

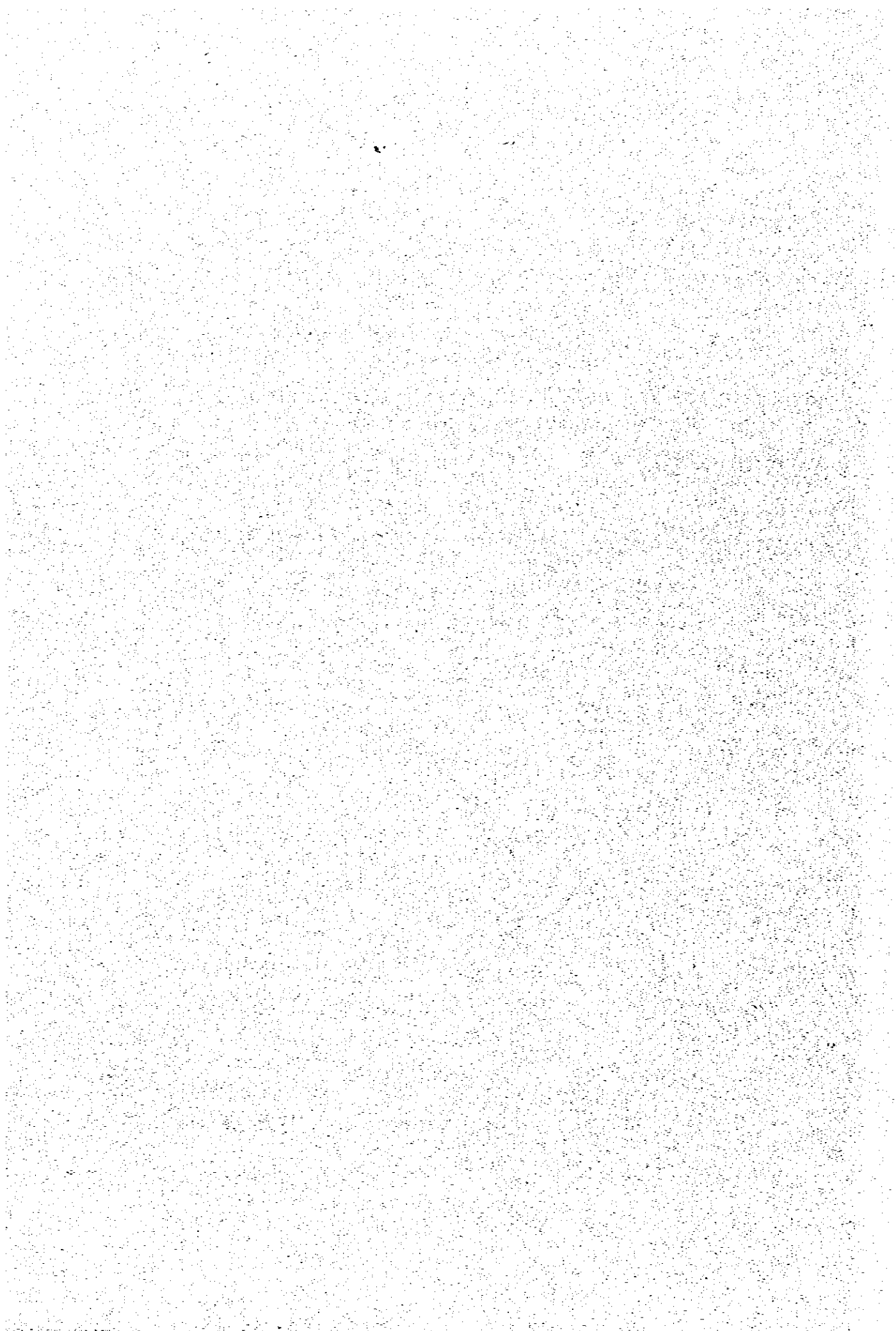
**CHAPTER IV. RULES AND REGULATIONS GOVERNING THE O & M OF
NATIONAL IRRIGATION SYSTEMS**

4) Action Research

Action Research meant to improve the PMT's management process relative to the objective of the FICP documents the experiences of the project personnel so that insights and learning will guide current project implementation and replication of the project in order systems.

Both the PMT and the ART collaborate on setting up the framework for the Research as well as jointly utilizing the gathered research data for planning. The PMT implements plans and ART monitors and documents the implementation for future joint planning. A four-month cycle of research is proposed of data gathering, data preparation and analysis, and data feedback to the PMT and joint planning.

**CHAPTER IV. RULES AND REGULATIONS GOVERNING THE O & M OF
NATIONAL IRRIGATION SYSTEMS**



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THE O & M OF NATIONAL IRRIGATION
SYSTEMS**

4.1 Presidential Decree Related

Rules and regulations governing the operation and maintenance of National Irrigation Systems are promulgated by Presidential Decrees.

They were originally issued by Decree of President Macapagal in 1965 as "Amended Revised Rules and Regulations Governing the Operation and Maintenance of National Irrigation Systems" and certain sections and provisions have been amended successively in 1967, 1974 and 1976.

4.1.1 Agency to Operate and Maintain

The National Irrigation Administration (NIA) will operate and maintain all reservoirs, diversion works, main canals, laterals, and sub-laterals and all appurtenant structures, gates and accessories in any manner except when permitted by the irrigation Administrator or any of his duly authorized representatives. All farm ditches shall, however, be operated and maintained by the landowners and/or farmers served by said farm ditches under the direction and supervision of the gatekeeper or ditchtender in whose section the farm ditches are located.

4.1.2 Organization

- (a) The organization for the operation and maintenance of an irrigation system is headed by either a Supervising Civil Engineer, Senior Civil Engineer, Irrigation Superintendent, Associate Civil Engineer, Supervising Watermaster, or a Watermaster hereinafter referred to

as "Chief of Irrigaion System" assisted by a staff.

- (b) The System shall be divided into divisions, each division to be under the direct supervision of a watermaster. Each division will be divided into sections, each section to be under the direct supervision of a ditchtender or a gatekeeper. Every gatekeeper and ditchender shall prepare a listing of all farmers and lots within his section, the listing preferably by farm ditch, and a copy of such listing shall be kept in the office file. Any change in the listing shall be corrected immediately by said ditchtender or gatekeeper. The territorial boundaries of these divisions and sections are subject to change without prior notice, by the Chief of Irrigation System. For the guidance of the farmers, the Chief of Irrigation System shall cause to be posted in conspicuous places in the locality, a lot survey plan comprising each section indicating thereon the lots encompassed by the boundaries of the section, and the name of the ditchtender or gatekeeper in charge of said section and the watermaster having supervision over the section. Any change in the boundary of any section shall immediately be followed by a posting of the revised partial layout.

4.1.3 Transfer and Discipline of Personnel

- (a) In the interest of the service, the Chief of Irrigation System is free to transfer a watermaster from one division to another, a ditchtender or gatekeeper from one section to another.
- (b) Upon a written complaint duly signed and subscribed

and sworn to by any farmer of the section against any employee thereof for such causes as habitual absence from the section, habitual tardiness, unsatisfactory maintenance of irrigation canals (exclusive of farm ditches) in their respective section, partiality in the distribution of water and non-attendance to the legitimate request of farmers, the Chief of Irrigation System or any officer designated by the Irrigation Administrator shall immediately conduct an investigation in which respondent, after being notified of the charges, shall be allowed to appear and defend himself in person or counsel, to confront and cross examine the witnesses against him and to require the attendance of witnesses and the production of documents in his favor by compulsory process of subpoena or duces tecum.

4.1.4 Water Delivery

- (a) Full Supply - Whenever the water supply so warrants delivery to lateral and sub-lateral canals will be simultaneous.
- (b) Partial Supply - In case the water supply becomes insufficient for the whole area during the rainy season, irrigation by intermittent application of water will be resorted to and the distribution of water will be left to the discretion of the Chief of the Irrigation System. The irrigation needs of irrigators who have fully paid their irrigation fees shall, however, be given preference. However, for the dry season service, the area that can be fully seved by the average dry season water supply shall be predetermined by the Chief of the Irrigation System at least 60 days before the start of the planting season, again

giving priority to irrigators who have no unpaid irrigation fees at the time of predetermination. Map showing the area to be irrigated should be prepared and shown to the farmers.

- (c) Delivery to Farm Ditches - A farmer desiring water service, shall serve notice in writing or verbally to Chief of the Irrigation Systems through the watermaster or the gatekeeper or ditchtender at least 4 days before the desired date of delivery. Forms for written request shall be provided by the Chief of the Irrigation System without cost. On the agreed date of delivery, the farmer shall be present to receive the flow of water in the farm ditch and shall acknowledge the service rendered accordingly in an appropriate form of the system.
- (d) Schedule - At least sixty (60) days before each planting season, the Chief of the Irrigation System shall cause to be posted in conspicuous places for the guidance of the farmers, the tentative schedule of water delivery for the ensuing irrigation season, service, again giving priority to irrigators who have no unpaid irrigation fees. This is particularly so for the dry season when the water supply is invariably sufficient only for a fraction of the irrigable area.

4.1.5 Zoning of Irrigable Area for Dry Season Service

Based on the average flow of the stream during the dry season, the Chief of the Irrigation System shall divide the irrigable area into zones for service during the dry season, each zone to be served on yearly rotation, one after the other. Irrigable areas which are not farmed during the rainy season due to submergence shall always be included in the dry season service area. The zoning plan, together

with their scheduled year of service shall be posted in conspicuous public places for the guidance of farmers concerned. Priority for irrigation service shall, however, be as follows:

*1st Priority - lots within the scheduled area without unpaid irrigation fees.

*2nd Priority - lots outside the scheduled area with unpaid irrigation fees.

*3rd Priority - Other lots in the scheduled area.

*4th Priority - Other lots in the unscheduled area.

4.1.6 Construction of Farm Ditches

A farm ditch for the exclusive use of one landowner shall be constructed by said landowner at his own expenses, with the technical assistance of the Chief of the Irrigation System. Necessary canal structures connecting the farm ditch to the canal of the system will be constructed by the Government. For farm ditches serving 2 or more landowners, the Government will furnish the right-of-way with the available assistance of the farmers that will use said farm ditches.

4.1.7 Maintenance of Farm Ditches

All farmers using a common farm ditch shall jointly maintain the farm ditch free from vegetation and in good condition satisfactory to the Chief of the Irrigation System. Non-compliance with this provision shall constitute sufficient reason for non-delivery of water to said farm ditches. Should one or more farmers using the farm ditch refuse to participate in the repair, improvement and/or maintenance of said farm ditch, the Chief of the Irrigation System, after serving written notice to said farmers, shall proceed to employ laborers to work together with the other willing farmers, charging the wages of the laborers employed against the defaulting farmers. Should the defaulting farmers fail

to pay the amount spent by the Government after the harvest season, the Chief of Irrigation System shall proceed to collect said amount through court action.

4.1.8 Irrigation Fees

The rate of irrigation fees on all irrigation systems operated and maintained by the NIA shall be as follows:

- (a) For the rice crops in gravity irrigation systems,
2 cavans of palay per hectare for the wet season crop,
3 cavans of palay per hectare for the dry season crop, and
3 cavans of palay in case of a third crop;
- (b) For the rice crops in pump irrigation systems,
3 cavans of palay per hectare for the wet season crop,
5 cavans of palay per hectare for the dry season crop, and
5 cavans of palay per hectare in case of a third crop
- (c) For annual crops such as sugar cane and bananas, the cash equivalent at prevailing government price of 5 cavans of palay per hectare in gravity irrigation systems and 8 cavans of palay per hectare in pump irrigation systems.
- (d) For all other crops, the same rates as that for the rice crops, except that payment shall be the cash equivalent of the rates of palay at the prevailing government price. The rates quoted above apply to standard systems and in the case of special projects like UPRIIS and projects utilizing groundwater where capital investments and operation and maintenance costs are higher, the NIA shall enter into agreements with the beneficiaries concerned. Irrigation fees in the case of Compana General de Tabacos de Filipinas shall be in accordance with the provisions of existing contract entered into with the Government.

A cavan above stated denotes palay of 50kg net weight with 14% of moisture content. Palay delivered immediately after harvesting to the nearest accessible NIA foned warehouse is often insufficiently dried and contains foreign matters.

Palay sold by the NIA to the National Grains Authority (NGA) shall have less than 14% moisture content and be 95% pure (5% of foreign matter).

In case the moisture content exceeds the standard 14%, a cavan of palay collected as irrigation fees shall be more than 50kg by application of NGA Equivalent Net Weight Factors.

In case the moisture content is hard to measure, a standard rate of 56kg per cavan shall be adopted. This saves part of duties of the NIA and also helps complete the payment of irrigation fees in a single delivery.

Since the rate of irrigation fees differs between the wet season crop and the dry season crop, the division of the year has significant influence both on the payer and the collector. For this purpose, the NIA brought forward the revised rules for every region that the wet season is six months of the year when there is more rainfall and the dry season the rest of the year. Based on this division of the year, the wet season crop shall be the crop raised for the greater part of its growing period during the wet season and the dry season crop shall be the crop raised for the greater part of its growing period during the wet season and the dry season crop shall be the crop raised for the greater part of its grow-

ing period during the dry season, provided that should there be any case where the greater parts of each growing period of two successive crops are both during the rainy season that crop which is harvested during the dry season shall be considered the dry season crop and the other shall be the wet season crop. The third crop is the third harvest, if any, during the calendar year. Sugarcane and banana shall be regarded as annual crops.

4.1.9 Payment of Irrigation Fees

For the rice crops farmers are given the option to pay irrigation fees either in kind or in cash whereas for all other crops irrigation fees shall be collected in cash, these fees to be due for payment within two months after harvesting both the wet season crop and the dry season crop. For crop harvested between January 1 and December 31 of Calendar year, those fees will be due for payment without penalty up to January 31 of the following year, after which, penalty shall be levied on unpaid irrigation fees at the rate of one percent per month or fraction thereof.

Amendment to Irrigation Fees

Special Rate of Irrigation Fees

The rate of irrigation fees per hectare on general irrigation systems is presented in the previous section. The following lists the special rates prescribed for the special system such as UPRIIS and other where capital investment and operation and maintenance costs arise due to the use of underground water.

<u>Systems</u>	<u>Wet Season</u> <u>Crop</u>	<u>Dry Season</u> <u>Crop</u>	<u>Third</u> <u>Crop</u>	<u>Annual</u> <u>Crop</u>
1. UPRIS	2.5	3.5	3.5	6
2. Dioso, Laguna	3	5	5	8
3. Banga pump, Ilocos Norte	3	5	5	8
4. Solana Tuguegarao, Cagayan	8	12	12	20
5. Siluay, South Cotabato	2	3	3	5
6. Pakaka, Kavaodel Sur	2	3	3	8cavans/1,000cc of water
7. Tarlac (Ground water)	3	5	5	8
8. San Miguel (Hacienda Luisita) (2000 ha.)		14,500 pesos/year		
9. Tibagan-Buonavista (AMRIS)	3	5	5	8

4.2 Memorandum Circular

4.2.1 Guidelines on the Proper Maintenance of Irrigation Canals (MC # 70, S.1972)

(1) It is hereby directed that all irrigation facilities operated by our Agency, foremost among which are the irrigation canals, be continuously maintained satisfactorily. To qualify as a satisfactorily maintained irrigation canal, it shall have:

- a. -no vegetation within normal water line
- b. -no debris or unnecessary obstruction inside canal
- c. -no open gap in canal embankment
- d. -no vegetation on canal embankment more than 6" tall except on one side slope (left or right as pre-determined) where vegetables or other cultivated crops may be grown if such will not interfere with proper operation and maintenance and with prior written permission from the superintendent or officer-in-charge
- e. -one of the embankments is at least a good foot path
- f. -all turn-outs with headwalls

A very satisfactorily maintained canal in addition to the above shall have:

- a. -both embankments are at least good foot paths
- b. -all turn-outs gated even with wooden gates
- c. -all farm ditches with calibrated staff gauges

(2) Inspection, Recording, and Reporting

a. To accomplish this, all concerned are directed to enforce immediately and vigorously the provisions of the memorandum circular on posting of time sheets by ditchtenders and gatekeepers, watermasters, supervising watermasters, zone superintendents, Irrigation Superintendents, Regional Irrigation Engineers or their Chiefs

of Operations Division shall make entries on these time sheets after every inspection by cancelling all blank spaces on said time sheets as of his date of inspection, indicating condition of the section inspected and other pertinent remarks and then initial on the date of inspection.

These time sheets duly accomplished shall be the basis for the payment of the salary of the ditchtenders and gatekeepers and shall justify the claim for bicycle or motorcycle allowance of Watermasters and Supervising Watermasters.

b. In the monthly reports of the Irrigation Superintendent, he shall include as Appendix "A", the summary of the inspections made by him of the Ditch-tender/Gatekeeper sections in his System and a summary of the inspections made by all the watermasters in his System. The summary shall contain names of Ditch-tender/Gatekeeper/Watermasters, canal conditions, and the number of visits made during the month.

c. Furnish copy to Regional Irrigation Engineer, attention:

Chief of Operations Division. From the frequent inspections made by the watermaster, the Superintendent shall call the watermaster's attention to anything that is inadequate. A Watermaster with a bicycle should be expected to visit at least 20 sections weekly, check if he visits them regularly or if irregular, more frequent visits to unsatisfactory Ditchtender/Gatekeeper will be reasonable. He may be visiting frequently only the near ones so he can comply with the number of sections visited weekly as prescribed.

d. Irrigation Superintendents shall be expected to inspect at least 50 sections a month.

e. Regional Irrigation Engineers (Chiefs of Operations Division) are also directed to submit monthly reports of their inspection of irrigation systems on formats similar for Irrigation Superintendents. On the Summary portion, enter names of Irrigation Superintendents instead of Watermaster.

f. Every Ditchtender or Gatekeeper without exception shall be required to construct a resting hut very near his canal section. If no RCW adjacent to the canal RCW can be acquired, this may be constructed on our canal embankment, but shall not block the roadway or foot path. The hut shall be of light materials only and the Ditchtender may be provided with bamboos and nipas and other materials that need to be purchased at an amount not exceeding ₱ 50.00 per hut. This will be used by him for resting or siestas during off hours and will be a good meeting place with farmers to develop intimacy with them.

g. Every Ditchtender and Gatekeeper shall carry a white flag 1' x 5' on a light pole at least 3 meters high. He shall keep this erect near him so as to make it easier for others to find him.

h. He shall keep a lot survey map of his section complete in all details as to canals, structures, turn-outs, farm ditches, drainage canals, names of land-owners/tenants. He shall keep a record of schedule of seeding, planting, and status by crops by lots. Group visits shall be encouraged and fair evaluation of the

different sections shall be done preparatory to award of cash or written commendations as per existing memoranda to those deserving. These outstanding Ditch-tenders-Gatekeepers shall always be considered in promotions to positions of watermaster.

i. Every watermaster shall have an office. Funds for the construction of these offices have already been provided. The time sheet of the watermaster similar to that of the Dichtender-Gatekeeper shall be posted in this office and shall be subject to inspection and corresponding entries by his supervisors. The immediate supervisor of the watermaster shall be the one to keep the duplicate copy of posted time sheet of the watermaster. These duly accomplished time sheets shall be the basis for the payment of salaries of watermasters.

(Evaluation on compliance)

j. Thirty (30) days after the date of this circular, evaluation will be made on the compliance with these instructions, initially on the satisfactory maintenance of irrigation canals and posting of time sheets. (Unavailability of data would not allow confirmation of whether or not evaluation has continuously been made on the compliance)

Disciplinary action taken against non-compliance with the instructions shall be as follows:

- i) Should the ditchtender or gatekeeper fail to comply for no valid reason, he should be administratively charged and the corresponding disciplinary action should be meted out.

- ii) For watermasters who tolerate non-compliance among his ditchtenders and gatekeepers, his bicycle or motorcycle allowance shall be suspended immediately and restored only upon satisfactory proof of compliance.
- iii) Should the Irrigation Superintendent fail to take appropriate, formal action in writing on non-complying Ditchtenders, Gatekeepers and Watermasters on proper maintenance of canals and posting of time sheets, the Regional Irrigation Engineer shall recommend suspension of his (Irrigation Superintendent's) representation allowance.
- iv) If inspection by the Administrator, Assistant Administrator, Chief of the Operations Department, Asst. Chief of the Operations Department or their duly designated representative disclose non-compliance and if the Regional Irrigation Engineer has failed to report same, the representation allowances of the Irrigation Superintendent concerned, Chief of Operations Division and Regional Irrigation Engineer will be suspended until such time that satisfactory compliance is attained.

4.2.2 Instructions to Preserve Irrigation Facilities

Reference has been made in the previous section to satisfactorily maintained irrigation canals. Stated below is Memorandum circular #64, S.1978 on the detailed rules and regulation on the growing of plants of the inside slopes and top of canals or road embankments and on the erection of private dwelling within the right-of-way of canals, embankments or roads as well as on the illegal diversion of water.

In order to preserve the irrigation facilities, it shall be the responsibility of the Ditchtender or Gatekeeper and the Water Management Technician/Watermaster supervising him, to see to it that no private dwelling, permanent or temporary, is erected within the right-of-way of canals, embankments or roads, nobody shall be allowed to grow plants on the inside slopes and top of canals or road embankments. Growing of food plants on the outside slope of canals or road embankments that will not interfere with traffic on top of the embankment may be allowed subject to the written approval of the Irrigation Superintendent. Such permit shall invariably include a provision that the plants may be destroyed anytime when necessary in the interest of the service without cost to NIA. Growing of bananas and similar crops which after harvest are more easily disposed by dumping into the irrigation canal shall be allowed by the Irrigation Superintendent only after a careful study shows that there is a more convenient disposal area than the irrigation canal for the plant wastes.

Non-compliance with the above instruction shall be sufficient ground for the dismissal of the erring Ditchtender, Gatekeeper, and Water Management Technician/Watermaster. The cost of removal of the illegally constructed dwelling or plants without written permit from the Irrigation Superintendent shall be charged against the erring employees. If non-compliance to the instruction is apprehended by the Irrigation Superintendent, the supervisors of the Water Management Technician/Watermaster may be charged by the Irrigation Superintendent for gross negligence. If non-compliance with this instruction is apprehended by the Regional Director, Project Manager or his duly authorized representative or by the supervisors from the Central Office with indication that the non-compliance was more than one

month, the supervisors of the Water Management Technician/Watermaster up to the Irrigation Superintendent shall be dealt with administratively for gross negligence.

Illegal diversion of water from our irrigation canals to irrigate areas not officially included on the system service are and/or billed for irrigation fees shall be treated as illegal construction of dwelling or illegal planting on canal embankments, except that the employee subject to dismissal shall be the Water Management Technician/Watermaster instead of the Dichtender or Gatekeeper.

4.2.3 Principal Duties of O & M Personnel and Actions

Taken in the Deficiency of Personnel (April 11, 1977)

(1) Principal Duties

- Gatekeeper - operation and maintenance of diversion works, canals and turnouts, under the supervision of the Watermaster. For the operation of the diversion works, the gatekeeper is under the supervision of the Irrigation Superintendent or zone supervisor.
- Dichtender - maintenance of canals and operation of check gates, lateral headgates and turnout gates as directed by the Watermaster.
- Watermaster - distribution of irrigation water within his division, keeping records of water deliveries, submittal of irrigated areas required for billing, harvest reports, collection of irrigation fees during off irrigation periods and supervision of dichtenders within his division. Reports to zone supervisor or Irrigation Superintendent areas where standing crops need attention from farm management technicians.

(2) Section of the Canal System

On the basis of the number of gatekeepers and ditch-tenders allocated for the system, the canal system is to be divided into sections, each section under a ditchtender. In the process of sectioning, you should consider the size of canals to be maintained and the number of turnout gates to be operated by the ditchtender so they will have equal work loads. After establishing the sections, group the sections into divisions, each division under a watermaster. No ditchtender shall be under 2 watermasters.

(3) Action Taken in the Deficiency of Personnel

In the case of deficiency of Watermasters, choose among the present gatekeepers and ditchtenders on the monthly basis (first preference for the gatekeepers) those capable to discharge the duties of Watermaster above stated, and designate them as acting watermaster. They will be entitled to privileges of Watermasters. Send to the Operations Director the assessment papers giving the choice of acting watermasters. If there is a deficiency in the numbers of gatekeepers and ditchtenders after designating some as acting Watermasters, the deficiency shall be supplied by new recruits working on a daily basis.

4.2.4 Revised Incentive Bonus Plan for Irrigation Service Fee Collection (MC #101, S.1980)

The NIA, for which collection of irrigation service fee is an important duty, has been giving due recognition to deserving bill collectors by rewarding them with an incentive bonus. Memorandum circulars #44, S.1970, 353, S.1977, and 368, S.1978 on incentive bonus plan have been rendered obsolete by MC #101, S.1980. Stated, hereunder, are the relevant provisions on incentive bonus promulgated in MC #101 of 1980.

(1) **Incentive Bonus for Collectors of Irrigation Fees**

Definition of Terms Used

Division - The service area assigned to Watermaster/
Water Management Technician.

Zone - The service area or part of an irrigation
system assigned for collection purposes to
collection team.

Current Account Collection

- Collection of receivables not yet subject
to penalty.

Back Account Collection

- Collection of past due irrigation service
fees including penalties.

Exemption

- Refers to the cancellation of bills for
irrigation service fees in accordance with
MC #26, s. of 1980.

Collection Period

- For purposes of Incentive Bonus, the
collection period shall be from January 1
to December 31 of the year.

Collection Task Force

- Refers to a group of personnel in the system
who are designated by the Irrigation Super-
intendent to undertake year-round collec-
tion of irrigation service fees particular-
ly during post harvest periods, per MC #56
s. 1980.

Principal Base

- Refers to the total current irrigation
service fees for the areas irrigated within
the zone/system/region/project which in no
case shall be less than 90% of the average
benefitted areas for the past 5 years.
For a new system operating less than 5

years, the principal base shall be total current irrigation service fees which in no case shall be less than the average benefited areas for the number of years in operation. However, for a system in its initial year of operation the principal base shall be the total current irrigation service fees for the year.

Collection Base

- equal to 70% of the principal base.

(2) Credit of Collection

Credit of collection, when allocated among various groups, shall be determined following the actual collection of irrigation service fees as described below.

- a. Collection of a team within its assigned zone shall be credited 100%.
- b. Collections of a team outside its zone, shall be credited 50% to said team and 50% to the other team covering that zone.
- c. Irrigation service fees collected in the system's office shall be credited 50% to the team covering the zone.
- d. Collections of the Collection team of the zone 100% to the collection team of the zone where collections were made.
- e. Collections made and turned over to the NIA by STANFILCO in the Siluay River Irrigation system shall be credited 80% to the team covering the zone.

(3) Incentive Bonus for Collection Team

- a. Conditions precedent to merit bonus (under this circular)

- i) Remittance of collections and submittal of collection reports by collectors or assistant irrigation fee collectors to the Cashiers should be made by the date and in the form specified. Delayed remittance of collection by a collector to the Cashier and delayed submittal of collection reports by Cashiers to the Regional Accountant shall separately be penalized by reduction by 25% of the bonus of the collector, assistant collector or cashier (if he has a share) for each failure to submit on time.
 - ii) The minimum gross collection for current and back irrigation service fees for regions/projects/systems/group of system/zones should be at least 70% of their respective principal base. For instance, in case a system is divided into more than two zones and the collection of the system falls short of 70% of the principal base collection team is entitled to the bonus when the collection in a zone exceeds 70%.
- b. schedule of bonus from total collection current and back irrigation fees.
- i) For collections above 70% up to 80% of the principal base.....10% bonus on that portion of the total collection in excess of 70% but not more than 80% of the principal base.
 - ii) PLUS:
For collections above 80% of the principal base.....15% bonus on that portion of the total collection in excess of 80% of the principal base.

c. Division of Bonus for Collection Team

The total bonus for the team shall be divided as follows:

- 5% - to the team leader
- 80% - to the team leader and members of the collection team in direct proportion to the total collection of each.
- 5% - to all Watermasters/Water Management Technicians/Gatekeepers and Ditchtenders with satisfactory performance rating.
- 10% - to Irrigation Superintendent/Asst. Irrigation Superintendent/Irrigation/Zone Engineer to be divided equally. However, Zone Engineer shall only be entitled to incentive bonus for collections in his zone.

(4) Bonus for the Regional Irrigation Director/Project Manager/Asst. Project Manager and Chief of Regional/Project Operations Division shall be entitled to incentive bonus provided that the region/foreign assisted project meets the collection base.

Bonus shall be in accordance with the following rates:

- a. Regional Irrigation
Director/Project or
Operations Manager.....2% of all bonus earned
in the region/project
- b. Asst. Project Manager.....1 - 1/2% of all bonus
earned in the project
- c. Chief of Regional/Project
Operations Division.....1% of all bonus earned
in the region/project

(5) Bonus for Collection Task Force

Since the irrigation fee shall be collected not only by the collection team only during the rice harvesting season, but also by the collection task force throughout the year, members of collection task force shall also be entitled to bonus, whenever the zone is entitled to bonus, in direct proportion to the total collections credited to the collection team of said zone.

Division shall be as follows:

- 5% - Head, Task Force
- 2% - Collection Officer
- 53% - Collecting Members in proportion to their individual collections
- 40% - Equally to all members whether collecting or non-collecting including the head of the task force.

(6) Systems Incentive

In accordance with the schedule hereunder and subject to the availability of funds, additional sums will be allocated to Systems or groups of Systems under one (1) Irrigation Superintendent for use in the improvement of the System's office of the purchase of necessary office equipment and furniture when the total collection of the system/group of systems for the year meets its collection base (70% of the principal base):

- (a) Two percent (2% of the first P500,000.00 collection, plus
- (b) One and one-half percent (1½%) of the next P500,000.00 collection, plus
- (c) One percent (1%) of collection in excess of P1,000,000.00.

(7) Incentive Bonus Committee

For the purpose of the preparation and evaluation of the incentive bonus, there shall be created such committees

as System Office Committee, Regional or Foreign-Assisted Project Office Committee which shall be composed of manager or officer-in-charge as Chairman, and accounting officer, field examiner or auditor as members of committee.

The System Office Committees shall submit the incentive bonus claim to the Regional or Project Office Committee and the latter Committee to the Regional Irrigation Director/Project or Operation Manager.

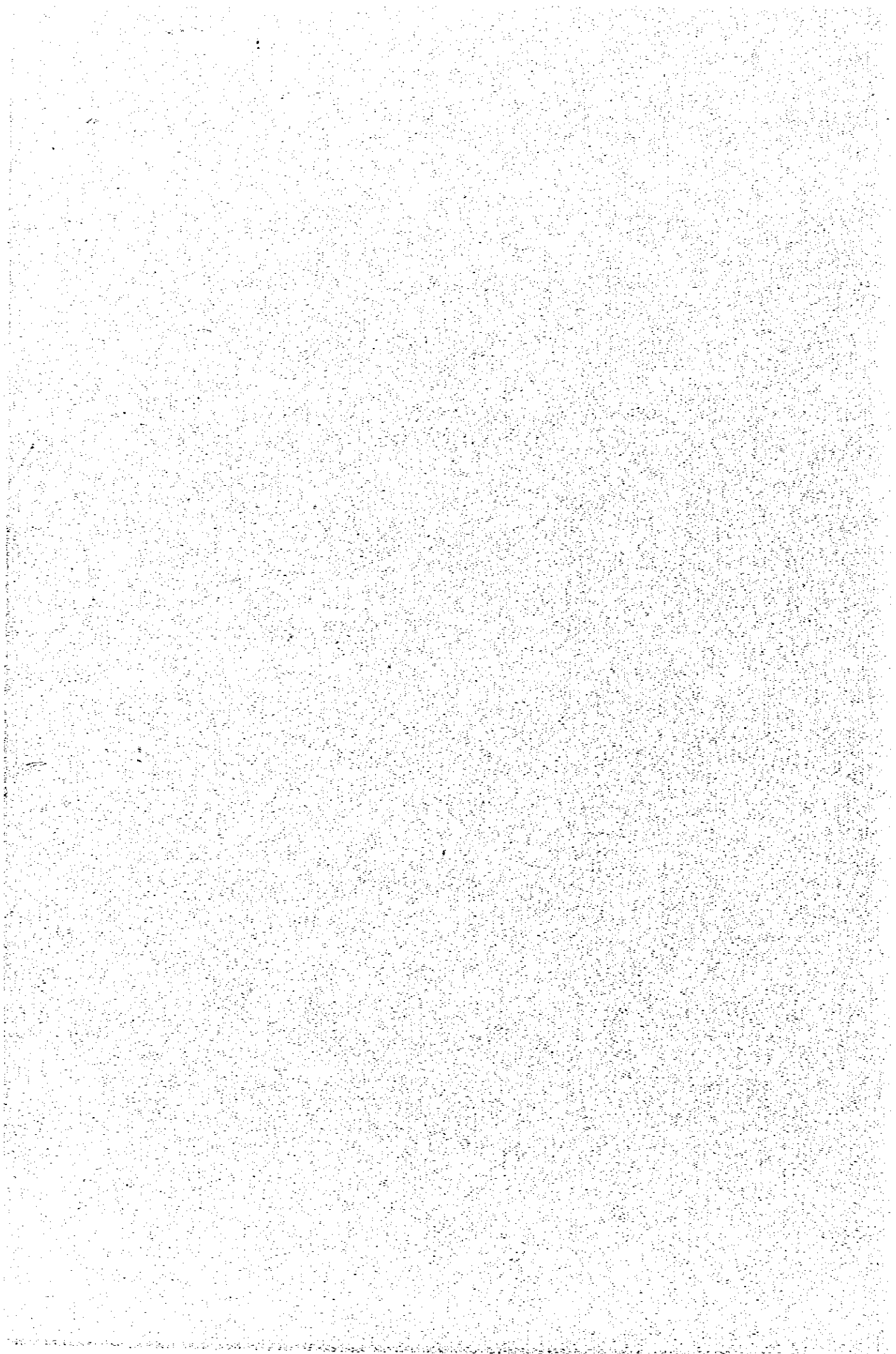
(8) Approval of Incentive Bonus on Collection

The Regional Irrigation Director/Project or Operations Manager is hereby authorized to approve, defer or disapprove claims for payment of the incentive bonus to personnel within his jurisdiction as recommended and forwarded to him by the Regional or foreign-assisted Project Office Committee within three (3) months from date of receipt.

(9) Allotment of Incentive Bonus

The Central Office Controllershship department shall release within fifteen(15) days from receipt of approved claim the corresponding sub-allotment advice upon request by the Regional Irrigation Director or Project/Operations Manager thru the Office of the Corporate Treasurer for review in coordination with the Systems Management Department.

**CHAPTER V. STRENGTHENING OF OPERATION AND
MAINTENANCE STRUCTURES**



CHAPTER V STRENGTHENING OF OPERATION AND MAINTENANCE STRUCTURES

5.1 Strategy of Upgrading Operation and Maintenance Structures

(1) General

Since the period of the Bureau of Public Work Irrigation Division from which NIA evolved originally, the national irrigation systems have had a history of tremendous progress achieved through technical innovation. Of more than one hundred twenty national irrigation systems in the country, AMRIS can be mentioned especially for its most advanced status where irrigation facilities have been implemented to the turnout level. Its organization and staffing for operation and maintenance of the facilities are quite sufficient from main office to field level, excelling by far the other examples in foreign countries.

In such government-initiative enterprises, however, some constraints were traceable in developing irrigated agriculture under a standardize formulation. Particularly in the irrigation projects, the benefits are limited to the specific farmers who can utilize the water. The situations are different from those of the public utilities such as national road and river projects which favor a number of unspecified people.

Therefore, a turnover of some parts of the expenditures needed for project operation and management from the authority concerned to the beneficiaries will gradually be realized in response to the development stage of the Project. This is especially so in the maintenance of irrigation facilities to which farmers who benefit should be responsible. Many of the problems on O & M of the NIA systems have appeared to

be derived from these circumstances. These problems would be solved through steady efforts made by both sides because a one sided solution is not expected.

Based on the present survey and discussions with officials concerned in the AMRIS Project Area, the constraints and needs with the Project can be pointed out in the following paragraphs from the view points of physical, organizational and financial aspect, and of agricultural development.

(2) Physical Improvement Aspect

For the better water management, necessary irrigation water must be allocated up to the terminal facilities in proper quantity as well as at proper time; excess water shall be drained out adequately. Upgrading the irrigation efficiency is of much importance for effective use of the limited water resources and expansion of service area. For this to be realized, the first necessity is to keep the facilities in the Area in a satisfactory condition so as to enable proper water management. AMRIS is not an exception where the present O & M status seems not so satisfactory, being affected by the continuous financial deficits, similar to other projects. It is urgent that facility maintenance work be intensified by reasonable re-allotment of the limited annual budget. Better water management would thus be realized, gaining the confidence of farmers to the Project. Aside from this, there may be another way of balancing the budget for maintenance of the roads by requesting their authorization as public barangay roads under the current road law system.

(3) Organizational Aspect

Present AMRIS office organization and staffing seems slightly large compared to the NIA working standard. According to the standard, the number of water management

technologists (W.M.T) and ditchtenders (D.T) should be standardized as one person per 750 ha of service area and each 3.5 km of irrigation canal length respectively.

One of the major constraints which has been affecting NIA's operation and maintenance structures is to try to reduce personnel service cost within reasonable working capability.

In order to realize this, partial turnover of the present O & M work to the irrigators association conducted by NIA will enable it to decrease its O & M expenditures. Especially different from the facility construction investments, implementation for O & M must be understood by farmers as a direct favor to their farming practices.

First of all in realizing the long term prospect, the farmers shall be instructed to organize irrigators associations step by step by themselves. In this connection, a useful reference is the Farmer Irrigators Organizer Program (FIOP) which has been conducted in the AMRIS Area. Referring to this pilot scheme, the first step shall be taken to form irrigator' organizations during the project implementation, in which a joint operation of the facilities with farmers will be smoothly carried out. With the Irrigators Associations (IAs) established, the partial turnover of the facilities' O & M shall be made possible as the second step which might also give some favorable changes to the organization of NIA Office. For instance, ordinary tasks will be simplified and computerized in order to upgrade management efficiency.

(4) Agricultural Development Aspect

By means of the improvement of existing irrigation facilities in the Project Area, great strides in agricultural

production shall be anticipated as a result of stabilized allocation of irrigation water and the development of expansion areas as well. Increased cropping intensity derived from efficient use of facilities and water source will contribute to overall increases not only in paddy production but also in output of upland crops which would be diversified in some portions of the Area in the dry season. The farmers will be favored with the higher income to enable them to pay the irrigation fees and to provide for necessary procurements such as farm machinery.

Incremental collectible amount of irrigation fees is expected to be about 3.5 million pesos by increased cropping intensity and production from the proposed expansion area.

(5) Financial Support Aspect

Overall expenditures for operation and maintenance of the facilities under NIA irrigation system are to be balanced with the irrigation fees collected from the beneficiary farmers. The irrigation fees shall be paid from the benefit obtained by the farmers through the favor of irrigation water.

From the view point of public utility of these roads for ordinary traffic, it should be urgently investigated how to authorized them as barangay roads and how to obtain government financial support. Since the minimum width requirements of the barangay road is defined to be seven meters, some alleviation is necessary to apply the existing road law.

In order to decrease the O & M costs, the inevitable budget for the repair work of facilities when damaged by natural disasters such as typhoon and heavy flood shall be

requested also to be specially accounted as the government's responsibility.

(5) Execution of the Strategy for the Physical Improvement Aspect

The present maintenance of the major and on-farm facilities in the Project Area is insufficient to perform proper water management and to obtain farmers confidence in the irrigation services. In order to improve the operation and maintenance structures of the Project, consolidation of the facilities is a major components.

1) Diversion Dam

Major works for rehabilitation are renewal of flood and scouring sluice gates, gate operation mechanism and dam's apron protection so as to operate and maintain without any difficulties. The Third Maasin Dam shall be newly constructed to provide a stable water supply to the service area instead of temporarily constructed earth dams every dry season.

2) Irrigation Canal and Appurtenant Structures

Major requirements of the systems are desilting, reshaping and heightening of the canals as well as improving structures especially gate systems at the headgates and turnouts. In order to upgrade irrigation efficiency, reduction of water leakage from the canals and proper water supply to the Area through the improvement works are vitally important component. Improvement of gate systems at the headgates and turnouts and removal of illegal turnouts are mainly to upgrade irrigation efficiency and effective utilization of water resources.

3) Drainage Canal and Creek

Most drainages and creeks in the area meander through the lands, causing some restrictions on the carrying capacity. Most drainages and creeks require desiltation, while a few are to be widened or re-constructed. Approximately 2,000 ha of the wet season crops can be expanded by those improvement and slightly changes in the cropping calendar.

4) Service Road

Consolidation of road networks is one of the main components of the Project in order to operate and maintain the project systems adequately, to use hauling agricultural inputs and productions. All proposed roads shall be made of gravel pavement so as to remain passable during the wet season.

5) On-farm Development

Adequate provision of the on-farm facilities will be expected to contribute to these area developments and the upgrading of farmers attitude to O & M works.

5.2 Organization Structures and Staffing of AHRIS

5.2.1 General

The major works of the Project consist of the rehabilitation and construction of canals, roads and on-farm systems and the institutional development works including establishment of viable irrigator's associations so as to experiment with partial turnover of the O & M works to IAs. Besides, the Project shall include ordinary operation and maintenance works for the existing systems.

These works and activities are closely related to each other so that organizational structures shall be incorporated to one executing body under the Irrigation Superintendent cum Project Manager and the supervision of Regional Irrigation Director III. The Irrigation Superintendent-V must perform not only from engineering, operation and maintenance aspects but also from institutional development works.

The construction work for system improvement and expansion will be carried out on the contract basis for major facilities such as diversion dams, canal systems, and by the force account basis for on-farm facilities and other minor works.

The project implementation will take seven years including one year of preparation, taking into account the work volumes of construction and time schedule of IAs establishment and so forth.

The program, which covers the establishment of several number of IAs, training of the farmers in O & M activities, will be implemented according to the timetable within the proposed project implementation period. The establishment of irrigator's associations, however, should be developed gradually considering farmer's activities and the stream of consciousness through careful monitoring and evaluation.

Full turnover of operation and maintenance work to the Federation of Irrigator's Association (PIA), which will be formed as one organization within the Project Area, seems difficult for the time being because the scale of the system is quite large. Therefore, joint operation and maintenance works between NIA and IAs for the Project systems will be recommended.

In this connection, the study on the organizational improvement for the system was conducted based on the following phasing plan. First step of the study is the optimum sizing NIA organization and its staffing for the developed systems which will cover about 35,000 ha of the service area. The second step of the study is joint operation plan between NIA and IAs.

5.2.2 Proposed Organization and Staffing of Project Implementation

(1) Proposed Organization

The proposed organization will be formulated in the following field on the basic concepts mentioned above, and the chart is presented in Figure B.5.2-1. The organizational structures and responsibility in the respective fields are summarized as follows:

1) Main Office

During project implementation period, one irrigation superintendent office and four divisions will be organized in the main office in Bulacan. Respective divisions will have two to five sections under the division manager.

- Administrative division will have three sections, namely, those for Procurement and Properties, Personal Affairs, and Billing & Collection. The division is in charge of procurement of materials, O & M office

properties, accounting and cashiering, personal management, billing and collection of irrigation fees, and disposal of collected in kinds and so forth.

- Construction division will consist of five sections, namely, those for Survey/Design and Specifications, Construction, Supervision, Equipment, Right-of-Way and Budget Control and Evaluation.

The division will be responsible for survey and design, preparation of specifications and contract documents including cost estimate, construction supervision, coordination between O & M and ID division, control of mobilization and operation of equipment, repair and maintenance of equipment, right-of-way, construction planning, budget control, and evaluation and monitoring of construction progress.

- Operation and Maintenance division will have two sections of Operation and Maintenance, and Water Control and Coordination. The division will be responsible for ordinary operation and maintenance works including Bustos Diversion Dam during project implementation periods, giving instructions and training to farmers on water management, preparation and revision of water distribution schedule, and recording, monitoring and reporting on water management.

- Institutional Development division will have two sections, namely those for Engineering Supporting and Farmers Organization. The division will be responsible for negotiation and giving instructions to farmers on the on-farm development and water management, consolidation of parcellation map and statement on the beneficiary farmers in the Project Area, documentation of establishment of IAs, preparation of training

programs and its execution, evaluation and monitoring of progress of IAs establishment.

2) Field Office

Two Zone Engineer Offices will be provided for smooth implementation of integrated project activities.

- North Zone Engineer Office will be composed of four units; Administration, Farmers Organization, Diversion Dam, and Canal and Road units. The offices will be in charge of operation and maintenance works related to Angat North Main Canal, Upper and Lower Maasim diversion dam and BPI area, supervision of their activities for the No.6, 7, 8, 9, 10, 11 and 12 Working Stations concerned, supervision and control of construction works in the service area, coordination for institutional development aspect in cooperating with institutional development division, (IDD) of Main Office, and collection of irrigation fees under the supervision of Billing, Collection Section in the Main Office.

- South Zone Engineer Office will be comprised of two units of Administrative and Farmers Organization, and Canal and Road units. The office is in charge of operation and maintenance works related to Angat South Main Canal including TPIP and BPE areas, supervision of their activities for No.1, 2, 3, 4 and 5 Working Stations concerned, supervision and control of construction works in the service area, coordination on the institutional development aspect in cooperating with IDD of main office, and collection of irrigation fees under the supervision of Billing, Collection Section in main office.

- The existing 12 Working Stations will continue their ordinary operation and maintenance work in their service areas under the supervision of the chief zone engineer and operation and maintenance division of main office. In parallel with the above-mentioned activities, the staff of the Working Stations will help in collection of irrigation fees, promotion of institutional development as well as supervision of construction works in their service areas during the project implementation period.

3) Committees

The Regional Evaluation Committee will be organized to supervise and evaluate the overall project activities including institutional development. The committee members will consist of Regional Irrigation Director III as a chairman, representative of Farmers Assistance Department (FAD) and System Management Department (SMD) in NIA central, Irrigation Superintendent-V (IS-V) in AMRIS, Division Managers of O & M and Farmers' Assistant Division in Regional Irrigation Office-III. The Secretariat members are Managers of Institutional Development, Operation and Maintenance, and Construction Divisions respectively. Consultants will be assigned as observers of the committee.

The Construction Coordinating Committee, on the other hand, will also be set up to coordinate and evaluate the construction planning, irrigation planning in the proposed construction area and its related systems and so forth. The committee will consist of IS-V as a chairman, and respective division managers in the AMRIS office. Furthermore, the chief of the Budget Control Section will be assigned as secretary of the committee and the system maintenance division manager in SMD and consultants will also participate in the committee as observers.

(2) Staffing Plan

The staffing plan for project implementation was studied based on the several factors concerned such as construction works manner and period, irrigation and cropping plans, ordinary O & M work and schedule of IAs establishment. Moreover, the optimum working standard which was stipulated by MS No.2, 1982 was also considered together with following conceptions.

- 1) The staffs of the administrative division is to be increased in the fields of right-of-way, contracting and material procurement.
- 2) Staff of the institutional development division is to be greatly increased so as to firmly establish the system of education and training the irrigators associations' staffs and related beneficiary farmers. Engineering supporting section is vitally important to consult with farmers on various problems, especially on on-farm development schemes and preparation of land property documents.
- 3) The staff of the operation and maintenance division are to be transferred from the existing O & M section in the main office to both north and south zone engineer offices so as to effectively carry out comprehensive field works.
- 4) The staff of the construction division is to be increased in the fields of design and equipment sections for the construction of on-farm facilities which will be undertaken on the force account basis.

5) The staff of both the zone engineer offices will have to be in charge of construction, operation and maintenance, and institutional development works. These key staffs in the zone engineer offices should work out a future operation and maintenance work program under the jurisdiction of NIA and instruction to IAs for the post-project works. The number of the construction supervisors and their assistants are estimated based on working standards of one person per five kilometers length of the proposed canal and road construction and assistant cum surveyor for two supervisors per 800 ha for on-farm facilities' rehabilitation works and 200 ha for new on-farm facilities construction works, respectively. In addition, the staffs of the respective Working Station shall assist them during the construction period.

Before consideration of proposed staffing plan for the project implementations, the number of existing staff shall be justified in accordance with NIA working standard and MC for operation and maintenance works.

The staff of the existing AMRIS office as of the end of July, 1983 was described in Chapter II of Appendix B. In May 1983, Personnel Audit of AMRIS was conducted with special emphasis on the daily positions by the study team of Management Service Department (MSD) in NIA Central.

The details of existing, MSD' proposing and estimate on the AMRIS office staff are presented in the Table B.5.2-1. The number of staffs presently in excess compared to the MSD' proposing and the estimate are 59 and 53 persons in total, respectively. The staffs of O & M section in the field level were decreased from 350 to 270 more or less to

follow the NIA working standard. On the other hand, the equipment and repair section shall be strengthened in number of staff and working capacity. Because the maintenance framework of the system is one of major strategy of improvement of operation and maintenance structures.

The number of staff during and post project before partial turnover of the O & M work to the IAs will be about 434 persons because total service area including the new expansion area of around 3,500 ha was increased to about 35,000 ha.

The proposed staff both construction and post-project phase were estimated based on the concepts mentioned above and study results in the Table B.5.2-2.

The comparison table of existing and during project and/or post-project but before partial turnover is as follows:

<u>Designation</u>	<u>Existing</u>	<u>During Project*</u>
Office of IS-V	6	4
Administration	25	17
Bill & Collection	20	22
Institutional Develop.	6	25
Operation & Maintenance	350	310
Water Control Coord.	11	12
Equipment	23	44
<u>Total</u>	<u>411</u> ^{*1/}	<u>434</u>

Note: * The number of staffs indicate mostly persons for operation and maintenance works concerned.

^{*1/} Refer to Table B.5.2-2.

From the above table, total numbers of staff for the project implementation and/or post-project but before

partial turnover are almost the same as existing total staff. Special emphasis was paid to institutional development and equipment staff in order to establish capable IAs and strengthen systems maintenance works.

5.2.3 Proposed Organization of Post-Project and Staffing

(1) Proposed Organization for Post-Project

The AMRIS Office organization for post-project after partial turnover will be reorganized to decrease its capacity and number of staff slightly from the project organization of the implementation except for the construction division.

The proposed organization of AMRIS Office after completion of the construction works is almost the same as before the project organization as illustrated in Figure B.5.2-2. Special attention for the reorganization should be paid to the institutional development section and repair, maintenance section.

Major improvements of the proposed organization are to abolish the construction division and to transfer the right-of-way section to the administrative section, to combine system operation and water control/coordinating work as a section, to strengthen the system maintenance works as the section of repair and maintenance and to maintain the North and South zone engineer's office and farmers' channel organization between AMRIS main office and farmers' concerned so as to train, educate the beneficiary farmers on the O & M works at field level and collection of irrigation fees. Furthermore, bill and collection section, and institutional development section should maintain their function continuously because the sections will have to take care of the educational and promotional aspect of the upgrading water management techniques, promotional aspect of the upgrading water management techniques, irrigation fees collection and irrigators associations management.

Accordingly, proposed organization of AMRIS Office for post-project has one Irrigation Superintendent Office and six sections, namely, those for Administrative, Bill and Collection, Institutional Development, Operation and Water Control, Repair and Maintenance, and Equipment, and the North and South Zone Engineer's Offices.

Their duties and responsibilities are almost the same as the organization at the time of the project implementation.

(2) Phasing Plan on the Partial Turnover of the Operation and Maintenance Works

The partial turnover of O & M works to the IAs will be carried out gradually after capable irrigators association were formed in the entire project area. Proposed organizational set-up and development scheme of the associations will comprise two phases such as IAs formation phase and FIAs formation phase. Former formation is on sub-lateral canal basis from the terminal group with 240 associations in the whole project area. The latter formation will federate six to seven IAs on the lateral canal basis serving about 1,000 ha of beneficiary area. These groups will form about 34 federations of irrigators associations.

In this connection, organizational structures and staffing of the AMRIS Office at the time will be slightly changed to decrease its office capacity and staffing. The number of staff in AMRIS Office will be about 324 persons after partial turnover to IAs and about 200 persons after partial turnover to FIAs, respectively.

The respective numbers of staff in details for two phases are tabulated in Table B.5.2-3.

Major decreasing in staff for respective phases are ditchtenders due to decrease their territories of O & M works for irrigation canal systems. Those staff in excess will be transferred to irrigator's associations from NIA as key engineering and operational staff.

Joint operation and maintenance work plans between NIA and IAs or FIAs are summarized as follows and detailed plans are shown in the Table B.5.2-4, B.5.2-5 and Figure B.5.2-3, B.5.2-4.

A. Phase-1

<u>Facilities</u>	<u>NIA</u> <u>(km)</u>	<u>IA</u> <u>(km)</u>	<u>Total</u> <u>(km)</u>
Main canal	47.0	-	47.0
Lateral	184.1	59.2	243.3
Sub-lateral	107.4	384.2	491.6
<u>Total</u>	<u>338.5</u>	<u>443.4</u>	<u>781.9</u>

B. Phase-2

<u>Facilities</u>	<u>NIA</u> <u>(km)</u>	<u>IA</u> <u>(km)</u>	<u>Total</u> <u>(km)</u>
Main canal	47.0	0	47.0
Lateral	34.4	208.9	243.3
Sub-lateral	0	491.6	491.6
<u>Total</u>	<u>81.4</u>	<u>700.5</u>	<u>781.9</u>

Diversion dam	Bustos, Upper Maasim	Lower and Third Maasim	4.0
Pumping station	0	3.0	3.0
Distribution facility	for lateral	Others	

TABLE B.5.2-1 NUMBER OF STAFF IN AMRIS (1)

Organizational Unit	Number of Staff		
	Existing	MSD	Estimate
1. Office of the Chief			
Irrigation Superintendent V	1	1	1
" " III	1	1	1
" " I	1	1	1
Clerk II	1	1	1
Irrigation Engineer	2	2	2
<u>Sub-total</u>	<u>6</u>	<u>6</u>	<u>6</u>
2. Water Contral Coordinating Sec.			
Hydrologist	1	1	1
Hydrologist Aide	1	1	1
Senior Gatekeeper	1	1	1
Gatekeeper	8	8	8
<u>Sub-total</u>	<u>11</u>	<u>11</u>	<u>11</u>
3. Operation and Maintenance Sec.			
Supervg. Water Mgt. Technologist	12	12	12
Water Management Technician	37	19	44
Watermaster	19	19	44
Gatekeeper	9	10	9
Ditchtender	266	204	202
Pump Operator	3	3	3
Assistant Irrigation Engineer	4*	0	4
<u>Sub-total</u>	<u>350</u>	<u>267</u>	<u>274</u>
4. Farmers Assistance Section			
Agricultural Coord. Officer	1	1	1
Assist. Agric'l Liaison Officer	0	2	0
Agric'l Liaison Aide	1	1	1
Irrigators Association Worker	3	2	3
Clerk Typist	1	1	1
<u>Sub-total</u>	<u>6</u>	<u>7</u>	<u>6</u>
5. Administrative Section			
Administrative Assistant	1	1	1
Personnel Aide	1	1	1
Clerk II	1	2	1
Clerk I	6	5	6
Property Custodian	1	1	1
Cashier I	1	1	1
Cashier Aide	1	1	1
Stere Aide	0	2	2

Remark : * Including Geod. Eng. Aide and C.E. Aide

TABLE B.5.2-1 NUMBER OF STAFF IN AMRIS (2)

Organizational Unit	Number of Staff		
	Existing	MSD	Estimate
Accounting Clerk	1	1	1
Electrician	1	2	1
Security Guard	1	3	1
Radio Operator	2	2	2
Office Helper	1	1	1
Janitor	1	1	1
Utilityman	1	2	1
Laborer	5	2	3
<u>Sub-total</u>	<u>25</u>	<u>28</u>	<u>25</u>
6. Billing & Collection Section			
Collection Analyst	1	1	1
Collection Officer	1	2	1
Billing Clerk	11	11	11
Bill Collector	6	6	6
Machine Operator	1	1	1
<u>Sub-total</u>	<u>20</u>	<u>21</u>	<u>20</u>
7. Equipment and Repair Section			
Assistant Mechanical Engineer	0	2	0
Heavy Equipment Operator	2	3	5
Senior Mechanic	1	1	2
Mechanic	2	4	8
Machinist	1	1	1
Meterpool Dispatcher	1	1	1
Instrumentman	1	1	1
Equipment Inspector	1	0	3
Driver	11	11	14
Auto Serviceman	1	1	1
Carpenter	1	3	1
Laborer	1	5	1
Civil Engineering Aide C	0	2	2
" " B	0	1	1
Survey Aide	0	4	4
Draftman	0	1	1
Mason	0	1	0
<u>Sub-total</u>	<u>23</u>	<u>42</u>	<u>46</u>
<u>Total</u>	<u>441</u>	<u>382</u>	<u>388</u>
<u>Difference</u>		(-)59	(-)53

TABLE B.5.2-2 NUMBER OF STAFF DURING AND POST PROJECT
(BEFORE PARTIAL TURNOVER)

<u>Organizational Unit</u>	<u>During Const.</u>	<u>Post Project</u>
<u>1. Office of Irrigation Superintendent</u>	<u>7</u>	<u>4</u>
<u>2. Administrative Division</u>	<u>57</u>	<u>39</u>
Office of Division Manager	(2)	(1)
Procurement, Property Section	(11)	(4)
Personnel Section	(22)	(12)
Billing & Collection Section	(22)	(22)
<u>3. Institutional Development Div.</u>	<u>25</u>	<u>25</u>
Office of Division Manager	(3)	(3)
Engineering Supporting Section	(6)	(6)
Farmer's Organization Section	(16)	(16)
<u>4. Operation and Maintenance Div.</u>	<u>17</u>	<u>17</u>
Office of Division Manager	(1)	(1)
Operation and Maintenance Sec.	(4)	(4)
Water Control Coordinating Sec.	(12)	(12)
Operation & Water Control Section	(-)	(-)
Repair & Maintenance Section	(-)	(-)
<u>5. Construction Division</u>	<u>92</u>	<u>44</u>
Office of Division Manager	(2)	(-)
Survey, Design, Supervision Sec.	(25)	(-)
Construction Supervision Sec.	(10)	(-)
Equipment Section	(44)	(44)
Right-of-way Section	(7)	(-)
Budget Control Section	(4)	(-)
<u>6. North Zone Engineer Office</u>	<u>235</u>	<u>178</u>
<u>7. South Zone Engineer Office</u>	<u>150</u>	<u>127</u>
<u>Total</u>	<u>583</u>	<u>434</u>

TABLE B.5.2-3 PROPOSED NUMBER OF STAFF FOR
PHASE-1 & PHASE-2

<u>Organization Unit</u>	<u>Phase-1</u>	<u>Phase-2</u>
1. Office of Irrigation Superintendent	4	4
2. Administrative Section	17	17
3. Bill & Collection Section	22	15
4. Institutional Dev. Section	25	15
5. Operation and water control Section	9	9
6. Repair Maintenance Section	12	10
7. Equipment Section	44	36
8. North Zone Engineer Office	107	54
9. South Zone Engineer Office	84	40
<u>Total</u>	<u>324</u>	<u>200</u>

Note : Numbers of Phase-1 are staffs after partial turn-over of O & M work to IAs.

Numbers of Phase-2 are staffs after partial turn-over of O & M work to FIAs.

TABLE B.5.2-4 JOINT OPERATION AND MAINTENANCE SCHEDULE OF PHASE-1 (1/2)

Name of W.S.	Name of F.I.A.	No. of I.A. (T.G.)	Service Area (ha)		Canal Length of O.M. Work concerned by NIA and IA (km)							
			Existing	Expansion	Main	Lateral NIA	Lateral IA	Sub-lateral NIA	Sub-lateral IA	Total NIA	Total IA	
1	SM-1	5 (34)	246	-	-	12.5	1.0	-	-	18.0	12.5	19.0
1	TP	9 (70)	1,286	-	-	22.0	8.0	-	-	9.2	22.0	17.2
2	SM-2	4 (24)	532	-	-	-	5.6	-	-	7.1	-	12.7
2	SM-3	5 (17)	645	-	-	-	7.6	-	-	5.5	9.9	13.1
2	SM-4	12 (43)*	1,597	90	-	16.3	-	-	1.7	14.0	18.0	14.0
3	SM-5	7 (34)	1,078	-	-	5.7	-	-	6.3	19.7	12.0	19.7
3	SM-6	9 (46)	1,066	-	-	-	-	-	10.0	14.6	10.0	14.6
3	SM-7	8 (32)	1,003	-	-	6.0	8.8	-	-	5.9	10.9	14.7
4	SM-8	10 (58)	1,538	-	-	11.1	-	-	2.9	19.0	14.0	19.0
4	SM-9	8 (54)	1,305	-	-	-	-	-	16.0	11.4	16.0	11.4
5	SM-10	9 (39)	1,245	-	-	8.0	-	-	6.0	12.7	14.0	12.7
5	SM-11	2 (22)	552	-	-	1.0	-	-	-	4.0	12.2	4.0
5	SM-12	5 (18)*	54	60	-	4.5	3.5	-	-	3.0	4.5	6.5
Sub-total			13,347	150	26.0	87.1	34.5	42.9	144.1	156.0	178.6	
6	NM-1	1 (18)	341	-	-	-	1.5	-	-	3.9	-	5.4
6	NM-2	5 (51)*	793	230	-	21.4	-	-	10.6	3.6	32.0	3.6
6	NM-3	7 (40)*	835	150	8.6	5.5	1.6	-	-	8.7	14.1	10.3
6	UM-1	10 (47)*	1,409	-	-	4.3	-	-	6.7	12.2	11.0	12.2
6	UM-2	6 (23)*	702	-	-	2.4	-	-	1.1	5.0	5.5	5.0
6	UM-3	7 (30)*	-	900	-	8.0	-	-	-	1.7	8.0	1.7

TABLE B.5.2-4 JOINT OPERATION AND MAINTENANCE SCHEDULE OF PAHSE-1 (2/2)

Name of W.S.	Name of F.I.A.	No. of I.A. (T.G.)	Service Area (ha)		Canal Length of O.M. Work concerned by NIA and IA (km)							
			Existing	Expansion	Main	Lateral		Sub-lateral				
						NIA	IA	Total	NIA	IA	Total	
7	NM-4	8 (56)	1,276	-	2.1	7.5	1.6	1,276	-	26.9	9.6	28.5
7	NM-1	7 (39)	1,059	-	-	8.0	4.4	1,059	-	14.8	8.0	19.2
7	NM-2	5 (23)*	-	680	-	7.0	-	680	-	6.4	7.0	6.4
8	NM-5	9 (56)	1,610	-	-	-	-	1,610	-	36.9	-	36.9
8	NM-6	11 (59)*	1,016	594	-	-	-	1,610	12.0	15.4	12.0	15.4
8	NM-7	3 (15)	550	-	-	-	-	550	-	12.5	-	12.5
9	NM-8	4 (18)	492	-	-	2.8	-	492	1.2	5.2	4.0	5.2
9	NM-9	17 (73)*	1,997	466	-	-	-	2,463	23.0	16.3	23.0	16.3
10	NM-10	9 (28)	1,091	-	-	-	-	1,091	3.5	23.2	3.5	23.2
10	NM-11	4 (19)	584	-	-	-	6.4	584	-	6.0	2.5	12.5
11	NM-12	6 (25)	891	-	-	2.9	4.6	891	0.9	8.6	8.4	8.6
11	NM-13	3 (12)	439	-	-	-	4.0	439	-	2.9	4.0	3.3
11	NM-14	10 (48)	1,430	-	-	-	7.5	1,430	-	24.2	7.5	24.4
12	NM-15	6 (29)	738	-	-	-	11.5	738	5.5	0.7	17.0	0.7
12	NM-16	9 (42)*	885	310	7.4	-	8.5	1,195	-	5.0	7.4	13.5
Sub-total		147 (751)	18,138	3,330	21.0	97.0	34.7	21,468	64.5	240.1	182.5	264.8
Total		240(1,227)	31,485	3,480	47.0	184.1	59.2	34,965	107.4	384.2	338.5	443.4

Note: * Numbers in parenthesis are estimated one compact farm per 30 ha.
 Figures in parenthesis indicate number of compact farm within the IA.

TABLE B.5.2-5 JOINT OPERATION AND MAINTENANCE SCHEDULE OF PAHSE-2 (1/2)

Name of W.S.	Name of F.I.A.	No. of I.A. (T.G.)	Service Area (ha)		Canal Length of O.M. Work concerned by NIA and IA (km)					
			Existing	Expansion	Main	Lateral	Sub-lateral	Total		
					NIA	IA	NIA	IA	NIA	IA
1	SM-1	5 (34)	746	-	-	13.5	-	18.0	-	31.5
1	TP	9 (70)	1,286	-	-	30.0	-	9.2	-	39.2
2	SM-2	4 (24)	532	-	-	5.6	-	7.1	-	12.7
2	SM-3	5 (17)	645	-	9.9	7.6	-	5.5	9.9	13.1
2	SM-4	12 (43)*	1,597	90	-	16.3	-	15.7	-	32.0
3	SM-5	7 (34)	1,078	-	-	3.2	-	26.0	2.5	29.2
3	SM-6	9 (36)	1,066	-	-	-	-	24.6	-	24.6
3	SM-7	8 (32)	1,003	-	4.9	14.8	-	5.9	4.9	20.7
4	SM-8	10 (58)	1,538	-	-	3.1	8.0	21.9	8.0	25.0
4	SM-9	8 (54)	1,305	-	-	-	-	27.4	-	27.4
5	SM-10	9 (39)	1,245	-	-	-	-	18.7	-	26.7
5	SM-11	2 (22)	552	-	11.2	1.0	-	4.0	11.2	5.0
5	SM-12	5 (18)*	754	60	-	8.0	-	3.0	-	11.0
Sub-total			13,347	150	26.0	111.1	10.5	187.0	36.5	298.1
6	NM-1	1 (18)	341	-	-	1.5	-	6.1	-	7.6
6	NM-2	5 (51)*	793	230	-	6.4	12.8	14.2	12.8	20.6
6	NM-3	7 (40)*	835	150	8.6	5.3	1.8	8.7	10.4	14.0
6	UM-1	10 (47)*	1,409	-	-	-	4.3	18.9	4.3	18.9
6	UM-2	6 (23)*	702	-	-	2.4	-	6.1	-	8.5
6	UM-3	7 (30)*	-	900	-	8.0	-	1.7	0	9.7

TABLE B.5.2-5 JOINT OPERATION AND MAINTENANCE SCHEDULE OF PHASE-2 (2/2)

Name of W.S.	Name of F.I.A.	No. of I.A. (T.G.)	Service Area (ha)		Canal Length of O.M. Work concerned by NIA and IA (km)			Total			
			Existing	Expansion	Main	Lateral NIA IA	Sub-lateral NIA IA		Total NIA IA		
7	NM-4	8 (56)	1,276	-	2.1	-	9.1	-	26.9	2.1	36.0
7	IM-1	7 (39)	1,059	-	-	-	12.4	-	14.8	0	27.2
7	IM-2	5 (23)*	-	680	-	-	7.0	-	6.4	0	13.4
8	NM-5	9 (56)	1,610	-	-	-	-	-	36.9	0	36.9
8	NM-6	11 (59)*	1,016	594	-	-	-	-	27.4	0	27.4
8	NM-7	3 (15)	550	-	-	-	-	-	12.5	0	12.5
9	NM-8	4 (18)	492	-	-	5.0	-	-	4.2	5.0	4.2
9	NM-9	17 (73)*	1,997	466	-	-	-	-	39.3	0	39.3
10	NM-10	9 (28)	1,091	-	-	-	-	-	26.7	0	26.7
10	NM-11	4 (19)	584	-	-	-	9.0	-	6.0	0	15.0
11	NM-12	6 (25)	891	-	2.9	-	4.6	-	9.5	2.9	14.1
11	NM-13	3 (12)	439	-	-	-	4.4	-	2.9	0	7.3
11	NM-14	10 (48)	1,430	-	-	-	7.7	-	24.2	0	31.9
12	NM-15	6 (29)	738	-	-	-	11.5	-	6.2	0	17.7
12	NM-16	9 (42)*	885	310	7.4	-	8.5	-	5.0	7.4	13.5
Sub-total		147 (751)	18,138	3,330	21.0	23.9	97.8	0	304.6	44.9	402.4
Total		240(1,227)	31,485	3,480	47.0	34.4	208.9	0	491.6	81.4	700.5

Note: * Numbers in parenthesis are estimated one compact farm per 30 ha.
 Figures in parenthesis indicate number of compact farm within the IA.

FIGURE B.5.2-1 PROPOSED ORGANIZATION OF PROJECT IMPLEMENTATION

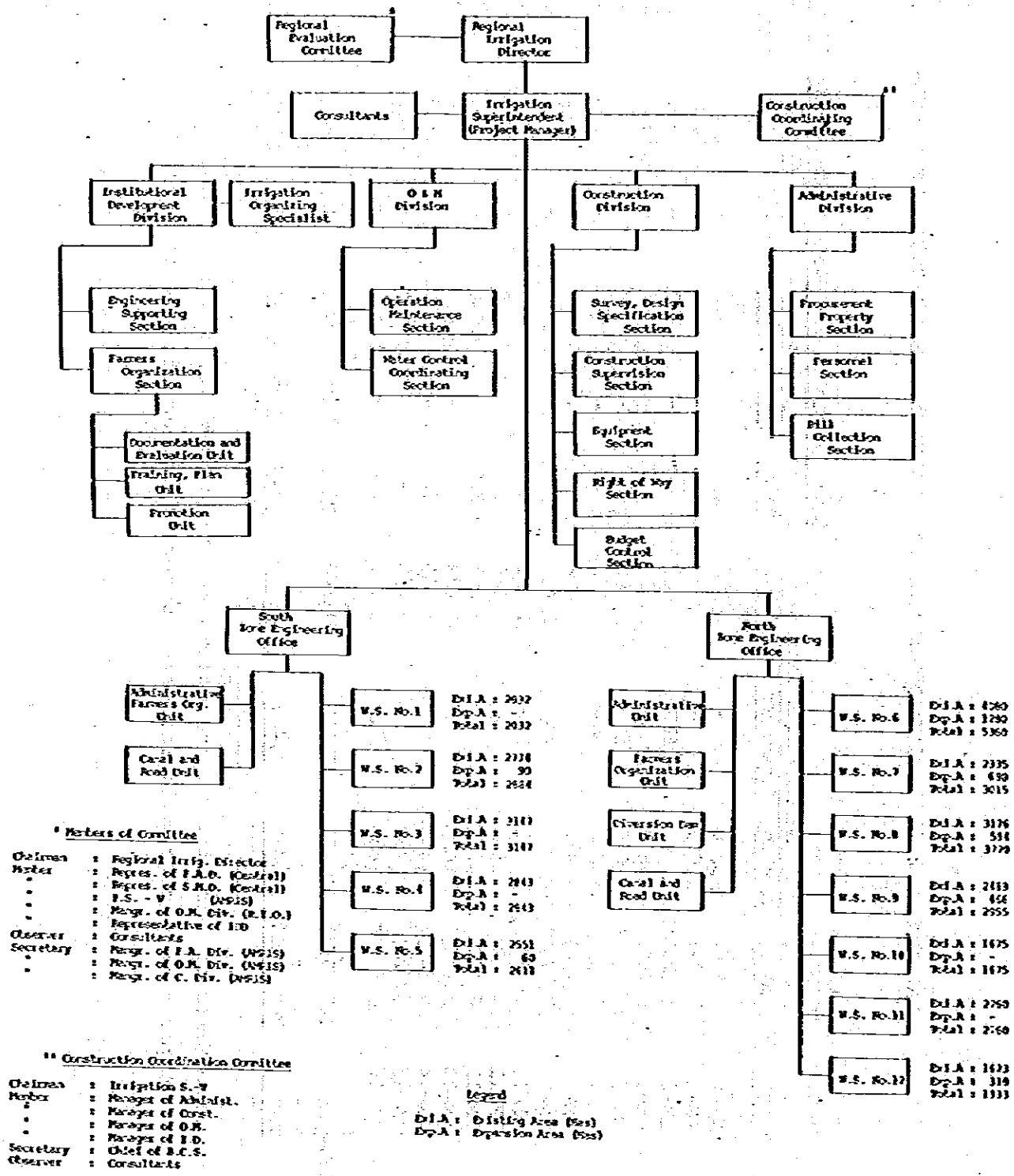


FIGURE B.5.2-2 PROPOSED ORGANIZATION OF AMRIS OFFICE

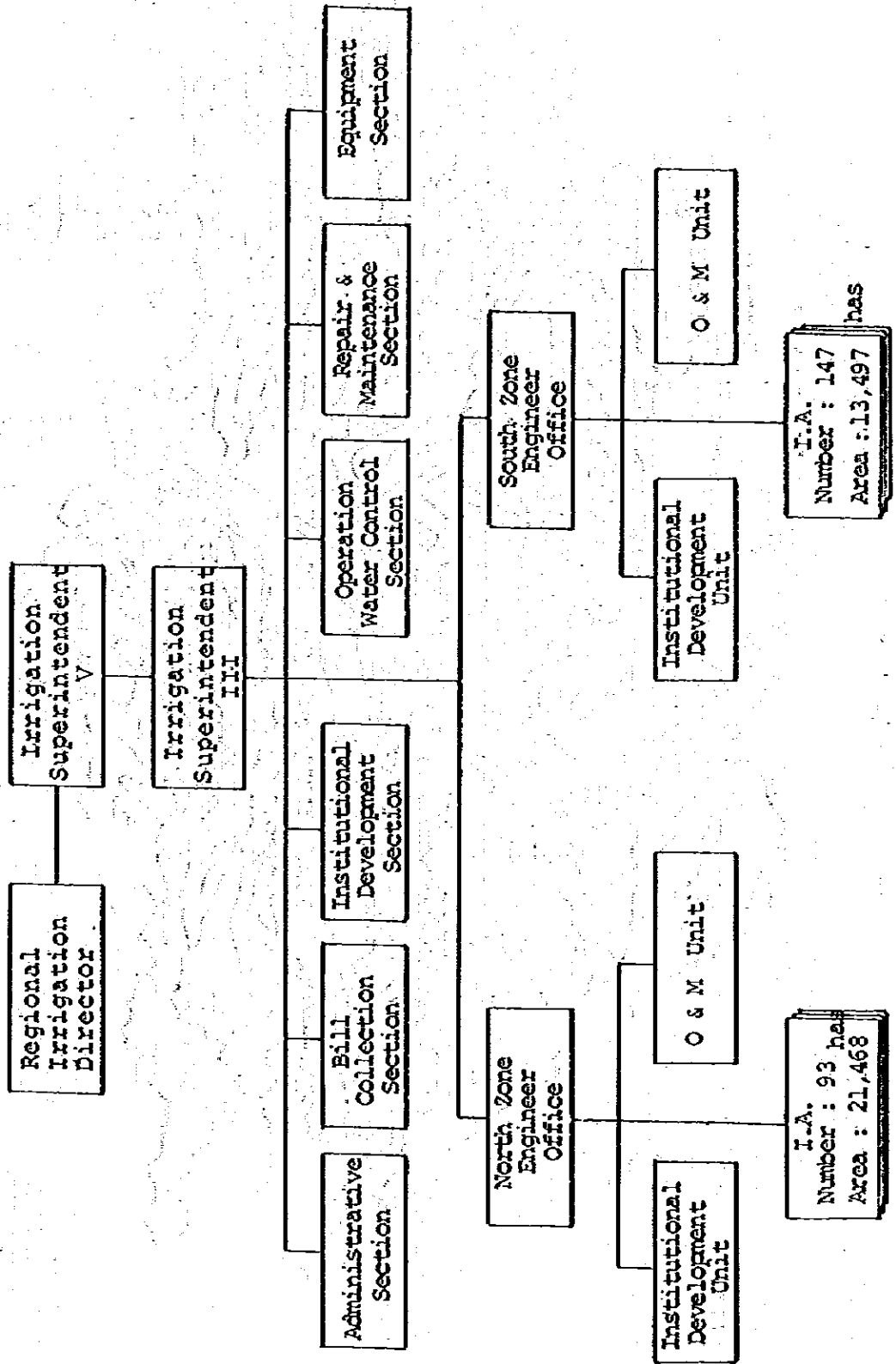
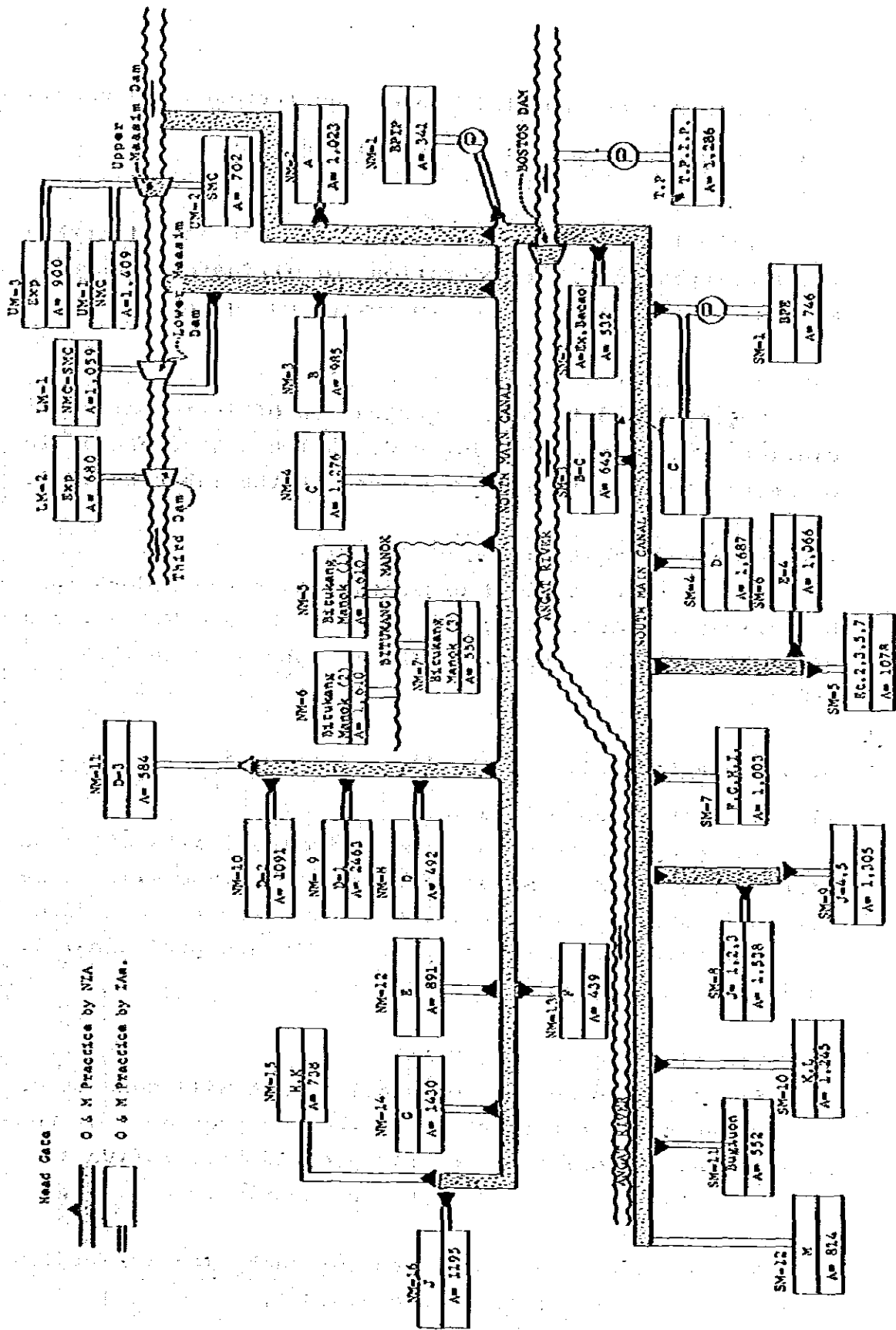


FIGURE B.5.2-4 JOINT OPERATION AND MAINTENANCE PROGRAM



5.3 Organization and Staffing of the Irrigators' Association

5.3.1 Organization of the IAs and the FIAs

(1) General

The detailed descriptions on establishment of irrigator's associations and federations of irrigator's associations are discussed in the following paragraph.

(2) Proposed Organization of the IAs.

The proposed typical organization of irrigator's association is shown in the Figure B.5.3-1 and size and scale of respective IAs is also described in the Table B.5.3-1.

(3) Proposed Organization of the FIAs

The proposed typical organization of the federation of Irrigator's Association is shown in Figure B.5.3-2 and size and scale of respective FIAs is tabulated in the Table B.5.3-2.

5.3.2 Staffing Plan of the IAs and the FIAs

(1) Staffing plan of the IAs

The proposed number of respective IAs staffs will consist of about six to seven farmers leader, who will be members of board of directors, and a few officers. The proposed staffing plans for respective IAs are preliminarily estimated in the Table B.5.3-3.

(2) Staffing Plan of the FIAs

The proposed numbers of staff of PIA will consist of six to seven IAs representatives who was president of respective IAs and officers in charge of Administrative and System Operation as illustrated in the Figure B.5.3-2.

The proposed staffing plans for each FIAs are preliminarily estimated in the Table B.5.3-4.

TABLE B.5.3-1 SIZE OF OPERATION AND MAINTENANCE BY IA

Name of W.S.	Name of F.I.A	No. of IA	No. of TG	No. of FARMER	Service Area (ha)	Length of Canal (Km)	Phase-1 (1/2)			
							Unit Canal Length (Km)	Unit Service Area	I.A. T.G.	
1	SM-1	5	34	728	746	19.0	3.8	0.56	149	22
1	TP	9	70	1,351	1,286	17.2	1.9	0.25	143	18
2	SM-2	4	24	592	532	12.7	3.2	0.53	133	22
2	SM-3	5	17	504	645	13.1	2.6	0.77	129	38
2	SM-4	12	43	1,336	1,687	14.0	1.2	0.33	133	37
3	SM-5	7	34	953	1,078	19.7	2.8	0.58	154	32
3	SM-6	9	36	827	1,066	14.6	1.6	0.41	118	30
3	SM-7	8	32	813	1,003	14.7	1.8	0.46	125	31
4	SM-8	10	53	1,220	1,538	19.0	1.9	0.36	154	29
4	SM-9	8	54	1,036	1,305	11.4	1.4	0.21	163	24
5	SM-10	9	39	916	1,245	12.7	1.4	0.33	138	32
5	SM-11	2	22	507	552	4.0	2.0	0.18	276	25
5	SM-12	5	18	558	814	6.5	1.3	0.36	151	42
	Sub-total (13)	93	476	11,341	13,497	178.6	1.9	0.38	144	28
6	NM-1	1	18	232	341	5.4	5.4	0.30	341	19
6	NM-2	5	51	766	1,023	3.6	0.7	0.07	159	16
6	NM-3	7	40	738	985	10.3	1.5	0.26	119	21
6	UM-1	10	47	812	1,409	12.2	1.2	0.26	141	30
6	UM-2	6	23	712	702	5.0	0.8	0.22	117	31

TABLE B.5.3-1 SIZE OF OPERATION AND MAINTENANCE BY IA

Name of W.S.	Name of F.I.A.	No. of IA	No. of TG	No. of FARMER	Service Area (ha)	Length of Canal (Km)	Phase-1 (2/2)		Unit Service Area	
							Unit Canal Length (Km)	Unit Service Area		
							S.L.G.	T.G.	I.A.	T.G.
6	UM-3	7	30	260	900	1.7	0.2	0.06	129	30
7	NM-4	8	56	1,016	1,276	28.5	3.6	0.51	160	23
7	LM-1	7	39	533	1,059	19.2	2.7	0.49	151	27
7	LM-2	5	23	220	680	6.4	1.3	0.28	138	30
8	NM-5	9	56	970	1,610	36.9	4.1	0.66	179	29
8	NM-6	11	59	726	1,610	15.4	1.4	0.26	147	27
8	NM-7	3	15	294	550	12.5	4.2	0.83	183	37
9	NM-8	4	18	337	492	5.2	1.3	0.29	123	27
9	NM-9	17	73	1,561	2,463	16.3	1.0	0.22	145	34
10	NM-10	9	28	504	1,091	23.2	2.6	0.83	121	39
10	NM-11	4	19	412	584	12.5	3.1	0.66	146	31
11	NM-12	6	25	515	891	8.6	1.4	0.34	149	36
11	NM-13	3	12	272	439	3.3	1.1	0.28	146	37
11	NM-14	10	48	936	1,430	24.4	2.4	0.51	143	30
12	NM-15	6	29	684	738	0.7	0.1	0.02	123	25
12	NM-16	9	42	715	1,195	13.5	1.5	0.32	133	28
Sub-total (21)		147	751	13,215	21,468	264.8	1.8	0.35	146	29
Total (24)		240	1,227	24,556	34,965	443.4	1.95	0.36	146	28

TABLE B-5.3-2 SIZE OF OPERATION AND MAINTENANCE BY IA OR FIA

W.S.	Name of FIA	No. of IA	No. of T.G.	Service Area (ha)	Length of Canal (ha)	Unit Canal Length (km)		Phase-2 Unit Service Area	
						FIA	IAS	IAS	T.G.
1	SM-1	5	34	746	31.5	6.3	0.93	149	22
1	TP	9	70	1,286	39.2	4.3	0.56	143	18
2	SM-2	4	24	532	12.7	3.2	0.53	133	22
2	SM-3	5	17	645	13.1	2.6	0.77	129	38
2	SM-4	12	43	1,687	32.0	2.7	0.74	133	37
3	SM-5	7	34	1,078	29.2	4.2	0.86	154	32
3	SM-6	9	36	1,066	24.6	2.7	0.68	118	30
3	SM-7	8	32	1,003	20.7	2.6	0.65	125	31
4	SM-8	10	53	1,538	25.0	2.5	0.47	154	29
4	SM-9	8	54	1,305	27.4	3.4	0.51	163	24
5	SM-10	9	39	1,245	26.7	3.0	0.68	136	32
5	SM-11	2	22	552	5.0	2.5	0.23	276	25
5	SM-12	5	18	814	11.0	2.2	0.61	151	42
<u>Sub-total (13)</u>						<u>22.9</u>	<u>0.63</u>	<u>144</u>	<u>28</u>
6	NM-1	1	18	341	5.4	5.4	0.30	341	19
6	NM-2	5	51	1,023	20.6	4.1	0.40	159	16
6	NM-3	7	40	985	14.0	2.0	0.35	119	21
6	UM-1	10	47	1,409	17.5	1.8	0.37	141	30
6	UM-2	6	23	702	8.5	1.4	0.37	117	31

TABLE B.5.3-2 SIZE OF OPERATION AND MAINTENANCE BY IA OR FIA

Name of W.S.	Name of IA	No. of		Service Area (ha)	Length of Canal (Km)	Phase-2		Unit Service Area	
		S.L.G	T.G			FIA	S.L.G	T.G	S.L.G
6	UM-3	7	30	900	9.7	1.4	0.32	129	30
7	NM-4	8	56	1,276	36.0	4.5	0.64	160	23
7	IM-1	7	39	1,059	27.2	3.9	0.70	151	27
7	IM-2	5	23	680	13.4	2.7	0.58	138	30
8	NM-5	9	56	1,610	36.9	4.1	0.66	179	29
8	NM-6	11	59	1,610	27.4	2.5	0.46	147	27
8	NM-7	3	15	550	12.5	4.2	0.83	183	37
9	NM-8	4	18	492	4.2	1.1	0.23	123	27
9	NM-9	17	73	2,463	39.3	2.3	0.54	145	34
10	NM-10	9	28	1,091	26.7	3.0	0.95	121	39
10	NM-11	4	19	584	15.0	3.8	0.79	146	31
11	NM-12	6	25	891	14.1	2.4	0.56	149	36
11	NM-13	3	12	439	7.3	2.4	0.61	146	37
11	NM-14	10	48	1,430	31.9	3.2	0.66	143	30
12	NM-15	6	29	738	17.7	3.0	0.61	123	25
12	NM-16	9	42	1,195	13.5	1.5	0.32	133	28
Sub-total (21)		147	751	21,468	398.8	19.0	0.53	146	29
Total (34)		240	1,227	34,965	696.9	2.9	0.57	146	28

TABLE B.5.3-3 STAFFING PLAN FOR I.A. (PHASE-1)

W.S	Zone of FIA	I.A & T.G.		Number of Staff						
		No. of I.A.	No. of T.G.	President	Vice President	Auditor	Clerical Staff	Leader of T.G.	Foreman	Total
I	SM-1	5	34	5	5	5	10	34	75	134
	T.P	9	70	9	9	9	18	70	129	244
	SM-2	4	24	4	4	4	8	24	53	97
II	SM-3	5	17	5	5	5	10	17	65	107
	SM-4	12	43	12	12	12	24	43	169	272
III	SM-5	7	34	7	7	7	14	34	108	177
	SM-6	9	36	9	9	9	18	36	107	188
	SM-7	8	32	8	8	8	16	32	100	172
IV	SM-8	10	53	10	10	10	20	53	154	257
	SM-9	8	54	8	8	8	16	54	130	224
	SM-10	9	39	9	9	9	18	39	124	208
V	SM-11	2	22	2	2	2	4	22	55	87
	SM-12	5	18	5	5	5	10	18	81	124
Sub-total		93	476	93	93	93	186	476	1,350	2,291
VI	NA-1	1	18	1	1	1	2	18	34	57
	NA-2	5	51	5	5	5	10	51	102	178
	NA-3	7	40	7	7	7	14	40	99	174
	NA-1	10	47	11	11	11	22	47	141	243
	NA-2	6	23	6	6	6	12	23	70	123
	NA-3	7	30	7	7	7	14	30	90	155
	NA-4	8	56	7	7	7	14	56	128	219
VII	NA-1	7	39	7	7	7	14	39	106	180
	NA-2	5	23	5	5	5	10	23	68	116
VIII	NA-5	9	56	9	9	9	18	56	161	262
	NA-6	11	59	13	13	13	26	59	161	285
	NA-7	3	15	3	3	3	6	15	55	85
IX	NA-8	4	18	4	4	4	8	18	49	87
	NA-9	17	73	17	17	17	34	73	246	404
X	NA-10	9	28	9	9	9	18	28	109	182
	NA-11	4	19	4	4	4	8	19	58	97
XI	NA-12	6	25	6	6	6	12	25	89	144
	NA-13	3	12	3	3	3	6	12	44	71
	NA-14	10	48	10	10	10	20	48	143	241
	NA-15	6	29	6	6	6	12	29	74	133
	NA-16	9	42	9	9	9	18	42	120	207
Sub-total		147	751	147	147	147	294	751	2,147	3,633
Total		240	1,227	240	240	240	480	1,227	3,497	5,924

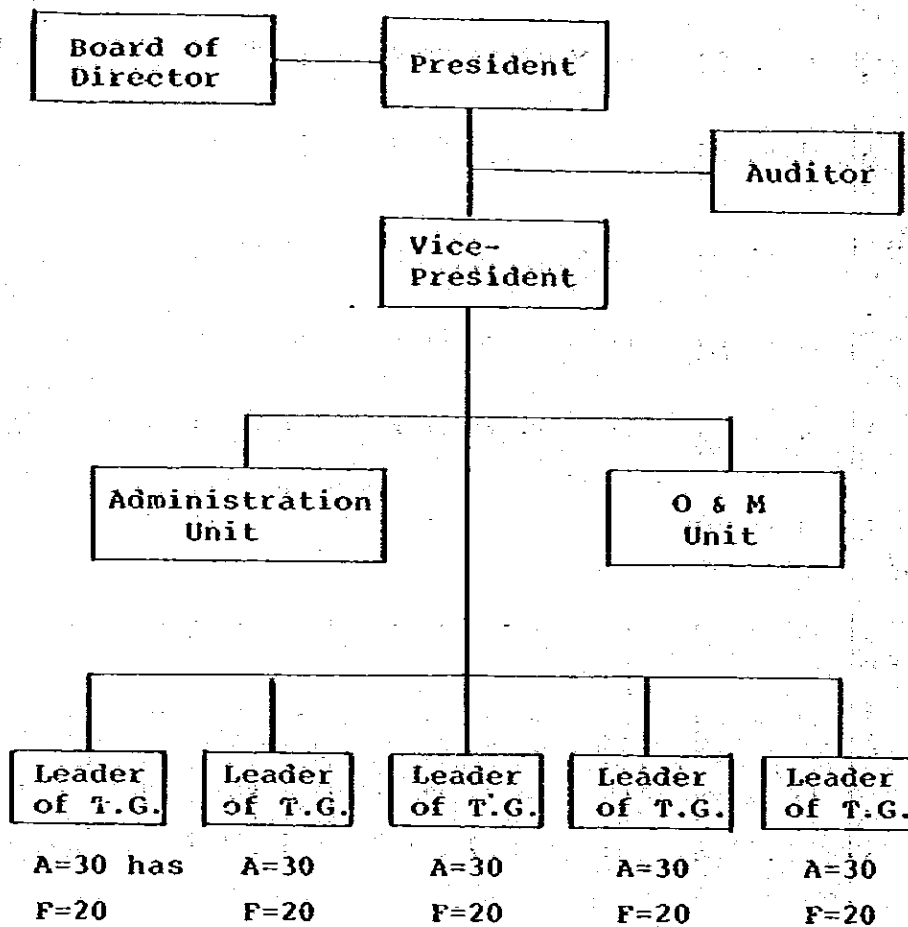
TABLE B.5.3-4 STAFFING PLAN FOR F.I.A. (PHASE-2) 1/2

Name of I.A.	Service Area (ha)		Vice Pres			I.A. Office			Group			Grand Total	
	Existing	Expansion	Total	Pres	Audi-	Head	Staff (A)	Staff (B)	Total	L.S.	L.T.G.		Total
North Zone													
NM-1	341	-	341	1	1	2	1	0	6	1	18	19	25
-2	793	230	1,023	1	1	2	3	1	9	5	51	56	65
-3	835	150	985	1	1	2	2	1	8	7	40	47	55
UM-1	1,409	-	1,409	1	1	2	3	1	9	11	47	58	67
-2	702	-	702	1	1	2	2	1	8	6	23	29	37
-3	-	900	900	1	1	2	2	1	8	7	30	37	45
NM-4	1,276	-	1,276	1	1	2	3	1	9	7	56	63	72
IX-1	1,059	-	1,059	1	1	2	3	1	9	7	39	46	55
-2	-	680	680	1	1	2	2	1	8	5	23	28	36
NM-5	1,610	-	1,610	1	1	2	4	1	10	9	56	65	75
-6	1,016	594	1,610	1	1	2	4	1	10	11	59	70	80
-7	550	-	550	1	1	2	2	1	8	3	15	18	26
-8	492	-	492	1	1	2	1	0	6	4	18	22	28
-9	1,997	466	2,463	1	1	2	4	1	10	17	73	90	100
-10	1,091	-	1,091	1	1	2	3	1	9	9	28	37	46
-11	584	-	584	1	1	2	2	1	8	4	19	23	31
-12	891	-	891	1	1	2	2	1	8	6	25	31	39
-13	439	-	439	1	1	2	1	0	6	3	12	15	21
-14	1,430	-	1,430	1	1	2	3	1	9	10	48	58	67

TABLE B.5.3-4 STAFFING PLAN FOR F.I.A. (PHASE-2)

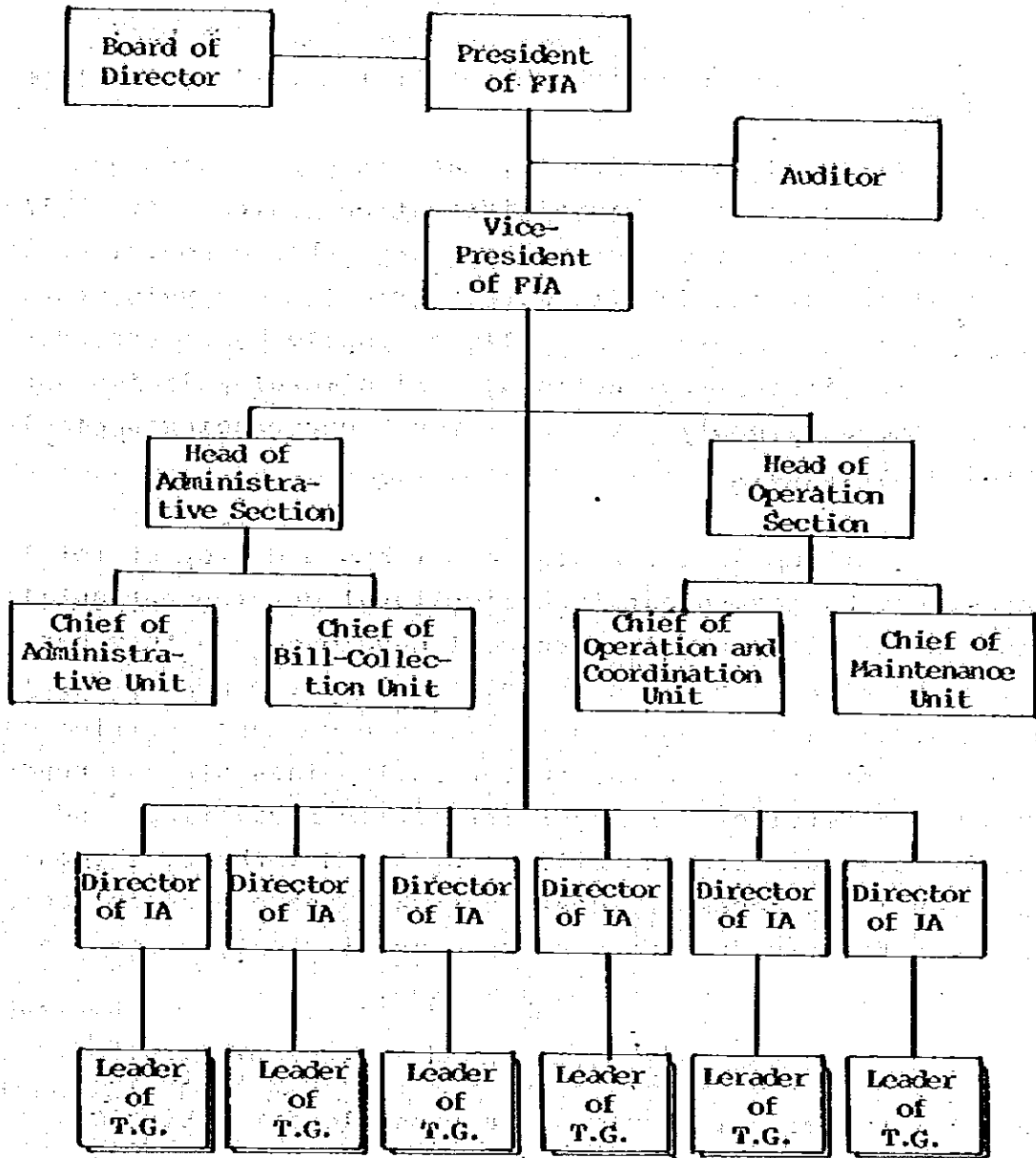
Name of I.A.	Service Area (ha)		I.A. Office				Group		Grand Total					
	Existing	Expansion	Total	Pres	Vice Pres	Audi- tor	Head	Staff (A)		Staff (B)	Total	I.S. L.G	L.T.G	Total
NM-15	738	-	738	1	1	1	2	2	1	8	6	29	35	43
NM-16	885	310	1,195	1	1	1	2	3	1	9	9	42	51	60
<u>Sub-total</u>	<u>18,138</u>	<u>3,330</u>	<u>21,468</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>42</u>	<u>52</u>	<u>18</u>	<u>175</u>	<u>147</u>	<u>751</u>	<u>898</u>	<u>1,073</u>
South Zone														
SM-1	746	-	746	1	1	1	2	2	1	8	5	34	39	47
-2	532	-	532	1	1	1	2	2	1	8	4	24	28	36
-3	645	-	645	1	1	1	2	2	1	8	5	17	22	30
-4	1,597	90	1,687	1	1	1	2	4	1	10	12	43	55	65
-5	1,078	-	1,078	1	1	1	2	3	1	9	7	34	41	50
-6	1,066	-	1,066	1	1	1	2	3	1	9	9	36	45	54
-7	1,003	-	1,003	1	1	1	2	3	1	9	8	32	40	49
-8	1,538	-	1,538	1	1	1	2	4	1	10	10	53	63	73
-9	1,305	-	1,305	1	1	1	2	3	1	9	8	54	62	71
-10	1,245	-	1,245	1	1	1	2	3	1	9	9	39	48	57
-11	552	-	552	1	1	1	2	2	1	8	2	22	24	32
-12	754	60	814	1	1	1	2	2	1	8	5	18	23	31
TP	1,286	-	1,286	1	1	1	2	3	1	9	9	70	79	88
<u>Sub-total</u>	<u>13,347</u>	<u>150</u>	<u>13,497</u>	<u>13</u>	<u>13</u>	<u>13</u>	<u>26</u>	<u>36</u>	<u>13</u>	<u>114</u>	<u>93</u>	<u>476</u>	<u>569</u>	<u>683</u>
<u>Total</u>	<u>31,485</u>	<u>3,480</u>	<u>34,965</u>	<u>34</u>	<u>34</u>	<u>34</u>	<u>68</u>	<u>88</u>	<u>31</u>	<u>289</u>	<u>240</u>	<u>1,227</u>	<u>1,467</u>	<u>1,756</u>

FIGURE B.5.3-1 ORGANIZATION CHART OF IRRIGATORS' ASSOCIATION



Note: A: Service Area (has)
F: Number of Farmers

FIGURE B.5.3-2 ORGANIZATION CHART OF FIA



Note: IA: Irrigator's Association
 (Sub-lateral level)
 TG: Terminal Group