute bills</li> <li>collection, recording of ISF payments</li> </ul>	<p>SMALL NIS</p> <ul style="list-style-type: none"> <li>prepare transmit bills (as a group) to IA provide advisory to IA</li> </ul> <p>LARGER NIS</p> <ul style="list-style-type: none"> <li>prepare, transmit bills (as a group) to IA</li> <li>provide advisory to IA</li> <li>undertake spot audit supervise IAs</li> </ul>	<ul style="list-style-type: none"> <li>prepare bills for individual farmers</li> <li>collects ISF</li> <li>records collection</li> <li>remit payments due NIA</li> <li>maintain reserve funds for future maintenance</li> <li>prepare/distribute bills for individual farmers</li> <li>develop/implement collection strategies</li> <li>undertake recording/audit system</li> <li>remit payments due NIA</li> <li>maintain reserve funds for future maintenance</li> </ul>
Miscellaneous (training, NIA-IA Interface, etc.)	<ul style="list-style-type: none"> <li>provide trainings, holds meetings w/ IA re: operation plans</li> <li>provide guidance to IA (capacity building)</li> </ul>	<ul style="list-style-type: none"> <li>attend trainings</li> <li>make available for training the officials and staff</li> <li>attend meetings</li> </ul>	<ul style="list-style-type: none"> <li>monitor, evaluate training impact</li> <li>initiate, conduct NIA-IA O&amp;M conferences, RPWs</li> <li>provide advisory on other programs</li> <li>conduct regular IA evaluation provide advisory on higher level programs (agriculture, entrepreneurship, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>identify training requirements</li> <li>conduct trainings</li> <li>develop programs for entrepreneurship, agriculture, etc.</li> <li>train members</li> <li>conduct regular RPWs (internal to IA)</li> <li>conduct internal evaluation/audit</li> <li>conduct continuing studies for agricultural development &amp; marketing</li> </ul>

表 3.7 NIA と IA 間の灌漑管理移転 (IMT) に係わる責任分掌 (5/5)

NIA-IA Delineation of Responsibilities

	NIA	IA
Maintenance	Same as future plus: <ul style="list-style-type: none"> <li>• Conduct on-the-job training for IAs</li> </ul>	Same as future plus: <ul style="list-style-type: none"> <li>• assign manpower to be trained and to be responsible</li> </ul>
Operation	Same as future plus: <ul style="list-style-type: none"> <li>• conduct OJT for IAs</li> <li>• provide simple operation manuals</li> <li>• provide control structures</li> <li>• jointly w/ IAs, conduct test run and NIS Assessment per annum</li> </ul>	Same as future plus: <ul style="list-style-type: none"> <li>• assign manpower to be trained and to be responsible</li> </ul>
Collection	Same as future plus: <ul style="list-style-type: none"> <li>• jointly with IAs, conduct NIS Assessment</li> <li>• train IA participants on billing, recording, collection and audit (modified FMST)</li> </ul>	Same as future plus: <ul style="list-style-type: none"> <li>• prepare for plan encompassing all other income generating activities</li> </ul>
Conflict	Same as future plus: <ul style="list-style-type: none"> <li>• strengthen operation of SMC</li> </ul>	
Miscellaneous	Same as future plus <ul style="list-style-type: none"> <li>• conduct strategic planning with IAS</li> <li>• conduct thorough IA evaluation</li> <li>• turnover all necessary documents</li> </ul>	Same as future plus: <ul style="list-style-type: none"> <li>• establish efficient record keeping management system</li> </ul>

Source: National Irrigation Administration

表 3.8 国営灌漑システム事務所 (NISO) の灌漑管理移転 (IMT) 優先順位

No.	Below 3,000 ha	Service Area (ha)	No.	Below 3,000 ha	Service Area (ha)
1	Catingas	256	54	Amburayan	3,420
2	Disalit	485	55	Inarihan-Tigman-Hinagyanan	3,542
3	Palico	886	56	San Fabian-Dumuloc	3,594
4	Pili-Bulan-San Francisco	950	57	Malatgao-Batang-Batang	3,678
5	Pagbahan	1,005	58	Tago	3,716
6	Colo-Caulaman	1,021	59	Ilocos Sur	3,806
7	Banurbur	1,087	60	Pula Bansod	3,830
8	Hindang-Hilongos-Dasay	1,106	61	Sto. Tomas(not operational)	3,924
9	Agos	1,119	62	Porac-Gumain	4,004
10	Bucao	1,231	63	Muleta	4,063
11	San Pablo-Cabagan	1,273	64	Manupali	4,395
12	Nueva Ecija PIS	1,313	65	Pinacanauan-Tumauini	4,495
13	Bito	1,411	66	Saug-Libuganon(Left)	4,550
14	Mambusao	1,423	67	Aklan-Panakuyan	4,816
15	Masalip	1,453	68	Maranding	4,927
16	Daguitan-Guinarona	1,496	69	Sta Cruz-Mabacan-Balanac	4,977
17	Lumintao	1,504	70	Andanan	5,000
18	Balire-Ibawon-Gibuga	1,715	71	Sibalom-San Jose	5,065
19	Cagaycay	1,745	72	Bohol IP	5,373
20	Pangiplan	1,756	73	Kabacan-Pagalungan	5,868
21	Sta Maria-Mayor	1,773	74	Binahaan-Tibak	6,041
22	Barotac Viejo	1,774	75	Mal-Padada	6,125
23	Cantillan	1,785	76	Ambayaon-Dipalo	6,402
24	Dummun	1,802	77	Malasila-Mlang	6,987
25	Lower Chico	1,856	78	Barit-Rida-Buhi-lalo	7,208
26	Bao	1,917	79	Lower Agno-Totonuguen	7,500
27	MNOH	1,946	80	Baco-Bucayao-Magasawang Tubig	8,027
28	Nayom-Bayto	1,948	81	Aganan-Sta Barbara	8,262
29	Sibalom-Tigbauan	2,020	82	Camiling	8,580
30	Zinundungan	2,045	83	Libungan	8,645
31	Baggao	2,067	84	Dipolo-Salug	8,824
32	Siluy-Buayan	2,116	85	Apayao-Abulog Pamplona	10,794
33	Gibong	2,158	86	Magapit	10,914
34	Nueva Vizcaya Bagabag	2,160	87	Pulangi-Roxas Kuya	12,238
35	Mainit-Pongso	2,184	88	Agno-Sinocalan	12,663
36	Libmanan-Cabusao	2,195	89	Bago	12,700
37	Amnay-Patrick-Mompong	2,213	90	Cavite Friar Lands	13,086
38	Iguig-Alcala-Amulung	2,306	91	Tasmoris	13,297
39	Baua	2,419	92	Lambayong-Dumaguil	13,355
40	Mallig	2,427	93	Jalaur-Suage Extn	14,400
41	Lupon	2,450	94	Lasang-Libuganon-Kipaliku	15,767
42	Rugnan	2,500	95	Ilocos Norte	17,034
43	Simulao	2,540	96	Allah-Banga-Marbel	18,209
44	Solana	2,777	97	MRIIS District IV	19,890
45	Daet-Talisay-Matogdon	2,910	98	MRIIS District I	21,797
	Sub-total	78,523	99	MRIIS District II	23,241
	Above 3000 ha	Sevice Area (ha)	100	MRIIS District III	23,442
46	Cagaycay	3,143	101	UPRIIS District IV	23,811
47	Labangan	3,195	102	URIIS District II	23,913
48	Cabadbaran-Taguibo	3,213	103	UPRIIS District I	24,962
49	Laguna Friar Lands	3,250	104	URIIS District III	29,846
50	Batutu	3,269	105	Angat-Maasin	31,485
51	Alip-Talayan	3,300	106	Upper Chico	17,502
52	Caguray	3,308		Sub-total	573,990
53	Dumacaa-Hanagdong-Lagnas	3,309		TOTAL	652,513

Source: JICA Study Team

表3.9 NIAの2000年における管区別財務状況

	CO	CAR	1	2	MRIIS	3	UPRIIS	4	5	6	7 & 8	9	10	11	12	13	Total
<b>1. Receipts from Income Sources</b>																	
1. Irrigation Fees		3	18	32	54	22	70	32	10	23	11	8	13	44	21	10	372
2. Management Fees	250																250
3. Equipment Rental	0	2	7	16	20	9	15	3	5	11	7	7	12	16	12	10	152
4. Interest Income	6	1	1	0	0	0	0	0	0		2	1	1	0	0	0	13
Total	256	6	26	48	74	31	85	35	15	35	20	15	26	60	33	21	786
<b>2. Receipts from Other Sources</b>																	
a. Pump Amortization			0	0	2	0		0	0		0	0		0	0	1	3
b. CIP Amortization		8	15	4		10		7	6	6	13	9	5	10	8	6	106
c. Miscellaneous	7	2	1	5	61	9	17	1	3	1	4	1	0	1	0	1	116
Total from Other Sources	7	9	16	9	63	19	17	8	9	7	16	10	5	11	9	9	225
<b>3. Total from All Sources</b>	263	15	42	57	137	50	103	43	24	42	36	26	31	71	42	30	1,011
<b>4. Less: Expenditures</b>																	
a. Personnel Costs	139	23	54	64	116	69	100	74	46	67	55	32	39	73	50	26	1,026
B. Other Operating Costs	35	2	6	39	32	8	17	3	4	3	4	2	6	21	9	3	192
Total Operating Costs	173	25	60	103	148	77	117	77	50	70	59	33	44	94	59	29	1,218
<b>5. Net Cash (Deficit)</b>	90	-10	-18	-45	-11	-27	-14	-34	-26	-28	-23	-8	-13	-23	-17	1	-207
a. % of ISF to Operating Costs		14%	31%	31%	36%	28%	60%	41%	21%	33%	19%	23%	29%	47%	36%	36%	31%
b. % Receipts from Income Sources to Operating Costs	147%	22%	43%	47%	50%	41%	73%	45%	31%	50%	33%	46%	59%	64%	56%	73%	65%
c. % of Receipts from All Sources to Operating Costs	152%	60%	70%	56%	92%	65%	88%	56%	48%	60%	60%	77%	71%	75%	71%	103%	83%

表3.10 2000年会計年度の内部監査実績

Audit Category	Location		Target Activity	Man/day	Budget (PHP)
	Region	Field Office			
1. Financial Audit	2	All National Systems	ISF Collection	18* 3**	21,600.00
2. Financial Audit	MARIIS	Districts 1 - 4	ISF Collection	12* 3**	19,400.00
3. Financial & Property Audit	CAR	Ifugao, Abra, Benguet Kalinga-Apayao PIO & Upper Chico RIS	Cash count of Cashier, & ISF; and audit of Office equipt.	12* 3**	16,900.00
4. Verification	2	Solana Pump IS	Pre-bidding qualification	12* 2**	6,500.00
5. Financial Audit	7&8	All Systems except Das-ay RIS	ISF Collection	12* 4**	37,692.00
6. Verification/Invest	7&8	Bohol PIO Talibon DAM ( SRIP)	Construction activities	6* 2**	13,988.00
7. Verification/Invest	11	Davao del Norte PIO	Alleged irregularities in the const. of canal	13* 2**	23,228.00
8. Verification/Invest	9	LALIK RIS	Alleged irregular activities of IS	6* 2**	18,884.00
9. Financial Audit of Irrigators Association	MRIIS	District I - IV	Eval. of coll. efficiency	6* 2**	5,600.00
10. Verification/Investigation	12	Kabasalan Irrig. Project	Alleged ver slow implementation of the Dam const. Project	6* 2**	17,552.00
11. Financial Audit	3	Angat Maasin RIS fee coll. & IA viabilty	ISF Collection Dam Entrance fee coll. & IA viabilty	18* 3**	23,600.00
12. Financial Audit	5	Cagaycay, Lib.Cab. RIIS, THRIS	ISF Collection	12* 2**	13,800.00
13. Verification/Investigation	C.O., QC	Contractor's claim in the amt. of P 280,603.95			
<b>Total</b>					<b>218,744.00</b>

Notes: \*Duration (No. of Days)  
 \*\*No. of Internal Auditors involved  
 Source: MSD, NIA

表 4.1 NISO の評価結果 ( 1995 年 ~ 1999 年 )

Level/ Class	A	B	C	Total
1. Nationwide				
1.1 Number of NISO	24	53	28	105
1.2 Proportion (1.1/105)	23%	50%	27%	100%
1.3 Service Area (ha)	170,926	355,434	134,255	660,615
1.4 Proportion (1.3/ 660,615)	26%	54%	20%	100%
2. Island Group				
(1) Luzon				
2.1 Number of NISO	12	29	20	61
2.2 Proportion (2.1/1.1)	43%	58%	72%	59%
2.3 Service Area (ha)	107,480	232,143	95,578	435,201
2.4 Proportion (2.3/1.3)	63%	65%	71%	66%
(2) Visayas				
2.5 Number of NISO	2	8	7	17
2.6 Proportion (2.5/1.1)	8%	15%	25%	16%
2.7 Service Area (ha)	2,517	34,765	36,177	73,459
2.8 Proportion (2.7/1.3)	1%	10%	27%	11%
(3) Mindanao				
2.9 Number of NISO	10	16	1	26
2.10 Proportion (2.9/1.1)	42%	30%	4%	25%
2.11 Service Area (ha)	60,929	88,526	2,500	151,955
2.12 Proportion (2.11/1.3)	36%	25%	2%	23%
3. Total				
3.1 Number of NISO	24	53	28	105
3.2 Percent	100%	100%	100%	100%
3.3 Service Area (ha)	170,926	355,434	134,255	660,615
3.4 Percent	100%	100%	100%	100%

Source: JICA Study Team

Legend: A- Good  
 B - Fair/Average  
 C - Poor



**表 4.2 灌漑用水送水に係るゲート操作スケジュール(アガナン灌漑地区)**

**Headgate of Lateral A**

Engineer in Charge: Mr. Melchor I. Bajande (Operation Engineer)  
 Gate Operator: Mr. Paterno Talite (WRFT)  
 Witness: Vice President of PASAMISBA IA

**Checkgate for Lateral A**

Engineer in Charge: Mr. Melchor I. Bajande (Operation Engineer)  
 Gate Operator: Mr. Paterno Talite (WRFT)  
 Witness: Vice President of PASAMISBA IA

Water Delivery to Area-A			Water Delivery to Area-B & C		
Month	Open		Month	Close	
	Date	Time		Date	Time
May	1	8:00 AM	May	8	8:00 AM
	24	8:00 AM		31	8:00 AM
Jun.	16	8:00 AM	Jun.	23	8:00 AM
Jul.	9	8:00 AM	Jul.	16	8:00 AM
Aug.	1	8:00 AM	Aug.	8	8:00 AM
	24	8:00 AM		31	8:00 AM
Sep.	16	8:00 AM	Sep.	23	8:00 AM
Oct.	9	8:00 AM	Oct.	16	8:00 AM
Nov.	1	8:00 AM	Nov.	8	8:00 AM
	24	8:00 AM		Dec.	1
Dec.	17	8:00 AM		24	8:00 AM
Jan.	9	8:00 AM	Jan.	16	8:00 AM
Feb.	1	8:00 AM	Feb.	8	8:00 AM
	24	8:00 AM		Mar.	1

Water Delivery to Area-B & C			Water Delivery to Area-A		
Month	Open		Month	Close	
	Date	Time		Date	Time
			May	1	8:00 AM
May	8	8:00 AM		24	8:00 AM
	31	8:00 AM		Jun.	16
Jun.	23	8:00 AM	Jul.	9	8:00 AM
Jul.	16	8:00 AM	Aug.	1	8:00 AM
	8	8:00 AM		24	8:00 AM
	31	8:00 AM	Sep.	16	8:00 AM
Sep.	23	8:00 AM	Oct.	9	8:00 AM
Oct.	16	8:00 AM	Nov.	1	8:00 AM
	8	8:00 AM		24	8:00 AM
Dec.	1	8:00 AM	Dec.	17	8:00 AM
	24	8:00 AM	Jan.	9	8:00 AM
Jan.	16	8:00 AM	Feb.	1	8:00 AM
Feb.	8	8:00 AM		24	8:00 AM

**Headgate of Lateral B**

Engineer in Charge: Mr. Melchor I. Bajande (Operation Engineer)  
 Gate Operator: Mr. Luis Ecube (WRFT)  
 Witness: Vice President of SAMICASA IA

**Checkgate for Lateral B**

Engineer in Charge: Mr. Melchor I. Bajande (Operation Engineer)  
 Gate Operator: Mr. Luis Ecube (WRFT)  
 Witness: Vice President of SAMICASA IA

Water Delivery to Area-B			Water Delivery to Area-C		
Month	Open		Month	Close	
	Date	Time		Date	Time
May	8	8:00 AM	May	16	8:00 AM
	31	8:00 AM		Jun.	8
Jun.	23	8:00 AM	Jul.	1	8:00 AM
Jul.	16	8:00 AM	Aug.	16	8:00 AM
	8	8:00 AM		24	8:00 AM
	31	8:00 AM	Sep.	8	8:00 AM
Sep.	23	8:00 AM	Oct.	1	8:00 AM
Oct.	16	8:00 AM	Nov.	16	8:00 AM
	8	8:00 AM		24	8:00 AM
Nov.	8	8:00 AM	Dec.	9	8:00 AM
Dec.	1	8:00 AM	Jan.	1	8:00 AM
	24	8:00 AM		24	8:00 AM
Jan.	16	8:00 AM	Feb.	16	8:00 AM

Water Delivery to Area-C			Water Delivery to Area-B		
Month	Open		Month	Close	
	Date	Time		Date	Time
			May	8	8:00 AM
May	16	8:00 AM		31	8:00 AM
	8	8:00 AM		Jun.	23
Jun.	1	8:00 AM	Jul.	16	8:00 AM
Jul.	24	8:00 AM	Aug.	8	8:00 AM
	16	8:00 AM		31	8:00 AM
Sep.	8	8:00 AM	Sep.	23	8:00 AM
Oct.	1	8:00 AM	Nov.	16	8:00 AM
	24	8:00 AM		8	8:00 AM
Nov.	16	8:00 AM	Dec.	1	8:00 AM
Dec.	9	8:00 AM	Jan.	16	8:00 AM
	1	8:00 AM		24	8:00 AM
	24	8:00 AM	Feb.	8	8:00 AM
Feb.	16	8:00 AM			

**Headgate of Lateral C & D**

Engineer in Charge: Mr. Melchor I. Bajande (Operation Engineer)  
 Gate Operator: Mr. Abundio Janobas (WRFT)  
 Witness: Vice President of MACABITU IA and SALAMBITU IA

Water Delivery to Area-C			For Canal Maintenance		
Month	Open		Month	Close	
	Date	Time		Date	Time
May	1	8:00 AM	Mar.	1	8:00 AM

表 4.3 水利費請求可能額( 2000年雨期作) (UPRIIS 第III区)

Division C IA: Sapang Kubo				Lot	Not	Area	ISF Collectibles (Kilos)			ISF Collectibles - In Pesos			Total
TSA: 601.1-5		CAD No.	Landowner				Size	Planted	Planted	W. Season			
BSA No.	Lot No.			<=2	>2 <=5	>5				<=2	>2 <=5	>5	
1	20506	1655 E	DELA CRUZ, JESSIE	1.00		1.00	75.00			675.00			675.00
2	20507	1655 F	DELA CRUZ, ELEUTERIO	1.00		1.00	75.00			675.00			675.00
3	20508	1655 G	DELA CRUZ, FELIX	1.75		1.75	131.25			1,181.25			1,181.25
4	20509	1655 H	CRUZ, DEMETRIO	2.00		2.00	150.00			1,350.00			1,350.00
5	20510	1655 I	VALERIANO, PONCIANO	2.00		2.00	150.00			1,350.00			1,350.00
6	20511	1655 J	VILLAREAL, DAISY	3.00		3.00		375.00			2,025.00		2,025.00
7	20512	2235 A	DELA CRUZ, DALMACIO	0.50		0.50	37.50			337.50			337.50
8	20513	1655 K	DIAZ, FLORENCIO	3.50		3.50		437.50			2,362.50		2,362.50
9	20514	1655 L	DELA CRUZ, DALMACIO	2.50		2.50		312.50			1,687.50		1,687.50
10	20515	1655 M	PAGUIA, FLORANTE	1.00		1.00	75.00			675.00			675.00
11	20516	1655 N	NUNEZ, EDGARDO	3.00		3.00		375.00			2,025.00		2,025.00
12	20517	2235 B	DELA CRUZ, DALMACIO	1.00		1.00	75.00			675.00			675.00
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
Total				22.25	0.00	22.25	768.75	1,500.00	0.00	6,918.75	8,100.00	0.00	15,018.75

表 4.4 能力向上計画・水利者リスト及び水利費登録簿の更新 (UPRIIS 第III区)

Irrigators Associations (IAs)	No. of Farm Lots				Billable Area			
	New	Old	Inc/(Dec)	%	New	Old	Inc/(Dec)	%
Sapang Kubo								
1 601-1-3A	16	14	2		29.20	25.95	3.25	
2 *601-1-3B*	14	14	0		35.25	33.75	1.50	
3 601-1-4	21	20	1		48.85	45.65	3.20	
4 601-1-5	11	12	-1		22.75	22.25	0.50	
5 601-1-7 **	7	10	-3		13.75	18.75	-5.00	
6 601-1-6	20	19	1		47.50	45.50	2.00	
7 601-2-1	31	30	1		63.55	54.95	8.60	
Sub-Total	120	119	1	0.01	260.85	246.80	14.05	5.4%
Crisol B. Pag-asa								
1 601-3	11	8	3		30.60	26.50	4.10	
2 601-4	18	16	2		25.25	21.12	4.13	
3 601-5	14	12	2		26.50	21.60	4.90	
4 601-6	4	4	0		20.00	20.00	0.00	
5 601-7	23	24	-1		42.30	40.90	1.40	
Sub-Total	70	64	6	0.09	144.65	130.12	14.53	10.0%
Rivera Borual								
1 MC-16	6	7	-1		23.85	25.05	-1.20	
2 MC-17	14	16	-2		34.60	40.80	-6.20	
3 600-S	2	2	0		6.50	8.50	-2.00	
4 601-1	12	12	0		24.80	24.90	-0.10	
5 601-2	19	18	1		33.34	33.75	-0.41	
6 601.1-1	34	35	-1		14.65	17.50	-2.85	
7 601.1-2	41	40	1		70.20	66.34	3.86	
Sub-Total	128	130	-1	-0.01	207.94	216.84	-8.90	-4.3%
Pitong Gatang								
1 600-2	13	9	4		33.60	27.00	6.60	
2 600-3	22	21	1		30.75	24.85	5.90	
3 600-5	32	30	2		41.15	39.95	1.20	
4 600-S1	14	13	1		23.80	23.80	0.00	
5 600-S1A	4	4	0		10.75	9.40	1.35	
6 602-1	5	4	1		13.10	11.00	2.10	
7 602-2	16	14	2		51.50	40.50	11.00	
8 602-S2	5	5	0		13.50	13.50	0.00	
9 602-S3	9	9	0		9.00	9.00	0.00	
10 MC-18	8	6	2		20.70	20.50	0.20	
11 MC-S6	4	4	0		6.25	7.25	-1.00	
12 MC-S7	4	4	0		4.35	4.20	0.15	
13 X602.1-1	4		4		25.00		25.00	
14 X602.1-2	2	7	-5		5.25	31.25	-26.00	
15 X602.1-6	30		30		64.50	20.80	43.70	
16 X602.1-7	31		31		48.95	48.45	0.50	
Sub-Total	203	130	73	0.36	402.15	331.45	70.70	17.6%
San Gregorio-Soledad								
1 600-4	22	21	1		31.40	27.70	3.70	
2 600-6	17	17	0		31.95	27.00	4.95	
3 605-1	29	31	-2		40.14	39.14	1.00	
4 605-2	31	29	2		46.97	42.05	4.92	
5 605-3	15	15	0		20.8	18.70	2.10	
6 605-4	10	11	-1		20.25	25.75	-5.50	
7 605.1-1	22	20	2		28.7	27.10	1.60	
8 605.1-2	13	13	0		16.75	15.75	1.00	
9 605.1-3	31	31	0		40.84	40.84	0.00	
Sub-Total	190	188	2	0.01	277.80	264.03	13.77	5.0%
Grand Total	711	631	80	11%	1,293.39	1,189.24	104.15	8.1%

表 4.5 国営灌漑システム (NIS) リスト (1/2)

NO.	REGION NIS NO.	REGION	PROVINCE	NISO NO.	NISO	NIS	LOCATION OF NISO
1	1	CAR	Kalinga	1	Upper Chico	Upper Chico	Bulanao, Tabuk
2	1	Region 1	Ilocos Norte	2	Ilocos Norte	Bonga PIS-1	Teodora Alonzo St., Laoag City
3	2					Bonga PIS-2	
4	3					Bonga PIS-3	
5	4					Laoag Vintar	
6	5					Nmc Pasuquin	
7	6					Dingras	
8	7					Bolo	
9	8					Cura	
10	9					Nueva Era	
11	10					Madongan Area	
12	11					Solsona Area	
13	12					Labugaon Area	
14	13					Papa Area	
15	14		Ilocos Sur	3	Ilocos Sur	Sta. Maria-Burgos	Maharlika Highway, Sta. Maria
16	15					Sta. Lucia-Candon	
17	16					Tagudin	
18	17		La Union	4	Amburayan	Amburayan	Sudipen
19	18			5	Masalip	Masalip	San Jose Norte, Agoo
20	19		Pangasinan	6	Agno-Sinocalan	Agno	Bayaoas, Urdaneta City
21	20					Sinocalan	
22	21			7	Ambayoan-Dipalo	Ambayoan	Tayug
23	22					Ambayoan-Extension	
24	23					Dipalo	
25	24			8	Lower Agno	Lower Agno	Tumana, Rosaes
26	25			9	San Fabian-Dumuloc	San Fabian	Cayanga, San Fabian
27	26					Dumuloc	
28	1	Region 2	Cagayan	10	Apayao-Abulug-Pamplona	Apayao-Abulug	Ballesteros
29	2					Pamplona	
30	3			11	Baggao	Baggao	San Jose, Baggao
31	4			12	Banurbur Creek	Banurbur Creek	Maddalero, Buguey
32	5			13	Baua	Baua	Sta. Cruz, Gonzaga
33	6			14	Dummun	Dummun	Cabacayan, Gattaran
34	7			15	Iguig-Alcala-Amulung	Iguig-Alcala-Amulung PIS	Amulung
35	8			16	Lower Chico	Lower Chico	Tuao
36	9			17	Magapit	Magapit PIS	Dugo, Camalaniugan
37	10			18	Solana-Pinacanauan	Solana PIS	Solana
38	11					Pinacanauan	
39	12			19	Zinundungan	Zinundungan	Lasam
40	13		Isabela	20	Mallig	Mallig	Mallig
41	14			21	San Pablo Cabagan	San Pablo Cabagan	Cabagan
42	15			22	Tumauni	Tumauni	Tumauni
43	16		Nueva Vizcaya	23	Bagabag	Bagabag	Bagabag
44	1	Region 3	Bataan	24	Colo-Caulaman	Colo	Layac, Dinalupihan
45	2					Caulaman	
46	3		Bulacan	25	Angat-Maasim	Angat	Tambubong, San Rafael
47	4					Maasim	
48	5		Nueva Ecija	26	NEPIS (Nueva Ecija PIS)	NEPIS	Cabanatuan City
49	6		Pampanga	27	Porac-Gumain	Porac	Solib, Floridablanca
50	7					Gumain	
51	8		Tarlac	28	Camiling	Camiling	Malacampa, Camiling
52	9			29	Tasmoris	Tasmoris	Matatalab, Tarlac
53	10		Zambales	30	Bucao	Bucao	Carael, Botolan
54	11			31	Nayom-Bayto	Nayom	Sta. Cruz
55	12					Bayto	
56	13			32	Sto. Tomas	Sto. Tomas	San Marcelino
57	1	Region 4	Aurora	33	Disalit Creek	Disalit Creek	Poblacion 5, San Luis
58	2		Batangas	34	Palico	Palico	Nasugbu
59	3		Cavite	35	Cavite Friar Lands	Molino	Ibayo Silangan, Naic
60	4					Embarcadero-Baluctot	
61	5					Luksuhin-Makuling	
62	6					Pasong Kastila-Julian	
63	7					Bankud	
64	8					Butas Marcelo	
65	9					Plucena-Bayan	
66	10					Butas-Lawang Bato	
67	11					Navarro	
68	12					Matanda	
69	13					Balayungan	
70	14					Tres Cruces	
71	15					San Agustin-Pasong Buaya	
72	16					Culong-Culong	
73	17					Sahing	
74	18		Laguna	36	Laguna Friar Lands	Cabuyao PIS	Sala, Cabuyao
75	19					San Cristobal	
76	20					Diezmo PIS	
77	21					Macablang	
78	22					San Juan	
79	23			37	Sta. Cruz-Mabacan-Balanac	Sta. Cruz	Pila
80	24					Mabacan	
81	25					Balanac	
82	26					Lumban	
83	27					Malaunod	
84	28			38	Sta. Maria-Mayor	Sta. Maria	Malico, Mabitac
85	29					Mayor	
86	30					Dambo PIS	
87	31		Occidental Mindoro	39	Amnay-Patrick-Mongpong	Amnay-Patrick	San Vicente, Sablayan
88	32					Mongpong	
89	33			40	Caguray	Caguray	Magsaysay
90	34			41	Lumintao	Lumintao	Magsikap, Rizal
91	35			42	Pagbahan	Pagbahan	Sta. Cruz
92	36		Oriental Mindoro	43	Baco Bucayao-Mag-Asawang Tubig	Baco Bucayao	Bayanan II, Calapan
93	37					Mag-Asawang Tubig	
94	38			44	Pula -Bansud	Pula	Pinamalayan
95	39					Bansud	
96	40		Palawan	45	Batang-Batang-Malatgao	Batang-Batang	Narra
97	41					Malatgao	
98	42		Quezon	46	Agos	Agos	Comon, Infanta
99	43			47	Dumacaa-Hanagdong-Lagnas	Dumacaa	Lucena City
100	44					Hanagdong	
101	45					Lagnas	
102	46		Romblon	48	Cantingas	Cantingas	San Fernando, Sibuyan

Source: SMD, NIA

表 4.5 国営灌漑システム (NIS) リスト (2/2)

NO.	REGION NIS NO.	REGION	PROVINCE	NISO NO.	NISO	NIS	LOCATION OF NISO
103	1	Region 5	Albay	49	Mahaba-Nasisi-Ogsong-Hibiga	Mahaba	Tuburan, Ligao
104	2				Nasisi		
105	3				Ogsong		
106	4				Hibiga		
107	5		Camarines Norte	50	Daet Talisay - Matognon	Daet Talisay	Lag-on, Daet
108	6				Matogdon		
109	7		Camarines Sur	51	Rinconada Integrated	Barit	Sta. Elena, Iriga City
110	8				Rida		
111	9				Buhi-Lalo		
112	10			52	Cagaycay	Cagaycay	Sabang, San Jose
113	11			53	Libmanan Cabusao	Libmanan Cabusao PIS	Libmanan
114	12			54	Tigman-Hinagyanan-Inarihan	Tigman-Hinagyanan	San Roque, Calabanga
115	13				Inarihan		
116	14		Sorsogon	55	Pili-Bulan-San Francisco	San Francisco	San Ramon, Bulan
117	15				San Ramon		
118	1	Region 6	Aklan	56	Aklan-Panakuyan	Aklan	Linabuan Sur, Banga
119	2				Panakuyan		
120	3		Antique	57	Sibalom-San Jose	Sibalom-San Jose	San Jose
121	4		Capiz	58	Mambusao	Mambusao	Mambusao
122	5		Iloilo	59	Aganan-Sta. Barbara	Aganan	Tacas, Jaro, Iloilo City
123	6				Sta. Barbara		
124	7			60	Barotac Viejo	Barotac Viejo	Barotac Viejo
125	8			61	Jalaur-Suague	Jalaur-Proper	Pototan
126	9				Jalaur-Extension		
127	10				Suague		
128	11			62	Sibalom-Tigbauan	Sibalom-Tigbauan	Tigbauan
129	12		Negros Occidental	63	Pangiplan	Pangiplan	Pavao, Binalagan
130	13			64	Bago	Bago	Bago City
131	1	Regions 7	Bohol	65	Bohol	Bohol	Pilar
132	1	Regions 8	Leyte	66	Balire-Ibawon-Gibuga	Balire North	MacArthur
133	2				Balire South		
134	3				Ibawon		
135	4				Gibuga		
136	5			67	Bao	Bao	Valencia, Ormoc City
137	6			68	Binahaan-Tibak	Binahaan North	Calogoc, Tanauan
138	7				Binahaan South		
139	8				Lower Binahaan		
140	9				Tibak		
141	10			69	Bito	Bito	Abuyog
142	11			70	Daguitan-Guinarona	Daguitan	Julita
143	12				Guinarona		
144	13			71	Hindang-Hilongos- Das-Ay	Hindang-Hilongos	Hindang
145	14				Das-Ay		
146	15			72	Maimit-Pongso	Maimit	Alang-alang
147	16				Pongso		
148	1	Region 9	Zamboanga del Sur	73	Dipolo-Salug	Dipolo	Duminguag
149	2				Salug		
150	3			74	Labangan	Labangan	Labangan
151	4			75	Sibuguey Valley	Sibuguey Valley	Bayog
152	1	Region 10	Bukidnon	76	Manupali	Manupali	Valencia
153	2			77	Muleta	Muleta	Maramag
154	3			78	Pulangui-Roxas-Kuya	Pulangui	Valencia
155	4				Roxas-Kuya		
156	1	Region 11	Compostela Valley	79	Batutu	Batutu	Compostela
157	2		Davao del Norte	80	Lasang-Libuganon-Kipaliku	Lasang	Carmen
158	3				Libuganon-Right		
159	4				Kipaliku		
160	5			81	Saug-Libuganon Left	Saug	Buclad, Asuncion
161	6				Libuganon-Left		
162	7		Davao del Sur	82	Mal-Padada	Mal	Hagonoy
163	8				Padada		
164	9		Davao Oriental	83	Lupon	Lupon	Lupon
165	10		Sarangani	84	Siluy-Buayan	Siluy	Siluy, General Santos City
166	11				Buayan		
167	12		South Cotabato	85	Allah-Banga-Marbel	Allah	Koronadal, Surallah
168	13				Banga		
169	14				Marbel-1		
170	15				Marbel-2		
171	1	Region 12	Lanao del Norte	86	Maranding	Maranding	Maranding, Lala
172	2		Maguindanao	87	Alip-Talayan	Alip	Alip, Datu Paglas
173	3				Talayan		
174	4		North Cotabato	88	Kabacan-Pagalungan	Kabacan	Katiduan, Kabacan
175	5				Pagalungan		
176	6			89	Libungan	Libungan	Villarica, Midsayap
177	7			90	Mlang-Malasila	Mlang	Buayan, Mlang
178	8				Malasila		
179	9		Sultan Kudarat	91	Lambayong-Dumaguil	Lambayong	Lambayong
180	10				Dumaguil		
181	11		Lanao del Sur	92	Rugnan	Rugnan	Taraka, Marawi City
182	1	Region 13	Agusan del Norte	93	Cabadbaran-Taguibo	Cabadbaran-Taguibo	Sanghan, Cabadbaran
183	2		Agusan del Sur	94	Andanan	Andanan	Bayugan I
184	3			95	Gibong	Gibong	Prosperidad
185	4			96	Simulao	Simulao	Trento
186	5		Surigao del Sur	97	Cantillan	Cantillan	Madrid
187	6			98	Tago	Tago	Tabon-Tabon, Tago
188	1	MRIIS	Isabela	99	MRIIS District I	MRIIS District I	Batal, Santiago City
189	2			100	MRIIS District II	MRIIS District II	San Mateo
190	3			101	MRIIS District III	MRIIS District III	San Manuel
191	4			102	MRIIS District IV	MRIIS District IV	Minante, Cauayan
192	1	UPRIIS	Nueva Ecija	103	UPRIIS District I	UPRIIS District I	Munoz
193	2			104	UPRIIS District II	UPRIIS District II	Talavera
194	3			105	UPRIIS District III	UPRIIS District III	Cabanatuan City
195	4			106	UPRIIS District IV	UPRIIS District IV	Gapan

Source: SMD, NIA

表4.6 国営灌漑プロジェクト(NIP) (1/2)

National Irrigation Projects (NIPs) (Recently Completed and On-Going NIPs)

No.	Name of Projects	Schedule	Region	Province	Recently Completed Area as of 1999 (ha)	On-Going Area (ha)	Total Target Area (ha)
1	San Roque Multipurpose Irrigation Project	1999-2007	Region 1	Pangasinan	0	23,700	23,700
2	Apayao-Abulug Irrigation Systems Improvement Project	1996-2001	Region 2	Cagayan/ Isabela	0	6,465	6,465
3	Addalam River Irrigation Project	1997-2004	Region 2	Quirino	0	5,830	5,830
4	Pampanga Delta Development Project-IC	1992-2002	Region 3	Pampanga	1,076	6,133	7,209
5	Casecnan Multipurpose Irrigation and Power Project-IC	1997-2004	Region 3	Nueva Ecija	1,641	33,359	35,000
6	Balog-Balog Multipurpose Project	1999-2006	Region 3	Tarlac	0	24,849	24,849
7	Bago RIS Rehabilitation & Improvement Project	2000-2005	Region 6	Negros Occidental	0	2,500	2,500
8	Bohol Irrigation Project II	2000-2005	Region 7	Bohol	0	4,550	4,550
9	Basey Irrigation Project	1996-2004	Region 8	Western Samar	0	3,000	3,000
10	Irrigation Systems Improvement Project (ISIP) II	1997-2002	Region 8	Leyte	0	809	809
11	Bubunawan Irrigation Project	1996-2003	Region 10	Bukidnon	0	2,000	2,000
12	Rural Development Pilot Project for Muslim Mindanao	2000-2002	Region 12	Lanao del Sur	0	2,800	2,800
13	Malitubog-Maridagao Irrigation Project I	1989-2002	Region 12	North Cotabato	632	10,208	10,840
14	Kabulnan Irrigation & Area Development Project	1992-2000	Region 12	Maguindanao	4,636	6,394	11,030
15	Lower Agusan Development Project - IC	1996-2002	Region 13	Agusan del Norte	0	7,082	7,082
16	Southern Philippines Irrigation Sector Project (SPISP)	2000-2006	Southern Philippines	Southern Philippines	0	15,500	15,500
17	Water Resources Development Project (WRDP)	1997-2002	Nationwide	Nationwide	139	6,857	6,996
	<b>Total</b>				<b>8,124</b>	<b>162,036</b>	<b>170,160</b>

Source: CORPLAN, NIA (As of February 2001)

表4.6 国営灌漑プロジェクト(NIP) (2/2)

**National Irrigation Projects (NIPs) (Proposed NIPs to be implemented up to 2004)**

No.	Name of Projects	Schedule	Region	Province	Total Target Area (ha)
1	Rizal (Aliog) Irrigation Project	2002-2003	CAR	Kalinga	1,500
2	Tineg River Irrigation Project	2004-2005	CAR	Abra	3,200
3	Infanta Impounding Irrigation Project	2003-2004	Region 1	Pangasinan	560
4	Ilocos Norte Irrigation Project Phase II (Palsiguan)	2001-2010	Region 1	Ilocos Norte	12,400
5	Banaoang Irrigation Project	2002-2004	Region 1	Ilocos Sur	6,000
6	Tumauini Reservoir Project	2003-2008	Region 2	Cagayan / Isabela	2,385
7	North Lawis Irrigation Project	2000-2003	Region 3	Zambales	1,270
8	Mapanuepe Lake Irrigation Project	2003-2004	Region 3	Zambales	1,900
9	Quipot Irrigation Project Phase I and II	2000-2005	Region 4	Quezon	3,410
10	Bicol River Basin Flood Control & Irrigation Development Project-IC	2004-2010	Region 5	Camarines Norte	6,100
11	Help for Catubig Agricultural Advancement Project Stage I	2001-2006	Region 8	Northern Samar	4,550
12	Marabong-Upper Daguitan Irrigation Project	2004-2005	Region 8	Northern Leyte	2,400
13	Titay Valley Irrigation Project	2003-2006	Region 9	Zamboanga del Norte & Sur	3,800
14	Sibuguey RIS Extension Project	2003-2005	Region 9	Zamboanga del Sur	3,000
15	Kadingilan Irrigation Project	2002-2005	Region 10	Bukidnon	6,000
16	Muleta Reservoir Irrigation Project	2002-2007	Region 10	Bukidnon	2,400
17	Talakag Irrigation Project	2003-2004	Region 10	Bukidnon	2,800
18	Balingasag Irrigation Project	2003-2005	Region 10	Misamis Oriental	2,000
19	Saug Reservoir Project	2002-2007	Region 11	Davao del Norte	5,000
20	Talayan River Irrigation System Rehabilitation Project	2002	Region 12	Maguindanao	388
21	Alip River Irrigation System Rehabilitation Project	2002	Region 12	Maguindanao	300
22	Pagalungan River Irrigation System Rehabilitation Project	2003-2005	Region 12	Maguindanao	380
23	Malitubog-Libungan Transbasin Irrigation Project	2002-2008	Region 12	Maguindanao / North Cotabato	5,000
24	Adgaoan-Umayan Irrigation Project	2003-2008	Region 13	Agusan del Sur	16,000
25	Grain Sector Development Program - IC	2001-2005	Nationwide	Nationwide	908
	<b>Total</b>				<b>93,651</b>

Source: CORPLAN, NIA (As of February 2001)

表4.7 灌漑インベントリーの主要項目

No.	Item	Unit	NIS	NIP		CIS
				On-going	Proposed	
1.	Name of Responsible Office	-	0	0	0	0
2.	Location					
	a. Region	-	0	0	0	0
	b. Province	-	0	0	0	0
	c. Municipality	-	0	0	0	0
	d. Latitude & Longitude (at Intake Site)					
	N. Latitude	-	0	0	0	0
	E. Longitude	-	0	0	0	0
	e. Distance from NIA's Regional Irrigation Office (at Intake Site)	km	0	0	0	0
	f. Distance from NIA's Provincial Irrigation Office (at Intake Site)	km	-	-	-	0
3.	Source of Water Supply	-	0	0	0	0
4.	Approved Water Right	m <sup>3</sup> /sec	0	0	0	0
5.	Catchment Area at Intake Site	km <sup>2</sup>	0	0	0	0
6.	Project History					
	a. Year of Feasibility Study Completed	-	0	0	0	0
	b. Year of Detailed Design Completed	-	0	0	0	0
	c. Year of Construction Started	-	0	0	-	0
	d. Year of Construction Completed	-	0	-	-	0
	e. Year of Operation Started	-	0	-	-	0
	f. Year of Rehabilitation Works (Latest)	-	0	-	-	0
7.	Total Construction Cost (Original)	Pesos	0	-	-	0
8.	Total Construction Cost (Estimate)	Pesos	-	0	0	-
9.	Irrigation Service Area (ISA) (Actual)	ha	0	-	-	0
10.	Irrigation Service Area (ISA) (Designed Irrigable Area)	ha	-	0	0	-
11.	Irrigated Area					
	a. Irrigated Area in the Wet Season	ha	0	-	-	0
	b. Irrigated Area in the Dry Season	ha	0	-	-	0
12.	Benefited Area					
	a. Benefited Area in the Wet Season	ha	0	-	-	-
	b. Benefited Area in the Dry Season	ha	0	-	-	-
13.	Number of Irrigation Divisions	nos.	0	-	-	0
14.	Type of Intake Facilities	-	0	0	0	0
15.	Designed Intake Discharge	m <sup>3</sup> /sec	0	0	0	0
16.	Length of Main Canal					
	a. Lined Canal	km	0	0	0	0
	b. Unlined Canal	km	0	0	0	0
	c. Total	km	0	0	0	0
17.	Length of Laterals					
	a. Lined Canal	km	0	0	0	0
	b. Unlined Canal	km	0	0	0	0
	c. Total	km	0	0	0	0
18.	Number of Irrigation Canal Structures	nos.	0	0	0	0
19.	Length of Service Roads	km	0	0	0	0
20.	Length of Access Roads	km	0	0	0	0
21.	Drainage Density (Total Length of Drains / ISA)	km/ha	0	0	0	0
22.	Farm Ditch Density (Total Length of Farm Ditches / ISA)	km/ha	0	0	0	0
23.	Average Annual Rainfall	mm	0	0	0	0
24.	Accomplishment (Progress) of Project Implementation					
	a. Financial Accomplishment (Progress)	%	-	0	-	-
	b. Physical Accomplishment (Progress)	%	-	0	-	-
25.	Average Crop Yield (Rice)					
	a. Average Crop Yield (Rice) in the Wet Season	t/ha	0	-	-	0
	b. Average Crop Yield (Rice) in the Dry Season	t/ha	0	-	-	0
26.	Cropping Intensity	%	0	-	-	0
27.	ISF Collection Efficiency	%	0	-	-	-
28.	Viability Index (Income-Expense Ratio)	-	0	-	-	-
29.	Numbers of Farmers (households) in the Irrigation Service Area	nos.	0	-	-	0
30.	Land Holding Distribution of Farmers (households)					
	a. 2 ha & Below	nos.	0	-	-	0
	b. 2 - 5 ha	nos.	0	-	-	0
	c. More than 5 ha	nos.	0	-	-	0
31.	Average Farm Size of Farmers	ha/household	0	-	-	0
32.	Date Turned over to IA	-	-	-	-	0
33.	Amortization Status (IA Loan)					
	a. Total Loan Amount	Pesos	-	-	-	0
	b. Cumulative Collected Amount	Pesos	-	-	-	0
34.	Operation Status (Operational / Non operational)	-	-	-	-	0

Note: 0: Particular to be mentioned.

Source: JICA Study Team



表 6.1 NIA機材の配置状況

(2000年6月30日現在)

REGION	HEAVY EQUIPMENT (H)			LIGHT EQUIPMENT (L)			OTHER EQUIPMENT (O)			SPECIAL EQUIPMENT (S)			SURFACE & DEEPWELL IRRIGATION PUMPS (F)			TOTAL A1+A2+R					PERCENT OPERABLE (%) A1/(A1+A2)*100					OVERALL PERCENT OPERABLE		
	A1	A2	R	A1	A2	R	A1	A2	R	A1	A2	R	A1	A2	R	H	L	O	S	P	TOTAL	DISTRIBUTION	H	L	O	S	P	TOTAL
	1	61	8	18	260	12	16	136	16	15	16	1		48	28	5	87	288	167	17	81	640	5.80	88	96	89	94	63
2	69	12	17	281	28	37	129	28	53	9	4	10	39	5		98	346	210	23	44	721	6.53	85	91	82	69	89	87
3	67	24	19	429	38	77	191	53	32	40	9	2	131	38		110	544	276	51	169	1150	10.42	74	92	78	82	78	84
4	58	32	25	379	78	137	90	67	90	14	3	1	21	31	1	115	594	247	18	53	1027	9.31	64	83	57	82	40	73
5*	44	7	47	200	16	202	64	15	167	5		3	17	1		98	418	246	8	18	788	7.14	86	93	81	100	94	89
6*	57	30	36	236	34	97	111	28	74				4			123	367	213	0	4	707	6.41	66	87	80	0		82
7 & 8	66	31	18	237	42	80	147	21	159	1	1	9				115	359	327	11	0	812	7.36	68	85	88	50		83
9	20	11	18	64	6	46	59	9	47	1		1				49	116	115	2	0	282	2.56	65	91	87	100		85
10	50	10	37	143	14	122	87	25	160							97	279	272	0	0	648	5.87	83	91	78			85
11	83	21	86	296	42	123	130	10	82	9		13	5			190	461	222	22	5	900	8.15	80	88	93	100		88
12*	78	27	23	323	45	46	149	65	27	3						128	414	241	3	0	786	7.12	74	88	70	100		80
13	75	21	146	180	33	273	125	22	284	37	4	115				242	486	431	156	0	1315	11.91	78	85	85	90		84
MRIIS	46	10	24	243	14	41	58	6	14	14	4	4				80	298	78	22	0	478	4.33	82	95	91	78		91
UPRIIS	23	21	9	234	33	25	44	21	4	10	2	9				53	292	69	21	0	435	3.94	52	88	68	83		80
CAR	29	5	9	88	15	46	74	18	9							43	149	101	0	0	293	2.65	85	85	80			83
C.O.				46	4	2	3									0	52	3	0	0	55	0.50		92	100			92
<b>TOTAL</b>	826	270	532	3,639	454	1,370	1,597	404	1,217	159	28	167	265	103	6	1,628	5,463	3,218	354	374	11,037	100.00	75	89	80	85	72	84
%	7.48	2.45	4.82	32.97	4.11	12.41	14.47	3.66	11.027	1.44	0.25	1.51	2.4	0.93	0.1	14.75	49.50	29.16	3.21	3.39	100							

NOTE:

A1 - Operable Equipment ..... 58.77  
 A2 - Non-Operable Equipment/  
 Equipment under repair ..... 11.41  
 R - Equipment recommended  
 for disposal ..... 29.827  
 100.00

Note: \* As of March 31, 2000 Report

\* Foreign & locally assisted projects included

HEAVY EQUIPMENT (H) ..... 14.75  
 Cranes, Bulldozers, Excavators, etc.  
 LIGHT EQUIPMENT (L) ..... 49.50  
 Services Vehicles, Motorcycles, etc.  
 OTHER EQUIPMENT (O) ..... 29.16  
 Chainsaws, Motorboats, etc.  
 SPECIALLY EQUIPMENT (S) ..... 3.21  
 Drilling, Rigs, Rice Threshers  
 PUMPS (P) ..... 3.39  
 100.00

表 6.2 監査活動分析シート  
(1) 維持管理用

Function & Activities		Resources Consumed														Total Value Input
Operation	Mission :	Manpower				Supplies and Materials				Fuel	Utilities			Other Resources		
		Positions or Items														
Core Activities																
1.																
2.																
3.																
4.																
5.																
6.																
7.																
8.																
9.																
Supporting Activities																
1.																
2.																
3.																
4.																
5.																
6.																
7.																
8.																
Maintenance	Mission :	Manpower				Supplies and Materials				Fuel	Utilities			Other Resources		
		Unit Cost/Price	@	@	@	@	@	@	@	@	@	@	@	@	@	@
Core Activities																
1.																
2.																
3.																
4.																
5.																
6.																
7.																
8.																
9.																
Supporting Activities																
1.																
2.																
3.																
4.																
5.																
6.																
7.																
8.																
Input for Other Functions than O & M																
Total Input in Quantity																
Total Input in Value																

表 6.3 監査活動分析シート

(2) 維持管理 - 要員

Function & Activities	Comparison between Actual and Normative Input																			
	Chief of O&M				SWRFT				Ditchtender (WRFTB)				Gatekeeper				Operator			
	Actual Input		Normative Input		Actual Input		Normative Input		Actual Input		Normative Input		Actual Input		Normative Input		Actual Input		Normative Input	
O&M at National Irrigation System	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours	Number of Staff	Hours
Core Activities																				
Information Collection																				
1.Travelling																				
2.Communications with Farmers																				
3.Observation and Investigation																				
4.Communications with Operators																				
Water Flow Control and Management																				
1.Gate Control & Operation of Other Structures																				
Control Structure																				
Intake Structure																				
Bifurcation Structure																				
Diversion Dams																				
Check Gates																				
Siphon Structure																				
Main Gates																				
Lateral Gates																				
Turnouts																				
2.Clearing Canals and Embankments																				
Maintenance																				
1.Minor Repairs																				
2.Disilting																				
3.Other Major Repairs																				
Supporting Activities																				
1.Planning																				
2.Recording																				
3.Reporting																				
Other Activities for O&M																				
Other Activities than O&M																				
Total Input																				

表 6.4 監査活動分析シート

(3) 維持管理 - 重機

Function & Activities	Comparison between Actual and Normative Input																			
	Dozer, Crawler				Loader, Wheeled				Loader W / Backhoe, Crawler											
	Actual Input		Normative Input		Actual Input		Normative Input		Actual Input		Normative Input		Actual Input		Normative Input		Actual Input		Normative Input	
	Number	Hours	Number	Hours	Number	Hours	Number	Hours	Number	Hours	Number	Hours	Number	Hours	Number	Hours	Number	Hours	Number	Hours
Core Activities																				
Information Collection																				
1.Travelling																				
2.Communications with Farmers																				
3.Observation and Investigation																				
4.Communications with Operators																				
Water Flow Control and Management																				
1.Gate Control & Operation of Other Structures																				
Control Structure																				
Intake Structure																				
Bifurcation Structure																				
Diversion Dams																				
Check Gates																				
Siphon Structure																				
Main Gates																				
Lateral Gates																				
Turnouts																				
2.Clearing Canals and Embankments																				
Maintenance																				
1.Minor Repairs																				
2.Disilting																				
3.Olther Major Repairs																				
Supporting Activities																				
1.Planning																				
2.Recording																				
3.Reporting																				
Other Activities for O&M																				
Other Activities than O&M																				
Total Input																				





表 7.1 組織改革シナリオの比較・分析結果

Characteristics	Scenario-1 Integrated RIOs with Smaller Central Office (CO)	Scenario-2 Island-Based Corporation	Scenario-3 CO-NISO Directly Linked Organization
<b>Organizational Features</b>	<ul style="list-style-type: none"> <li>- <u>Central Office (CO)</u> : Significant downsizing corresponding to diminution of functions to policy, planning, programming and monitoring and evaluation</li> <li>- <u>Regional Irrig. Offices (RIOs)</u>: Reduction of the number of RIOs from 13 to 6 resulting from integration</li> <li>- <u>Field Offices (FOs)</u>: Merger of PIO and NISO in a Province into PIMO</li> </ul>	<ul style="list-style-type: none"> <li>- <u>Central Office (CO)</u> : Smaller CO for major policy direction, monitoring and evaluation to ensure the minimal adjustments/ arrangements</li> <li>- <u>Regional Irrig. Office (RIOs)</u>: 3 Corporate Offices (one each for Luzon, Visayas and Mindanao)</li> <li>- <u>Field Offices (FOs)</u>: Integration of NISO and PIO functions into PIMO</li> </ul>	<ul style="list-style-type: none"> <li>- <u>Central Office (CO)</u> : Lean but strong CO to be managerial nucleus of the operations</li> <li>- <u>Regional Irrig. Offices (RIOs)</u>: Abolition of RIOs (Direct control of Field Offices by CO)</li> <li>- <u>Field Offices (FOs)</u>: Integration of NISO and PIO functions into PIMO</li> </ul>
<b>BASIC STRATEGY</b>	<ul style="list-style-type: none"> <li>- Transfer of CO functions to RIO</li> <li>- Significantly increase delegated authorities from CO to the integrated RIOs (AIOOs) &amp; PIMOs</li> <li>- Rationalize the NIA's management system to minimize overhead expenses by eliminating duplication and overlapping of functions</li> </ul>	<ul style="list-style-type: none"> <li>- Divide the NIA CO into three corporations; one each for <ul style="list-style-type: none"> <li>• Luzon</li> <li>• Visayas and</li> <li>• Mindanao</li> </ul> to promote extensive decentralization and cost reduction </li> </ul>	<ul style="list-style-type: none"> <li>- Abolish RIOs and create a PIMO by integrating the functions of NISOs and PIOs.</li> <li>- The PIMO is to be placed under the direct control of the CO</li> </ul>
<b>Advantages (+) and Disadvantages (-)</b>	<ul style="list-style-type: none"> <li>+ Effective to tackle an overhead cost reduction</li> <li>+ Instrumental to solve the current personnel redundancy issue</li> <li>- Possibility to create regional disparities</li> <li>- Difficulty in coordination with other government agencies</li> </ul>	<ul style="list-style-type: none"> <li>+ Effective location-specific planning</li> <li>+ Huge cost reduction</li> <li>- Difficulty of handling large dismissals and relocation of manpower in the CO</li> <li>- Difficulty in policy and strategy adjustments</li> <li>- Difficulty in promoting projects for foreign assistance</li> <li>- Difficulty of reducing gaps among three islands</li> </ul>	<ul style="list-style-type: none"> <li>+ Significant reduction in administrative cost</li> <li>- Huge fund requirement to finance and attractive retirement package</li> <li>- Difficulty of coordinating with other government agencies particularly on planning and adjustments of plans</li> <li>- Possibility of centralizing the system during the transition</li> </ul>
<b>Orientation of Long Term Direction</b>	<ul style="list-style-type: none"> <li>- Improvement of operational systems based on existing structural framework</li> </ul>	<ul style="list-style-type: none"> <li>- Privatization (ex. NPC, MWSS, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>- Autonomy of NISO with enhanced cooperation of the IAs</li> </ul>
<b>Key Issues or Requirements</b>	<ul style="list-style-type: none"> <li>- Elimination/ Reduction of current problems</li> </ul>	<ul style="list-style-type: none"> <li>- Balanced and responsive policy in irrigation development in three island groups</li> <li>- Regional equity</li> </ul>	<ul style="list-style-type: none"> <li>- Effective implementation of IMT and strengthening of IA capability</li> <li>- Networking of autonomous NISO and their sustainability</li> </ul>
Consistency in Policy / Leadership of the Top Management / Ownership at Each Level			
<i>Restoration of Financial Viability/ Securing the Required Funds</i>			

表 7.2 担当部署の構造改革案 (1/3)

Functions	Related Activities	Present Units Involved	Proposed Units	Remarks
1. Management Support	<ul style="list-style-type: none"> <li>Policy formulation/ Corporate Planning</li> <li>Management information</li> <li>Public information</li> <li>Internal audit</li> </ul>	<ul style="list-style-type: none"> <li>Corplan/ SPS-SOEM and PDI</li> <li>Corplan/MSD</li> <li>PAIS</li> <li>MSD</li> </ul>	<ul style="list-style-type: none"> <li>Policy &amp; Planning Dept. (PPD)</li> <li>Information Systems Dept. (ISD)</li> <li>Public Affairs &amp; Information Staff (PAIS)</li> <li>Internal Audit Service (IAS)</li> </ul>	<ul style="list-style-type: none"> <li>PPD to be constituted with staff from Corplan, S O E M and PDI/HRD thru higher education</li> <li>ISD to be constituted with staff from Corplan/MSD and new recruitment</li> <li>PAIS to be constituted with staff from existing PAIS/HRD thru training on Dev't. Communication</li> <li>Establish independent internal audit unit</li> </ul>
2. Project Development	<ul style="list-style-type: none"> <li>Project formulation, investigation and feasibility study</li> <li>Project planning and programming</li> <li>Detailed design and specifications</li> <li>Procurement of consulting services</li> </ul>	<ul style="list-style-type: none"> <li>PDD</li> <li>PDD/Corplan/CD</li> <li>DSD</li> <li>PDD/DSD/(SMD undertakes activities for rehab. Projects)</li> </ul>	<ul style="list-style-type: none"> <li>Area Irrigation Operations Offices (AIOO)/ Project Engineering Dept. (PED)</li> <li>Project Engineering Dept. (PED)</li> <li>Area Irrigation Operations Offices (AIOO) /Project Engineering Dept. (PED)</li> <li>Project Engineering Dept. (PED)/Area Irrigation Operations Offices (AIOO)</li> </ul>	<ul style="list-style-type: none"> <li>Major activities to be conducted by AIOO and PED reviews and evaluates</li> <li>PED to be constituted with staff from PDI</li> <li>PED reviews/ evaluates design and specs and major activities to be conducted by AIOO</li> <li>PED to be in charge of inter-regional projects or large projects, while AIOO is in charge of other projects</li> </ul>
3. Project Implementation	<ul style="list-style-type: none"> <li>Procurement of civil work</li> <li>Monitoring and evaluation</li> <li>Force Account Works</li> </ul>	<ul style="list-style-type: none"> <li>PMO/RIO/ NISO/PIO</li> <li>CMD/SMD</li> <li>DSD/ CMD/ PMO</li> </ul>	<ul style="list-style-type: none"> <li>Project Management Office (PMO)/Area Irrigation Operations Office (AIOO)/ Prov'l. Irrigation Office (PIO)</li> <li>Coordination and Monitoring Dept. (CMD)</li> <li>Area Irrigation Operations Offices (AIOO) (Project Management Office (PIMO))</li> </ul>	<ul style="list-style-type: none"> <li>All project implementation activities will be undertaken by AIOO /PMO and PIMO in collaboration with PED</li> <li>CMD to be constituted with staff from PDI and SOEM</li> <li>All related activities to be undertaken by AIOO/PMO</li> </ul>



表 7.2 担当部署の構造改革案 (2/3)

	Functions	Related Activities	Present Units Involved	Proposed Units	Remarks
		<ul style="list-style-type: none"> <li>• SSIP/ CIP</li> </ul>	<ul style="list-style-type: none"> <li>• PIO</li> </ul>	<ul style="list-style-type: none"> <li>• PIMO</li> </ul>	<ul style="list-style-type: none"> <li>• Small-scale irrigation projects given by the national government to NIA are to be undertaken by PIMO</li> </ul>
4.	O&M of NISs	<ul style="list-style-type: none"> <li>• Monitoring and evaluation on O&amp;M</li> <li>• Equipment Management</li> <li>• Support on O&amp;M</li> <li>• IA dev't. support and supervision</li> <li>• O&amp;M of NISs</li> </ul>	<ul style="list-style-type: none"> <li>• SMD</li> <li>• SMD/RIO</li> <li>• SMD/RIO</li> <li>• SMD/IDD</li> <li>• SMD/NISO /RIO</li> </ul>	<ul style="list-style-type: none"> <li>• Coordination &amp; Monitoring Dept. (CMD)</li> <li>• Area Irrigation Operations Offices (AIOO)</li> <li>• Area Irrigation Operations Offices (AIOO)</li> <li>• Area Irrigation Operations Offices (AIOO)</li> <li>• Prov'l. Irrigation Management Office (PIMO)</li> </ul>	<ul style="list-style-type: none"> <li>• CMD to be constituted with staff from SMD</li> <li>• All related functions to be transferred to AIOO</li> <li>• All O&amp;M functions to be undertaken by PIMO under technical support of AIOO</li> <li>• All related functions to be transferred to AIOO</li> <li>• All related functions to be transferred to PIMO</li> </ul>
5.	Financial Management	<ul style="list-style-type: none"> <li>• Accounting</li> <li>• Cast Management</li> <li>• Budgeting</li> <li>• ISF Collection and CIS Amortization</li> </ul>	<ul style="list-style-type: none"> <li>• CD/RIOs</li> <li>• TD</li> <li>• CD/RIOs</li> <li>• CD/TD</li> <li>• NISO/PIO</li> </ul>	<ul style="list-style-type: none"> <li>• Financial Management Dept.(FMD)/Area Irrig. Operations Offices (AIOO)/ Prov'l. Irrig. Mgt. Office (PIMO)</li> <li>• Financial Management Dept.(FMD)/Area Irrig. Operations Offices (AIOO)/ Prov'l. Irrig. Mgt. Office (PIMO)</li> <li>• Financial Management Dept.(FMD)/Area Irrig. Operations Offices (AIOO)/ Prov'l. Irrig. Mgt. Office (PIMO)</li> <li>• Provincial Irrigation Management Office (PIMO)</li> </ul>	<ul style="list-style-type: none"> <li>• Decentralization of the accounting functions to the level of PIMO</li> <li>• FMD-CO shall coordinate and provide project fund to the AIOO</li> <li>• AIOO and PIMO shall have greater autonomy in managing their revenues</li> <li>• PIMO will be responsible for collection and reconciliation</li> </ul>

表 7.2 担当部署の構造改革案 (3/3)

Functions	Related Activities	Present Units Involved	Proposed Units	Remarks
6. Administrative Support	<ul style="list-style-type: none"> <li>• Organization &amp; Personnel Management of &amp; HRD</li> <li>• Procurement of materials, supplies &amp; equipment</li> <li>• Disposal of unserviceable equipment</li> <li>• General and security services</li> <li>• Monitoring of NIA Resources</li> </ul>	<ul style="list-style-type: none"> <li>• PRMD/MSD</li> <li>• PPRD/RIO/NISO/PIO</li> <li>• PPRD/EMD</li> <li>• PRMD</li> <li>• PRMD/MSD</li> </ul>	<ul style="list-style-type: none"> <li>• Admin. Service Dept. (ASD)/Area Irrig. Oper. Office (AIOO)</li> <li>• Admin. Service Dept.(ASD)/Area Irrig.. Operations Offices (AIOO)/Prov'l Irrig. Mgt. Office (PIMO)</li> <li>• Area Irrigation Operation Office (AIOO)</li> <li>• Admin. Service Dept. (ASD)/Area Irrigation Operation Office (AIOO) /Prov'l. Irrig. Mgt. Office (PIMO)</li> <li>• Admin. Service Dept (ASD)</li> </ul>	<ul style="list-style-type: none"> <li>• CO and AIOO to be given semi-autonomy in HR mgt. and dev't. CO may undertake NIA-wide HRD prog.</li> <li>• CO, AIOO and PIMO to be given autonomy in procurement</li> <li>• AIOO to be given autonomy in disposal of unserviceable equipment system</li> <li>• CO, AIOO, PIMO to be given autonomous</li> <li>• ASD to monitor</li> </ul>
7. Information Systems and Technology Dev't.	<ul style="list-style-type: none"> <li>• Infrastructure dev't. and support</li> <li>• Information management</li> </ul>	<ul style="list-style-type: none"> <li>• EDP-MISD</li> </ul>	<ul style="list-style-type: none"> <li>• Information Systems Dept. (ISD)/Planning &amp; Monitoring Unit of AIOO</li> </ul>	<ul style="list-style-type: none"> <li>• Central support to be provided by the CO</li> </ul>

Source: JICA Study Team

表 7.3 構造改革部署の機能・責務 (1/3)

Organizational Units	Functions
(1) Board of Directors	<ol style="list-style-type: none"> <li>1) Adoption of policies for the management and operation of the NIA</li> <li>2) Approval of the NIA staffing pattern</li> <li>3) Recommend appointment of the NIA Assistant Administrators to the President of the Philippines</li> <li>4) Approval of the annual and supplemental budget of the NIA</li> </ol>
(2) Administrator	<ol style="list-style-type: none"> <li>1) Conduct the affairs and business of the NIA and enforce the resolutions, instructions and orders approved by the Board</li> <li>2) Determine the staffing pattern and the number of personnel of the NIA</li> <li>3) Sit as Vice-Chairman of the NIA Board</li> <li>4) Submit through the NIA Board, an annual report of operation and accomplishment to the President of the Philippines and Congress</li> </ol>
(2) Board Secretariat (Consists of the Legal Department and the Policy and Planning Department)	<ol style="list-style-type: none"> <li>1) Prepare and recommend to the Board its annual activities</li> <li>2) Prepare agenda of board meetings</li> <li>3) Present analysis of policy recommendations to the Board</li> <li>4) Study documents for approval of the Board</li> <li>5) Ensure legality and consistency of Board resolutions with existing policies</li> </ol>
(3) Legal Service (Board Secretariat)	<ol style="list-style-type: none"> <li>1) Provision of legal services for the protection of corporate rights, interest and property.</li> <li>2) Assist the Solicitor General in prosecuting cases where NIA is a party.</li> <li>3) Preparation and review of contracts and legal instruments.</li> <li>4) Participation in irrigation development policy advocacy.</li> </ol>
(4) Internal Audit Service	<ol style="list-style-type: none"> <li>1) Review and appraise the soundness, adequacy and application of policies, procedures and standards on administration, organization and existing work methods and procedures; make recommendation for their improvement.</li> <li>2) Conduct the following audit (periodically or as required): <ul style="list-style-type: none"> <li>- Financial Audit</li> <li>- Compliance Audit</li> <li>- Operation and Management Audit</li> </ul> </li> <li>3) Analyze and Evaluate Audit Findings.</li> <li>4) Provision of audit opinions with advice to the top management based on the result of the analyses and evaluation from the respective auditing viewpoints.</li> </ol>

表 7.3 構造改革部署の機能・責務 (2/3)

Organizational Units	Functions
(5) Public Affairs and Information Service (PAIS)	<ol style="list-style-type: none"> <li>1) Development and administration of a comprehensive communication program and strategies for the dissemination of information concerning NIA thru various media Development and production of various multi-media materials to support the communications program of the agency</li> <li>2) Coordination with various government and private agencies in various activities involving promotion and advocacy for irrigation</li> </ol>
(6) Office of the Assistant Administrator for Planning and Monitoring	<ol style="list-style-type: none"> <li>1) Provide direction in policy formulation, corporate planning and irrigation investment.</li> <li>2) Provide direction in the development and management of management information system</li> </ol>
(7) Policy and Planning Department (Board Secretariat)	<ol style="list-style-type: none"> <li>1) Determination of the medium and long term corporate objectives consistent with the national development policies.</li> <li>2) Preparation of the NIA corporate plan and formulation strategies for implementation</li> <li>3) Formulation of policies.</li> <li>4) Formulate a short and long-range irrigation development plan.</li> <li>5) Prepare the annual infrastructure investment program</li> <li>6) Coordinate with other government and non-government entities including foreign lending/donor institutions on matters relating to capital investment for irrigation development, release of funds and settlement of problems arising from availment and utilization of funds</li> <li>7) Prepare loan proposals, terms of reference and other documents to obtain financial and technical assistance and attend to all matters pertaining to appraisal of loan project</li> </ol>
(8) Project Engineering Department	<ol style="list-style-type: none"> <li>1) Review and evaluate feasibility study reports and detailed design of projects submitted by the AIOO</li> <li>2) Review contracts pertaining to feasibility studies, detailed design, civil works and other engineering-related works</li> <li>3) Provide technical supervision to AIOO on feasibility studies and detailed design of projects</li> <li>4) Coordinate with various research institutions, colleges and universities on the irrigation engineering research and development (R&amp;D), and adopting the results to improve operations</li> </ol>
(9) Coordination and Monitoring Department	<ol style="list-style-type: none"> <li>1) Monitor progress of projects implementation</li> <li>2) Monitor the implementation and effectiveness of institutional development programs</li> <li>3) Monitor progress of IMT</li> <li>4) Monitor technical assistance to LGUs</li> <li>5) Monitor performance of NIS operation and maintenance</li> <li>6) Monitor the utilization of equipment</li> <li>7) Monitor the financial performance of area offices and PIMO</li> </ol>

表 7.3 構造改革部署の機能・責務 (3/3)

Organizational Units	Functions
(10) Office of the Assistant Administrator for Finance and Management	<ol style="list-style-type: none"> <li>1) Advise the Administrator on the financial position of NIA and utilization of resources</li> <li>2) Supervise administrative and financial management activities in the central office and IT installation throughout the NIA.</li> </ol>
(11) Financial Management Department	<ol style="list-style-type: none"> <li>1) Maintain the financial accounts of the Corporation</li> <li>2) Prepare periodic accounting reports for NIA's top management and other interested parties.</li> <li>3) Manage and safeguard the financial resources of NIA</li> <li>4) Formulate the annual COB budget and monitor the implementation of such budget</li> </ol>
(12) Administrative Department	<ol style="list-style-type: none"> <li>1) Manage recruitment, staff development, movement, promotions and retirement of personnel</li> <li>2) Manage HRD and welfare programs of NIA</li> <li>3) Manage the maintenance of NIA office premises and vehicles</li> <li>4) Undertake procurement of office equipment, supplies and materials for use of central office Maintain.</li> <li>5) Update records of NIA properties and physical resources</li> </ol>
(13) Information Systems Department	<ol style="list-style-type: none"> <li>1) Create IT infrastructure to enable digital information creation and communication.</li> <li>2) Coordinate the development and implementation of information systems that will provide information needs of the management and NIA staff</li> <li>3) Undertake support for proper operation of NIA info. System</li> </ol>

表7.4 NIAの管区別財務実績、2000年

(Unit: million pesos)

Particulars	CO	CAR	I	II	MRIIS	III	UPRIIS	IV	V	VI	VII & VIII	IX	X	XI	XII	XIII
1) Receipts																
- Receipts from Income Sources	256	6	26	48	74	31	85	35	15	35	20	15	26	60	33	21
- Receipts from Other Sources	7	9	6	9	63	19	17	8	9	7	16	10	5	11	9	9
- Total Receipts	263	15	43	57	137	50	102	43	24	42	36	25	31	71	42	30
2) Expenditures																
- Personnel Cost	139	23	54	64	116	69	100	74	46	67	55	32	39	73	50	26
- CIP Amortization	35	2	6	39	32	8	17	3	4	3	4	2	6	21	9	3
- Total Operating Costs	174	25	60	103	148	77	117	77	50	70	59	34	45	94	59	29
3) Net Cash (Deficit)	89	-10	-17	-46	-11	-27	-15	-34	-26	-28	-23	-9	-14	-23	-17	1
4) % of ISF Revenue to Operating Cost		14	31	31	36	28	60	41	21	33	19	23	29	47	36	36

Source: JICA Study Team, Interim Report March 2001

表 7.5 国営灌漑プロジェクト(NIP)の開発状況、2000-2009年

(1) Present Regional Group

(Unit: hectare)

Region		On-going	Proposed	Total
1.	I	70,800	38,787	109,587
2.	CAR*	0	4,700	4,700
3.	II	22,330	6,000	28,330
4.	III	100,642	4,270	104,912
5.	IV*	0	4,180	4,180
6.	V	0	10,404	10,404
7.	VI	15,200	35,985	51,185
8.	VII*	5,300	0	5,300
9.	VIII*	3,000	6,950	9,950
10.	IX	0	19,100	19,100
11.	X	2,000	20,800	22,800
12.	XI*	0	6,730	6,730
13.	XII	19,402	27,088	46,490
14.	XIII	7,922	38,972	46,894
Total		246,596	223,966	470,562

Note: \* Low irrigation potential with about 6,000 ha

Source: Corplan, NIA

(2) Proposed Regional Group (AIOO)

(Unit: hectare)

Region		On-going	Proposed	Total
1.	Northern Luzon	93,130	49,487	142,617
2.	Central Luzon	100,642	4,270	104,912
3.	Southern Luzon	0	14,584	14,584
4.	Visayas	23,500	42,935	66,435
5.	Eastern Mindanao	9,922	66,502	76,424
6.	Western Mindanao	19,402	46,188	65,590
Total		246,596	223,966	470,562

表7.6 管区別国営灌漑システム事務所 (NISO)の分布状況

No.	Region	Below 3,000 ha		Above 3,000 ha		Total Area (ha)
		No. of NISO	Area (ha)	No. of NISO	Area (ha)	
1.	I	1	1,453	8	71,921	73,374
2.	II	11	22,219	7	114,573	136,792
3.	III	4	5,513	9	163,822	169,335
4.	IV	8	9,241	8	43,465	52,706
5.	V	5	9,746	2*	10,750	20,496
6.	VI	4	6,973	5	45,243	52,216
7.	VII & VIII	6	9,829	2*	11,414	21,243
8.	IX	0	0	3*	15,162	15,162
9.	X	0	0	3*	20,696	20,696
10.	XI	2	4,566	4	29,711	34,277
11.	XII	2	5,100	6	58,308	63,408
12.	XIII	3	6,483	3*	11,929	18,412
Total		46	81,123	60	596,994	678,117

Note: \* Two or three NISOs whose total service area ranges from 15,000 to 21,000 ha may be too small to maintain as a separate office.

Source: JICA Study Team

After Integration of NISO by Area

	NISO	Area
1. Northern Luzon	15	186,494
2. Central Luzon	9	163,822
3. Southern Luzon	10	54,215
4. Visayas	7	56,657
5. Eastern Mindanao	10	62,336
6. Western Mindanao	9	73,470
Total:	60	596,994



表 7.7 地域灌漑運営事務所(AIOO)及び州灌漑管理事務所(PIMO)の機能

Organizational Unit	Main Functions
<b>A. Area Irrigation Operations Office (AIOO)</b>	<ul style="list-style-type: none"> <li>- Prepare and implement all NIS programs and projects</li> <li>- Extend technical support and supervision to the PMOs</li> <li>- Extend technical support and supervision to the PIMOs</li> <li>- Formulate and study all plans and programs concerning NIS development</li> <li>- Coordinate with concerned authorities, notably LGUs in water resource development and food production programs</li> </ul>
1. Engineering Division	
1) Planning and Investigation	- Conduct investigation work, including hydrologic, soils and land studies
2) Feasibility Study	- Conduct feasibility studies
3) Design and Specification	- Prepare plans and designs and specifications related to civil and architectural works
4) Construction Management	<ul style="list-style-type: none"> <li>- Conduct in coordination with PMO pre-construction activities of NIS projects</li> <li>- Review in coordination with PMO construction schedules and all job orders and construction management</li> </ul>
5) Equipment Management	<ul style="list-style-type: none"> <li>- Prepare an inventory and acquisition program in coordination with PMO for construction works</li> <li>- Prepare a maintenance and utilization program for the requirement of the PIMO and keep the vehicles and equipment in good condition by maintaining a separate maintenance fund</li> </ul>
2. Operations Support Division	
1) Systems and Water Management	<ul style="list-style-type: none"> <li>- Prepare and execute a comprehensive training program on systems and water management</li> <li>- Execute a sound water allocation plan for District/PIMO</li> </ul>
2) IA Support	- Prepare and execute a comprehensive training program for IAs
3. Finance and Administrative Division	
1) Finance	<ul style="list-style-type: none"> <li>- Control all financial transaction of AIOO, including internal audit</li> <li>- Maintain accurate records and all financial reporting in coordination with PIMO</li> </ul>
2) Administrative	<ul style="list-style-type: none"> <li>- Personnel Management and training of AIOO/PIMO</li> <li>- Management of building and day-to-day administrative works</li> <li>- Maintain accurate records and all financial reporting</li> </ul>
4. Planning and Monitoring Unit	<ul style="list-style-type: none"> <li>- Prepare in coordination with the 3 divisions quarterly and annual plans</li> <li>- Monitor work progress, income and expenditures</li> <li>- Prepare and maintain all applications for loan withdrawals and loan availments</li> </ul>
<b>B Provincial Irrigation Management Office (PIMO)</b>	- Execute sound O&M practices
1. Operations Section	<ul style="list-style-type: none"> <li>- Prepare seasonal, quarterly and operational plans</li> <li>- Monitor water allocation and delivery</li> <li>- Enforce in coordination with LGUs and IAs sanctions on illegal water use</li> <li>- Execute a workable O&amp;M fund</li> <li>- Execute sound ISF collection mechanisms</li> <li>- Extend technical support to LGU</li> <li>- Provide continuing coaching job to IAs</li> </ul>
2. Engineering and Maintenance Section	<ul style="list-style-type: none"> <li>- Provide quick emergency repairs and implement small-scale irrigation projects</li> <li>- Monitor cleaning of canals and other facilities</li> <li>- Maintain a pool of equipment for emergency repairs and maintenance</li> <li>- Maintain a plan for routine, periodic and emergency maintenance</li> </ul>
3. Administrative and Finance Section	<ul style="list-style-type: none"> <li>- Implement sound administrative procedures</li> <li>- Maintain accurate financial transaction and records (Journalization, Book of accounts, GL/SL, ISF billing/collection)</li> </ul>

表 7.8 NIA中央の人員構成(試案)とその必要経費 (CO) (1/4)

Office/Positions	Number of Positions	Salary Grade	Annual Financial Requirement	
			Monthly Salary	Total
<b>(1) Board of Directors (BOD)</b>	-	-	-	-
<b>(2) Office of the Administrator</b>				
- Administrator	1	30	27,500.00	330,000.00
- Head Executive Assistant	1	23	19,067.00	228,804.00
- Technical Assistant	2	22	18,334.00	440,016.00
- Executive Secretary	1	15	12,667.00	152,004.00
- Stenographer	1	9	8,874.00	106,488.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
	7			
<b>(3) Legal Service</b>				
- Director III	1	27	22,865.00	274,380.00
- Legal Officer IV	5	22	18,334.00	1,100,040.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
	7			
<b>(4) Internal Audit Service</b>				
- Director III	1	27	22,865.00	274,380.00
- Mgt. Systems Dev't. Chief A	3	22	18,334.00	660,024.00
- Mgt. Systems Design Spec.B	3	18	15,850.00	570,600.00
- Sr. Mgt. Systems Analyst	3	16	14,106.00	507,816.00
- Principal Engineer A	2	22	18,334.00	440,016.00
- Principal Engineer C	1	20	16,951.00	203,412.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	15			
<b>(5) Public Affairs and Information Service</b>				
- Director II	1	26	21,985.00	263,820.00
- Public Relations Chief	1	20	16,951.00	203,412.00
- Public Relations Officer A	2	15	12,667.00	304,008.00
- Information Officer A	1	15	12,667.00	152,004.00
- Senior Artist Illustrator	1	12	11,174.00	134,088.00
- Head Photographer	1	12	11,174.00	134,088.00
- Audio Visual Sys. Technician	1	8	8,294.00	99,528.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	9			
Sub-Total	38			7,097,448.00
<b>(6) Office of the Asst. Adm. for Planning &amp; Monitoring</b>				
- Asst. Administrator	1	27	22,865.00	274,380.00
- Technical Assistant	1	20	16,951.00	203,412.00
- Secretary	1	11	10,033.00	120,396.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
	4			
<b>(7) Policy and Planning Department</b>				
- Director III	1	27	22,865.00	274,380.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	3			
<b>(7-1) Corporate Planning Div.</b>				
- Director II	1	26	21,985.00	263,820.00
- Planning Officer V	3	24	20,835.00	750,060.00
- Principal Engineer A	2	22	18,334.00	440,016.00
- Principal Engineer C	2	20	16,951.00	406,824.00
- Sr. Corplan Specialist	3	19	16,801.00	604,836.00
- Chief Economist A	3	22	18,334.00	660,024.00
- Chief Statistician	3	15	12,667.00	456,012.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	18			
<b>(7-2) Policy Formulation Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Chief Economist A	2	22	18,334.00	440,016.00
- Principal Engineer A	4	22	18,334.00	880,032.00
- Sr. Corplan Specialist	2	19	16,801.00	403,224.00
- Chief Economist C	2	18	15,850.00	380,400.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	12			

表 7.8 NIA 中央の人員構成 (試算) とその必要経費 (CO) (2/4)

Office/Positions	Number of Positions	Salary Grade	Annual Financial Requirement	
			Monthly Salary	Total
<b>(8) Project Engineering Department</b>				
- Director III	1	27	22,865.00	274,380.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	3			
<b>(8-1) Project Planning Div.</b>				
- Director II	1	26	21,985.00	263,820.00
- Principal Engineer A	4	24	20,835.00	1,000,080.00
- Principal Engineer C	6	22	18,334.00	1,320,048.00
- Chief Economist A	4	22	18,334.00	880,032.00
- Principal Geologist A	3	22	18,334.00	660,024.00
- Principal Hydro-Geologist A	2	22	18,334.00	440,016.00
- Chief Soil Technologist	3	22	18,334.00	660,024.00
- Chief Agriculturist	1	22	18,334.00	220,008.00
- Chief Agronomist	2	22	18,334.00	440,016.00
- Watershed Management Chief	3	20	16,951.00	610,236.00
- Environmental Specialist A	3	18	15,850.00	570,600.00
- Sr. Photogrammetrist	3	15	12,667.00	456,012.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	36			
<b>(8-2) Design &amp; Specifications Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Principal Engineer A	6	22	18,334.00	1,320,048.00
- Principal Engineer C	9	20	16,951.00	1,830,708.00
- Principal Engineer D	12	19	16,801.00	2,419,344.00
- Principal Architect A	5	22	18,334.00	1,100,040.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	34			
<b>(8-3) Irrigation Engineering Center</b>				
- Director II	1	27	22,865.00	274,380.00
- Principal Engineer A	1	22	18,334.00	220,008.00
- Principal Hydro-Geologist A	1	22	18,334.00	220,008.00
- Chief Soil Technologist	1	22	18,334.00	220,008.00
- Chief Agriculturist	1	22	18,334.00	220,008.00
- Watershed Management Chief	1	20	16,951.00	203,412.00
- Environmental Specialist A	1	18	15,850.00	190,200.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	8			
<b>(9) Coordination and Monitoring Dept</b>				
- Director II	1	27	22,865.00	274,380.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	3			
<b>(9-1) Project Coord. &amp; Monitoring Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Principal Engineer A	5	22	18,334.00	1,100,040.00
- Principal Engineer C	6	20	16,951.00	1,220,472.00
- Supervising Engineer A	2	18	15,850.00	380,400.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	16			
<b>(9-2) Operations Monitoring Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Principal Engineer A	2	22	18,334.00	440,016.00
- Principal Engineer C	4	20	16,951.00	813,648.00
- Supvg. Economist A	4	18	15,850.00	760,800.00
- Community Devt Offr. IV	2	22	18,334.00	440,016.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	15			
Sub-Total	152			30,591,024.00

表 7.8 NIA中央の人員構成(試案)とその必要経費 (CO) (3/4)

Office/Positions	Number of Positions	Salary Grade	Annual Financial Requirement	
			Monthly Salary	Total
<b>(10) Office of the Asst. Adm. for Finance &amp; Management</b>				
- Assistant Administrator	1	28	23,199.00	278,388.00
- Technical Assistant	1	20	16,951.00	203,412.00
- Secretary	1	11	10,033.00	120,396.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
	4			
<b>(11) Financial Management Department</b>				
- Director III	1	27	22,865.00	274,380.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	3			
<b>(11-1) Budget Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Corporate Financial Serv. Chief	1	22	18,334.00	220,008.00
- Corporate Budget Specialist A	2	18	15,850.00	380,400.00
- Corporate Budget Officer B	3	15	12,667.00	456,012.00
- Corporate Budget Analyst B	4	12	11,174.00	536,352.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	12			
<b>(11-2) Accounting Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Corporate Finance Serv. Chief	3	22	18,334.00	660,024.00
- Sr. Corporate Accountant A	3	18	15,850.00	570,600.00
- Sr. Corporate Accts. Analyst	6	15	12,667.00	912,024.00
- Sr. Accounting Processor A	7	12	11,174.00	938,616.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	21			
<b>(11-3) Treasury Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Cashiering Services Chief A	2	22	18,334.00	440,016.00
- Sr. Cashier	3	18	15,850.00	570,600.00
- Sr. Financial Plng Specialist	3	20	16,951.00	610,236.00
- Sr. Financial Plng Analyst A	3	15	12,667.00	456,012.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	13			
<b>(12) Administrative Service Department</b>				
- Director III	1	27	22,865.00	274,380.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	3			
<b>(12-1) HR Mgt. &amp; Devt Division</b>				
- Director II	1	26	21,985.00	263,820.00
- HRM Officer V	4	22	18,334.00	880,032.00
- Ind. Relations Mgt. Officer A	5	18	15,850.00	951,000.00
- Ind. Relations Mgt. Officer C	4	15	12,667.00	608,016.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	15			
<b>(12-2) Physical Resources Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Procurement Services Chief	1	22	18,334.00	220,008.00
- Storekeeper B	2	9	8,874.00	212,976.00
- Supvg. Property Officer A	3	18	15,850.00	570,600.00
- Property Officer A	4	14	11,949.00	573,552.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	12			
<b>(12-3) General Services Division</b>				
- Director II	1	26	21,985.00	263,820.00
- Records Mgt. Chief	1	22	18,334.00	220,008.00
- Records Officer B	3	14	11,949.00	430,164.00
- Bldg. & Grnds Maintenance Hd.	1	18	15,850.00	190,200.00
- Head Carpenter	1	10	9,945.00	119,340.00
- Mason A	1	5	6,708.00	80,496.00
- Senior Painter	1	8	8,294.00	99,528.00
- Plumber A	1	8	8,294.00	99,528.00
- Sr. Building Electrician A	1	12	11,174.00	134,088.00
- Sr. Librarian A	1			
- Clerk-Processor	1	8	8,294.00	99,528.00
	13			

表 7.8 NIA 中央の人員構成 (試案) とその必要経費 (CO) (4/4)

Office/Positions	Number of Positions	Salary Grade	Annual Financial Requirement	
			Monthly Salary	Total
<b>(13) Information Systems Dept</b>				
- Director III/Chief IT Information Officer	1	27	22,865.00	274,380.00
- Driver/Mechanic A	1	9	8,874.00	106,488.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	3			
<b>(13-1) IT Infrastructure Division</b>				
- Director II/IT Officer	1	26	21,985.00	263,820.00
- Network Specialist/ IT Officer II	2	22	18,334.00	440,016.00
- Systems Specialist/IT Officer II	2	22	18,334.00	440,016.00
- Technicians/Computer Maint. Tech. III	3	17	15,850.00	570,600.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	9			
<b>(13-2) Information Management Division</b>				
- Director II/IT Officer	1	26	21,985.00	263,820.00
- Info.Systems Specialist/IT Officer II	2	22	18,334.00	440,016.00
- Programmers/Programmer III	2	18	15,850.00	380,400.00
- Junior Programmers/Programmer II	2	16	14,106.00	338,544.00
- Computer Operator/ Computer Operator IV	2	14	11,949.00	286,776.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	10			
<b>(13-3) IT Support Div.</b>				
- Director II/IT Officer	1	26	21,985.00	263,820.00
- Support Staff/Computer Programmer III	4	18	15,850.00	760,800.00
- Area Support Staff/Computer Programmer III	6	18	15,850.00	1,141,200.00
- Clerk-Processor	1	8	8,294.00	99,528.00
	12			
Sub-Total	130			22,358,808.00
<b>Grand-Total</b>	320			60,047,280.00

Source: JICA Study Team

**表7.9 地域灌漑運営事務所 (AIOO)の人員構成 (試算)とその必要経費**

Size of AOO Service Area (ha)	Staff		Annual Financial Requirement			
	>150000	50000-150000	Salary Grade	Salary/mo Pesos	>150000 Pesos	50000-150000 Pesos
<b>AIOO Head Office</b>	No	No				
1. Regional Administrator	1	1	28	22,000	264,000	264,000
2. Deputy Regional Administrator	1	1	27	21,300	255,600	255,600
3. Secretary	2	2	11	9,580	229,920	229,920
Sub-total	4	4			749,520	749,520
<b>Planning and Monitoring Unit</b>						
4. Sr Engineer	3	2	16	12,820	461,520	307,680
5. Sr Economist	3	2	16	12,820	461,520	307,680
6. Sr Finance/Accountant	2	2	16	12,820	307,680	307,680
7. Clerk	1	1	9	7,900	94,800	94,800
Sub-total	9	7			1,325,520	1,017,840
<b>Engineering Division</b>						
8. Division chief	1	1	25	19,700	236,400	236,400
9. Clerk	1	1	9	7,900	94,800	94,800
Sub-total	2	2			331,200	331,200
<b>Investigation and Survey</b>						
10. Principal Engineer	1	1	22	17,500	210,000	210,000
11. Supervising Engineer	4	3	18	14,400	691,200	518,400
12. Sr Engineer	5	4	16	12,820	769,200	615,360
Sub-total	10	8			1,670,400	1,343,760
<b>Planning and Design Section</b>						
13. Principal Engineer	1	1	22	17,500	210,000	210,000
14. Supervising Engineer	4	3	18	14,400	691,200	518,400
15. Sr Engineer	6	5	16	12,820	923,040	769,200
16. Sr Draftsman	2	2	11	9,600	230,400	230,400
Sub-total	13	11			2,054,640	1,728,000
<b>Feasibility Study</b>						
17. Principal Engineer	1	1	22	17,500	210,000	210,000
18. Supervising Engineer	2	2	18	14,400	345,600	345,600
19. Sr. Engineer	2	2	16	12,820	307,680	307,680
20. Sr Economist	2	1	16	12,820	307,680	153,840
Sub-total	7	6			1,170,960	1,017,120
<b>Construction Management Section</b>						
21. Principal Engineer	1	1	22	17,500	210,000	210,000
22. Supervising Engineer	4	3	18	14,400	691,200	518,400
23. Sr Engineer	4	3	16	12,820	615,360	461,520
24. Engineer	2	2	14	11,000	264,000	264,000
Sub-total	11	9			1,780,560	1,453,920
<b>Equipment and Management</b>						
25. Principal Engineer	1	1	22	17,500	210,000	210,000
26. Supervising Engineer	1	1	18	14,400	172,800	172,800
27. Sr Engineer	2	2	16	12,820	307,680	307,680
28. Drivers	5	3	7	7,400	444,000	266,400
29. Equipment Operators	3	2	9	7,900	284,400	189,600
30. Auto-Mechanic	3	2	9	7,900	284,400	189,600
Sub-total	15	11			1,703,280	1,336,080
<b>Operations Support Division</b>						
31. Division Chief	1	1	25	19,700	236,400	236,400
32. Clerk	1	1	9	7,900	94,800	94,800
Sub-total	2	2			331,200	331,200
<b>Systems and Water Management Section</b>						
33. Principal Engineer	1	1	22	17,500	210,000	210,000
34. Supervising Engineer	4	3	18	14,400	691,200	518,400
35. Sr Engineer	6	5	16	12,820	923,040	769,200
36. Soil and Water Specialist	2	2	16	12,820	307,680	307,680
Sub-total	13	11			2,131,920	1,805,280
<b>Institutional Section</b>						
37. Irrigators Development chief	1	1	22	17,500	210,000	210,000
38. Supervising IDO	4	3	18	14,400	691,200	518,400
39. Sr IDO	4	3	16	12,820	615,360	461,520
Sub-total	9	7			1,516,560	1,189,920
<b>Administrative &amp; Finance Division</b>						
40. Division Chief	1	1	25	17,500	210,000	210,000
41. Clerk	1	1	9	7,900	94,800	94,800
Sub-total	2	2			304,800	304,800
<b>Personnel, Records &amp; Gen. Services</b>						
42. Administrative Services chief	1	1	22	17,500	210,000	210,000
43. Personnel Officer	1	1	16	12,820	153,840	153,840
44. Records Officer	1	1	16	12,820	153,840	153,840
45. Procurement and Supply Officer	1	1	16	12,820	153,840	153,840
46. General Services Officer	1	1	16	12,820	153,840	153,840
47. Legal Officer	1	1	22	17,500	210,000	210,000
48. Industrial Security Guards	2	2	7	7,400	177,600	177,600
49. Utility Workers	2	2	7	7,400	177,600	177,600
Sub-total	10	10			1,390,560	1,390,560
<b>Finance and Accounting Section</b>						
50. Chief Accountant	1	1	22	17,500	210,000	210,000
51. Sr Accountant	3	2	16	12,820	461,520	307,680
52. Sr Financial Analyst	3	2	16	12,820	461,520	307,680
53. Sr Cashier	1	1	16	12,820	153,840	153,840
54. Accountants	5	4	15	12,100	726,000	580,800
Sub-total	13	10			2,012,880	1,560,000
<b>TOTAL</b>	<b>120</b>	<b>100</b>			<b>18,474,000</b>	<b>15,559,200</b>

Service Area of AOO (ha)	>150000	50000-150000	Total
Manpower output ratio (ha/staff)	1250	1176	
Number of AIOO	2	4	6
Staff Requirement	120	100	
Total Manpower	240	400	640
Existing Manpower (13 Regions, UPRIIS & MARIIS)			1,152
Extent of reduction			-44%

表7.10 州灌漑管理事務所 (PIMO)の人員構成 (試案)とその必要経費

Size of PIMO Service Area (ha)	3000-5000	5001-20000	>20000	Salary	Grade	Monthly	Actual Financial Requirement		
	Staff No.	Staff No.	Staff No.				3000-5000	5001-20000	>20000
							Pesos	Pesos	Pesos
<b>PIMO Head Office</b>									
1 Provincial Administrator	1	1	1	25		19,700	236,400	236,400	236,400
2 Clerk	1	1	1	9		7,900	94,800	94,800	94,800
Sub-total	2	2	2				331,200	331,200	331,200
<b>Operations Section</b>									
3 Supvg Engineer	1	1	1	18		14,400	172,800	172,800	172,800
4 Sr Engineer	1	3	4	16		12,820	153,840	461,520	615,360
5 Sr WRF/IDOs*	5	14	19	16		12,820	769,200	2,153,760	2,922,960
6 WRF/Operator	2	8	9	12		10,160	243,840	975,360	1,097,280
7 Agronomist	1	2	2	14		11,000	132,000	264,000	264,000
8 Soils Specialist	1	2	2	14		11,000	132,000	264,000	264,000
9 Utility worker	1	2	2	7		7,400	88,800	177,600	177,600
Sub-total	12	32	39				1,692,480	4,469,040	5,514,000
<b>Repair and Maintenance Section</b>									
10 Supvg Engineer	1	1	1	18		14,400	172,800	172,800	172,800
11 Sr Engineer	2	3	4	16		12,820	307,680	461,520	615,360
12 Engineer	2	3	3	14		11,000	264,000	396,000	396,000
13 Auto Mechanic	1	2	3	9		7,900	94,800	189,600	284,400
14 Driver Mechanic	1	2	2	9		7,900	94,800	189,600	189,600
15 HE Operator	1	2	2	9		7,900	94,800	189,600	189,600
16 Survey Aide	1	2	2	9		7,900	94,800	189,600	189,600
Sub-total	10	15	17				1,123,680	1,788,720	2,037,360
<b>Administrative &amp; Finance Section</b>									
17 Administrative Services Officer	1	1	1	18		14,400	172,800	172,800	172,800
18 Cashier	1	1	1	16		12,820	153,840	153,840	153,840
19 Sr Accountant	1	1	1	16		12,820	153,840	153,840	153,840
20 Property Officer	1	1	1	16		12,820	153,840	153,840	153,840
21 Records Officer	1	1	1	16		12,820	153,840	153,840	153,840
22 IRM/Personnel Officer	1	1	1	16		12,820	153,840	153,840	153,840
23 Collection Representative	1	1	2	12		10,160	121,920	121,920	243,840
24 Accountants	2	4	5	15		12,100	290,400	580,800	726,000
25 Clerk	1	1	1	9		7,900	94,800	94,800	94,800
26 Security Guards	1	2	2	7		7,400	88,800	177,600	177,600
27 Utility Worker	1	2	2	7		7,400	88,800	177,600	177,600
Sub-total	12	16	18				1,626,720	2,094,720	2,361,840
<b>Total</b>	<b>36</b>	<b>65</b>	<b>76</b>				<b>4,774,080</b>	<b>8,683,680</b>	<b>10,244,400</b>

\* Ratio of 1 IDO/750-1000 ha

	PIMO	Staff	Total
3000-5000	27	36	972
5001-20000	24	65	1560
>20000	9	76	684
Dam & Res**	2	62**	124
<b>TOTAL</b>	<b>62</b>		<b>3340</b>
Existing Staff			
PIO			964
NISO			2086
Dam & Res			286
D I-IV			944
Total			4280
Extent of Reduction			-22%

\*\* See Table 7.11

表7.11 UPRIISダム・貯水池部の人員構成(試案)とその必要経費

Dam and Reservoir	No	SG	Monthly	Annual
<b>Head Office OF UPRIIS D&amp;R Division</b>				
1 Division Manager	1	25	19,700	236,400
2 Clerk	1	9	7,900	94,800
	2			331,200
<b>Pantabangan Dam Section</b>				
Head Unit				
3 Principal Engineer	1	22	17,500	210,000
4 Clerk	1	9	7,900	94,800
	2			304,800
Electrical/Mechanical Unit				
5 Supervising Engineer	1	18	14,400	172,800
6 Sr Engineer	2	16	12,820	307,680
7 Engineer	2	14	11,000	264,000
8 Plant Electrician	2	10	8,600	206,400
9 Plant Mechanic	2	10	8,600	206,400
	9			1,157,280
Maintenance Unit				
10 Supervising Engineer	1	18	14,400	172,800
11 Sr Engineer	2	16	12,820	307,680
12 Engineer	2	14	11,000	264,000
13 HE Operator	1	9	7,900	94,800
14 Auto-Mechanic	1	9	7,900	94,800
15 Driver-Mechanic	2	9	7,900	189,600
16 WRF Operator	2	9	7,900	189,600
17 Other skilled/utility worker	2	9	7,900	189,600
	13			1,502,880
<b>Canili-Diayo Dam Section</b>				
Head Unit				
18 Principal Engineer	1	22	17,500	210,000
19 Clerk	1	9	7,900	94,800
	2			304,800
Electrical/Mechanical Unit				
20 Supervising Engineer	1	18	14,400	172,800
21 Sr Engineer	1	16	12,820	153,840
22 Engineer	1	14	11,000	132,000
23 Plant Electrician	1	10	8,600	103,200
24 Plant Mechanic	1	10	8,600	103,200
	5			665,040
Maintenance Unit				
25 Supervising Engineer	1	18	14,400	172,800
26 Sr Engineer	1	16	12,820	153,840
27 Engineer	1	14	11,000	132,000
28 HE Operator	1	9	7,900	94,800
29 Auto-Mechanic	1	9	7,900	94,800
31 Driver-Mechanic	1	9	7,900	94,800
32 WRF Operator	1	9	7,900	94,800
33 Other skilled/utility worker	2	9	7,900	189,600
	9			1,027,440
Watershed Management Section				
Head Unit				
34 Watershed Mgt. Chief	1	22	17,500	210,000
35 Clerk	1	9	7,900	94,800
	2			304,800
Maintenance Unit				
36 Forester	2	16	12,820	307,680
37 Agriculturist	1	16	12,820	153,840
38 Forest Assistant	6	10	8,600	619,200
39 Driver-Mechanic	1	9	7,900	94,800
	10			1,175,520
Administrative Section				
40 Administrative Services chief	1	22	17,500	210,000
41 Property & Suply Officer	1	16	12,820	153,840
42 Personnel Officer	1	16	12,820	153,840
43 Sr Accountant	1	16	12,820	153,840
44 Cashier	1	16	12,820	153,840
45 Clerk	1	9	7,900	94,800
46 Security Guard	1	7	7,400	88,800
47 Utility worker	1	7	7,400	88,800
	8			1,097,760
<b>TOTAL</b>	<b>62</b>			<b>7,871,520</b>

Source: JICA Study Team



表 7.12 特定政府機関の解雇 / 退職プログラムの特徴

PARTICULARS	NATIONAL POWER CORP. (NPC)	GOVERNMENT SERVICE INSURANCE SYSTEM (GSIS)	DEVELOPMENT BANK OF THE PHILS. (DBP)	PHILIPPINE NATIONAL BANK (PNB)	LAND BANK OF THE PHILIPPINES (LBP)	METROPOLITAN WATERWORKS & SEWERAGE SYSTEM (MWSS & LWUA)
<b>Name of the Grant</b>	Special Disengagement Program (SDP)	1997 GSIS Early Retirement/Separation Incentive Plan (GERSIP)	Early Retirement Incentive Program III (ERIP II)	Special Separation Incentive Plan (SSIP)	Separation Incentive Program (SIP)	Early Retirement Incentive Program
<b>Coverage</b>	Perm. Co-terminus w/the Proj./Perm. Co-terminus w/the Appointing Authority /Position Co-terminus w/ the incumbent, Human Resources Pool Positions deemed of absence due to illness Endorsed by Cost Center Heads/Functional Group/ Vice President Casual Qualified to retire	All employees regardless of status Employees with pending case Employees of COA who are assigned to the GSIS as of the availment of GERSIP subject to approval of COA-Chairman	Voluntary basis for officials and employees	Involuntary Separation, subject to endorsement	Positions that considered redundant Qualified retirees; RA 660/1616/8291 Rank & File with 50 years of age Those with at least 20 years in service Employees suffering from illness	All regular/permanent officials/employees and casuals who have served for at least one (1) year.
<b>Entitlement</b>	Highest Basic Salary X Gratuity Months x 1.5 LESS: Retirement Gratuity/Lump-sum Benefits from existing retirement plans	150% of the gratuity/lump-sum benefits from existing retirement plans	15 and above = Basic Salary X 1.75 X GM 10 < 15 years = Basic Salary X 1.5 X GM Below 10 years = Basic Salary X YOS X GM  <b>Plus PHP 3,000 for every government services</b>	Before Privatization (05/26/96) 10>15 = [100% x SSL Rate x Years of Service (YOS)] 15>20 = [175% x SSL Rate x (YOS)] 20>25 = [225% x SSL Rate x (YOS)]  <b>Plus</b> <b>After Privatization</b> 10>15 = [100% x Latest Rate + Allow. x YOS] 15>20 = [175% x Latest Rate + Allow. x YOS] 20>25 = [225% x Latest Rate + Allow. x YOS] 25 and above = [250% x + Latest Rate + Allow x YOS]  <b>Less</b> <b>GSIS Gratuity under RA 1616 for services rendered in PNB</b>	1.5 = for the first 20 years 1.75 = for 21-30 years 2.00 = for 31 and above  Payment is subject to issuance of GSIS clearance.  PLUS: PHP3,000 for every service in LBP (Given before their exemption from SSL)	First 20 years = 1.5 per year 20-30 years = 2.0 per year Over 30 years = 2.5 per year
<b>Condition of Entitlement</b>	In the government service	Incentive program covers those who have rendered an aggregate service	In the government service. Available only for retirees of at least 50 years old.	Applicable only to those with at least 10 years service in PNB regardless of age	With at least 5 years in LBP	At least one year in service
<b>Basic Monthly Salary</b>	NPC Pay Plan	GSIS Pay Plan	Salary Standardization Rate	SSL Rate before Privatization PNB New Pay Plan after Privatization	LBP Pay Plan (Exempted from SSL)	Salary Standardization Rate

**表8.1 収支分析表、 2001 - 2010年(シナリオ1)**  
**(Scenario 1 - AO17 ISF Rates - Compulsory Retirement Only)**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
<b>Revenues</b>											
1. Irrigation Service Fee											
Current Accounts	337	351	365	380	415	430	445	460	475	490	
Back Accounts	150	158	166	175	183	193	203	213	224	234	
Total	487	509	532	554	598	623	648	673	698	724	
2. Management Fee	164	299	317	236	326	342	335	307	220	241	
3. Equipment Rental	159	159	159	159	159	159	159	159	159	159	
4. CIS Equity and Amortization	162	123	99	85	77	72	69	67	66	65	
Total Receipts	972	1,090	1,107	1,035	1,160	1,195	1,210	1,206	1,143	1,189	
<b>Expenditures</b>											
1. Personnel Services	1,041	1,083	1,126	1,170	1,198	1,228	1,245	1,270	1,294	1,315	
2. Other Administrative Expenses	195	203	211	219	224	230	233	238	242	246	
3. Maintenance - Irrigation Facilities (PHP 1000/ha)	709	739	769	799	829	859	889	919	949	979	
Total Operating & Maintenance Costs	1944	2024	2105	2187	2251	2316	2366	2426	2485	2540	
<b>Net Operating Income (Deficit)</b>	<b>-972</b>	<b>-934</b>	<b>-997</b>	<b>-1,152</b>	<b>-1,091</b>	<b>-1,121</b>	<b>-1,156</b>	<b>-1,220</b>	<b>-1,342</b>	<b>-1,350</b>	<b>-1,213</b>

**Sensitivity Analysis**

<b>1. Level of O&amp;M Expenditure @ PHP/Hectare</b>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>2. Level of Collection Efficiency</b>	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	
<b>3. Amount of O&amp;M that can be funded from COB</b>	-372	-265	-298	-443	-316	-305	-301	-328	-414	-380	-341
<b>4. Ratio of Available Income to O&amp;M Requirement</b>	-37%	-27%	-30%	-44%	-32%	-31%	-30%	-33%	-41%	-38%	-34%

**Assumptions:**

- (1) 1975 ISF rates.
- (2) ISF collection efficiency at 45% (2001 - 2010)
- (3) Management fee at 5% (2001 - 2010).
- (4) No early retirement program; retirement only through natural attrition.  
 (Permanent: 1100 spread over ten years)

**表8.2 収支分析表、2001-2010年(シナリオ2)**  
(Scenario 2 - 1975 ISF Rates, Compulsory Retirement Only)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
<b>Revenues</b>												
1. Irrigation Service Fee												
Current Accounts	522	544	566	619	642	666	689	712	736	759		
Back Accounts	150	165	180	195	212	229	247	265	283	301		
Total	672	709	746	814	855	895	936	977	1,018	1,060		
2. Management Fee	115	299	317	236	326	342	335	307	220	241		
3. Equipment Rental	159	159	159	159	159	159	159	159	159	159		
4. CIS Equity and Amortization	162	123	99	85	77	72	69	67	66	65		
Total Receipts	1,107	1,289	1,322	1,295	1,417	1,467	1,498	1,510	1,463	1,525		
<b>Expenditures</b>												
1. Personnel Services	1,041	1,083	1,126	1,170	1,198	1,228	1,245	1,270	1,294	1,315		
2. Other Administrative Expenses	195	203	211	219	224	230	233	238	242	246		
3. Maintenance - Irrigation Facilities (PHP 1000/ha)	709	739	769	799	829	859	889	919	949	979		
Total Operating & Maintenance Costs	1944	2024	2105	2187	2251	2316	2366	2426	2485	2540		
<b>Net Operating Income (Deficit)</b>	<b>-837</b>	<b>-735</b>	<b>-783</b>	<b>-892</b>	<b>-834</b>	<b>-849</b>	<b>-868</b>	<b>-916</b>	<b>-1,022</b>	<b>-1,014</b>	<b>-917</b>	

**Sensitivity Analysis**

<b>1. Level of O&amp;M Expenditure @ PHP/Hectare</b>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>2. Level of Collection Efficiency</b>	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%
<b>3. Amount of O&amp;M that can be funded from COB</b>	-181	5	-19	-117	-7	12	23	3	-77	-37	-14
<b>4. Ratio of Available Income to O&amp;M Requirement</b>	-18%	1%	-2%	-12%	-1%	1%	2%	0%	-8%	-4%	-1%

**Assumptions:**

- (1) 1975 ISF rates.
- (2) ISF collection efficiency at 45% (2001 - 2010)
- (3) Management fee at 5% (2001 - 2010).
- (4) No early retirement program; retirement only through natural attrition.  
(Permanent: 1100 spread over ten years)

**表8.3 収支分析表、2001-2010年(シナリオ3)**  
**(Scenario 3 - 1975 ISF Rates without ERP\*)**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
<b>Revenues</b>												
1. Irrigation Service Fee												
Current Accounts	522	574	629	722	791	863	938	1,016	1,097	1,181		
Back Accounts	150	220	296	375	457	536	610	677	732	775		
Total	672	794	925	1,097	1,248	1,399	1,548	1,692	1,829	1,956		
2. Management Fee	115	299	444	331	457	478	469	430	308	337		
3. Equipment Rental	159	159	159	159	159	159	159	159	159	159		
4. CIS Equity and Amortization	162	123	99	85	77	72	69	67	66	65		
Total Receipts	1,107	1,375	1,627	1,672	1,940	2,108	2,245	2,348	2,362	2,518		
<b>Expenditures</b>												
1. Personnel Services	1,053	1,106	1,161	1,219	1,280	1,344	1,411	1,482	1,556	1,634		
2. Other Administrative Expenses	197	207	217	228	240	252	264	277	291	306		
3. Maintenance - Irrigation Facilities (PHP 1000/ha)	709	739	769	799	829	859	889	919	949	979		
Total Operating & Maintenance Costs	1,959	2,051	2,147	2,246	2,348	2,454	2,564	2,678	2,796	2,918		
<b>Net Operating Income (Deficit)</b>	<b>-852</b>	<b>-677</b>	<b>-520</b>	<b>-574</b>	<b>-408</b>	<b>-346</b>	<b>-319</b>	<b>-330</b>	<b>-434</b>	<b>-401</b>		<b>-373</b>

**Sensitivity Analysis**

<b>1. Level of O&amp;M Expenditure @ PHP/Hectare</b>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>2. Level of Collection Efficiency</b>	45%	48%	50%	53%	55%	58%	61%	64%	67%	70%		
<b>3. Amount of O&amp;M that can be funded from COB</b>	-202	84	324	281	507	597	641	641	542	591		587
<b>4. Ratio of Available Income to O&amp;M Requirement</b>	-20%	8%	32%	28%	51%	60%	64%	64%	54%	59%		59%

**Assumptions:**

- (1) 1975 ISF rates.
- (2) ISF collection efficiency will increase from 45% (2001) to 70% (2010)
- (3) Management fee will increase to 7% from 2004.
- (4) No Early Retirement Program included.

表8.4 収支分析表、2001-2010年(シナリオ4)

(Scenario 4 - 1975 ISF Rates with ERP\*)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.
<b>Revenues</b>											
1. Irrigation Service Fee											
a. Current Accounts	522	574	629	722	791	863	938	1,016	1,097	1,181	
b. Back Accounts	150	220	296	375	457	536	610	677	732	775	
Total	672	794	925	1,097	1,248	1,399	1,548	1,692	1,829	1,956	
2. Management Fee	115	299	444	331	457	478	469	430	308	337	
3. Equipment Rental	159	159	159	159	159	159	159	159	159	159	
4. CIS Equity and Amortization	162	123	99	85	77	72	69	67	66	65	
Total Receipts	1,107	1,375	1,627	1,672	1,940	2,108	2,245	2,348	2,362	2,518	
<b>Expenditures</b>											
1. Personnel Services	1,053	1,106	1,161	1,130	1,082	1,026	1,077	1,131	1,187	1,247	
2. Other Administrative Expenses	197	207	217	211	202	192	202	212	222	233	
3. Maintenance - Irrigation Facilities (PHP 1000/ha)	709	739	769	799	829	859	889	919	949	979	
Total Operating & Maintenance Costs	1959	2051	2147	2140	2113	2076	2167	2261	2358	2459	
<b>Net Operating Income (Deficit)</b>	-852	-677	-520	-468	-172	32	78	87	4	59	15

## Sensitivity Analysis

<b>1. Level of O&amp;M Expenditure @ PHP/Hectare</b>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>2. Level of Collection Efficiency</b>	45%	48%	50%	53%	55%	58%	61%	64%	67%	70%	
<b>3. Amount of O&amp;M that can be funded from COB</b>	-202	84	324	414	792	1,037	1,088	1,095	1,004	1,060	1,013
<b>4. Ratio of Available Income to O&amp;M Requirement</b>	-20%	8%	32%	41%	79%	104%	109%	109%	100%	106%	101%

## Assumptions:

- (1) 1975 ISF rates.
- (2) ISF collection efficiency will increase from 45% (2001) to 70% (2010)
- (3) Management fee will increase to 7% from 2004.
- (4) Early Retirement Program implemented.  
(Permanent: 923 Daily-Paid: 834 Total: 1757)

表8.5 収支分析表、2001-2010年(シナリオ5)

(Scenario 5 - 1975 ISF Rates with ERP\*)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.
<b>Revenues</b>											
1. Irrigation Service Fee											
a. Current Accounts	522	574	629	722	791	863	938	1,016	1,097	1,181	
b. Back Accounts	150	220	296	375	457	536	610	677	732	775	
Total	672	794	925	1,097	1,248	1,399	1,548	1,692	1,829	1,956	
2. Management Fee	115	299	444	331	457	478	469	430	308	337	
3. Equipment Rental	159	159	159	159	159	159	159	159	159	159	
4. CIS Equity and Amortization	162	123	99	85	77	72	69	67	66	65	
Total Receipts	1,107	1,375	1,627	1,672	1,940	2,108	2,245	2,348	2,362	2,518	
<b>Expenditures</b>											
1. Personnel Services	1,053	1,106	1,161	1,130	1,131	1,129	1,186	1,245	1,307	1,373	
2. Other Administrative Expenses	197	207	217	211	212	211	222	233	245	257	
3. Maintenance - Irrigation Facilities (PHP 1000/ha)	709	739	769	799	829	859	889	919	949	979	
Total Operating & Maintenance Costs	1959	2051	2147	2140	2171	2199	2296	2397	2500	2608	
<b>Net Operating Income (Deficit)</b>	-852	-677	-520	-468	-231	-91	-51	-48	-138	-90	-108

Sensitivity Analysis

1. Level of O&M Expenditure @ PHP/Hectare	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2. Level of Collection Efficiency	45%	48%	50%	53%	55%	58%	61%	64%	67%	70%	
3. Amount of O&M that can be funded from COB	-202	84	324	414	721	894	942	947	854	908	878
4. Ratio of Available Income to O&M Requirement	-20%	8%	32%	41%	72%	89%	94%	95%	85%	91%	88%

Assumptions:

- (1) 1975 ISF rates.
- (2) ISF collection efficiency will increase from 45% (2001) to 70% (2010)
- (3) Management fee will increase to 7% from 2004.
- (4) Early Retirement Program implemented.  
(Permanent: 489 Daily-Paid: 834 Total: 1,323)