

**APPENDIX VII**

**UPRIIS**

**ORGANIZATION**



## APPENDIX VII UPRIIS ORGANIZATION

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## APPENDIX VII UPRIS ORGANIZATION

### CHAPTER 1 GENERAL

At present, the NIA administers the operation of 133 National Irrigation Systems (NISs) covering the area of about 500,000 ha in the whole country. Efficiency of irrigation service fee collection in these NISs is only 61% on an average in 1982 and its total deficit amounts to P22,448,940.61 as shown in Table 7.1.

The Upper Pampanga River Integrated Irrigation System (UPRIIS) is the largest irrigation system with the total potential irrigation service area of 116,900 ha (maximum). The efficiency of irrigation service fee collection of the UPRIS is about 50% in the same year. The UPRIS deficit in 1982 reaches P8,275,000 as shown in Table 7.2. This amount accounts for about 37% of the total NISs deficit. As for the O&M cost per hectare, the cost of P250 of the UPRIS is fairly high than the NISs average of P187.

With the gradual diminution of government subsidies due to the financial difficulties, the UPRIS is being pressed to reconstruct, as soon as possible, its finance to make it more sound.

In this Appendix, institutional and financial constraints which UPRIS Office encountered were clarified and studied in comparison with other NISs with higher irrigation fee collection efficiency. Based on the results of the survey and studies, institutional development of the UPRIS is proposed.

## CHAPTER 2 PRESENT ORGANIZATIONAL STRUCTURE OF UPRIIS

### 2.1 General

The UPRIIS is the largest irrigation system in the Philippines. Major sources of its irrigation water come from Pantabangan dam, Pampanga river and its tributaries such as the Talavera and the Peñaranda rivers.

The maximum potential irrigation service area of the UPRIIS is about 116,900 ha. In this area, it is estimated that about 58,000 farmers are engaged in irrigated farming.

To ensure the efficient system management, the UPRIIS Office is responsible for the following works:

- 1) Rehabilitation and/or construction of the systems
- 2) O & M of the facilities
  - Pantabangan dam & reservoirs
  - Diversion dams 8 nos.
  - Diversion canal 47 km
  - Main canal 236 km
  - Lateral canal 1,281 km
  - Head gate & turnout 3,230 nos
  - Check structures 353 nos.
  - Crossing structures 2,195 nos.
  - Syphon 131 nos.
  - Drainage culvert 213 nos.
- 3) Various irrigation services (training, extension, etc.) for water users
- 4) Collection of irrigation service fees

### 2.2 Structure

The existing organizational structure of the UPRIIS is prepared in Fig. 7.1. The Assistant Administrator for Operations, National Irrigation Administration (Central Office in Quezon City) has an overall responsibility over the UPRIIS. The UPRIIS is headed by an Operations Manager who undertakes overall supervision and direction of operation and management of the system. Under the operations Manager there are five (5) support Divisions, four (4) District Offices and Water Control Coordinating Center (WCCC).



As for implementation and coordination of matters related to the development of irrigated agriculture in the Province, there exist the Provincial Development Committee (PDC) and Agricultural Development Coordinating Council (ADCC) composed of representatives from government agencies concerned.

The existing structure of UPRIIS consists of two major bodies: Main Office and four (4) District Offices. It differs from those adopted universally in the other national irrigation systems (NISs), especially in the existence of WCCC and Dam and Reservoir Division and in their grouping.

#### Main Office:

There exist five (5) support divisions in UPRIIS. Three (3) support Divisions (Administrative, Engineering & Operations and Equipment) are based in the headquarters at Cabanatuan, one (Agriculture) at Muñoz and one (Dam & Reservoir) at Pantabangan dam site. These support Divisions provide, in principle, the Operations Manager with necessary supports with regard to general administration, engineering, training, research and extension, operation of Pantabangan dam, equipment, etc.

Upon reviewing the O&M organization, it was found that the responsibilities and functions of each Division and Section are not clearly defined. In the actual organization, maintenance of the systems is being performed by two sections: Operations Section and Field Services & Repair Section.

To ensure continuity and adequacy of maintenance works, it is advisable from the viewpoints of efficiency and economy to separate maintenance works from operation works. It is also observed that the functions of the Engineering and Operations Division and the WCCC are overlapping on the monitoring of the operations of the four (4) Districts.

#### District Offices:

The four (4) District Offices are located respectively in Muñoz, Talavera, Cabanatuan and Gapan. Each Office is headed by a District Chief who is responsible for operation, maintenance, improvement and rehabilitation of the irrigation and drainage systems in the District. The District Office consists in principle of three (3) sections: administrative, operation and maintenance. Some Districts have collection section as shown in Fig. 7.2.

The operation and maintenance of the irrigation service area are carried out through administrative irrigation block ranging from District, Zone, Division to Section as shown in the following table.

Administrative Irrigation Block	Number of Blocks				Whole UPRIIS
	District				
District	I	II	III	IV	4
Zone	3	3	3	3	12
Division	8	11	12	11	42
Section	40	47	51	48	186

The irrigation service area in each District is divided into twelve (12) Zones having about 10,000 ha each. A Zone is under the supervision of a Zone Engineer who directly reports to the Operations Engineer. Likewise, the Zone is further divided into 42 Divisions with about 2,500 ha each, being managed by one Water Management Technologist (WMT). Then, each Division is subdivided into 186 Sections; where one Water Management Technician (AWMT) supervises 500-750 ha at working station. Below Section level, irrigation rotational areas are controlled by Ditchtenders (DT). It means that the operation & maintenance in the whole UPRIIS are carried out through so many steps as seven (7) steps in total, ranging from Operations Manager, District Chief, Operation Engineer, Zone Engineer, WMT, AWMT (or Watermaster) to DT. As explained later, the presence of multi-posts at the midway in the system would often complicates communication among them and negatively affects operation and maintenance activities.

### 2.3 Staff and Staffing Pattern

The UPRIIS is now passing a transition period on institutional aspects. In pursuance of the Memorandum Circular MC #2, 1982, the coverage of the duties and responsibilities for field staff was amended. Followed by this circular, a large-scale reorganization including personnel reduction and resectioning is under way.

Since October 1982, more than 400 temporary workers have been tapered and total number of employees in the UPRIIS amounts to 1,654 as of July 31, 1983. Its workforce comprises 402 key staffs and 1,252 skilled & unskilled workers as shown in Table 7.3. The staff conducting field operation in the four District offices occupies 78% of the total number of employees. On the other hand, the UPRIIS staffs are classified by their function as follows:

	No. of Staff	Percent (%)	No. of Farmer*/Staff
Supervision	18	1	2,561
Operation	1,030	62	45
Repair & Maintenance	159	10	290
Administration	423	26	109
Research & Training	24	1	1,920
Total	1,654	100%	28

\* Total No. of the UPRIIS farmers: 46,100

Major staff for operation and maintenance work in the UPRIIS comprise 4 Division Managers, 15 Irrigation Engineers including Operation Engineers and Zone Engineers, 38 WMT, 126 AWMT, 22 WM, 759 DT, 27 Gatekeepers (GK), 23 Billing Clerks (BC) and 5 Cashiers. The work load of the main field staff is shown in Table 7.4. The table indicates that work load for the staff varies in four Districts. The length of canal controlled by one DT is estimated at 2.1 km on an average ranging from 1.6 km to 3.3 km. The irrigation service area supervised by one WMT and one AWMT/WM ranges from 1,600 ha to 3,300 ha and from 500 ha to 1,200 ha, respectively. Work load of DT varies from 110 ha/person to 160 ha/person.

To evaluate work load of UPRIIS staff, 13 national irrigation systems that have an irrigation fee collection efficiency of more than 70% were selected among all national irrigation systems. The work load was studied and the details are explained in Chapter 4. It is further examined in comparison with NIA work standard. The results in both cases are as shown below:

#### Work Load per Person

Main Field Staff	UPRIIS* (Average)	NIA Work Standard	National Irrigation Systems with High Collection Efficiency
WMT	2,400 ha	1,000 to 3,000 ha	-
AWMT/WM	620 ha	At least 750 ha	1,040 ha
Ditchtender	120 ha 2.1 km of canal	At least 3.5 km of canal plus all gates	170 ha 2.8 km of canal
Gatekeepers	3,400 ha	2 major gates plus 1.5 km of canal	1,460 ha 9 km of canal

\* Work load is estimated on the basis of present irrigation service area of about 92,000 ha.

It is noticed from the above that the UPRIIS has thick density of field staff assignment with the exception of GK.

## 2.4 General Profile of UPRIIS Staff

To identify characteristics of UPRIIS staff, the surveys on age, service period, employment status, training experience and working willingness, etc. are carried out by two kinds of survey: i) general field survey and ii) questionnaire surveys on 177 AWMTs and 236 DTs.

### 2.4.1 Age Distribution

The staffing structure by age distribution in the whole UPRIIS is as summarized in the following table.

(Unit: No. or %)

UPRIIS		Age									Total
		20-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	
Head	No.	0	18	84	87	60	45	38	22	9	363
Office	%	0	5.0	23.1	24.0	16.5	12.4	10.5	6.1	2.4	100.0
District	No.	9	195	278	218	180	190	134	66	21	1,291
Office	%	0.7	15.1	21.5	16.9	14.0	14.7	10.4	5.1	1.6	100.0
Total	No.	9	213	362	305	240	235	172	88	30	1,654
	%	0.6	12.9	21.9	18.4	14.5	14.2	10.4	5.3	1.8	100.0

The table indicates that the thirties occupy about 40.3%, followed respectively by the forties (28.7%), the fifties (15.8), the twenties (13.5%) and the sixties (1.8%).

Detailed age distribution by position/designation for the whole UPRIIS staff is given in Tables 7.5 and 7.6.

On the other hand, age distribution of the major field staff is summarized hereunder.

(Unit: No. or %)

Field Staff		Age									Total
		20-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	
WMT	No.	0	6	4	11	5	7	4	1	0	38
	%	0	15.8	10.5	28.9	13.2	18.4	10.5	2.7	0	100.0
AWMT	No.	0	16	58	23	12	12	2	3	0	126
	%	0	12.7	46.0	18.3	9.5	9.5	1.6	2.4	0	100.0
WM	No.	0	0	0	0	3	5	6	5	3	22
	%	0	0	0	0	13.6	22.8	27.3	22.7	13.6	100.0
DT	No.	3	131	142	106	111	125	84	43	14	759
	%	0.4	17.3	18.7	14.0	14.6	16.4	11.1	5.7	1.8	100.0
GK	No.	0	0	5	5	4	4	5	3	1	27
	%	0	0	18.5	18.5	14.8	14.8	18.5	11.1	3.8	100.0
Total	No.	3	153	209	145	135	153	101	55	18	972
	%	0.3	15.7	21.5	14.9	13.9	15.7	10.4	5.7	1.9	100.0

As for DTs occupying 78% of the field O&M personnel, their age distribution is wide-spread. This means that their share in old ages is large on the whole. Staffing by age distribution in the major field staff shows almost the same pattern.

#### 2.4.2 Service Period

The periods of water management services rendered by main field staff are summarized hereunder. They include working periods in UPRIS as well as in other government agencies for certain personnel.

(Unit: No. or %)

Field Staff		Service Period (years)									Total
		1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	
WMT	No.	1	16	15	3	2	1	0	0	0	38
	%	2.6	42.1	39.5	7.9	5.3	2.6	0.0	0.0	0.0	100.0
AWMT	No.	3	90	29	2	1	0	1	0	0	126
	%	2.4	71.4	23.0	1.6	0.8	0.0	0.8	0.0	0.0	100.0
WM	No.	0	1	6	4	2	6	1	2	0	22
	%	0.0	4.5	27.3	18.2	9.1	27.3	4.5	9.1	0.0	100.0
DT	No.	8	481	113	112	13	18	10	4	0	759
	%	1.0	63.4	14.9	14.8	1.7	2.4	1.3	0.5	0.0	100.0
Total	No.	12	588	163	121	18	25	12	6	0	945
	%	1.3	62.2	17.3	12.8	1.9	2.6	1.3	0.6	0.0	100.0

The above table indicates that most of the main field staff have experience of over five (5) years in water management. It also indicates that more than 60% of field staff especially AWMTs and DTs have experience of 5 to 10 years in water management. As about 10 years have passed since commencement of the irrigation service by the UPRIIS, 60% of the main field staff have been employed since UPRIIS started.

Distribution of service periods by position of District Offices staff is shown in Table 7.7 with reference data on the separation benefit.

#### 2.4.3 Employment Status

With regard to the status of employment, about 80% of the total number of employees in the UPRIIS are permanent ones. The remainder is temporary staff, comprising 12% on monthly and 9% on daily basis. The summary of the status of employment is shown in the following table:

	Permanent	Temporary		Total
		Monthly	Daily	
Main Office (%)	244 (67)	113 (31)	6 (2)	3 (100)
District I (%)	284 (90)	15 (5)	17 (5)	316 (100)
District II (%)	300 (87)	21 (6)	23 (7)	344 (100)
District III (%)	306 (91)	19 (6)	11 (3)	336 (100)
District IV (%)	178 (60)	22 (8)	95 (32)	295 (100)
Total (%)	1,312 (79)	190 (12)	152 (9)	1,654 (100)

(As of July 31, 1983)

The detailed status distribution by position of the District Offices staffs (Dist. I - IV) is given in Table 7.8.

#### 2.4.4 Others

For the purpose of improving and upgrading quality of these staffs, UPRIIS has executed several kinds of training programs seasonally or annually. 99% of AWMTs and 97% DTs respondents have already attended such training programs. The strengthening of such training programs is vital for the betterment of operation and maintenance of the UPRIIS. The training subjects requested by AWMTs and DTs are indicated in the following table:

<u>Subjects requested by AWMTs</u>	<u>No. of AWMTs (%)</u>	
- Hydro-meteorological data analysis	54	(24)
- Human resources management	52	(23)
- Irrigated crop production	26	(11)
- Irrigation networking and scheduling	25	(11)
- Preparation of cropping pattern and water delivery schedule	11	( 5)
- Irrigation facilities rehabilitation programming	11	( 5)
- Others	50	(21)
Total	229*	(100)

\* With multiple answer

<u>Subjects requested by DTs</u>	<u>No. of DTs (%)</u>	
- Program on rotational irrigation method	29	(18.2)
- Preparation of cropping pattern and water delivery schedule	20	(12.6)
- Rating of canals	16	(10.1)
- Irrigation facilities rehabilitation programming	16	(10.1)
- Refresher course on water management	13	( 8.2)
- Joint training of field personnel	13	( 8.2)
- Others	52	(32.6)
Total	159	(100.0)

As to the awareness of duties and roles, 90% of AWMTs and 47% of DTs given an answer that they have "completely" understood them as shown below:

Awareness of Duties as AWMTs:

Degree	District (%)				Whole UPRIIS (%)
	I	II	III	IV	
a. Completely	32 (94)	44 (94)	48 (91)	35 (83)	159 (90)
b. Partly	2 (6)	3 (6)	5 (9)	7 (17)	17 (10)
c. Not yet	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total No. of Respondents	34(100)	47(100)	53(100)	42(100)	176(100)

Awareness of Duties as DTs:

Degree	District (%)				Whole UPRIIS (%)
	I	II	III	IV	
a. Completely	35 (60)	16 (30)	26 (49)	24 (49)	101 (47)
b. Partly	21 (36)	27 (51)	25 (47)	24 (49)	97 (46)
c. Not yet	2 (4)	10 (19)	2 (4)	1 (2)	15 (7)
Total No. of Respondents	58(100)	53(100)	53(100)	49(100)	213(100)

However, it is noticeable that 10% of AWMTs and 46% of DTs reply: "partly" and 7% of DTs: "not yet".

Apart from the level of their skill, 97% of AWMTs and DTs are eager to work. This is supported by the following results of questionnaire surveys.

Interest of AWMTs on Present Job:

Degree	District (%)				Whole UPRIIS (%)
	I	II	III	IV	
a. Very much	31 (94)	46 (98)	52 (96)	40 (98)	169 (97)
b. Not so much	1 (3)	1 (2)	2 (4)	1 (2)	5 (3)
c. Not at all	1 (3)	0 (0)	0 (0)	0 (0)	1 (0)
Total No. of Respondents	33(100)	47(100)	54(100)	41(100)	175(100)



Interest of DTs on Present Job:

Degree	District (%)				Whole UPRIIS (%)
	I	II	III	IV	
a. Very much	55 (95)	60(100)	56 (98)	57(100)	228 (97)
b. Not so much	2 (3)	0 (0)	1 (2)	0 (0)	3 (2)
c. Not at all	1 (2)	0 (0)	0 (0)	0 (0)	1 (1)
Total No. of Respondents	58(100)	60(100)	57(100)	57(100)	232(100)

2.5 O&M Cost Reduction Program

Driven by financial pressure originally due to the low efficiency of irrigation service fee collection and the relatively superfluous personnel, the NIA-UPRIIS are now proceeding with radical reform with the following emergency measures:

- 1) Personnel reduction,
- 2) Reduction of expenses for operation and maintenance (50% reduction is expected),
- 3) Sharing of expenses with the projects concerned.

In compliance with the memorandum: proposals/recommendations for the rationalization of UPRIIS in June 1982, total number of UPRIIS employees was reduced from 2,080 (as of October 31, 1982) to 1,654 (as of July 31, 1983).

Staffing pattern of the UPRIIS proposed in the above memorandum was revised and approved by the NIA Board during its 410th Regular Meeting on the 11th day of July, 1983. (See Fig. 7.3) According to its resolution, only 1,276 out of 1,654 (monthly and daily) positions are decided to be retained as indicated in Table 7.9. 378 positions, all of which belong to the District Offices I - IV, will therefore be adversely affected. Most of the positions so affected are such field staffs as WMTs, AWMTs, Watermasters and Dichtenders. Total number of field staffs to be reduced amounts to 321 or about 85% of the total positions affected. (See Table 7.10)

To implement smoothly the reduction of personnel, NIA Board has approved new guidelines for the payment of separation benefits as described in Table 7.11. As of August 31, 1983, 170 of UPRIIS employees are applying voluntarily for separation before reaching the age limit.

Such being the situation, it is strongly recommended to implement carefully this O&M cost reduction program taking into due consideration the viability and operational efficiency of the system and quality of irrigation services to farmers, since this kind of program must bring about the far-reaching results.

## CHAPTER 3 FINANCIAL STATUS OF UPRIIS

### 3.1 Irrigation Service Fee Collection

In principle, the rates of irrigation service fees are to be determined at the level that will provide for: i) total repayment of public investment in irrigation facilities without interest, ii) operation and maintenance cost of the system and iii) marginal cost such as incentives/bonus to be paid to the personnel participated in irrigation service fee collection.

As mentioned in Appendix VI, Chapter 2, special rates of irrigation service fee applied to the UPRIIS are as follows:

- 2.5 cavans of paddy per ha for wet season crop and
- 3.5 cavans of paddy per ha for dry season crop and third crop

Total amount of irrigation fee collections and fee collection efficiency from 1979 to 1982 in the UPRIIS are shown in Table 7.12.

Average collection efficiency is about 50% and yearly collection amounts to P15.5 million. The irrigation fee collection efficiency of UPRIIS is lower in comparison with the other National Irrigation Systems with about 60% on an average as mentioned in Chapter 4.

The low efficiency of irrigation service fee collection of UPRIIS is supposed to be due to the following major factors:

#### (1) Insufficient Supply and Improper Distribution of Irrigation Water

Irregularity of irrigation water supply becomes a major problem affecting irrigation service fee collection, inasmuch as the earning of the farmers is tied up with their yield which is generally dependent on the adequacy of water supply.

#### (2) Inadequate Record Keeping and Procedures of Billing and Collection

The records on beneficiaries-farmers, bills, statements of accounts, etc. which serve as basic data for collection are not properly kept and updated. Data submitted by bill collector or deputized collector are at times inaccurate and preparation of irrigation service fees is often delayed because of its intricate procedure and many forms to be filled up in a short time. In such cases, the irrigation users are usually reluctant to pay their dues.

#### (3) Inadequacy of Transportation Facilities

The lack of vehicles (especially motorcycles) and necessary transportation allowance for bill collectors and other deputized collectors sometimes hampers the collection of irrigation service fees.

(4) Lack of Information Dissemination

Lack of information regarding the organizational set-up, policies, rules and regulations, etc. of the system affects the efficiency of irrigation service fee collection. Practically, this seems to be creating a wider communication gap between the NIA-UPRIIS and the farmers. Thereby, non cooperation on the part of the farmers hampers the attainment of the objective of NIA-UPRIIS, namely increased production and harmonious relationship among farmers and eventually results in poor collection.

(5) Low Capacity-to-pay of Farmers

The reasons for non payment of irrigation service fee are mostly due to the low production caused by poor facilities and/or fortuitous events including natural calamities and the poor financial situation of farmers. Under these conditions, money is used first for other pressing purposes and paying of other debts.

(6) Farmers' Perception of NIA Services

Irrigation water users pay voluntarily for their irrigation service fees in return for the sincere, honest and valued services rendered to them by NIA personnel. It is a common fact that good service is usually followed by good collection. In this connection, it is noticed from the survey results that 37.4% of 273 farmer-respondents do not have the impression that the performance of duties and responsibilities of UPRIIS personnel has improved compared with that in 1970's. It is supposed that such reaction of UPRIIS farmers greatly affects the irrigation fee collection.

(7) Unaction of NIA-UPRIIS against Delinquent Farmers

For the NIA-UPRIIS, there is no proper way to cut irrigation water supply to farmers who fail to settle irrigation service fee. Farmers can get irrigation water whether they pay irrigation fee or not. It is likely to be one of the major reasons leading to non payment by farmers. Furthermore, the present penalty charge of 1% per month for non payment of irrigation service fee seems too low to discourage effectively the delinquency, taking into account the current interest rate on loans (around 24% per annum or 2% a month) and penalties imposed in tax payments (surcharge of 10 to 20% and interest at the rate of 14 to 20% per annum).

## 3.2 UPRIIS Expenditure

### 3.2.1 Total Expenditure

The total expenditure of the UPRIIS from 1978 to 1982 is shown in Table 7.13. The expenditure decreases gradually from 191.6 million pesos in 1978 to 44.9 million pesos in 1982 according to the progress of construction works under the Aurora-Peñaranda Irrigation Project. The expenditure is divided into four categories: operation and maintenance work, construction works, erosion control and reforestation project, and project systems development. In 1982, operation and maintenance work occupies 74.3% of total expenditure, followed by construction works (25.6%) and project systems development (0.1%). The operation and maintenance cost increases annually at the rate of 10 to 20%.

In order to clarify personnel expenses for UPRIIS Main Office including 5 support Divisions and four (4) District Offices (generally called "Field Offices"), estimation was made on the basis of the number of employees as of July 1983 and their basic salaries. About 26% of the total amount of salaries are paid to staff of the Main Office and the balance thereof to the District Offices. It is significant to note that personnel expenses for the UPRIIS Main Office occupy around 30% of total personnel expenditure, if several allowances are added to the salaries of its staff.

In case of the District Offices, it can be considered that they comprise four functions: supervision, operation, repair & maintenance and administration. Salary distribution by these functions is estimated as follows: 2% for supervision, 77.8% for operation, 7.4% for repair & maintenance and 12.8% for administration as shown in Table 7.14.

### 3.2.2 O&M Cost

In 1982, operation and maintenance (O&M) cost allocated to the UPRIIS amounts to ₱33.34 million, equivalent to 74.3% of the total expenditure.

The O&M cost of the UPRIIS can be classified into two items: personnel expenses and other expenses, as indicated in Table 7.15.

#### (1) Personnel Expenses

Personnel expenses consisting of salaries, government share, wages, allowances and pag-ibig fund account for about 83% (1982) of the total O&M cost. The calculation of personnel expenses other than basic salary and wages is given in Table 7.16.

Personnel expenses for UPRIIS increased annually from ₱16,302,000 in 1978 to ₱27,581,500 in 1982, as a result of the increases in personnel and salaries and wages. However, this tendency has slowed down in recent years, as shown in Table 7.15.

According to the proposed O & M budget for NISs for FY 1983, personnel expenses of the UPRIIS are expected to be about P22,034,000 or a 20% reduction of the budget in 1982.

(2) Other Expenses

Other expenses occupying 27% of the O & M cost consist of traveling, sundries and materials, spare parts, water, illumination & power services, gasoline and oils, etc. The total amount of the expenses becomes more than double from P2,558,700 in 1978 to P5,759,000 in 1982.

As indicated in Table 7.15, it is noted that in 1982, the budget for collection expenses and purchase of equipment was newly allocated with a view to improving the efficiency of irrigation service fee collection.

According to proposed O & M budget for NISs for FY 1983, the total amount is proposed to be reduced by around 35%. It is apprehended that reduction of maintenance and operating expenses by reducing number of vehicles, accordingly gasoline and oil cost, may adversely affect the efficiency of the system management.

3.3 Budget Analysis

The irrigation service fees (ISF) collected from water-users are the major source of revenue of the NIA-UPRIIS. Based on the ISF collected and O & M expenditure of the UPRIIS, the financial status was analysed as summarized in the following table:

	(Unit: P10 <sup>3</sup> )			
	1979	1980	1981	1982
Revenue	15,920	13,467	15,419	17,334
Expenditure	21,715	26,661	30,240	33,341
Balance	-5,795	-13,194	-14,821	-16,007

The deficit of the UPRIIS gradually increases and is forecasted to be P50 million after 10 years if this tendency continues. This deficit will become a huge burden for the government.

In addition to the above-mentioned O & M expenditure, it is noticed that the NIA-UPRIIS is bound to repay the loan borrowed from the IBRD for the implementation of the Upper Pampanga Irrigation Project including its commitment charge and interest in accordance with the repayment schedule given in Table 7.17 and further P45 to 60 million will be required annually thereafter for the rehabilitation and extension works.

## CHAPTER 4 COMPARATIVE STUDY WITH OTHER NATIONAL IRRIGATION SYSTEMS

### 4.1 General

The total irrigation area of the National Irrigation Systems (NISs) in the country is about 500,000 ha, as shown in Table 7.18. It varies according to the seasonal and annual availability of irrigation water.

The areas served by the NISs range from 202 ha in Bonga Pump #3 NIS to 116,900 ha in the UPRIS. As to the efficiency of irrigation service fee collection, there exists a big difference from 15 to 126% among the served areas.

In this Section, the NISs which have irrigation service fee collection efficiency higher than 75% were selected among all NISs. This approach is based on the supposition that the efficiency of irrigation service fee collection is one of the key factors to evaluate the soundness and viability of system management.

The institutional characteristics of 13 selected NISs were studied and analyzed with respect to their structure, staff and staffing pattern and work load of each staff.

The 13 NISs selected by the above-mentioned method are the followings:

- 1) Amburayan NIS
- 2) Masalip NIS
- 3) Zinunduan NIS
- 4) Palico NIS
- 5) Cavite Friar Land NIS
- 6) Barotac-Viejo NIS
- 7) Sibalom-Tigbanuan NIS
- 8) Hindang Das Ay NIS
- 9) Padada NIS
- 10) Siluay NIS
- 11) Libungan NIS
- 12) Kabacan NIS
- 13) Malasila-M'lang NIS

#### 4.2 Structure

The existing organizational structure of NIA-UPRIIS is unique among the NISs. It does not have the same line of supervision as that being followed by other systems, in which the structure is mainly established from the Central Office in Quezon City down through the regional irrigation offices to the irrigation systems.

The Operations Manager of UPRIIS reports to the Assistant Administrator for Operations, whereas in other systems, the Irrigation Superintendent (corresponding to the Operations Manager of UPRIIS) reports to the Regional Irrigation Director or directly to the Administrator.

The typical structure of Regional Irrigation Office is presented in Fig. 7.4. The Regional Irrigation Office is composed of Office of the Regional Irrigation Director and six (6) Divisions, namely: Engineering, Operations, Agricultural Coordinating, Equipment Management, Administrative and Accounting Divisions.

In this structure, it is noticed that Accounting Division is established separately from the Administrative Division with a view to improving internal control.

#### 4.3 Staff and Staffing Pattern

The study on staff and staffing pattern was conducted both in Main Office and Field Office (corresponding to District Offices in case of the UPRIIS).

##### Main Office

To grasp the functional distribution of UPRIIS Main Office and Region III Irrigation Office staffs, the comparative study on staffing pattern was carried out and results thereof are summarized in the following table:

Category	Total Number of Staff		
	UPRIIS Main Office		Region III (%)
	Whole (%)	Dam & Res. Div. Excluded (%)	
Supervision:	10 (100)	7 (4)	8 (7)
Administration	227 (62)	102 (57)	45 (38)
Operation	33 (9)	15 (8)	16 (14)
Repair & Maintenance	69 (19)	30 (17)	37 (31)
Research & Training	24 (7)	24 (14)	12 (10)
<b>Total</b>	<b>363 (100)</b>	<b>178 (100)</b>	<b>118 (100)</b>

Out of 363 UPRIIS Main Office staffs, 185 belong to the Dam & Reservoir Division at Pantabangan dam. The number of UPRIIS Main Office staffs, excluding the personnel working for the operation of Pantabangan dam, is 178. This number seems considered "adequate" in comparison with 118 of the Region III Office, considering that the actual UPRIIS irrigation service area (92,000 ha) is 1.4 time of the Region III area (67,000 ha).

A significant finding in the review of the UPRIIS Main Office organization is the improper functional distribution of the staff. In particular, the UPRIIS Main Office staff for Operation (8%) and Repair & Maintenance (17%) is very small in quantity, compared with 14% and 31% respectively in the Region III Office. To the contrary, the UPRIIS Administration personnel (57%) is 1.5 time larger than of that of the Region III Office (38%).

#### Field Office (District Offices)

The analytical study on staffing pattern and work load of each staff focussed on the comparison between the main field staffs of UPRIIS District Offices and 13 selected NISs.

The staffing pattern of the specific NISs is presented in Table 7.19. In the NISs, the O&M of the systems is controlled through four (4) grades: Irrigation Superintendent - Irrigation Engineer - Watermaster - Ditch-tender. On the other hand, the line of control in the UPRIIS passes through seven (7) grades: Operations Manager - District Chief - Operations Engineer, Zone Engineer, Water Management Technologist (WMT) - Water Management Technician (AWMT) & Watermaster (WM) - Dichtender (DT).

The work load of staff in the specific NISs is presented in Tables 7.20 and 7.21 are summarized hereunder.

Main Field Staff	Work Load			UPRIIS
	13 Selected NISs			
	Maximum	Minimum	Average	
Watermaster (AWMT & WM in UPRIIS)	2,066	360	980	620
Dichtender (km/person)	224 (2.3)	85 (6.2)	173 (4.5)	120 (2.1)
Gatekeeper	2,179	358	810	3,400
Billing Clerk	4,919	216	1,670	4,000

As shown in the above table, the work load of Watermaster (WM) in the specific NISs ranges widely from 360 to 2,066 ha/person. In view of the average of 980 ha/WM in the NISs, the work load (620 ha/person) of AWMT & WM in the UPRIIS is relatively light.



Concerning the work load of Ditchtenders (DTs) in the specific NISs, it ranges from 85 to 224 ha/person and averages 173 ha/DT. This indicates that the work load (120 ha/person) of DTs in the UPRIIS is less than the average of the NISs. In addition to the work load based on area, the work load based on canal length is also estimated as follows: Max. 6.2 km/DT, Min. 2.3 km/DT and Average 4.5 km/DT. However, in this case, attention must be paid to the fact that the work load varies according to the dimensions of their sections.

On the contrary, it was found that the work loads of Gatekeeper (3,400 ha/person) and Billing Clerks (4,000 ha/person) in the UPRIIS are heavy, compared with those of 810 ha/GK and 1,670 ha/BC respectively in the NISs.

In conclusion, the comparative study on work load of field personnel in UPRIIS District Offices and Region III Office shows the general over-staffing of the UPRIIS District Offices, especially in middle staff such as WMT, AWMT & WM and DT.

## CHAPTER 5 PROPOSED ORGANIZATION OF UPRIIS

### 5.1 General

The organization of the UPRIIS will be shaped according to the type of system management which the NIA-UPRIIS Office will adopt. Concretely, it depends on the degrees of transferring the ownership and responsibilities for management & maintenance of the systems to Farmer-Irrigation Associations (FIAs).

The following four (4) types of system-management can be viewed in perspective as shown hereunder.

Type of System-Management	Ownership of Irrigation Facilities & Structures				Responsibilities for Management & Maintenance			
	NIA-UPRIIS		Irrigation Association		NIA-UPRIIS		Irrigation Association	
Rotational Area (RA) Basis (50 ha) <sup>/1</sup>	<	≡	<	≡	<	≡	<	≡
I	0	0	X	X	0	X	X	0
II	0	X	X	0	0	X	X	0
Sub-Lateral <sup>/2</sup> (SL) Canal Basis	<	≡	<	≡	<	≡	<	≡
III	0	0	X	X	0	X	X	0
IV	0	X	X	0	0	X	X	0

Note: <sup>/1</sup>: This is merely a standard figure. The area varies actually from 40 to 80 ha.

<sup>/2</sup>: The area served by a sub-lateral canal varies from 50 to over 800 ha.

#### Type I

The existing system management is based on this case. The whole ownership of the system and the responsibilities for management & maintenance of the system of more than 50 ha belong to the NIA-UPRIIS, while the operation and maintenance of rotational irrigation area (less than 50 ha) are left to the care of Irrigation Associations (IAs)<sup>/\*</sup>.

<sup>/\*</sup>: The term of "Irrigation Association" (IA) is used herein as common name of Farmer-Irrigation Groups (FIGs) and Farmer-Irrigation Associations (FIAs).

### Type II

This idea consists of transforming the existing NIA-UPRIIS with areas of less than 50 ha into communal systems. The NIA-UPRIIS transfers the ownership of a part of the system of less than 50 ha to IAs and takes charge of management and maintenance of the area of more than 50 ha. The cost spent for construction of the rotational irrigation area will be repaid by IAs.

### Type III

Type III is similar to Type I in its system management, but may be different in size. In this type, the whole ownership of the system belongs to the NIA-UPRIIS, whereas the responsibilities for operation and maintenance of the system at sub-lateral canal level are transferred to FIAs.

### Type IV

This case is similar to Type II in its system management, but may be different in size. The NIA-UPRIIS transfers the ownership and responsibility for management and maintenance of a part of the system (at sub-lateral canal level) to FIAs on condition that FIAs pay its construction costs.

Among four (4) types of system management, Type III seems to be most realistic and practical taking into consideration the following main points: i) Participation of farmers to owner management and farmers' capability for management of FIA, ii) Reduction of O & M cost of the UPRIIS and iii) Impossibility of cutting irrigation water supply.

## 5.2 Structure

The proposed organizational structure of the UPRIIS is presented in Fig. 7.5.

### Main Office

The main points recommended in the proposed organization of UPRIIS-Main Office are as follows:

- 1) Establishment of the strengthened Maintenance and Equipment Division which will integrate the maintenance functions shared by the existing Equipment and Engineering and Operations Divisions;
- 2) Creation of the Planning and Operations Division which will take over the present functions of the WCCC;
- 3) Transformation of the Agriculture Division into the Farmers' Assistance Division and its consolidation.

As for the system management of the UPRIIS, the Field Services and Repair Section in the Equipment Division shares at present responsibilities with the Engineering and Operations Division (FOD). For smooth implementation of maintenance works, it seems to be more effective to transfer the maintenance functions of the EOD to a strengthened Engineering and Maintenance Section under the supervision of Maintenance and Equipment Division Manager, since the fundamental requirement for the successful operation of the systems is proper maintenance. The existing Utilization and Control Section and Central Shop and Depot Section will be incorporated and transformed into the Equipment Section under the Maintenance and Equipment Division.

Hence, the Planning and Operations Division composed of Planning and Evaluation Section and Water Distribution and Control Section will take over the present functions of the WCCC and be responsible for operating the systems.

As mentioned in Appendix IX, Section 3.2, about 3,008 Farmer-Irrigation Groups and about 865 Farmer-Irrigation Associations will be set up for the smooth operation and maintenance of the UPRIIS. For the purpose, the existing Agriculture Division will be transformed into the Farmers' Assistance Division strengthened in institutional development functions.

In parallel with the organizational reform of the UPRIIS, it is recommended to introduce a computer system so as to rationalize its system management, especially in water management and administrative general affairs. Regarding the general supervision of the computer system in the Main Office, it is proposed to entrust it to the Office of Operations Manager. In addition, office computers will be installed in the Dam and Reservoir Division at Pantabangan dam and in each four (4) District Offices.

### District Offices

The proposed organizational structure of the District Offices is presented in Fig. 7.6.

In addition to the existing Repair & Maintenance, Operations and Administration Section, it seems to be convenient to establish a Billing & Collection Section in each District Office in order to intensify the tied-up activities in billing and collection.

### 5.3 Staffing Pattern

Proposed work load and staffing pattern of the main field staff are presented in Table 7.22.

As pointed out in the Section 2.2, the existing organizational structure of the UPRIIS-District Office is characterized by the presence of the multi-posts from the top to the bottom: Operations Manager, District Chief, Operations Engineer, Zone Engineer, WMT, AWMT & WM and Ditchtender. The operation and maintenance works have been carried out through a long channel. It takes a long time to go through the necessary steps. Further, delayed transmission of information from bottom to top and inaccuracy of data often occur. Such being the situation the UPRIIS is put in the embarrassing place to manage itself properly. To remove these obstacles, it is advisable to simplify that channel. In case of National Irrigation Systems other than UPRIIS and Angat-Maasim, all systems are administrated by the channel of command consisting of four (4) steps from DT, WM, Irrigation Engineer and Irrigation Superintendent. The efficient operation and management are observed in the above-mentioned systems, especially in 13 National Irrigation Systems mentioned in Chapter 4. Accordingly, functions to be fulfilled by Operations Engineer, Zone Engineer and WMT would be transferred to Irrigation Superintendent.

With abolishment of the posts of Operations Engineer, ZE and WMT, Operations Engineer and ZEs will be transformed into Irrigation Superintendents. WMTs well-versed in water management in the field will be assigned as Irrigation Association Organizers (IAOs), to the new posts in the Farmers' Assistance Division (FAD). This FAD is expected to be consolidated prior to the implementation of the program of organization and development of the Farmer-Irrigation Associations (FIAs).

In addition, the work loads of AWMT and DT will be increased respectively from 620 to 750 ha (at least) and 120 to 200 ha (at least) for each staff. Work load AWMT is as determined in the Memorandum Circular No. 2. Work load of DT is based on the work load prevailing in the 13 National Irrigation Systems with an irrigation fee collection efficiency of more than 70%.

Based on the work load proposed for organizational reform of the UPRIIS, the number of main field staffs will be adjusted as shown in Table 7.22.

#### 5.4 Implementation Program

In implementing the reorganization in accordance with the staffing pattern proposed in Section 5.3, it is recommended for the NIA-UPRIIS to adopt, as their principle, the following measures:

- 1) Relocation of the superfluous personnel to new posts;
- 2) Tapering trimming of the retirable personnel and not filling up new hands, especially in ditchtender;
- 3) Arrangements for assigning the personnel concerned to the marginal posts such as Common Irrigator and Association Worker in the FIAs, as mentioned in Section 3.4, Appendix IX Farmer's Organization.

Considering the limited reshuffle only within the UPRIIS, it is proposed that the superfluous personnel in Table 7.22 will be relocated or programmed as follows:

- 1) Superfluous WMTs will be incorporated in the Farmers' Assistance Division (FAD) as Irrigation Association Organizers (IAOs);
- 2) New posts of Gatekeeper will be occupied by non-retirable Ditchtenders;
- 3) Ditchtenders on over-staffed list will be discharged as their age and/or service period requirements for retirement are satisfied.
- 4) Implementation program for this reshuffle should be carried out in a certain period (e.g. 9 years), because drastic change of organization will adversely affected the present O & M functions of UPRIIS.

As for the along ranged program on retirement of Ditchtenders, the results of two (2) Case-studies are presented below:

Taking into consideration superfluous personnel and the reshuffle of superfluous personnel to new posts, program of Case II will be proposed. Actual implementation program is explained in Section 2.4, Appendix X Implementation Schedule and Cost Estimate.

Case I - Retirement at age 60 and 15 after years of service<sup>/1</sup>

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	Total
No. of Retirable Ditchtenders	21 <sup>/2</sup>	7	8	13	23	15	23	10	20	140

Case II - Retirement at age 55 and after 20 years of service<sup>/1</sup>

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	Total
No. of Retirable Ditchtenders	32 <sup>/2</sup>	3	21	26	12	17	23	29	19	182

Note: <sup>/1</sup>: To simplify the present regulations on modes of retirement, age and service conditions for retirement are set at 60 & 55 years old and 15 & 20 years of service (Cases I & II).

<sup>/2</sup>: In first year (1984), DTs being over 60 (Case I) or 55 (Case II) years old are included.





Table 7.1 STATISTICS OF THE O & M OF NATIONAL IRRIGATION SYSTEMS, 1982

Region	No. of NISS	Total Service Area (ha)	Collectible (P)	Collection		O & M Expenses (P)	Income/Deficit (P)	O&M Cost (P/ha)
				Amount (P)	Eff. (%)			
I	20 <sup>/1</sup>	47,014	9,960,439.50	5,404,430.02	54	9,887,071.87	-4,482,641.86	210
II	13	101,511	21,585,114.00	13,483,310.53	62	12,864,041.85	619,268.68	127
III	12 <sup>/1</sup>	172,047	51,070,880.25	27,702,436.75	54	39,997,884.46	-12,295,447.71	232
IV	23	49,933	9,375,999.25	6,227,150.26	66	9,007,694.03	-2,780,543.77	180
V	14	16,386	4,036,048.88	2,027,401.96	50	4,960,282.80	-2,932,880.84	303
VI	14	53,194	12,971,965.50	9,262,504.12	71	8,545,259.28	717,244.84	161
VII	2	457	47,430.00	36,482.51	77	103,053.71	-66,571.20	226
VIII	11	14,918	2,915,619.75	1,624,152.80	56	3,323,054.79	-1,698,901.99	223
IX	4	11,316	2,650,221.00	2,069,156.74	78	1,548,668.73	520,488.01	137
X	3	9,697	1,413,204.75	922,838.16	65	562,399.95	360,438.21	58
XI	10 <sup>/1</sup>	30,431	4,621,007.25	3,634,207.98	79	4,334,926.16	-700,718.18	142
XII	7	25,022	5,389,164.00	4,362,747.93	81	4,071,422.74	291,325.19	163
Total	133	531,926 <sup>/2</sup>	126,037,094.13	76,756,819.76	61	99,205,760.37	-22,448,940.61	187

Note: /1: Each of the sub-systems in Regions I, III and XI having the same designation is counted as one unit system.

/2: Total irrigation service area varies from season to season and year to year according to the availability of irrigation water.

Table 7.2 STATISTICS OF THE O&M OF NATIONAL IRRIGATION SYSTEMS  
IN THE REGION III (1982)

No.	System	Total Service Area (ha)	Collectible (P)	Collection		O&M Expenses (P)	Income/Deficit (P)	O&M Cost (P/ha)
				Amount (P)	Eff. (%)			
1.	Angat-Maasin	31,371	9,309,183.75	6,646,936.70	71	8,671,145.00	-2,024,208.30	276
2.	Porac-Gumain	5,015	1,436,850.00	661,727.71	46	841,173.49	-179,445.78	168
3.	Colo	467	141,592.50	128,568.28	91	174,322.00	-45,753.72	373
4.	Tama	77	26,365.50	14,863.51	56	42,446.00	-27,582.49	551
5.	Caulaman	562	161,610.75	90,491.67	56	240,548.93	-150,057.26	428
6.	San Juan	68	15,205.50	10,059.33	66	68,349.65	-58,290.32	1,005
7.	Sto. Tomas	3,448	831,420.00	578,849.89	70	753,443.67	-174,593.78	219
8.	Nayom	1,158	343,100.25	221,073.18	64	384,404.73	-163,331.55	332
9.	Tarlac	9,763	1,114,116.75	804,739.63	72	1,281,291.43	-476,479.80	131
10.	Smoris	8,645	1,200,885.75	486,831.01	41	760,737.00	-273,905.99	88
11.	Camiling	8,885	1,545,869.25	724,013.91	47	1,170,744.65	-446,730.74	132
12.	UPRIIS	102,588 <sup>/2</sup>	34,944,680.25	17,334,281.93	50	25,609,349.91 <sup>/1</sup>	-8,275,067.98	250
Total		172,047	51,070,880.25	27,702,436.75	54	39,997,884.46	-12,295,447.71	232

Note: <sup>/1</sup>: In the O&M expenses in this table, expenses for UPRIIS support divisions in the Main office are not included.

<sup>/2</sup>: In this report, 92,000 ha is used as standard irrigation service area.

Table 7.3 WORKFORCE IN UPRIIS (AS OF JULY 1983)

Office/Division/District	Key Personnel		Other Personnel		Total
	Technical	Non Technical	Skilled	Un-Skilled	
1. Office of the Operations Manager	1	6	1	0	8
2. W C C C	5	1	2	0	8
3. Administrative Division	1	28	27	5	61
4. Eng. & Operation Division	7	1	2	0	10
5. Agriculture Division	23	9	6	7	45
6. Dam & Reservoir Division	15	10	85	75	185
7. Equipment Division	7	7	30	2	46
8. Sub-Total (1 to 7)	59	62	153	89	363
9. District I	53	19	28	216	316
10. District II	57	21	36	230	344
11. District III	57	23	28	228	336
12. District IV	32	19	90	154	295
13. Sub-Total (9 to 12)	199	82	182	828	1,291 (78.0%)
14. GRAND-TOTAL (8-13)	258	144	335	917	1,654
% of Grand Total	(15.6%)	(8.7%)	(20.3%)	(55.4%)	(100%)

N.B. - Including permanent, temporary and daily personnel  
 - Staff of IOMP, On-Farm Facilities Study and Soils and Water Laboratory Services in Agriculture Division, and Testing and Control Laboratory are excluded.

Table 7.4 WORK LOAD OF THE UPRIIS STAFF

Basic Factors	District				Whole UPRIIS
	I	II	III	IV	
1. Potential area (ha)	28,000	26,200	32,900	29,800	116,900
2. Planted area (ha)*	23,000	24,000	26,000	19,000	92,800
3. Diversion canal (km)	7.1	12.1	27.4	-	46.6
4. Main canal (km)	53.3	50.7	71.3	60.7	236
5. Lateral canal (km)	275.6	296.6	360.6	348.2	1,281
6. Total length (3+4+5)	336.0	359.4	459.3	408.9	1,563.6
7. No. of turnout & headgate	668	685	942	935	3,230
8. No. of headgate	60	85	107	98	350
9. No. of farmers (as of March 1980)	10,621	11,603	13,950	9,967	46,141
10. No. of WMT	7	9	10	12	38
11. No. of AWMT (or WM)	38	47	47	16	148
12. No. of ditchtender	206	215	216	122	759
13. No. of gatekeeper	5	10	7	5	27
14. No. of billing clerk	5	10	4	4	23
15. No. of cashier	1	1	1	2	5
16. 2/10 (ha/person)	3,290	2,670	2,600	1,580	2,420
17. 2/11 (ha/person)	605	510	550	1,190	620
18. 2/12 (ha/person)	110	110	120	160	120
19. 6/12 (km/person)	1.6	1.7	2.1	3.3	2.1
20. 10/14 (person/person)	4,600	2,400	6,500	4,750	4,000
21. 2/15 (ha/person)	23,000	24,000	26,000	9,500	18,400
22. 2/13 (ha/person)	4,600	2,400	3,700	3,800	3,400

Remarks: \* Average planted area per one crop season during the past four years from 1979 to 1982.

Table 7.5(1) AGE DISTRIBUTION OF UPRIS-HEAD OFFICES' STAFFS  
(INCLUDING FIVE DIVISIONS)

	Age								Total No. of Staff
	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	
1. Operations Manager	0	0	0	1	0	0	0	0	1
2. Secretary	0	0	1	0	0	0	0	0	1
3. Sr. Corporate Atty.	0	0	1	0	0	0	0	0	1
4. Public Affair Officer	0	0	1	0	0	0	0	0	1
5. Photographer	0	0	0	0	1	0	0	0	1
6. Division Manager	0	0	3	1	0	0	1	0	5
7. Principal Engineer	0	0	2	0	0	0	0	1	3
8. Supervising Engineer	0	0	1	0	0	0	0	0	1
9. Senior Engineer	0	2	2	1	0	0	0	0	5
10. Engineer	2	8	4	1	1	0	0	0	16
11. Engineer Asst.	1	0	1	0	0	0	0	0	2
12. Engineer Aide	1	2	0	1	1	0	0	0	5
13. Administrative Asst.	0	1	1	0	0	0	0	0	2
14. Supervising Clerk	0	0	0	1	0	0	0	0	1
15. Clerk	0	10	12	7	0	0	0	1	30
16. Senior Cashier	0	0	0	0	0	1	0	1	2
17. Corporate Accountant	0	1	1	0	0	0	0	0	2
18. Accounting Clerk	0	2	3	1	0	0	0	0	6
19. Personnel Service Chief	0	0	1	0	0	0	0	0	1
20. Personnel Asst.	0	0	1	1	0	0	0	0	2
21. Medical Service Aide	1	0	1	0	0	0	0	0	2
22. Supply Officer	0	0	0	1	0	0	0	0	1
23. Disbursing Officer	0	0	1	0	0	0	0	0	1
24. Driver	0	1	7	6	7	4	3	1	29
25. Radio Operator	1	2	0	4	0	0	0	0	7
26. Telephone Operator	0	1	1	0	0	0	0	0	2
27. Commun. Linesman	0	0	0	1	0	0	0	0	1
28. Electrician	0	3	3	2	2	1	1	0	12
29. Bldg. Maintenance Sup.	0	0	1	0	0	0	0	0	1
30. Security Guard	1	8	5	0	4	1	5	0	24
31. Book Keeper	0	0	2	0	0	0	0	0	2
32. Store Keeper	0	2	0	0	1	0	0	0	3
33. Store Keeper Aide	0	0	0	1	0	0	0	0	1
34. Tool Keeper	0	1	0	0	0	0	0	0	1
35. Property Custodian	0	0	1	1	0	0	0	0	2
36. Pipefitter	0	0	0	2	1	1	1	0	5
37. Janitor	0	7	1	1	4	7	1	0	21
38. Utility Man	0	0	1	0	1	0	1	0	3

Table 7.5(2) AGE DISTRIBUTION OF UPRIIS-HEAD OFFICES' STAFFS  
(INCLUDING FIVE DIVISIONS)

	Age								Total No. of Staff
	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	
39. Auto. Equip. Inspector	0	1	0	0	0	0	0	0	1
40. Dispatcher	0	0	0	0	1	0	0	0	1
41. H.E. Operator	0	0	0	2	0	3	1	1	7
42. Sup./Sr. Mechanic	0	1	0	1	1	1	1	0	5
43. Mechanic (A/B)	2	2	3	3	4	1	0	0	15
44. Reproduct. Mach. Operator	0	0	1	0	0	0	0	0	1
45. DUP Machine Operator	0	0	0	1	0	0	0	0	1
46. Engine Man	0	0	1	0	0	0	0	0	1
47. Pump Operator	0	0	0	1	0	1	0	0	2
48. Sheet Metal Worker	0	0	1	0	0	0	0	0	1
49. Autopainter/Painter	0	1	0	1	0	0	0	1	3
50. Welder	0	1	0	1	0	0	0	0	2
51. Senior Mason	0	2	1	1	0	0	0	0	4
52. Labor Foreman	0	0	1	0	0	0	0	0	1
53. Maintenance Foreman	0	0	3	0	0	1	1	1	6
54. Draftsman	1	0	0	0	1	0	0	0	2
55. Greet House Caretaker	1	0	0	0	0	0	0	0	1
56. Gardener	0	3	1	2	0	2	0	2	10
57. Carpenter	0	0	0	3	3	0	0	0	6
58. Fishery Aide	1	0	0	0	0	0	0	0	1
59. Canvasser	0	0	0	0	0	1	0	0	1
60. Agri. Specialist	0	1	1	0	0	0	0	0	2
61. Senior Agriculturist	0	1	1	0	0	0	0	0	2
62. Agronomist	0	1	0	0	0	0	0	0	1
63. Soil Technologist	0	1	1	0	0	0	0	0	2
64. Agro-economist	0	2	0	0	0	0	0	0	2
65. Research Assistant	0	1	0	0	0	0	0	0	1
66. Research Aide	0	2	0	0	0	0	0	0	2
67. Training Specialist	0	0	0	0	0	0	1	0	1
68. Farmer's Org. Specialist	0	0	0	0	0	1	0	0	1
69. Farmer's Training Officer	0	1	1	2	1	0	0	0	5
70. Sociologist	0	0	0	0	0	1	0	0	1
71. Laboratory Technician	0	0	1	0	0	0	0	0	1
72. Tech-report Writer	0	0	1	0	0	0	0	0	1
73. Research Analyst	0	1	0	0	0	0	0	0	1
74. Laborer	5	13	10	9	10	10	5	0	62
Total	17	85	87	60	45	38	22	9	363
Proportional (%)	4.7	23.4	24.0	16.5	12.4	10.4	6.1	2.5	100.0

Table 7.6 AGE DISTRIBUTION OF DISTRICT OFFICES' STAFFS  
(DIST. I - IV)

	Age									Total No. of Staff
	20-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	
<b>A. Supervision</b>										
1. Division Manager	0	0	1	1	2	0	0	0	0	4
2. Principal Engineer	0	0	2	2	0	0	0	0	0	4
<u>Sub-total</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>8</u>
<b>B. Operation</b>										
3. Engineer	0	1	6	1	2	0	1	0	0	11
4. Engineer Aide	0	0	1	0	1	0	0	0	0	2
5. WMT	0	6	4	11	5	7	4	1	0	38
6. WMT	0	16	57	24	12	12	2	3	0	126
7. Watermaster	0	0	0	0	3	5	6	5	3	22
8. Ditchtender	3	130	144	103	108	129	84	44	14 <sup>1</sup>	759
9. Gatekeeper	0	0	5	5	4	4	5	3	1	27
10. Hydrologist	0	0	1	0	0	0	0	0	0	1
11. Hydrologist Aide	0	0	0	1	0	0	0	0	0	1
12. Irrigation Technologist	1	4	0	1	0	0	0	0	0	6
13. Engineering Assistant	1	1	1	0	0	0	0	0	0	3
14. Asst. Agriculturist	0	1	0	0	0	0	0	0	0	1
<u>Sub-total</u>	<u>5</u>	<u>159</u>	<u>219</u>	<u>146</u>	<u>135</u>	<u>157</u>	<u>102</u>	<u>56</u>	<u>18</u>	<u>997</u>
<b>C. Repair &amp; Maintenance</b>										
15. Supervising R&M Engineer	0	0	0	3	0	0	0	0	0	3
16. Motorpool Dispatcher	0	0	0	2	0	0	0	0	0	2
17. Mechanic	0	0	3	2	0	0	1	0	0	6
18. Construction Foreman	0	0	0	3	2	2	0	0	0	7
19. Mason	0	1	5	2	2	3	0	0	0	13
20. Carpenter	0	0	2	3	9	4	2	2	0	22
21. Draftsman	0	0	1	1	0	0	0	0	0	2
22. Geodetic Engineer	0	0	0	0	1	0	1	1	0	3
23. Geodetic Engineer Aide	0	0	2	1	2	2	1	1	0	9
24. Heavy Eqipt. Operator	0	0	2	1	3	7	8	2	0	23
<u>Sub-total</u>	<u>0</u>	<u>1</u>	<u>15</u>	<u>18</u>	<u>19</u>	<u>18</u>	<u>13</u>	<u>6</u>	<u>0</u>	<u>90</u>
<b>D. Administration</b>										
25. Administrative Asst.	0	0	0	0	0	1	2	1	0	4
26. Cashier Clerk	0	0	1	3	0	1	1	0	0	6
27. Collection Representative	0	0	0	1	0	0	1	0	0	2
28. Accounting Clerk	0	0	1	2	1	1	0	0	0	5
29. Building Clerk	0	9	2	8	3	1	0	0	0	23
30. Clerk	0	5	15	14	1	1	1	1	0	38
31. Property Custodian	0	0	0	0	0	0	2	1	0	3
32. Radio Operator	0	3	4	1	0	1	0	0	0	9
33. Storekeeper	0	0	2	1	1	0	1	0	0	5
34. Driver	1	1	7	13	9	7	6	2	2	48
35. Security Guard	0	1	3	2	4	4	1	0	0	15
36. Electrician	0	0	1	0	0	0	0	0	0	1
37. Janitor	0	2	1	1	0	0	0	1	0	5
38. Utilityman	0	0	0	0	1	1	1	0	0	3
39. Laborer	3	13	4	3	1	3	0	0	0	27
40. Automotive Serviceman	0	0	0	0	1	0	0	0	0	1
41. Pipefilter	0	0	0	0	0	0	1	0	0	1
<u>Sub-total</u>	<u>4</u>	<u>34</u>	<u>41</u>	<u>49</u>	<u>22</u>	<u>21</u>	<u>17</u>	<u>6</u>	<u>2</u>	<u>196</u>
<b>Total</b>	<b>9</b>	<b>194</b>	<b>278</b>	<b>216</b>	<b>178</b>	<b>196</b>	<b>132</b>	<b>68</b>	<b>20</b>	<b>1,291</b>
<b>Proportion (%)</b>	<b>0.7</b>	<b>15.0</b>	<b>21.5</b>	<b>16.7</b>	<b>13.8</b>	<b>15.2</b>	<b>10.2</b>	<b>5.3</b>	<b>1.6</b>	<b>100%</b>

Remarks: /1: One ditchtender, aged sixty-six (66) years, is included in age group of 61-65.





Table 7.8(1) STATUS DISTRIBUTION OF DISTRICT OFFICES' STAFFS  
(AS OF JULY 1983)

	I		II		III		IV		Sub-total (%)		Total (%)	
	Temporary		Temporary		Temporary		Temporary		Perm.	Temp. Mon. Daily		Total (%)
	Mon. Daily	Perm.	Mon. Daily	Perm.	Mon. Daily	Perm.	Mon. Daily	Perm.				
<u>SUPERVISION</u>												
1. Division Manager	1	0	0	1	0	0	0	0	0	0	0	4
2. Principal Engineer	0	0	0	1	0	0	0	0	0	0	0	3
3. Irrigation Supt. III	1	0	0	0	0	0	0	0	0	0	0	1
<u>OPERATION</u>												
4. Irrigation Engineer	3	0	0	0	0	0	0	0	0	0	0	3
5. Engineer	0	0	0	2	0	0	0	0	0	0	0	1
6. Eng. Aide	0	0	0	0	1	0	0	0	0	3	1	3
7. Water Management Technologist	6	1	0	7	2	0	0	0	0	34	4	38
8. Asst. Water Management Technician	21	12	4	27	14	1	29	12	0	83	38	126
9. Water Master	1	0	0	4	1	0	5	1	0	14	8	22
10. Ditchtender	206	0	0	210	1	4	216	0	0	749	1	759
11. Gatekeeper	5	0	0	10	0	0	7	0	0	27	0	27
12. Hydrologist	1	0	0	0	0	0	0	0	0	1	0	1
13. Hydrologist Aide	1	0	0	0	0	0	0	0	0	1	0	1
14. Assistant Agriculturist	0	0	0	0	0	0	0	0	0	0	0	1
<u>REPAIR &amp; MAINTENANCE</u>												
15. Supervising R&M Engineer	1	0	0	1	0	0	0	0	0	0	0	3
16. Motor Pool Dispatcher	1	0	0	1	0	0	0	0	0	0	0	2
17. Mechanic	0	0	0	1	0	1	1	0	0	2	0	6
18. Construction Foreman	0	0	0	1	0	0	1	0	0	3	4	7
19. Mason	1	0	0	1	0	0	1	0	0	2	1	10
20. Carpenter	2	0	0	2	0	1	0	0	0	4	6	12
21. Draftsman	1	0	0	0	1	0	0	0	0	1	1	2
22. Geodetic Eng. (Survey Eng.)	0	2	0	1	0	0	1	0	0	2	0	3
23. Geodetic Eng. Aide (Survey Aide)	0	2	0	2	0	0	2	0	0	5	2	9
24. Heavy Equip. Operator	6	0	0	4	0	0	1	1	0	12	2	23
25. Automotive Serviceman	1	0	0	0	0	0	0	0	0	1	0	1

Table 7.8(2) STATUS DISTRIBUTION OF DISTRICT OFFICES' STAFFS  
(AS OF JULY 1983)

	I		II		III		IV		Sub-total (%)		Total (%)
	Perm.	Temp. Daily	Perm.	Temp. Daily	Perm.	Temp. Daily	Perm.	Temp. Daily	Perm.	Temp. Daily	
<b>ADMINISTRATION</b>											
26. Administrative Assistant	1	0	0	0	1	0	0	0	4	0	4
27. Personnel Assistant	0	0	0	0	0	0	0	0	1	0	1
28. Cashier Clerk	1	0	0	0	2	0	0	0	6	0	6
29. Collection Representative	0	0	0	0	1	0	0	0	2	0	2
30. Accounting Clerk	0	0	0	0	1	0	0	1	4	0	4
31. Billing Clerk	4	0	1	7	4	0	0	0	15	0	15
32. Clerk	5	0	5	0	5	0	8	4	21	0	21
33. Property Custodian	1	0	0	0	1	0	0	0	3	0	3
34. Radio Operator	2	0	0	0	2	0	0	0	7	1	8
35. Storekeeper	1	0	0	0	1	0	0	0	2	0	2
36. Driver	8	0	2	6	8	0	0	14	28	2	30
37. Security Guard	1	0	1	2	3	0	0	5	4	2	6
38. Electrician	1	0	0	0	1	0	0	0	1	0	1
39. Janitor	0	0	2	1	0	0	0	0	3	0	3
40. Utilityman	0	0	0	0	1	0	0	0	2	0	2
41. Irrigation Tech. Trainee	0	0	0	0	0	0	0	0	0	0	0
42. Laborer	0	0	2	0	0	0	0	6	0	0	6
43. Pipefilter	0	0	0	0	0	0	2	21	0	0	21
	0	0	0	0	0	0	0	1	0	0	1
<b>Total (%)</b>	<b>284</b>	<b>15</b>	<b>17</b>	<b>300</b>	<b>21</b>	<b>23</b>	<b>306</b>	<b>19</b>	<b>178</b>	<b>22</b>	<b>95</b>
	<b>316</b>			<b>344</b>			<b>336</b>		<b>295</b>		<b>1,068</b>
											<b>1,291</b>
											<b>(82.7) (6.0) (11.3) (100.0)</b>

Table 7.9 SUMMARY OF STAFFING PATTERN REVISED BY NIA BOARD

Office/Division/District	No. of Staff	
	As of July 1983	Approved by NIA Board
1. Office of the Operations Manager	8	12
2. Administrative Division	61	53
3. W C C C	8	6
4. Eng. & Operation Division	10	10
5. Agriculture Division	45	22
6. Dam & Reservoir Division	185	211
7. Equipment Division	46	50
Sub-Total (1 - 7)	363 ( 22%)	364 ( 29%)
8. District I	316	218
9. District II	344	207
10. District III	336	248
11. District IV	295	239
Sub-Total (8 - 11)	1,291 ( 78%)	912 ( 71%)
Grand Total (1 - 11)	1,654 (100%)	1,276 (100%)

- No. of personnel to be reduced : 378  
(from September to December 1983)

- No. of volunteers for separation : 170  
(As of August 31, 1983)

Table 7.10 MAIN FIELD STAFFS WITH POSITIONS AFFECTED  
(NIA BOARD RESOLUTION)

(Unit: No. of staffs)

Field Staff	As of July 1983					Approved by NIA Board					Balance (1)-(2)
	I	II	III	IV	Total (1)	I	II	III	IV	Total (2)	
Water Management Technologist (WMT)	7	9	10	12	38	0	0	0	0	0 <sup>/*</sup>	38
Water Management Technician (AWMT)	37	42	41	6	126	31	25	26	22	104	22
Watermaster	1	5	6	10	22	2	7	9	11	29	-7
Dichtender	206	215	216	122	759	110	93	138	121	462	297
Gatekeeper	5	10	7	5	27	10	14	15	17	56	-29
<b>Total</b>	<b>256</b>	<b>281</b>	<b>280</b>	<b>155</b>	<b>972</b>	<b>153</b>	<b>139</b>	<b>188</b>	<b>171</b>	<b>651</b>	<b>321</b>

<sup>/\*</sup>: Abolition of the post

Table 7.11 GUIDELINES FOR THE PAYMENT OF SEPARATION BENEFITS

(Equivalent to one month salary for every year of NIA service rendered)

1. The separation pay shall be granted only in cases where the separation is due to any of the following causes:
  - (a) Cessation of operation of a System or a hydro-power plant due to the high cost of operation and maintenance;
  - (b) Take-over of an irrigation system by a farmer's association; and
  - (c) Abolition or retitling of unnecessary positions under the re-organization.

Separation as a result of the completion of a project, as in the case of co-terminus appointments, is not covered by separation pay.

2. By way of recognizing loyalty to the agency, all NIA services shall be credited based on the latest salary received, to the exclusion of services outside the NIA.
3. The separation pay shall apply to permanent and temporary (monthly or daily) employees provided, that in the case of daily employees, they should have rendered at least three (3) years continuous service in the NIA.
4. Leaves incurred without pay shall be excluded in the computation of the total service of the employee concerned.
5. The grant of separation benefit shall be subject to clearance from money and property accountabilities and from any administrative case.

Source: NIA Digest, Vol. XI No. 3, Quezon City

Table 7.12 IRRIGATION FEE COLLECTION

District	Collectible (₱10 <sup>3</sup> )	Collected (₱10 <sup>3</sup> )	Efficiency (%)
<u>1979</u>			
I	6,452	3,294	51.1
II	7,800	4,997	64.1
III	8,964	4,086	45.6
IV	5,512	3,543	64.3
<u>Whole UPRIIS</u>	<u>28,728</u>	<u>15,920</u>	<u>55.4</u>
<u>1980</u>			
I	5,760	2,967	51.5
II	6,759	4,407	65.2
III	7,427	3,559	47.9
IV	5,330	2,534	47.5
<u>Whole UPRIIS</u>	<u>25,276</u>	<u>13,467</u>	<u>53.3</u>
<u>1981</u>			
I	8,394	3,842	45.8
II	9,350	4,254	45.5
III	10,571	3,509	33.2
IV	6,129	3,814	62.2
<u>Whole UPRIIS</u>	<u>34,444</u>	<u>15,419</u>	<u>44.8</u>
<u>1982</u>			
I	8,263	3,932	47.5
II	9,389	4,944	52.7
III	10,166	3,769	37.1
IV	7,127	4,689	65.8
<u>Whole UPRIIS</u>	<u>34,945</u>	<u>17,334</u>	<u>49.6</u>
<hr/>			
Average Collection and Efficiency	(1979-1982)	<u>15,535</u>	<u>50.4</u>

/\* Including back account

Source: Annual Report, UPRIIS, NIA

Table 7.13 TOTAL EXPENDITURE OF UPRIIS (1978 to 1982)

(Unit: P106)

Particulars	Amount				
	1978	1979	1980	1981	1982
A. OPERATION/MAINTENANCE	18.86	21.79	26.66	30.24	33.34
B. CONSTRUCTION WORKS					
1. Rehabilitation Works	-	0.82	-	-	0.52
2. Improvement of irrigation facilities and structures	0.95	1.43	1.36	0.27	0.24
3. Repair of typhoon damages	0.58	3.78	0.73	0.87	0.47
4. Addition and remaining work	2.59	0.30	-	-	0.17
5. Expansion of irrigation system at APIP	51.11	20.62	24.14	14.17	7.01
6. Others (specify)					
6.1 Bogting-Siclong	-	0.61	0.12	-	-
6.2 Closing the gap	-	-	1.26	0.09	-
6.3 Rehabilitation of roadway at Pantabangan	-	-	0.07	-	-
6.4 Power Phase	80.83	-	-	-	-
6.5 Resettlement and Assistance	0.04	-	-	-	-
6.6 Programmed Act for CY-1978	1.02	-	-	-	-
6.7 Repair/Maintenance of dams	12.82	-	-	-	-
6.8 Proposed warehouse	-	-	-	0.18	-
6.9 NIA-agri. institutional Dept. Project	-	-	-	0.21	-
6.10 Pinagbaryuhan Communal Irrigation Project	-	-	-	-	1.10
6.11 Agribusiness	-	-	-	-	0.21
6.12 Rehab Japanese Loan Project (Feasibility Study)	-	-	-	-	0.11
6.13 Invest and Survey Balintingon Project	-	-	-	-	0.21
6.14 Construction	-	-	-	-	1.10
6.15 Const. of Lateral D-4 and D-5	-	-	-	-	0.28
6.16 Invest and Survey Casecan Transbasin Project	-	-	-	-	1.14
6.17 Invest and Survey Const. of Cableway Across Sumacbao River	-	-	-	-	0.03
C. EROSION CONTROL AND REFORESTATION PROJECT	8.41	5.87	-	-	-
D. PROJECT SYSTEMS DEVELOPMENT					
1. Aurora Transbasin Project	8.47	0.33	0.35	0.43	-
2. Casecan River F/S	5.96	1.80	-	-	0.04
Total	191.64	57.35	54.69	46.46	44.87
Ratio of O & M Total Expenditure(%)	9.80	38.00	48.70	65.10	74.30

Table 7.14(1) SALARY DISTRIBUTION BY SPECIALTY IN FIELD OFFICE  
(Dist. Offices I - IV)

	Total Monthly Salaries (P103)	Proportion (%)
<u>SUPERVISION</u>		
1. Irrigation Supt.	13.6	1.3
2. Principal Engineer	6.8	0.7
Sub-total	20.4	2.0
<u>OPERATION</u>		
3. Engineer	18.0	1.8
4. Engineer Aide	1.8	0.2
5. W M T	52.1	5.1
6. A W M T	156.3	15.4
7. Water Master	21.4	2.1
8. Dichtender	512.3	50.4
9. Gatekeeper	19.9	1.9
10. Hydrologist	1.6	0.2
11. Hydrologist Aide	0.9	0.1
12. Irrigation Technical Trainee	4.6	0.5
13. Engineering Assistant	2.3	0.2
14. Assistant Agriculturist	0.9	0.1
Sub-total	792.1	77.8
<u>REPAIR AND MAINTENANCE</u>		
15. Supervising R & M Engr.	6.4	0.6
16. Motor Pool Dispatcher	2.0	0.2
17. Mechanic	4.4	0.4
18. Const. Foreman	7.7	0.8
19. Mason	9.5	0.9
20. Carpenter	15.1	1.5
21. Draftsman	1.8	0.2
22. Geodetic Engineer	2.9	0.3
23. Geodetic Engr. Aide	6.4	0.6
24. Heavy Equip. Operator	19.1	1.9
Sub-total	75.3	7.4
<u>ADMINISTRATION</u>		
25. Administrative Ass't.	5.6	0.6
26. Cashier	5.9	0.6
27. Collection Representative	1.8	0.2
28. Accounting Clerk	2.2	0.2
29. Billing Clerk	15.5	1.5
30. Clerk	24.6	2.4
31. Property Custodian	3.2	0.3
32. Radio Operator	6.3	0.6
33. Storekeeper & Store Aide	3.0	0.3
34. Driver	33.5	3.3

to be continued



Table 7.14(2) SALARY DISTRIBUTION BY SPECIALTY IN FIELD OFFICE  
(Dist. Offices I - IV)

	Total Monthly Salaries	Proportion
	(P103)	(%)
35. Security Guard	9.2	0.9
36. Electrician	0.8	0.1
37. Janitor	2.8	0.3
38. Utilityman	1.7	0.2
39. Laborer	12.1	1.2
40. Automotive Serviceman	0.6	0.1
41. Pipe-filter	0.6	0.1
Sub-total	129.4	12.8
Grand Total	1,017.2	100.0

Table 7.15 OPERATION AND MAINTENANCE COST IN UPRIS  
(1978 to 1982)

	(Unit: P10 <sup>3</sup> )				
	1978	1979	1980	1981	1982
1. <u>Personnel Expenses</u>	<u>16,302.2</u>	<u>19,695.4</u>	<u>23,472.3</u>	<u>27,029.1</u>	<u>27,581.5</u>
a. Salaries	13,854.6	16,999.0	13,989.0	14,318.5	15,055.2
b. Gov't. Share	968.7	1,061.0	1,236.3	1,247.1	1,362.6
c. Wages	1,478.9	1,635.4	1,222.2	1,344.9	1,396.7
d. Cost of Living Allowance	-	-	5,511.5	6,153.0	5,845.4
e. Amelioration Allowance	-	-	1,492.0	1,555.8	1,619.9
f. Representation Allowance	-	-	21.3	44.5	47.2
g. Incentive Allowance	-	-	-	2,301.4	1,975.3
h. Pag-ibig Fund	-	-	-	63.9	279.2
2. <u>Other Expenses</u>	<u>2,558.7</u>	<u>2,019.5</u>	<u>3,189.1</u>	<u>3,210.8</u>	<u>5,759.0</u>
a. Traveling Expenses	282.2	135.3	322.4	262.3	266.4
b. Sundries & Other Expenses	1,010.6	499.1	465.1	533.4	720.2
c. Supplies and materials, spare parts	1,265.9	1,385.1	1,101.7	522.4	1,228.0
d. Water, illum and power services	-	-	183.0	174.4	290.6
e. Gasoline and Oils	-	-	1,116.9	1,718.3	3,095.5
f. Collection Expenses	-	-	-	-	135.5
g. Purchase of Equipment	-	-	-	-	228.8
Total (1 + 2)	18,860.9	21,714.9	26,661.4	30,239.9	33,340.5
Ratio of Personnel Expenses/Total O & M Cost (%)	86.4	90.7	88.0	89.4	82.7

Table 7.16 CALCULATION OF PERSONNEL EXPENSES  
OTHER THAN BASIC SALARY AND WAGES

A. AMELIORATION ALLOWANCE (AA)			
1.	Below ₱1,500.00	-	10% of monthly salary
2.	₱1,500.00	-	₱150.00
3.	Above ₱1,500.00	-	9%
B. COST OF LIVING ALLOWANCE (COLA)			
1.	₱300.00		
C. GOVERNMENT SHARE			
1.	9.5%		
D. INCENTIVE ALLOWANCE			
1.	One (1) Month Salary	-	₱1,000.00 and above
2.	One (1) Month AA	-	₱1,000.00 and above
3.	One (1) Month COLA	-	₱1,000.00 and above
	Below ₱1,000.00, one sack of rice or ₱150.00 in addition to the above incentive.		
E. REPRESENTATION ALLOWANCE (Monthly)			
	Operations Manager	-	₱750.00
	District and Division Chiefs	-	₱250.00
	Personnel Officer	-	₱100.00
F. STATE INSURANCE			
	Government Share	-	1% of salary but not to exceed ₱30.00
G. G.S.I.S.			
			<u>Gov't. Share</u> <u>Emp. Share</u>
	Life Insurance Premium	-	3% of salary      -      3%
	Retirement Insurance Premium	-	6.5% of salary      -      5.5%
H. PAG-IBIG FUND			
	July 1981	-	1%
	January 1982	-	2%
	January 1983	-	3%
I. MEDICARE			
			<u>Employee's Share</u> <u>Employer's Share</u>
	250 - 349.99	-	3.75      -      3.75
	350 - 499.99	-	5.35      -      5.35
	500 - above	-	7.50      -      7.50
J. TERM INSURANCE - TEMPORARY EMPLOYEES ONLY			
	12.00 per year	-	Employee's Share
	12.00 per year	-	Employer's Share

Table 7.17 AMORTIZATION SCHEDULE OF THE UPPER  
PAMPANGA IRRIGATION PROJECT

(Unit: US\$)	
Year	Payment of Principal
1976	465,000
1977	975,000
1978	1,045,000
1979	1,120,000
1980	1,200,000
1981	1,285,000
1982	1,375,000
1983	1,475,000
1984	1,580,000
1985	1,690,000
1986	1,810,000
1987	1,940,000
1988	2,075,000
1989	2,225,000
1990	2,385,000
1991	2,555,000
1992	2,735,000
1993	2,930,000
1994	3,135,000
Total	34,000,000 <sup>/1</sup>

Remarks: In addition to the principal, the NIA will repay the following:

- Commitment charge at the rate of 3/4 of 1% per annum on the principal amount of the loan.
- Interest at the rate of 7% per annum on the principal amount of the loan.

Source: Loan Agreement between Republic of the Philippines and IBRD dated August 18, 1969.

Table 7.18(1) IRRIGATION SERVICE FEE COLLECTION EFFICIENCY  
IN THE NATIONAL IRRIGATION SYSTEMS

Name of National Irrigation System	Region	Service Area (ha)	Irrigation Collection Ratio (%)	
			1980	1981
1. Abra Pump	I	-	-	-
2. Laoag-Vintar	I	2,376	62	65
3. Bolo	I	487	62	65
4. Cura	I	808	62	65
5. Dingras	I	1,018	62	65
6. NMC & Pasuquin Ext'n	I	684	62	65
7. Bonga Pump #1	I	298	62	65
8. Bonga Pump #2	I	652	62	65
9. Bonga Pump #3	I	202	62	65
10. Sta. Maria-Burgos	I	942	85	68
11. Sta. Lucia-Candon	I	1,593	85	68
12. Tagudin	I	1,404	85	68
13. Gaco	I	525	85	68
14. Amburayan	I	3,613	76	70
15. Masalip	I	1,509	85	80
16. Agno-Sinucalan	I	20,174	41	45
17. San Fabian-Dumuloc	I	4,266	56	45
18. Ambayoan-Dipalo	I	7,015	33	25
19. Lower-Agno-Totonoguen	I	7,501	41	46
<u>Sub-total (Region I)</u>		<u>55,067</u>	<u>52</u>	<u>52</u>
20. Abulug-Pamplona	II	10,534	45	52
21. Banurbur	II	933	71	36
22. Baggao	II	2,016	38	34
23. Dummun	II	1,461	53	57
24. Zinundungan	II	1,600	85	75
25. Solana-Tuguegarao	II	1,442	-	-
26. Tumauini	II	2,983	66	55
27. Mallig	II	1,376	-	34
28. Pinacanauan	II	242	-	59
29. Chico RIS	II	1,354	34	84
30. CRIP Communal	II	2,388	-	-
31. Magat	II	46,613	38	69
32. Siffu	II	10,926	62	54
<u>Sub-total (Region II)</u>		<u>83,868</u>	<u>44</u>	<u>61</u>

Table 7.18(2) IRRIGATION SERVICE FEE COLLECTION EFFICIENCY  
IN THE NATIONAL IRRIGATION SYSTEMS

Name of National Irrigation System	Region	Service Area (ha)	Irrigation Collection Ratio (%)	
			1980	1981
33. Angat-Massim	III	31,371	57	66
34. Porac-Gumain	III	5,015	26	38
35. Colo-Caulaman	III	1,485	59	74
36. Sta. Tomas	III	3,550	56	63
37. Nayom	III	1,158	35	27
38. Tarlac	III	8,761	42	61
39. San Miguel-O'Donnel	III	7,205	28	44
40. Camiling	III	8,873	60	79
41. CLGIP	III	-	-	94
42. UPRIIS	III	103,600	51	46
<u>Sub-total (Region III)</u>		<u>171,018</u>	<u>51</u>	<u>51</u>
43. Cavite-Kay Akle	IV	14,758	101	87
44. Palico	IV	846	94	88
45. Dumacao	IV	3,202	73	65
46. Agos	IV	1,074	42	48
47. Disalit	IV	566	23	41
48. Cantingas	IV	295	26	34
49. Laguna	IV	3,794	54	81
50. Sta. Cruz-Mabacan	IV	5,463	44	53
51. Sta. Maria-Mayor	IV	1,271	41	90
52. Baco-Bucayao	IV	7,931	50	43
53. Pula	IV	2,384	32	42
54. Kalawaan-Tipaz	IV	-	-	-
<u>Sub-total (Region IV)</u>		<u>41,584</u>	<u>66</u>	<u>65</u>
55. Daet-Talisay-Matogdon	V	3,062	54	50
56. Inarihan	V	1,023	29	26
57. Cagaycay	V	2,053	38	34
58. Barit-Lalo	V	3,845	44	34
59. Mahaba-Nasisi	V	2,369	39	37
60. Pili-Bulan-Sn. Francisco	V	1,291	52	45
61. Oco	V	244	15	29
62. LCIADP	V	3,427	-	43
<u>Sub-total (Region V)</u>		<u>17,314</u>	<u>43</u>	<u>40</u>

Table 7.18(3) IRRIGATION SERVICE FEE COLLECTION EFFICIENCY  
IN THE NATIONAL IRRIGATION SYSTEMS

Name of National Irrigation System	Region	Service Area (ha)	Irrigation Collection Ratio (%)	
			1980	1981
63. Aklan-Panakuyan	VI	4,816	59	68
64. Mambusao	VI	1,440	22	31
65. Sibalom-San Jose	VI	5,015	62	66
66. Bago	VI	12,790	40	58
67. Pangiplan	VI	1,884	39	81
68. Jalaur-Suague	VI	11,779	33	55
69. Aganan-Sta. Barbara	VI	8,359	26	71
70. Sibalom-Tigbauan	VI	2,020	97	79
71. Barotac-Viejo	VI	1,616	85	92
<u>Sub-total (Region VI)</u>		<u>49,719</u>	<u>43</u>	<u>63</u>
72. Dumaguete-Sibulan-Tanjay	VII	310	203	309
73. BSTG	VIII	6,488	72	43
74. Bito	VIII	1,700	113	60
75. Bao	VIII	1,708	79	52
76. Daguitan	VIII	1,021	71	45
77. Hindang-Das-Ay	VIII	1,075	109	75
78. Mainit	VIII	1,644	109	50
79. Pongso	VIII	1,000	34	11
<u>Sub-total (Region VII &amp; VIII)</u>		<u>14,946</u>	<u>88</u>	<u>50</u>
80. Labangan	IX	2,471	66	74
81. Salug	IX	5,720	70	66
82. Dipolo	IX	1,623	57	51
83. Sibugney	IX	955	-	98
<u>Sub-total (Region IX)</u>		<u>10,769</u>	<u>68</u>	<u>68</u>
84. Roxas-Kuya	X	750	92	98
85. Pulangui	X	-	-	38
<u>Sub-total (Region X)</u>		<u>750</u>	<u>92</u>	<u>56</u>

Table 7.18(4) IRRIGATION SERVICE FEE COLLECTION EFFICIENCY  
IN THE NATIONAL IRRIGATION SYSTEMS

Name of National Irrigation System	Region	Service Area (ha)	Irrigation Collection Ratio (%)	
			1980	1981
86. Lupon	XI	2,823	57	73
87. Padada	XI	2,179	79	101
88. Marbel-Banga	XI	5,526	43	61
89. Marbel-#2	XI	1,841	-	-
90. Siluay	XI	2,066	126	101
91. Buayan	XI	555	-	73
92. Cantillan	XI	1,818	37	52
93. Sang	XI	4,723	47	90
94. Bantutu	XI	4,380	67	82
95. Marbel-Hydro	XI	-	-	-
<u>Sub-total (Region XI)</u>		<u>25,911</u>	<u>66</u>	<u>77</u>
96. Libungan	XII	8,651	89	99
97. Kabacan	XII	4,135	87	85
98. Kabacan Ext'n	XII	191	-	19
99. Malasita-M'lang	XII	5,990	75	123
100. Maranding	XII	3,994	62	84
101. Rughan	XII	494	-	-
<u>Sub-total (Region XII)</u>		<u>23,455</u>	<u>82</u>	<u>99</u>
<b>Total</b>	<b>I - XII</b>	<b>494,401</b>	<b>53</b>	<b>59</b>

Source: Proposed O&M Budget for National Irrigation Systems for FY1983  
prepared by Systems Management Department, NIA.



Table 7.19 STAFFING PATTERN OF FIELD OFFICES IN THE SPECIFIC NATIONAL IRRIGATION SYSTEMS (AS OF JUL. 1983)

Speciality	National Irrigation Systems														(Unit: No.)				
	UPRII		Cavite		Sibalom-		Hindang		Padada		Sifluy		Lubungan			Kabacan		Malasila-	
	(Dist Office I-IV)/1	Amburayan	Masalip	Zinundugan	Palico	Friar Land	Viejo	Tigbauan	Das Ay	Land	Padada	Sifluy	Lubungan	Kabacan		M'lang	M'lang	M'lang	M'lang
1. Supervisor	8	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2. Engineer	14	1	1	1	0	3	1	1	1	1	1	1	1	1	1	1	1	1	
3. Engineer Aide	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4. WMT	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5. AMMT	126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6. Water Master	22	3	1	5	1	12	4	3	2	2	1	6	4	4	4	4	4	4	
4 + 5 + 6	186	3	1	5	1	12	4	3	2	2	1	6	4	4	4	4	4	4	
7. Ditchtender	759	25	10	16	10	66	16	14	10	10	46	24	24	36	36	36	36	36	
8. Gatekeeper	27	4	2	1	1	38	1	1	1	1	4	2	2	3	3	3	3	3	
9. Hydrologist	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10. Hydrologist Aide	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11. Motor Pool Dispatcher	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12. Mechanic	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13. Const. Foreman	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14. Mason	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15. Carpenter	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16. Draftsman	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17. Geodetic Engineer	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18. Geodetic Engineer Aide	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19. Heavy Equip. Operator	23	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
20. Administrative Asst.	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21. Cashier	6	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
22. Collection Represent (Disb. Officer)	2	0	0	0	1	0	1	1	2	1	1	1	1	1	1	1	1	1	
23. Account Clerk	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
24. Billing Clerk	23	6	7	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	
25. Clerk	39	1	1	2	1	1	1	2	1	1	2	2	2	1	1	1	1	1	
26. Bill Collector	0	2	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
27. Property Custodian	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
28. Radio Operator	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29. Storekeeper	5	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	
30. Driver	48	2	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	
31. Security Guard	15	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
32. Electrician	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
33. Janitor	5	1	0	1	0	1	1	1	0	0	1	1	1	1	1	1	1	1	
34. Utilityman	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35. Pump Operator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36. Other	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	1,291	51	34	31	24	136	32	32	24	24	73	43	43	58	58	58	58	58	

Remarks: /1: Excluding the staff of UPRII-Main Office

Table 7.20 WORK LOAD OF FIELD OFFICES' STAFFS IN THE SPECIFIC NATIONAL IRRIGATION SYSTEMS

	(Unit: ha/person)													
	UPRIIS (Dist. Office I - IV)	Amburayan	Masalip	Zinundugan	Palico	Cavite Friar Land	Barotac- Viejo	Sibalom- Tegbauan	Hindang Das Ay	Padada	Situyay	Libungan	Kabacan	Matasila- M'lang
1. Supervisor	11,500	3,613	1,509	400	846	14,758	1,616	2,020	1,075	2,179	2,066	8,651	4,135	5,990
2. Engineer	6,600	3,613	1,509	800	0	4,919	1,616	2,020	0	2,179	2,066	8,651	4,135	5,990
3. Engineer Aide	18,400	0	0	0	0	0	0	0	0	0	0	0	0	0
4. WMT*	2,400	0	0	0	0	0	0	0	0	0	0	0	0	0
5. AWMT**	730	0	0	0	0	0	0	0	0	0	0	0	0	0
6. WM***	4,200	1,204	1,509	160	846	1,230	404	404	358	1,090	2,066	1,442	1,034	1,498
7. WMT + AWMT + WM	490	1,204	1,509	160	846	1,230	404	404	358	1,090	2,066	1,442	1,034	1,498
8. Ditchtender	120	145	151	100	85	224	101	144	179	218	207	188	172	166
9. Gatekeeper	3,400	903	755	800	846	388	1,616	2,020	358	2,179	2,066	2,163	2,068	1,997
10. Hydrologist	92,000	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Hydrologist Aide	92,000	0	0	0	0	0	0	0	0	0	0	0	0	0
12. Motor Pool Dispatcher	30,700	0	0	0	0	0	0	0	0	0	0	0	0	0
13. Mechanic	15,300	0	0	0	0	0	0	0	0	0	0	0	0	0
14. Const. Foreman	13,100	0	0	0	0	0	0	0	0	0	0	0	0	0
15. Mason	7,100	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Carpenter	4,200	0	0	0	0	0	0	0	0	0	0	0	0	0
17. Draftsman	46,000	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Geodetic Eng.	30,700	0	0	0	0	0	0	0	0	0	0	0	0	0
19. Geodetic Eng. Aide	10,200	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Heavy Equip. Operator	4,000	3,613	0	0	0	14,758	0	0	0	0	0	0	4,135	5,990
21. Administ. Assist.	23,000	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Cashier	15,300	3,613	0	0	0	14,758	0	0	1,075	0	2,066	8,651	0	5,990
23. Collect. Rep./ Disb. Officer	46,000	0	0	0	846	0	1,616	2,020	1,075	1,090	2,066	8,651	4,135	0
24. Account. Clerk	18,400	3,613	1,509	800	846	14,758	1,616	2,020	1,075	2,179	2,066	8,651	4,135	5,990
25. Billing Clerk	4,000	602	216	800	846	4,919	1,616	2,020	538	2,179	2,066	4,326	4,135	1,997
26. Clerk	2,400	3,613	1,509	400	846	14,758	1,616	1,010	1,075	2,179	2,066	4,326	2,068	5,990
27. Bill Collector	0	1,805	216	800	846	14,758	1,616	2,020	538	2,179	2,066	4,326	4,135	5,990
28. Property Custodian	30,700	0	0	0	0	14,758	0	0	0	0	0	8,651	0	0
29. Radio Operator	11,500	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Storekeeper	18,400	3,613	1,509	0	846	0	1,616	2,020	0	2,179	2,066	0	4,135	5,990
31. Driver	1,900	1,805	1,509	800	423	3,690	1,616	2,020	1,075	2,179	2,066	4,326	4,135	5,990
32. Security Guard	6,100	3,613	1,509	800	846	7,379	1,616	2,020	1,075	2,179	0	4,326	4,135	5,990
33. Electrician	92,000	0	0	0	0	0	0	0	0	0	0	0	0	0
34. Janitor	18,400	3,613	0	800	0	14,758	1,616	2,020	0	0	2,066	8,651	4,135	5,990
35. Utility man	30,700	0	0	0	846	0	0	0	0	0	0	0	0	0
36. Pump Operator	0	0	0	0	846	0	0	0	0	0	0	0	0	5,990
37. Other	2,600	0	0	0	0	0	0	0	1,075	0	0	0	0	0

\*: WMT : Water Management Technologist  
 \*\*: AWMT: Assistant Water Management Technician  
 \*\*\*: WM : Water Master

Table 7.21 COMPARATIVE TABLE ON WORK LOAD OF FIELD PERSONNEL  
IN THE SPECIFIC NATIONAL IRRIGATION SYSTEMS

Name of National Irrigation System	Region	Service Area (ha)	Irrigation Fee Ratio (%)		Length of Canal (km)			Ditchtender		Gatekeeper		AWM/WM Area Con-trolled (ha/person)
			(1980)	(1981)	Main	Lateral	Total	Area Con-trolled (ha/person)	Canal Con-trolled (km/person)	Area Con-trolled (ha/person)	Area Con-trolled (ha/person)	
1. Amburayan RIS	I	3,613	76	70	20.0	69.5	89.5	145	3.6	900	1,200	
2. Masalip RIS	I	1,509	85	80	15.0	31.1	46.1	151	4.6	750	1,500	
3. Zinundungan	II	1,600	85	75	27.3	22.6	49.9	100	3.1	1,600	320	
4. Palico RIS	IV	846	94	88	9.4	14.0	23.4	85	2.3	850	850	
5. Cavite Friar Land LS	IV	14,700	191	87	126.0	283.0	409.0	224	6.2	390	1,340	
6. Barotac-Viejo	VI	1,616	85	92	16.4	32.4	48.8	101	3.1	1,620	400	
7. Sibalom-Tigbauan	VI	2,020	97	79	12.3	31.9	44.2	144	3.2	2,020	400	
8. Hindang Das Ay	VIII	1,075	109	75	3.4	27.6	31.0	179	5.2	360	360	
9. Padada	XI	2,179	79	101	3.7	36.9	40.6	218	4.1	2,180	1,090	
10. Silluay	XI	2,066	126	101	8.8	34.6	43.4	207	4.3	2,070	2,070	
11. Libungan	XII	8,651	89	99	20.9	131.1	152.0	188	3.3	2,160	1,440	
12. Kabacan	XII	4,155	87	97	26.4	60.2	86.6	172	3.6	2,070	1,030	
13. Malasila-M'lang	XII	5,990	75	125	124.1	104.3	228.4	166	6.3	2,000	1,500	
Average		3,850	91	90	413.7	879.2	1,293	173	4.5	806	1,040	
UPRIIS	III	116,900	53.3	44.8	283*	1,281	1,564	120	2.1	3,840	620	

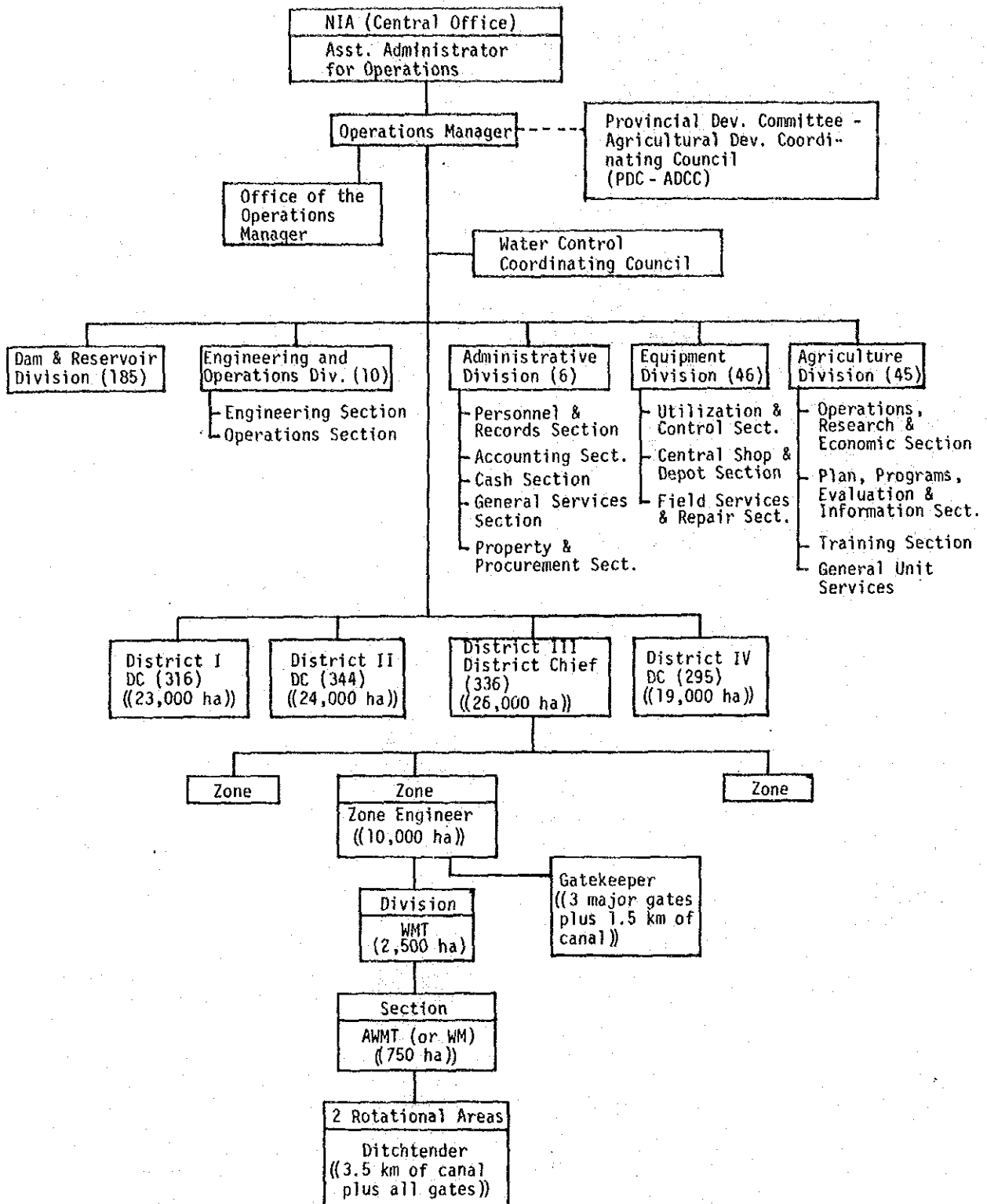
Remarks: \*: Including DC No. 1 and 2 canal

Table 7.22 PROPOSED WORK LOAD AND STAFFING PATTERN OF THE MAIN FIELD STAFF

Item	Work Load <sup>/1</sup> (ha/person)		No. of Staff		
	Present	Proposed <sup>/2</sup>	Present <sup>/3</sup>	Proposed	Difference
Irrigation Superintendent <sup>/4</sup>	-	20,000 - 30,000	4	4	-
Irrigation Engineer <sup>/5</sup>	5,000	5,000 - 10,000	16	16	-
Water Management Technologist (WMT)	2,400	0	38	0	+38
Irrigation Association Organizer (IAO)	-	2,200	0	50	-50
Water Management Technician & Water-master (AWMT & WM)	620	750	148	148	0
Gatekeeper	-	-	27	47	-20
Dichtender	120	200	759	556	+203
Total	-	-	988	817	171

- Remarks: /1: Work loads are estimated on the following basis; present irrigation service area = 92,000 ha/ projected irrigation service area = 111,200 ha.
- /2: The proposed work load is determined on the basis of system efficiency analysis of the National Irrigation Systems and MC 2.
- /3: As of July 31, 1983.
- /4: Present district chiefs.
- /5: Present Operation Engineers and Zone Engineers.

Fig. 7.1 ORGANIZATIONAL STRUCTURE IN UPRIS OFFICE



Remarks: Figures in ( ) are numbers of staff including permanent, temporary and daily personnel (as of July 1983).

Figures in ( ) are planted area (ha) and work standards.

Fig. 7.2 ORGANIZATIONAL CHART OF DISTRICT I, II, III & IV

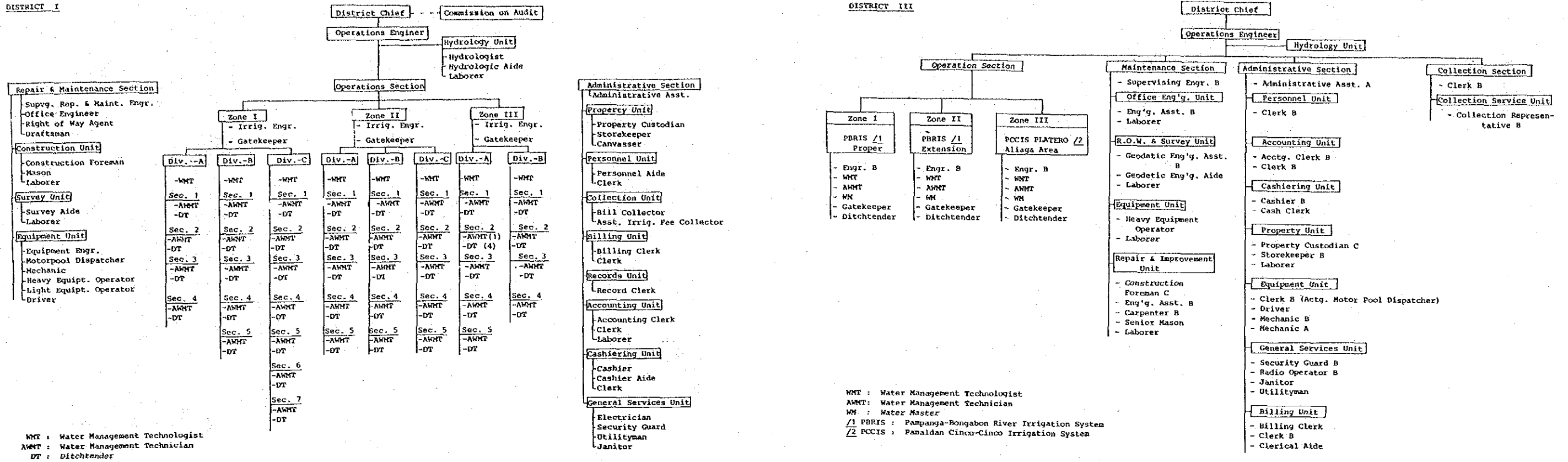


Fig. 7.3 ORGANIZATIONAL CHART APPROVED BY NIA BOARD (JULY 1983)

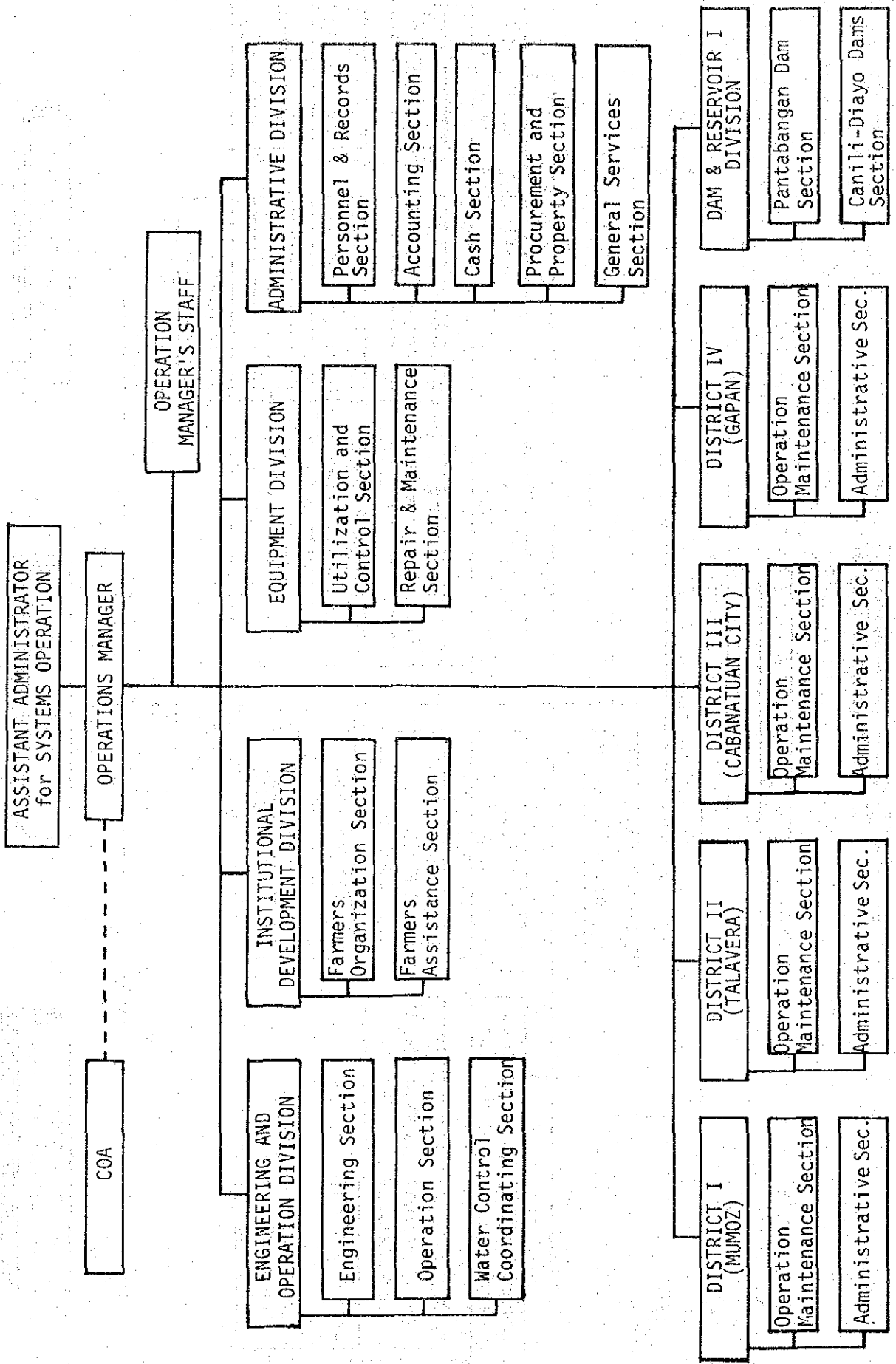


Fig. 7.4 TYPICAL ORGANIZATIONAL STRUCTURE OF REGIONAL IRRIGATION OFFICE

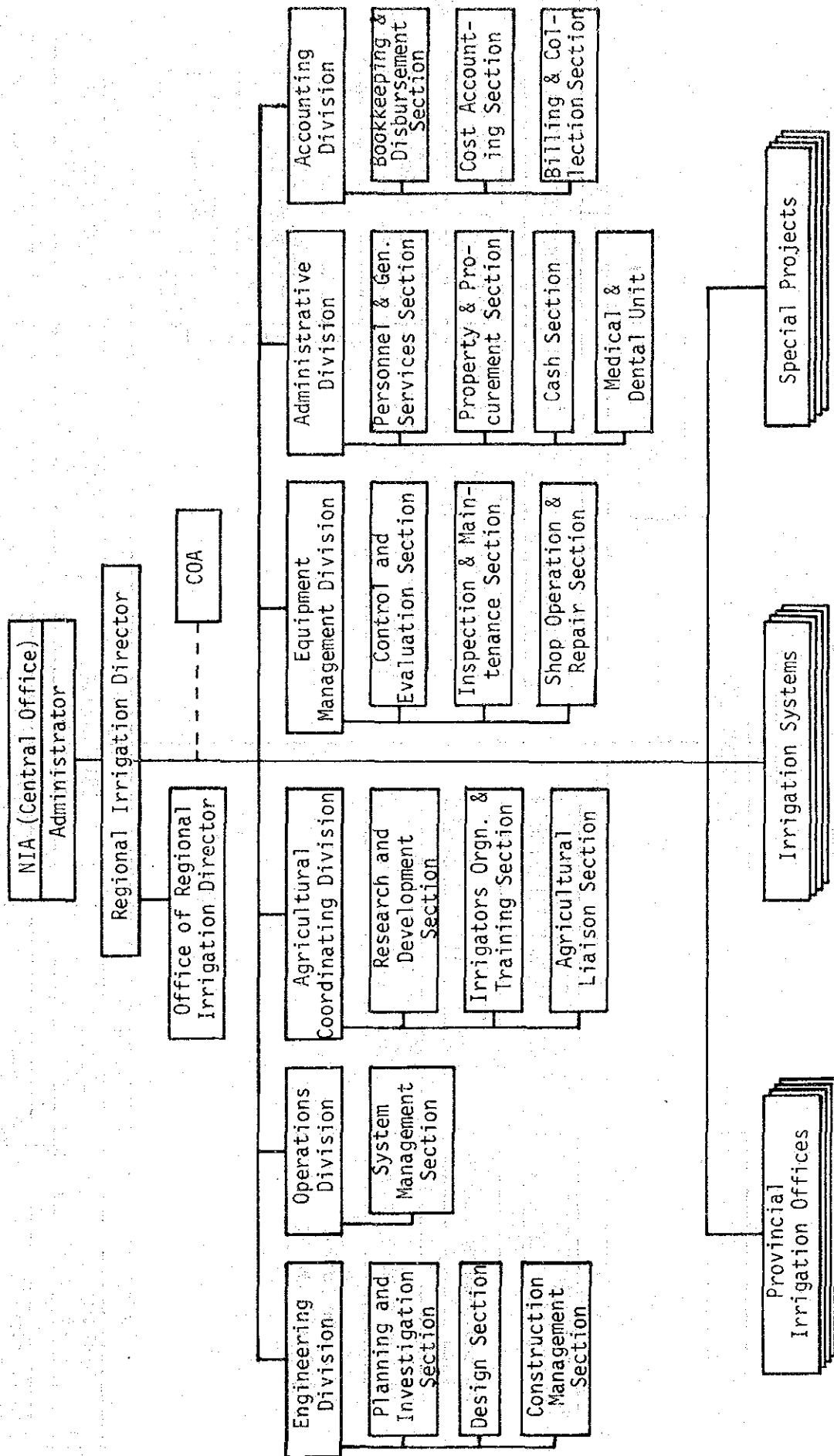




Fig. 7.5 PROPOSED ORGANIZATIONAL STRUCTURE  
UPRIIS-MAIN OFFICE

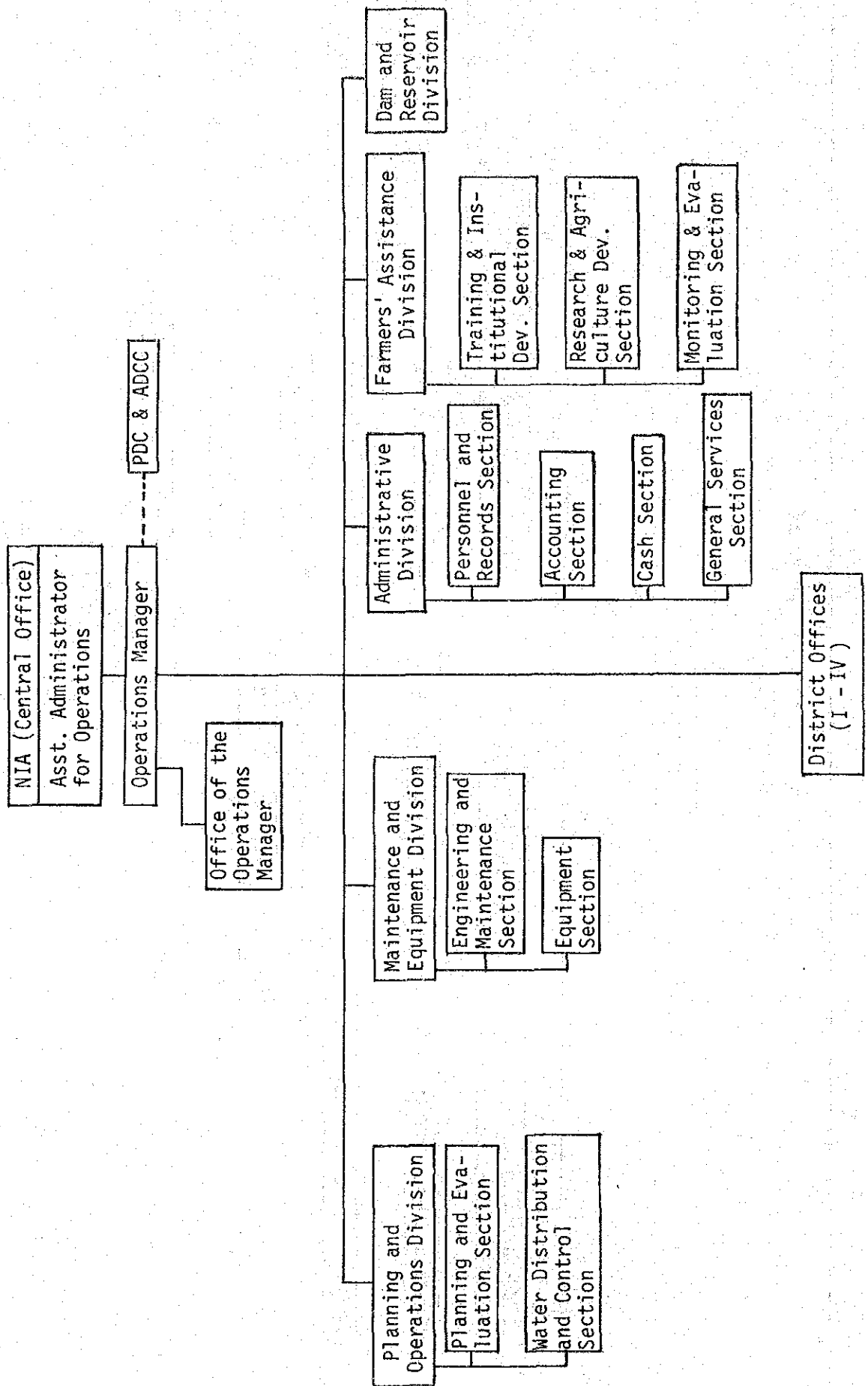


Fig. 7.6 PROPOSED ORGANIZATIONAL STRUCTURE  
UPRIIS - DISTRICT OFFICE

