

**Japan International Cooperation Agency(JICA)
National Irrigation Administration (NIA)
The Republic of the Philippines**

**THE STUDY
ON
THE IRRIGATORS ASSOCIATION STRENGTHENING PROJECT
IN
NATIONAL IRRIGATION SYSTEMS**

ANNEX

July 2003

**Nippon Koei Co., Ltd.
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ANNEX 1

POLICY FRAMEWORK ON NIS-IA STRENGTHENING

**THE STUDY
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ANNEX 1

POLICY FRAMEWORK ON NIS-IA STRENGTHENING

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ANNEX 1 POLICY FRAMEWORK ON NIS-IA STRENGTHENING

1. Overall Policy and NIA's Mission

NIA's mission, as a government corporate entity, directly placed under the administrative supervision of the Department of Agriculture (DA) is essentially to provide irrigation through sustainable development of the country's water resources. It is a service institution catering to the needs of no less than 2 million farmers in lowland irrigated areas. There are currently about 3.12 million hectares of potential irrigable area, 43% of which or roughly 1.34 million hectares are irrigated. The irrigated areas comprise around 689,010 hectares of national irrigation systems (NISs), 486,000 hectares of communal irrigation systems (CISs), and 174,000 hectares of private irrigation systems (PISs).

Under the Agriculture and Fisheries Modernization Act (AFMA), the task of developing the remaining potential irrigable lands and maintaining existing irrigation systems has been clearly delineated among NIA, the local government units (LGUs) and irrigators associations (IAs). NIA's work is focused on NISs, with the exception of some selected and donor-assisted CISs. While CIS is taken away from NIA, this will not diminish the premier role of the agency in irrigation and water resource development, however. NIA is mandated to continue providing technical support to the LGUs in planning, construction, design and institutional aspects.

Basic policies explicit in the AFMA with respect to the development of NISs are: (a) to generate additional irrigated areas, either through construction or rehabilitation; (b) to gradually transfer the operation and maintenance of national systems, notably secondary laterals and other tertiary facilities to IAs; and (c) to review and recommend reasonable irrigation service fee (ISF) to cover the cost of its operations and maintenance of the systems.

2. NIA's Streamlining Plan

NIA released the latest version of its streamlining plan in January 2002, borne out of the recommendations of the JICA-funded Study on the Strengthening of NIA's Management System completed in October 2001. The streamlining plan essentially adopted the structural recommendations of the JICA-funded study, on: (a) the consolidation of regional offices from 13 regional and 2 operations offices (MRIIS and UPRIIS) to six (6) area operations offices; and (b) the merging of provincial irrigation office (PIO) with national irrigation systems office (NISO) into the irrigation management office (IMO) at field level. A comparative analysis of the

organizational features between the streamlining plan and the JICA-funded study is given in Table 2.1.

The Department of Budget and Management (DBM) has completed evaluation of NIA's streamlining plan and recommendation, and is waiting for the issuance of an Executive Order by the President of the Philippines, subject to the Congressional deliberation and approval. While, a committee chaired by the Deputy Administrator is also preparing the guidelines for the reorganization. NEDA is closely monitoring the reorganization as this will have an impact on the processing of future NIA.

3. Irrigation Management Transfer

IMT in national irrigation system as currently being implemented considers the transfer only of the *management* of the system's secondary facilities and does not allow for the wholesale transfer of the *assets* to the IAs.

IMT or joint system management (JSM) issued under some of the NISs under IOSP II, WRDP and ISIP II funded by the WB and ADB, respectively integrated maintenance and collection of ISF into a single contract, a sort of a management obligation similar to combined Type I and II, and thus substantially not different, except in the compensation mode.¹

NIA compensates the IAs for services rendered either in cash (canal clearing) or allocation from ISF collection. The rates are fixed for Type I and II contracts.² In the case of the existing IMT/JSM contracts, the sharing from ISF collection between NIA and IA varies from one (1) system to another, either at 50%-50%, 40%-60%, or 30%-70%. The bigger share can either go to NIA or IA depending on the extent of obligation between each party, and expected productivity. The IAs are obliged to do minor repairs of canals using their share from ISF, unlike in Type I where the concerned IA is paid by NIA for canal clearing.

NIA has not articulated a vigorous policy on IMT. The draft policies and guidelines as shown in Table 3.1 are generally inadequate in terms of: (a) delegation of

¹ IMT is a generic term being used by NIA to describe its participatory approach to O& M of NIS. It is generally a transfer of the management of the O&M of NIS secondary canals and tertiary facilities to IAs. The JSM has the same meaning as IMT; NIA uses IMT to differentiate it from other forms of turn-over programs. Thus even prior to AFMA, NIA has in fact implementing various forms of IMT such broadly termed as MTP in the form of "stage" or "type" contract. NIA implements Type I, II, and III contracts as part of irrigation management transfer program. Type I is canal clearing, Type II is ISF collection and Type III is full turn over, including the assets. These contracts are still being implemented in the absence of a concrete IMT policy. Type III is very rare because of AFMA.

² A brief review and progress of IMT is presented in Chapter 3, on The JICA-Study on Strengthening of NIA's Management System, Final Report, Vol. I, October 2001.

adequate authority (ownership) to the IAs; (b) sufficient mutual accountability between NIA and IA; and (c) adequate incentives to develop self-reliant IAs. NIA will retain greater *de facto* control. NIA should explore all the legal means to have a clear-cut IMT policy given its reduced financial support from the national government. A case in point is the on-going ADB-assisted Southern Philippines Irrigation Sector Project (SPISP) where ownership of the irrigation facilities will be transferred to the IAs. Drawing from its experience in CISs, SPISP, and few Type III contracts, where IAs have complete control over the facilities, NIA can similarly prepare a unified policy for the remaining NISs.

4. Issues, Recommendation and Lessons Learned

The following are summary of issues, recommendations and lessons learned extracted from available project documents.

4.1 Active Participation of IAs

The active participation of IAs has been proven essential in the entire spectrum of rehabilitation works, beginning from planning to execution. Conscientious implementation and assurance of sustainability have been documented in past projects involving full participation of IAs. In this context, capacity development of IAs and provision of effective tools for IA participation are required.

The link to this success is IDOs who constantly provide coaching and technical support to IAs. Recently, however, IDOs have been terminated at NISO due to funding problem, borne out of the termination of O&M subsidy to NIA. To resolve this problem, redeployment of existing IDOs from other NISO and RIOs is being suggested.

4.2 O&M cost

O&M cost can be significantly reduced through: (a) improved structures; and (b) rationalization of systems management. One of the important considerations to effect this change is to replace the current NIA's ISF billing system from retail to wholesale approach. Direct billing to IAs is suggested to replace the current and costly practice of collecting ISF from individual farmers (water retailing).

4.3 IMT

In promoting the IMT, staff redundancy in the field office is a serious issue. The responsibility of the NISO is reduced from O&M of the system to only monitoring the IA on O&M activities. Therefore, adequate financing for early retirements is indispensable to implement the IMT.

The elimination of direct and indirect O&M subsidies to NIA should follow the NIA's downsizing. After completion of rehabilitation works and IMT, the subsidies for O&M are not necessary. NIA and IA should generate their O&M cost from collection of fees from the beneficiaries.

For the implementation of the IMT, the IMT contract needs further refinement, since it does not have a self-sustaining mechanism to ensure proper O&M by the IAs, and the sharing of ISF is still fraught with problems. Although the IAs has autonomy on O&M of irrigation system with some fund from sharing of ISF, dependency of the IAs on NIA remains. Therefore, an earmarked O&M fund from the ISF share of the IAs and a trust fund, consisting of farmer's equity paid for systems improvement under IOSP II and WRDP, were proposed. And ISF sharing system has a drawback. The IAs frequently complain of late remittance of their share by NIA. Provision to farmers the option of continuing ISF sharing or fixed payment in cavans/ha or based on volume of water supplied by NIA are recommended.

Table 2.1 Comparative Features of NIAs Streamlining Plan

Item	JICA Study Team/ ²	NIA's Proposal/ ^{**4}	Remarks
1 Hierarchy			
1.1 Central	1.1 Central Office (CO)	1.1 Central Office	1. In terms of hierarchy and/or spatial delineation of offices, the JICA proposal has only a single organic body per office. The NIA proposal retained two offices at the field, that of the IMO (the old PIO) and the NISO.
1.2 Region	1.2 Area Irrigation Operations Office (AIOO)	1.2 Area Irrigation Office (AIO)	
1.3 Field	1.3 Provincial Irrigation Management Office (PIMO)	1.3 Irrigation Management Office/ National Irrigation Systems office (IMO/NISO)	
2 Functions & Mandate			
2.1 Central Office	2.1 Planning and policy, engineering support and monitoring.	2.1 Planning and policy, project development, implementation, systems operation and institutional development	2. The JICA proposal is clear in the delineation of functions among the 3 offices. The JICA proposal devolved project development and implementation to the region and O & M to the field offices. The NIA proposal retained project development and implementation and systems O & M support at the CO. Full devolution and decentralization is absent in NIA proposal.
2.2 Regional Office	2.2 Project development and implementation	2.2 Project implementation	
2.3 Field Office	2.3 Systems operation and maintenance	2.3 Systems operation and maintenance	
3 Organization Structure			
3.1 Central Office	3.1 2 sectors and 3 service offices. Sector Offices: Planning and Monitoring Finance and Management Service Offices: Legal Service Internal Audit Service Public Affairs & Information	3.1 2 sectors and 3 service offices Sector Offices: Engineering & Operations Finance and Administrative Service Offices: Legal Service Corplan and Public Affairs Internal Audit Service	3.1 Both proposals have the same number of sector and service offices at the CO. Organizationally, however, the sector offices are different. The NIA proposal retained the old set-up through mergers of departments with minimal consideration of devolution and decentralization policies. The JICA's proposed structure for the sector offices recognized these policies as inevitable considerations to limit the functions of the CO and give greater autonomy to the region and field offices.
3.2 Regional Office	3.2 3 divisions and one support unit for AIOO Divisions: Engineering Operations Support Finance and Administrative Support : Planning and Monitoring Unit	3.2 3 divisions for AIO Divisions : Engineering Operations and Institutional Devt. Finance and Administrative	
3.3 Field Office	3.3 3 sections for PIMO and separate PMO for new projects PIMO Sections: Operations Engineering & Maintenance Finance and Administrative PMO: Programming & Monitoring & Eval Contract Management Project Preparation & Coord. Administrative and Finance Dam and Reservoir Centralized administrative and dam and watershed management as two separate sections. Dam section has electrical/mechanical and maintenance units. The watershed management section has maintenance unit	3.3 2 sections for IMO/NISO and implicitly new PMO for new projects Sections: Operations and Maintenance Administrative and Finance Dam and Reservoir 4 sections : Watershed Electrical & Mechanical Instrumentation Administrative & Finance	
3.3 Field Office			3.3 The NIA proposal differs significantly from the JICA proposal. The JICA proposal considered the PIMO as the organic structure for merged PIO and NISO as well as the district offices under MARIIS and UPRIS. The district offices will adopt the PIMO structure. NIA's IMO and NISO will co-exist at the field with the latter office under the IMO. Merging and/or integration is not absolute. Organization for dam and reservoir offices (for UPRIS and MARIIS) equivalent to PIMO/IMO are different. The JICA proposal considered functional integration with support units to each function, while NIA proposal considered sectoral organization.
4 Number and geographic groupings of Regional offices	4 Six (6) AIOOs delineated as follows: a) Northern Luzon AIOO-Regions 1, 2, CAR and MRIIS b) Central Luzon AIOO- Regions 3 and UPRIS c) Southern Luzon AIOO- Regions 4 and 5 d) Visayas AIOO- Regions 6,7, and 8 e) Eastern Mindanao AIOO- Regions 10, 11 & 13 f) Western Mindanao AIOO- Regions 9&12	4 Six (6) AIOs delineated as follows: a) Northern Luzon AIO - Regions 1,2, CAR and MRIIS b) Central Luzon AIO - Region 3 and UPRIS c) Southern Luzon AIO - Regions 4 and 5 d) Visayas AIO - Regions 6, 7, and 8 e) Eastern Mindanao AIOO- Regions 10, 11 & 13 f) Western Mindanao AIO - Regions 9 & 12	4 NIA proposal adopted the JICA's Study Team proposed regional integration and grouping.
5 Number of Manpower/Positions			
5.1 Central Office	5.1 320	5.1 450	5.1 The JICA estimates are based on full devolution and decentralization of CO functions on project development and implementation to the region, hence fewer personnel are required compared to NIA's estimates.
5.2 Regional Office	5.2 640	5.2 622	
5.3 Field Office	5.3 3340	5.3 3921	
	Total = 4300	Total =4993	
			5.2 The JICA and NIA estimates do not differ significantly as the structure in the regions are similar.
			5.3 The JICA estimates assume that there is only a PIMO at the field office and that IMT will be fully implemented. The NIA estimates still consider the existence of the IMO, the old PIO and the NISO. In effect, the NIA will retain its people both at the provincial and systems offices.
6 Retirement package	6 Multiplier coefficient of 1.5, 2 and 2.5 for every year of service depending on length of service for retirement gratuity.	6 Same as JICA proposal	

* The Strengthening of NIA's Management System, October 2001

** NIA's Streamlining Plan, January 2002

Table 3.1 Draft Policies and Guidelines on Irrigation Management Transfer

I. LEGAL BASIS

Under Section 30 of the Agriculture and Fisheries Modernization Act (AFMA), Republic Act 8435, enacted in 1997, the National Irrigation Administration (NIA) is mandated to gradually transfer the operation and maintenance (O&M) of secondary canals and the farm facilities of all national irrigation systems (NISs) to the Irrigators Associations (IAs). This is a reiteration of the authority of the NIA to delegate the full or partial management of NISs to duly organized cooperatives or farmer organizations under such terms and conditions which the NIA Board of Directors may impose (1974 amended corporate charter, PD 552).

II. GENERAL POLICIES

A. Program Scope

- a. All National Irrigation Systems
- b. All National Irrigation Projects

B. Policy Statements

a. O&M Contracts

- a.1 Transition: Existing O&M Contracts (Types/Stages I and II) shall be transformed into Joint System Management contracts. All new O&M contracts shall be in the JSM format.
- a.2 Long-term: After the IA Federation has proven sufficient O&M capability, the JSM contract shall be elevated to full management of the entire or part of the irrigation system.

a.3 Contract Area:

Service Area (ha)	Number of Contract
Below 1000	1
1,001-3000	1-3
3001-6000	2-6
Above 6000	1/1000-1500ha

a.4 IA Membership prior to Contract Signing

- a.4.1 Joint System Management 85%
- a.4.2 Full System Management 100%

a.5 Internal IA Federation Agreements: In case the IA Federation is the contracting party, before the MOA signing the individual members-IA should have formal agreements with the federation as regards their individual and collective O&M responsibilities, ISF collection and sharing, resource mobilization and arrangements for capital build-up for system maintenance.

a.6 Transfer of NIA Documents: All required documents for O&M (copies of irrigation fee registers (IFRs), parcellary maps, masterlist of farmers, etc. must be turned over by NIA to the IA/IA Federation upon signing of the contract.

a.7 NIA staffing after Contract Signing: NIA personnel to be retained after contract signing shall be agreed upon by the NIA and the IA/IA federation.

Table 3.1 Draft Policies and Guidelines on Irrigation Management Transfer

a.8	<p>Compensation for Displaced NIA staff: All affected/displaced NIA staff shall be compensated in accordance with policies approved for this purpose.</p> <p>All foreign-assisted projects shall allocate funds for the compensation of IMT-affected/displaced NIA staff in NIS covered by the project.</p>									
a.9	<p>Training</p> <p>a.9.1 All IA/IA federation officers and members must be provided with appropriate training to develop their skills I managing the irrigation system.</p> <p>a.9.2 All NIA staff retained after the contract signing must be trained on the provision of technical assistance to and in monitoring and</p>									
a.10	<p>Seed Fund</p> <p>If necessary, the NIA shall provide the IA/IA federation seed fund for its initial operation subject for repayment based on terms and conditions agreed upon by both parties.</p>									
b.	<p>System Improvement/Rehabilitation</p> <p>b.1 Fund Allocation: NIS undergoing IMT implementation shall be given priority in the annual allocation of funds for system improvement/rehabilitation.</p> <p>b.2 Participatory Rehabilitation</p> <p>b.2.1 IAs must be involved in the identification, planning and implementation of repair/rehabilitation works in accordance with the Memorandum of Understanding (MOU) between NIA and the IAs.</p> <p>b.2.2 Program of work (POW) for repair/rehabilitation must be conformed by the IAs</p> <p>b.2.3 Individual IA-members to be hired during the rehabilitation should be required to contribute a share to the IA capital build-up.</p>									
C.	<p>FUNDING SOURCE</p>									
c.1	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">NIPs</td> <td style="width: 10%; text-align: center;">-</td> <td style="width: 40%;">Project funds</td> </tr> <tr> <td>Existing NIS without external</td> <td></td> <td></td> </tr> <tr> <td>Funding source</td> <td style="text-align: center;">-</td> <td>Annual GAA-AIDP</td> </tr> </table>	NIPs	-	Project funds	Existing NIS without external			Funding source	-	Annual GAA-AIDP
NIPs	-	Project funds								
Existing NIS without external										
Funding source	-	Annual GAA-AIDP								

Source: Institutional Development Department
National Irrigation Administration, June 2002

ANNEX 2

NIA's STUDIES AND PROJECTS (OUTLINE OF MAJOR ON-GOING AND IMPLEMENTED STUDIES AND PROJECTS)

**THE STUDY
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ANNEX 2

**NIA's STUDIES AND PROJECTS (OUTLINE OF MAJOR
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ANNEX 2 NIA's STUDIES AND PROJECTS (OUTLINE OF MAJOR ON-GOING AND IMPLEMENTED STUDIES AND PROJECTS)

1. Major Development Studies and Projects

The irrigation area was officially estimated at 541,000 ha, including 217,500 ha of NISs in 1964 when NIA was then established. To date, irrigated area has grown to only 1.34 million ha or an increase of 148% over a period of 37 years. The growth has been generally slow mainly due to depleted funds and inefficient management systems of the agency. As a result of the latter problem, the JICA-assisted study on the Strengthening of NIA's Management Systems completed in 2001 recommended structural changes and several of the recommendations are now being considered by NIA.

During the periods 1970s and until the early 80s, official development assistance (ODA) in the form of technical and financial support has made remarkable expansion to the development of NISs. These included two largest multi-purpose water resources development projects, notably Upper Pampanga River Integrated Irrigation Systems (UPRIIS) started in 1970, and MRIIS started in 1976, both of which covered about 190,000 ha corresponding to 27.7 % of the current NIS service area.

In the late 1980s, however, WB and ADB changed their thrusts to finance rehabilitation projects rather than construction of new irrigation projects, mainly due to low irrigation performance of existing NISs. With this new policy, WB funded the First Irrigation Operation Support Project (IOSP-I) in 1988, and ADB similarly financed the First Irrigation Systems Improvement Project (ISIP-I) in 1990. The subsequent IOSP-II and ISIP-II focused on the achievement of sustainable O&M through the participation of beneficiaries in rehabilitation works. Both projects were also planned to accelerate IMT and/or JSM, aimed at turning over O&M of the rehabilitated irrigation system either partially or wholly to IAs.

In the latest WB-assisted WRDP, water resource management is pursued in the light of effective water use resulting ultimately in the reduction of O&M cost. On the other hand, the on-going ADB-assisted SPISP promotes the rehabilitation of NIS with service area of 3,000 ha and below, including the transfer of the facility to IAs. This practice is equivalent to CIS, where IAs are made to amortize the cost of rehabilitation. While, one of the GOJ, the largest donors to the irrigation sector in the Philippines, has been providing NIA technical and financial assistance through the Japan Bank for International Cooperation (JBIC) and JICA, and have continued

to support NIS development and capacity building of IAs, respectively in line with the government's policy on irrigation.

Clearly, the government encourages capital investment in small to medium-sized irrigation projects, and at the same time allow IAs to take an active part in O&M of the systems, as summarized in the table below.

IMT/JSM Projects and AFMA

Project (Fund) Period	Project Component	Institutional Organization of IA	ISF sharing	Turn-over Subject	Extent of Turn-over
IOSP-II (WB) 1993-2000	<ul style="list-style-type: none"> - Rehabilitation of 17 NISs - Improvement of O&M - Institutional development for NIA & IA - Agricultural support 	CIA	Variable (e.g. NIA: 50%, IA: 50%)	O&M and ISF Collection	Full and Partial turn-over of system: Secondary and tertiary
WRDP (WB) 1997-2002	<ul style="list-style-type: none"> - Improvement of water resources planning and management - Improvement of watershed management - Rehabilitation of 18 NISs - Institutional development for NIA & IA - Environmental improvement 	CIA	Variable	O&M and ISF Collection	1) Full turn-over of system less than 3,000ha: All system, 2) Progressive turn-over of O&M more than 3,000ha: Secondary and tertiary
ISIP (ADB) 1997-2004	<ul style="list-style-type: none"> - Rehabilitation of 9 NISs - Institutional development for NIA & IA - Agricultural improvement - Environmental and social improvement and monitoring 	Farmer Irrigators Service Cooperative (FISCO)	Variable	O&M and ISF Collection	Joint System Management (JSM): IA is responsible for secondary and tertiary
SPISP (ADB) 2000-2006	<ul style="list-style-type: none"> - Institutional development for NIA and LGU - Participation and transfer to IA - Construction and rehabilitation of more than 10 CISs, 10 NISs and 8 small reservoir irrigation system - Construction of access and service roads - Environmental and social measures 	IA	Full cost recovery Following CIS policy	Irrigation facility	After Interim partial transfer and joint management phase, full turn-over of system less than 3,000ha: All system
Casecnan-IC (JBIC)	<ul style="list-style-type: none"> - Development of new irrigation are of 30,500 ha - Rehabilitation of UPRIS area of 30,500 ha - Improvement of O&M - Institutional development 	COFIA (Council of Farmers Irrigation Association)	Progressive sharing scheme	Operation, Maintenance, Billing & collection of ISF	Lateral canals cover about maximum of 2,000 ha
NIA-NIS AFMA 1998 -		IA	Sharing of ISF is not specified, but shall be changed to reasonable rate	Operation, Maintenance	Secondary canal and on-farm facilities

Table 1.1 shows NIA's foreign loans and capital expenditures from 1969 to 2001 As of July 2002, there were 12 on-going foreign-assisted projects. Table 1.2 shows the

major development studies and projects implemented and implementing by NIA in recent years and each description sheet of these studies and projects is presented in Table 1.3

2. Review of Major Projects Implementation

2.1. IOSP-II

IOSP-II is a World Bank-assisted project started in 1993 and completed in 2000. The principal objective of the project is to achieve sustainable improvement in the operational efficiency of NISs and thereby increase agricultural production and small farmers' incomes, expand rural employment opportunities, and contribute to rural poverty alleviation. A distinct feature of the project is emphasis on participation of beneficiaries in identifying irrigation system improvement works, sharing in improvement costs through labor contributions, and assuming O&M for laterals and sub-laterals after completion of improvement works.

The project covered 17 NISs located nationwide with 84,200 ha of service area. The components included: 1) System improvement and repair, 2) incremental operation and maintenance, 3) institutional development, 4) agricultural support services. Total project cost was 68.86 million USD.

The project continued the institutional development efforts initiated under IOSP-I, through improvement in ISF collection process (parcellary mapping and preparation and updating of IFRs), staff training, support to IMIS, technical assistance, and provision of equipment and materials.

The project facilitated progressive turn-over of substantial portion of NISs to the IAs for O&M, so as to improve collection of ISF, and encourage membership' expansion. The institutional efforts focused on reorganization and strengthening of TSAGs, IAs, and eventually the Council of IAs (CIAs). The total area of implemented IMT, including existing Type-II and Type-III contracts as of end of 2000 was 56,594 ha or 71% of the 80,240 ha targeted IMT service area. The delayed progress of IMT was due to labor displacement of NIS field staff who were affected by the management transfer process. NIA's staff were not willing to implement IMT unless there was a guarantee for payment of early retirement.

Although the implementation of IMT was delayed, the irrigation cropping intensity of the 17 NISs increased from 149% to 167% by the end of 2000.

2.2 WRDP

WRDP is another World Bank-assisted project started in 1997. The project envisaged improvement of facilities and management of 18 NISs nationwide

covering 86,349 ha of service area. Total project cost estimated at 85.2 million USD. The project was a continuation of IOSP-II focusing on program approach to irrigation systems improvement and repair. A comprehensive approach towards sustainable improvement in operation efficiency of the NISs, and expanding into environmental and social aspects of irrigation and rural development was the major project strategy. The project components included: 1) improved water resources planning and management, 2) improved watershed management, 3) improved system of 18 NISs, repair of major structure of 8 NISs, construction of silt excluder to 5 NISs, and strengthen one (1) storage dam, 4) institutional strengthening of NIA and IAs, and 5) environmental improvement. The project involved the efforts of several agencies such as NWRB, DENR, DOH and NIA in the implementation of the components.

The project encourages turnover of O&M of laterals and sub-laterals in larger systems (service area for each of about more than 3,000 ha) and complete turn over of smaller system to the IAs. Under IMT, the IAs would manage water distribution within their jurisdiction and NIA's responsibility would be limited to supplying the required amount of water at the head of the IA's jurisdiction. To implement of wholesaling of water service, NIA would bill the IAs for water directly, rather than individual farmers.

To facilitate the IMT, a parallel program for IAs development included IA training, training of Institutional Development Officers (IDOs) and Farmer Irrigator Organizers (FIOs), consultancy for monitoring and evaluation of the IAs and for development of IA federation, and incremental operating costs. The incremental operating cost is utilized for recruitment of FIOs to non-functional IAs and for honoraria of Water Resources Facilities Technicians (WRFTs) to convert IDOs.

The project introduced a volumetric pricing in three laterals, one each in MARIIS, Sta. Maria-Mahor, and Roxas-Kuya as pilot sites. The systems have just started and are still on trial.

2.3 ISIP-II

ISIP-II is an ADB assisted project. It will rehabilitate nine (9) NISs with 13,458 ha of service area located in the province of Leyte. The project started in 1997 and will be completed in 2004. The project cost is estimated at 46.9 million USD. The project components are; 1) physical infrastructure, 2) institutional development, 3) agricultural improvement, and 4) environmental and social improvement and monitoring. The main objective of the project is to reduce rural poverty by increasing incomes of about 12,000 farm households, increase food production,

improve the general living standard through improving road network leading to better access to market, provide control of schistosomiasis and promote environmental protection and monitoring.

As regards institutional development component, the project provides for organization and registration of Farmer Irrigators Service Cooperatives (FISCO). The formation of FISCO will facilitate farmers' participation under the project in income-generating activities and obtain credit from the Land Bank of Philippines. In addition to forming the FISCOs, the project will strengthen the FISCOs to: 1) participate in irrigation systems design and construction, 2) implement rotational irrigation schemes at turn-out service area (TSA) level, 3) jointly manage O&M of the system, 4) collect ISF, and 5) undertake cooperative and income generating operations. The project also provides post-harvest facilities (PHFs) to each FISCO consisting of a concrete solar drier, a storage warehouse, and an office.

To encourage participation of beneficiaries on O&M of the constructed facilities, the project requires members equity. The beneficiaries contribute direct labor in the construction of farm ditch and strengthening of paddy bunds, and land for the FISCO's office and post-harvest facilities.

Furthermore, the project provides assistance to complement the on-going irrigation systems improvement. This is aimed to increase beneficiary incomes by increasing cropping intensity, optimize fertilizer and pesticide application, and promote production of high-value crops and farm products. The Municipal Agricultural Officers (MAOs) and Agricultural Technicians (Tas) of the Provincial Agricultural Office will be utilized to design and disseminate appropriate production technologies. This will be accomplished through establishment and operation of research cum demonstration (RCD) plots, support of integrated pest management (IPM) technologies, and income generating activities for women.

Under its IMT, the project provides series of training to IA/FISCO members and encourages them to enter a Joint System Management (JSM) contract with NIA. Under the JSM, O&M of the headworks and other main facilities are the responsibilities of NIA and O&M of the secondary and tertiary facilities including service roads are responsibility of the FISCO. Major repair and maintenance, however, which is defined as necessity of heavy equipment or machinery in addition to manpower in the JSM contract, is the responsibility of NIA. FISCO will furnish common labor to be paid by NIA.

2.4 SPISP

SPISP is also an ADB assisted project covering regions in the southern Philippines;

ARMM, Caraga, and regions VI and VII. The project started in 2000 will be completed in 2006.

The project components are 1) beneficiary participation and transfer of management of irrigation systems, 2) physical infrastructure composing of new construction and rehabilitation of 10 NISs in ARMM and Caraga, construction of 8 Small Reservoir Irrigation Projects (SRIPs) in Region VI and VII, and construction of 10 CISs in Agusan del Norte, 3) environmental and social measures including 40,000ha of watershed rehabilitation and management activities, mitigation measures for schistosomiasis and resettlement of affected families with income support schemes , and 4) project management including training of NIA and LGU staff. The total project cost is 102 million USD.

The lessons learned from the Bank's previous projects, which are ownership of facilities and increase participation of beneficiaries in the design, implementation and management, has been incorporated in the project. Thus the project concept of full turn-over involves not only of management but also assets of the completed project facilities to IAs.

To facilitate smooth turn-over and sustainable management of the system by IAs, the project provides various aspects of training of user participation, IA capacity building and agricultural production with on-the-job training. The training is conducted to selected progressive farmers who will eventually became trainers in their area.

Under IA capacity building, the beneficiaries are involved in project feasibility study, detailed engineering design, construction, and system management. IA capacity building conducted in Program Irrigation Management and Transfer (PIMT) process takes about 6 years to finish.

To bring farmers to the minimum standard of bankability, seed funds are provided by the beneficiaries' contribution through part of the small contracts that they worked on for the project. This will demonstrate IA's capability to manage its group credit and, more importantly, access credit funds from formal financial institutions.

A uniform cost recovery arrangement for facilities transferred is adopted in the project. The project beneficiaries are required to contribute 25% of the construction cost, 10% of the 25% contribution is required before the project. The remaining balance of contribution by the beneficiaries will be repaid in a maximum period of 25 years, including 3 years grace-period at market-based lending rate.

2.5 Casecanan Multipurpose Irrigation and Power Project-Irrigation Component (CMIPP-IC)

CMIPP-IC is a JBIC-assisted project covering the development of Super Diversion Canal's (SDC) service area of 30,500ha and rehabilitation of Upper Pampanga River Integrated Irrigation System (UPRIIS) of about 103,000ha. In addition, the establishment of management system of O&M, and Institutional development are included as major components. The project started in 2000 and will be completed in 2005.

The strategies in the institutional development program are: 1) firming up/ establishing stratified organization based on hydrologic boundary, 2) socio-technical coordination for participatory implementation in the planning and construction or rehabilitation, 3) timely provision of training inputs, 4) IMT, 5) ISF collection improvement, and 6) FIA/COFIA assistance.

The strategies institutional development includes: 1) reference built-up, 2) Turn-out Service Area (TSA) mapping / initial farmers listing, 3) Turn-out Service Area Group (TSAG) organization, 4) drafting / ratifying Articles of Incorporation (AOI) and By-laws, 5) FIA organization and leadership installation conference, 6) FIA registration, 7) memorandum of understanding development, 8) training for NIA staff and FIA officer, and 9) IMT contract,

The project proposed a proper size of IMT area where IAs are capable for O&M. For SDC new service area, the service areas of lateral canal are designed based on manageable size of newly organized Farmers Irrigators Association (FIA). In the case of UPRIIS area, the existing 420 Farmer Irrigators Groups (FIGs) or TSAGs will be re-organized and developed into 59 FIAs. The FIAs would be federated into 12 Council of FIAs (COFIAs) to be considered the proper size of management by the beneficiaries. IMT in UPRIIS will be on a pilot basis covering about 17,000 ha. The pilot IMT areas were selected per lateral from each district.

To support the financial management of FIAs/COFIAs, the project introduced progressive ISF sharing scheme and improvement of ISF collection and accounting system. This scheme was introduced in the pilot areas.

3. Issues, Recommendation and Lessons Learned

The following are summary of issues, recommendations and lessons learned extracted from available project documents.

3.1 Active Participation of IAs

The active participation of IAs has been proven essential in the entire spectrum of rehabilitation works, beginning from planning to execution. Conscientious implementation and assurance of sustainability have been documented in past projects involving full participation of IAs. In this context, capacity development of IAs and provision of effective tools for IA participation are required.

The link to this success is IDOs who constantly provide coaching and technical support to IAs. Recently, however, IDOs have been terminated at NISO due to funding problem, borne out of the termination of O&M subsidy to NIA. To resolve this problem, redeployment of existing IDOs from other NISO and RIOS is being suggested.

3.2 O&M cost

O&M cost can be significantly reduced through: (a) improved structures; and (b) rationalization of systems management. One of the important considerations to effect this change is to replace the current NIA's ISF billing system from retail to wholesale approach. Direct billing to IAs is suggested to replace the current and costly practice of collecting ISF from individual farmers (water retailing).

3.3 IMT

In promoting the IMT, NIA field office staff redundancy is the serious issue. The IMT contract transfers responsibility of O&M of the partial or the whole system to IAs from the NISO. The responsibility of the NISO reduces from O&M of the system to only monitoring the IA on O&M activities. Implementation of the IMT creates redundancy in the NISO. Therefore, adequate financing for early retirements is indispensable to implement the IMT.

The elimination of direct and indirect O&M subsidies to NIA should follow the NIA downsizing. After completion of rehabilitation works and IMT, the subsidies for O&M are not necessary. NIA and IA should generate their O&M cost from collection of fees from the beneficiaries.

For the implementation of the IMT, the IMT contract needs further refinement, since it does not have a self-sustaining mechanism to ensure proper O&M by the IAs, and the sharing of ISF is still fraught with problems. Although the IAs has autonomy on O&M of irrigation system with some fund from sharing of ISF, dependency of the IAs on NIA remains. Therefore, an earmarked O&M fund from the ISF share of the IAs and a trust fund, consisting of farmer's equity paid for systems improvement under IOSP II and WRDP, were proposed. And ISF sharing

system has a drawbacks. The IAs frequently complain of late remittance of their share by NIA. Provision to farmers the option of continuing ISF sharing or fixed payment in cavans/ha or based on volume of water supplied by NIA are recommended.

Other than the above, a number of issues affect the current implementation of IMT. These are further discussed in Annex 3,4 and 5.

Table 1.1 Foreign Loans and Capital Expenditures from 1969-2002

Year	Loan	Project	Project Cost (million PHP)	Loan Amount (million US\$)
1969	ADB	Cotabato Irrigation	-	2.5
1970	WB	Upper Pampanga River Project	840.9	34.0
1971			-	-
1972			-	-
1973	ADB	Angat-Magat Integrated Irrigation Development	267.1	9.6
	ADB	Davao del Norte Irrigation	120.2	4.2
1974	WB	Aurora Penaranda Irrigation Project	423.8	9.5
	ADB	Agusan del Sur Irrigation Project	153.1	5.8
	JBIC	Central Luzon Groundwater Irrigation Project	217.5	26.6
1975	WB	Tarlac Irrigation System Improvement Project	354.7	17.0
	WB	Rural Infrastructure Project	189.8	9.7
	ADB	Pulangui River Irrigation	220.3	13.5
	ADB	Laguna de Bay Development	253.6	10.0
	USAID	Libmanan-Cabusao	83.2	3.5
1976	WB	Magat River Irrigation Project	636.1	42.0
	WB	Chico River Irrigation Project	827.0	50.0
	ADB	Second Davao del Norte Project	550.3	15.0
1977	WB	Jalaur River Irrigation Project	259.1	15.0
	WB	National Irrigation System Improvement Project I	888.7	50.0
	WB	Second Rural Dev't.-Land Settlement Proj.	5.5	0.6
	ADB	Tago River Irrigation	897.1	22.0
	ADB	Mindanao Irrigation Study II	n.a	0.2
1978	WB	National Irrigation System Improvement Project	996.8	65.0
	WB	Samar River Development Project	27.9	9.2
	IDA	Rural Infrastructure Project-IC	87.2	5.1
	WB	Magat River Irrigation Project II	2,932.8	150.0
	ADB	Allah River Irrigation	672.9	23.5
	ADB	Second Agusan Irrigation	431.9	14.0
	JBIC	CIADP	581.9	49.3
1979	WB	Magat River Irrigation Project III	523.4	21.0
	ADB	Bukidnon Irrigation	501.5	15.0
	ADB	Third Mindoro Irrigation Study	n.a	1.7
	ADB	Bicol River Basin Irrigation Development	762.8	41.0
	OPEC	Bukidnon Irrigation	*	3.5
	IFAD	Magat River Irrigation Project III	*	10.0
1980	WB	Philippine Medium Scale Irrigation Project	886.1	71.0
	ADB	Second Laguna de Bay Irrigation	700.6	20.0
	WB	Watershed Management and Erosion	696.4	38.0
1981	ADB	Palawan Integrated Area Development	115.7	9.3
	OPEC	Laguna de Bay Project	*	7.5
	JBIC	Ilocos Norte Irrigation Project	1,382.1	45.0
1982	WB	Communal Irrigation Development Project I	1,749.9	71.1
	ADB	Third Davao del Norte Irrigation	427.3	45.3
	IFAD	Communal Irrigation Development Project I	*	12.0
1983	ADB	Special Assistance for selected Bank Projects	*	17.7
	ADB	Irrigation Sector	1,279.8	67.4
	ADB	Fourth Mindanao Irrigation Study	n.a	1.7
	JBIC	Bohol Irrigation	1,485.2	40.0
1984	ADB	Allah River Irrigation (Supplementary)	*	27.9
	WB	Magat River Multi-Purpose Project III	*	5.1
1985			-	-
1986	ADB	Special Project Implementation Assistance	*	30.2
	ADB	Highland Agricultural Development	87.5	3.9
1987			-	-
1988	WB	Irrigation Operations Support Project I	1,441.0	45.0
	ADB	Sorsogon Integrated Area Development	103.8	3.7
1989	JBIC	Irrigation Operation Support Project I	*	17.6
1990	ADB	Palawan Integrated Area Development	549.5	13.9
	ADB	Irrigation Systems Improvement Project I	1,011.4	30.0
	JBIC	Malitubog-Maridagao Irrigation Project	3,285.0	38.9
	WB	Communal Irrigation Development Project II	1,910.3	46.2
	WB	Earthquake Reconstruction Project-IC	540.4	14.6
1991	JBIC	Pampanga Delta Irrigation Project	4,557.5	68.3
1992	ADB	Kabulnan Irrigation and Area Development Project	1,998.5	48.0
	IFAD	Visayas Communal Irrigation and Participatory Project	514.2	15.1
1993	WB	Irrigation Operations Support Project II	2,334.5	51.3
1994			-	-
1995	JBIC	Lower Agusan Development Project	2,056.5	40.3
1996	ADB	Irrigation Systems Improvement Project II	1,883.4	27.5
	WB	Water Resources Development Project	2,152.1	58.0
1997				
1998	JBIC	Central Luzon Improvement Project	6,599.8	103.9
1999	ADB	Southern Philippines Irrigation Project	4,169.4	60.0
	JBIC	Bohol Irrigation Project II	2,384.4	56.3
2000	ADB	Grain Sector Development Project-IC	2,171.6	75.0
2001	JBIC	Help for Catubig Agricultural Advancement	1,809.7	26.6
2002	JBIC	BAGO RIS Rehab & Improvement	1,868.8	28.1

Table 1.2 List of Major On-going and Implemented Study and Project

Fund Source	Study / Project Title	Study / Project	Period	Region	Province	System Category	Service area		Ref. No.	
JBIC	Bohol Irrigation Project	Project	1984 - 1998	VII	Bohol	NIS	New	5,000 ha	01	
	Malitubog-Maridagao Irrigation Project		1989 - 2003	XII	South Cotabat	NIS	New	10,840 ha	02	
	Pampanga Dleta Development Project - IC		1992 - 2003	III	Pampanga	NIS	New	10,270 ha	03	
	Lower Agusan Development Project - IC		1996 - 2004	XIII	Agusan del Norte	NIS	New	8,000 ha	04	
	Casencan Multipurpose Irrigation & Power - IC		1997 - 2004	III	Nueva Ecija	NIS	New Rehab	24,849 ha 61,884 ha	05	
	Tarlac Groundwater Irrigation System Reactivation Project		1997 - 2002	III	Tarlac	NIS	New Rehab	2200 ha 300 ha	06	
	Bohol Irrigation Project Phase II		2001 - 2005	VII	Bohol	NIS	New	4,550 ha	07	
	Help for Catubig Agricultural Advancement Project		2002 - 2007	VIII	Northern Samar	NIS	New	4,550 ha	08	
	Bago RIS Rehab. & Improvement Project		2003-2008	VI	Negros Occidental	NIS	Rehab	12,777 ha	09	
JICA	Aganan River Irrigation Project	Project	1993-1995	VI	Iloilo	NIS	Rehab	4,863 ha	10	
	Angat Afterbay Regulatory Dam		2002 - 2003	III	Bulacan	NIS	Rehab	29,374 ha	11	
	Study on Jaluar Irrigation Systems and Rural Area Development Project	Study	1997 - 1998	VI	Iloilo	NIS	Rehab	21,760 ha	12	
	Study on Strengthening of NIA's Management System		2000 - 2001	Nationwide		-	-	-	13	
	Bohol T/A		1996-	VII	Bohol	CIS	-	4,973 ha	14	
	Aganan T/A		1998-2001	VI	Iloilo	NIS	-	4,863 ha	15	
ADB	Second Palawan Integrated Area Development Project (SPIADP-IC)	Project	1991 - 1998	IV	Palawan	CIS	New Rehab	2,613 ha 7,396 ha	16	
	Kabulnan Irrigation & Area Development Project		1992 - 2001	XII	Maguindanao	NIS	New	8,985 ha	17	
	Second Irrigation System Improvement Project (ISIP II)		1997 - 2004	VIII	Leyte	NIS	Expan Rehab	800 ha 12,600 ha	18	
	Southern Philippine Irrigation Sector Project		2000 - 2006	ARMM, Caraga, VI, VII		NIS / CIS	New Rehab	6,565 ha 12,630 ha	19	
	Grain Sector Development Program - IC		2001 - 2006	Nationwide		NIS	Expan Rehab	1,544 ha 16,456 ha	20	
	Cordillera Highland Agricultural Resource Management - IC (DA)		1996-2003	CAR	Abra, Benguet, Mountain Pro	NIS	New Rehab	1,387 ha 1,325 ha	21	
	Bukidnon Integrated Area Development Project - IC (Bukidnon)		1999 - 2004	X	Bukidnon	NIS	New	1,160 ha	22	
	Review of Cost Recovery Mechanisms for National Irrigation System		Study	2000	Nationwide		NIS	-	-	23
	Participatory Irrigation Development Project II		Project	Proposed	Nationwide		NIS / CIS	Expan Rehab	10,540 ha 329,673 ha	24
	WB	Second Communal Irrigation Development Project (CIDP II)	Project	1991 - 2000	Nationwide		CIS	New	34,127 ha	25
Second Irrigation Operation Support Project (IOSP II)		1993 - 2000		Nationwide		NIS	Rehab	95,944 ha	26	
Water Resources Development Project (WRDP)		1997 - 2002		Nationwide		NIS	Expan Rehab	3,125 ha 66,332 ha	27	
Participatory Irrigation Development Project I		Proposed		Nationwide		NIS / CIS	Expan Rehab	8,247 ha 315,679 ha	28	
IFAD	Visayas Communal Irrigation & Participatory Project (VCIPP)	Project	1992 - 2000	VI to VIII		CIS	New Rehab	3,984 ha 1,366 ha	29	

Detailed out-line of each project is attached in Table 2.3

Table 1.3 Outline of Past and On-going Study / Project (1/29)

Ref no. 01

Title of Study/Project	Bohol Irrigation Project	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/> Planned <input type="checkbox"/>
Period	1984-1997	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Japan Bank for International Cooperation	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	<p>(1) To increase rice and corn production through the systematic application of improved irrigation, drainage and related water management facilities and application of better and improved water management practices.</p> <p>(2) To increase the annual per capita income of the farmers in the project area through paddy yield improvement, increase in cropping intensity, improved land tenure status, and effective extension, financing and marketing services.</p> <p>(3) To accelerate economic development in the project area through the generation of related agricultural activities, creation of employment opportunities and provision of improved and better road network and infra structures.</p>	
Location	Bohol, Region 7	
Features of Study/Project	<p>(1) Construction of Malinao Dam, earthfill with a length of 20.8 km, storage capacity of 5,990,000 cubic meters, spillway, intake and circumferential road with a total length of 5.95 km.</p> <p>(2) Construction of irrigation canals: main canal of 27 km, lateral canal of 36 km.</p> <p>(3) Construction of drainage canal of 34 km and lateral canal of 93 km.</p> <p>(4) Construction of service roads with a total length of 129 km.</p> <p>(5) Construction of on-farm development facilities such as farm ditches and farm leveling 2,358 has.</p> <p>(6) Development of agri-institutional program.</p>	
Targets of Study/Project	<p>(1) To adequately supply irrigation water in the 5,000 service area.</p> <p>(2) The EIRR of the project was computed at 18 %.,</p>	
Cost	Foreign (Mill. US \$) 17.75	Total (Mill. US\$) 31.05 Local (Mill. US \$) 13.30
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	<p>(1) There is an increase in paddy production through the increase in cropping intensity from 105% to 188%.</p> <p>(2) With the completion of the project, a boom in economic development is coming. Some businessmen are putting up big business establishment such as commercial rice mill, warehouses for farm products and agricultural supplies, repair shops and shops for the farm implements</p>	
Constraints and Risks	<p>(1) Unrealistic plan of land development</p> <p>(2) Inadequate institutional capability.</p> <p>(3) Shortage of funds/ fluctuation of exchange rate.</p> <p>(4) Poor performance of the contractor.</p> <p>(5) Natural calamities/ unusual weather</p>	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (2/29)

Ref no. 02

Title of Study/Project	Malitubog-Maridagao Irrigation Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	1989-2003		
Executing Agency	National Irrigation Administration (NIA)		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	<p>(1) To accelerate economic development in the project area through the generation of Agricultural activities, creation of employment and provision of improved and better network and other infra structures</p> <p>(2) To increase rice and corn production through the systematic application of improved irrigation and drainage and related water management facilities and application of better and improved water management practices.</p> <p>(3) To increase the annual per capita income of the farmers in the project area through increase in paddy production, cropping intensity, improved land tenure status, and effective extension, financing and marketing services.</p>		
Location	North Cotabato, Region 12		
Features of Study/Project	<p>(1) Construction of diversion dam</p> <p>(2) Construction of main canal with a total length of 43km</p> <p>(3) Construction of laterals with a total length of 145 km</p> <p>(4) Construction of drainage canals with a total length of 98 km</p> <p>(5) Construction of access roads with a total length of 30 km .</p> <p>(6) Construction of Maridagao bridges 25 meters long</p>		
Targets of Study/Project	<p>(1) Incremental palay production from 10,840 ha of 88,510 tons annually</p> <p>(2) Increase in the income of the 4,550 farmer beneficiaries to from P18,530/farm to P38,530/farm in the Malitubog area and P23,560/farm to P 52,160/farm in the Maridagao area.</p>		
Cost	<p>Foreign (Mill. US\$) 23.02 Total (Mill. US\$) 49.94</p> <p>Local (Mill. US\$) 26.92</p>		
Evaluation of Performance of Study/Project	<u>Planned:</u>		<u>Performed</u>
Impact of Study/Project	The project would alleviate the poverty level of the farmers in the project area		
Constraints and Risks	Due to the peace and order problem and the conflict between the Muslims and the Christians the construction of the dam was delayed.		
Lessons Learnt	Due to the dominance of the Muslim populace in the area it is proper to appoint a Project manager who is Muslim to have the project undertaking smoothly.		

Table 1.3 Outline of Past and On-going Study / Project (3/29)

Ref no. 03

Title of Study/Project	Pampanga Delta Development Project	
Type of Study/Project	Study (M/P) <input type="checkbox"/> Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>	
Status	Completed <input type="checkbox"/> On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>	
Period	1992-2003	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Japan Bank for International Cooperation	
Type of Assistance	Technical Cooperation <input type="checkbox"/> Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>	
Objectives of Study/Project	<p>(1) The irrigation component objective is to construct irrigation and drainage facilities in order to increase palay production and improve the living standard of the farmers in the project area.</p> <p>(2) To promote employment through an increase in rice production will create additional demand for agriculture and other related industries.</p> <p>(3) To improve the flood conditions in the South Candaba and lower coastal area.</p>	
Location	Pampanga, Bulacan; Region III	
Features of Study/Project	<p>(1) Construction of diversion channel with a total length of 3,260 m , with a height of 8 m and a with of 160 m.</p> <p>(2) Construction of a gate weir with a length of 150 m, and a fixed weir of 850 m long and a height of 2 m.</p> <p>(3) Construction of main irrigation canal with a 35.5 km long , laterals with 72 km long and (24)sub-lateral with a total length of 41 km.</p> <p>(4) Construction of Drainage facilities such as main drain with a total length of 22 km, secondary drain of 33 km, sub-main drain of 5 km and collector drains of 67 km.</p>	
Targets of Study/Project	(1) Incremental rice production for self sufficiency in the project area and rice supply in Metro Manila of 65,820 tons annually.	
Cost	Foreign (Mill. US\$) 50.75 Total (Mill. US\$) 68.17 Local (Mill. US\$) 17.42	
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	<p>(1) The EIRR of the project is 18 %</p> <p>(2) Increase in the income of the farmer beneficiaries that will stimulate their consumption and consequently lead to activate regional economy.</p> <p>(3) An increase in the cropping intensity will create demand for farm inputs, like fertilizer and agro-chemicals.</p>	
Constraints and Risks	(1) Inadequate institutional capacity.	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (4/29)

Ref no. 04

Title of Study/Project	Lower Agusan Development Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	1997-2004		
Executing Agency	National Irrigation Administration		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	To construct irrigation and drainage facilities in the lower Agusan River Irrigation Basin in order to increase rice production and to improve the living standard of the farmers in the project area.		
Location	Along the Lower reach of Agusan River, Agusan del Norte, Region 13		
Features of Study/Project	(1) Construction works of two (2) pumping stations, project offices, irrigation and drainage facilities in Bit-os and Aupagan schemes. (2) Procurement of pumps, construction and operation and maintenance equipment for Bit-os and Aupagan schemes (3) Review of detailed design, construction supervision and other necessary consulting services for the above worked.		
Targets of Study/Project	Increase in paddy production from about 8,000 ha from 36,250tons/annum to 80,000tons/annum.		
Cost	Foreign (Mill. US \$) 29.95	Total (Mill. US\$) 41.13	
	Local (Mill.US \$) 18.18		
Evaluation of Performance of Study/Project	<u>Planned:</u> (1) Diesel pumps	<u>Performed</u> (1) Electrical pumps (2) Additional construction of stilling basin pond at pump station	
Impact of Study/Project	Poverty incidence in the project area is expected to decline as irrigation and agricultural support services are improved and made available to around 4,000 farmer households		
Constraints and Risks	(1) Inadequate institutional capability (2) Operation cost of electrical pump (3) Urbanization of the service area (4) Unsuitable foundation along main canal		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (5/29)

Ref no. 05

Title of Study/Project	Casecnan Multipurpose Project- Irrigation Componentect		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation) <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	2000-2005		
Executing Agency	National Irrigation Administration		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	<p>(1) The project is envision as a multi-purpose project with irrigation and power generation as the major function. Flood control is an incidental purpose. The purpose of the Casecnan transbasin project is to take excess water from the Cagayan River and convey it to the Central Luzon basin for irrigation.</p> <p>(2) To develop new irrigation expansion area covering about 30,500 ha of fertile lands in the Super Diversion Canal service area.</p> <p>(3) To rehabilitate and modernize the existing irrigation and drainage facilities within the four Districts of the UPRIIS, covering a total service area of 103,000 has.</p>		
Location	Nueva Ecija ,Bulacan and Tarlac, Region III		
Features of Study/Project	<p>(1) Construction of a 64 km super diversion canal with trapezoidal concrete lining sections and 220 related structures.</p> <p>(2) Additional main intake at the diversion works of Penaranda River Irrigation Systems main canal and improvement of the existing PRIS intake sluice gates and sediment flashing gate</p> <p>(3) Enlargement of the first 1.2 km for the existing PRIS main canal, with a design capacity from 84m cubic meters per second to 147 cubic meters per second</p> <p>(4) Construction of 23 lateral canals and sub-lateral canals with a total length of 640 km with trapezoidal concrete lining section and related structures.</p> <p>(5) Construction of on farm facilities including main farm ditches .</p> <p>(6) Construction of 373 km of main and collector drains of and related structures.</p> <p>(7) Procurement of O&M equipment for SDC and UPRIIS.</p> <p>(8) For UPRIIS area, the works also include additional intake at PBRIS, enlargement of the first 2.4 km of DC 2, enlargement of PBRIS proper main canal and lateral G2, rehabilitation od Penaranda diversion dam, improvement of PENRIS main canal and lateral</p>		
Targets of Study/Project	(1) A year round irrigation of 92,300 ha of agricultural land located in Nueva Ecija, Pangasinan and Tarlac.		
Cost	Foreign (Mill. US\$) 80.98		Total (Mill. US\$) 115.64
	Local ((Mill. US\$)34.66		
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/Project	<p>(1) The EIRR of the project is 18 %</p> <p>(2) The agriculture and agro-economy is expected to be significantly improved by the project through increase in farm productivity and income, increase in employment opportunities, and provision of equity by farmers organizations such as irrigators association and cooperatives</p>		
Constraints and Risks	<p>(1) Financial constraints for upgrading existing irrigation facilities.</p> <p>(2) Inadequate institutional capability.</p>		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (6/29)

Ref no. 06

Title of Study/Project	Tarlac Groundwater Irrigation Reactivation Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	1997-2002		
Executing Agency	National Irrigation Administration (NIA)		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	The principal objective of the project is to provide deep-well irrigation facilities that will boost agricultural productivity and generate income in 50 barangays in several municipalities of Tarlac where the existing water source and supply facilities were damaged by Mt. Pinatubo eruption on the July 1990 earthquake.		
Location	Tarlac, Region III		
Features of Study/Project	<ul style="list-style-type: none"> (1) Organization, training and development of Irrigators Association. (2) Construction, development and testing (40) of new wells. (3) Procurement and installation of pumps and engines. (4) Construction of irrigation and drainage facilities for about 50 ha each service area. (5) Inter-agency coordination and networking. (6) Initial operation of completed pump irrigation system (7) Provision of technical and agricultural support services (8) Introduction of diversified crops through demonstration farm 		
Targets of Study/Project	Increment of farm income from P13,400 to P49,950.		
Cost	Foreign (Mill. US\$) 7.5	Total (Mill. US\$) 12.5	
	Local (Mill. US\$) 5.0		
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/Project	(1) Poverty alleviation through stable supply of water by pumps and diversified crops.		
Constraints and Risks	<ul style="list-style-type: none"> (1) Pump operation may be costly due to diesel feed. (2) Sustainable maintenance of diesel pump 		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (7/29)

Ref no. 07

Title of Study/Project	Bohol Irrigation Project Stage 2		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	2001-2005		
Executing Agency	National Irrigation Administration (NIA)		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	(1) To establish irrigated agricultural development in the area. (2) To improve the agricultural and rural facilities such as ; irrigation system and farm roads. (3) To increase agricultural productivity and income of the rural in habitants. (4) To contribute to development of the rural economy in Bohol province.		
Location	Bohol, Region7		
Features of Study/Project	(1) Construction Activities - 0.8 km diversion canal to the main canal of the proposed reservoir of Bayongan Dam - 34.5 m high earthfill dam across Bayongan Dam; - Main canal of 12.7 km inter connecting Bayongan reservoir with the Capayas reservoir; - Lateral canal of 49.7 km, - Drainage and road network (2) Development of on farm facilities including land development. (3) Relocation and resettlement of families affected by dam construction and reservoir. (4) Development of water management plan including water measurement		
Targets of Study/Project	(1) To adequately supply irrigation water to around 5,300 ha s of farmland located in Ubay, San Miguel and Trinidad especially during the dry season to produce rice for self-sufficiency and to the adjoining municipalities.		
Cost	Foreign (Mill. US\$) 35.4 Total (Mill. US\$) 50.4 Local (Mill. US\$) 15.0		
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/Project	(1) The project would alleviate the living standard of the farmers in the project area. (2) After the completion of the project, the province would play more important role in supplying rice to the Central Visayas. (3) The project EIRR is 16%		
Constraints and Risks	(1) Land development (2) Relocation and compensation of families who are affected by the reservoir and the dam		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (8/29)

Ref no 08

Title of Study/Project	Help for Catubig Agricultural Advancement Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	2002-2007		
Executing Agency	NIA, DPWH, DENR, DOH, DAR and Provincial Government of Northern Samar		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	<p>(1) Increase agricultural production with the provision of irrigation and drainage facilities and extension of road network</p> <p>(2) Strengthen the productive activities with the development of agriculture support services and institution and,</p> <p>(3) Enhance public health through schistosomiasis control and provision of basic social services</p>		
Location	Catubig, Las Navas of Northern Samar, Region 8		
Features of Study/Project	<p>(1) Construction of diversion dam ,intake and tunnel, main canal of 77 km, lateral and sub-lateral of 67 km, main drainage canal of 77 km, O&M roads of 143 km.</p> <p>(2) Construction of rural infra-structure, improvement and construction of national road of 9 km, rehabilitation of existing road of 14 km, construction of bridge over Catubig river</p> <p>(3) Schistosomiasis control component through construction of main drainage canal, secondary drainage canal, village drainage canal</p>		
Targets of Study/Project			
Cost	Foreign (Mill. US\$) 30.9		Total (Mill. US\$) 60.00
	Local (Mill. US\$) 29.08		
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/Project	Alleviate poverty by raising income level of the farmers, generating employment opportunities and improving social infrastructures and services of Catubig Valley		
Constraints and Risks			
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (9/29)

Ref no. 09

Title of Study/Project	Bago RIS Rehab . and Improvement Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input type="checkbox"/>	Planned <input checked="" type="checkbox"/>
Period	2003-2008		
Executing Agency	National Irrigation Administration		
Funding Source/Donor	Japan Bank for International Cooperation		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	The project envisages sustainable improvement in the operational efficiency through the provision of stable irrigation for the system thereby helping increase agricultural productivity, expand small farmers income and rural employment opportunities and contribute to rural poverty reduction.		
Location	Negros Occidental, Region VI		
Features of Study/Project	<ol style="list-style-type: none"> (1) System rehabilitation/improvement through the construction of a new conveyance tunnel and selective concrete lining of canals (2) Institutional strengthening and provision of trainings to the irrigators associations and NIA system office (3) Improvement of water management (4) Coordination of watershed management for the project 		
Targets of Study/Project	<ol style="list-style-type: none"> (1) Increase system efficiency from 23 % to 180 % during the wet season and from 25 % to 45 % during the dry season. (2) Increase cropping intensity from 137 % to 180 %. (3) Increase irrigated area from 8900 ha to 12,777 ha during wet season and from 8500 ha to 10220 ha during the dry season. (4) Increase in yield from the average 3.19 ton/ha to 4.5 tons/ha (5) Strengthen the 17 IA's organization. 		
Cost	Foreign (Mill. US\$) 9.72	Total (Mill. US\$) 30.425	
	Local (Mill. US \$) 20.705		
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/Project	<ol style="list-style-type: none"> (1) The EIRR of the project is 17 % (2) Poverty incidence in the project area is expected to decline. 		
Constraints and Risks			
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (10/29)

Ref no. 10

Title of Study/Project	Aganan River Irrigation Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/>	Planned <input type="checkbox"/>
Period	1993-1995		
Executing Agency	National Irrigation Administration		
Funding Source/Donor	Government of Japan through Japan International Cooperation Agency		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input checked="" type="checkbox"/>	Loan <input type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	The principal objectives of the project are increasing agricultural production and improvement of farm productivity.		
Location	Iloilo, Region VI		
Features of Study/Project	(1) Improvement of the diversion dam (2) Improvement / rehabilitation of the irrigation canal structure (3) Concrete lining of the main irrigation canal (4) Construction of post harvest facilities (5) Institutional development and agriculture support services		
Targets of Study/Project	(1) Increasing irrigation area and cropping intensity of 4,863 ha (2) Improvement of farm income of 2,300 household in the project area		
Cost	Foreign (Mill. US \$)	Total (Mill. US\$)	
	Local (Mill. US \$)		
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/Project			
Constraints and Risks	(1) Inadequate institutional capability of the beneficiaries for operation of post harvest facilities (2) Deterioration of watershed causes increment of sedimentation in the canals (3) Urbanization of irrigation service area		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (11/29)

Ref no. 11

Title of Study/Project	Project for Rehabilitation of Apron at Angat Afterbay Regulator Dam	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>
Period	2002 – 2003	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Government of Japan through Japan International Cooperation Agency	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input checked="" type="checkbox"/> Loan <input type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	(1) To maintain the structural stability of the Angat Afterbay Regulator dam in AMRIS and establish a stable irrigation water supply for the AMRIS service area	
Location	Bulacan, Region III	
Features of Study/Project	(1) Provide new apron and riverbed protection on the downstream of the Angat Afterbay Regulator Dam (construction on ground sill and apron) (2) Rehabilitate the damaged area of apron and revetment (3) Reinforcement of right bank training dike and filling on riverbed (4) Riverbank protection at upstream of right bank intake gate (5) Riverbed protection by concrete block (6) Procurement of equipment for the operation and maintenance	
Targets of Study/Project	Secure safety of the diversion dam from scouring of riverbed.	
Cost	Foreign (Mill. Pesos) 500 Local (Mill. Pesos) 110	Total (Mill. Pesos) 610
Evaluation of Performance of Study/ Project	<u>Planned:</u> Physical Accomplishment: For May, 2002 : 8.73 % Cumulative to date : 61.71 %	<u>Performed</u> Physical Accomplishment: For May, 2002 : 8.78 % Cumulative to date : 56.05 %
Impact of Study/Project	(1) Improvement of farmers' income and living conditions (2) Contribute to socioeconomic stability and eradication of poverty	
Constraints and Risks		
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (12/29) - 1/2

Ref no. 12

Title of Study/Project	Study on the Jalaur Irrigation Systems and Rural Area Development Project	
Type of Study/Project	Study (M/P) <input checked="" type="checkbox"/> Study (F/S) <input checked="" type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input type="checkbox"/>	
Status	Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Planned <input type="checkbox"/>	
Period	1996-1998	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Government of Japan through Japan International Cooperation Agency	
Type of Assistance	Technical Cooperation <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan <input type="checkbox"/> Others <input type="checkbox"/>	
Objectives of Study/ Project	<p>(1) Formulate a master plan for irrigation and rural development in order to improve the regional and farm economy for increasing agricultural production in the existing and potential areas of some 30,500 ha, to enhance efficiency in the O&M of the irrigation facilities by rehabilitating/improving them to ensure irrigation water supply throughout the year through the construction of a series of small water impounding dams in the river basin; and to select the priority projects</p> <p>(2) Conduct feasibility studies on the 2 priority projects selected and formulate irrigation and rural development plans to establish a pilot model project for rehabilitation/improvement of existing irrigation systems</p> <p>(3) Transfer technology to the counterpart personnel by the On-the-Job Training method in the course of the Study</p>	
Location	Iloilo, Panay Island	
Features of Study/ Project	<p>(1) Covers the 5 existing NIS in Panay island, namely: Aganan, Sta. Barbara, Suague, Jalaur proper and Jalaur extension</p> <p>(2) Involved field reconnaissance, data collection and analysis, field investigation, preliminary studies on present conditions of meteo-hydrology, socio-economy, agriculture, irrigation & drainage, water management, watershed management and environment in and around the study area</p> <p>(3) Also included aerial photograph shooting and preparation of photo-mosaic maps, hydro-geological investigation and water quality survey</p>	
Targets of Study/Project	<p>The Master plan contains the prospective plans envisaged to attain development goals:</p> <ul style="list-style-type: none"> - Irrigated agriculture development plan anchored on increasing productivity - Rehabilitation & improvement plan of existing irrigation facilities to enhance irrigation efficiency for maximum use of available water - Improvement & strengthening plan of present water management & O&M practice including improvement plan of ISF collection by NIA and IA - Institutional development plan of IA and NIA for sustainability of water management and O&M practice - Strengthening and improvement plan of agricultural support and rural infrastructures - Watershed management plan to stabilize river water flow, reduce sediment and sustain project operations <p>According to the results of the project evaluation, the irrigated agriculture devt for the 5 RIS in the study area is technically sound and economically feasible. The Jalaur RIS and Suague RIS were selected to be priority projects and feasibility study was done for these projects.</p>	
Cost	Total costs of the 2 proposed projects is estimated at P 1573.3 million.	
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>

Table 1.3 Outline of Past and On-going Study / Project (12/29) 2/2

<p>Impact of Study/Project</p>	<p>The proposed project will have the following impacts:</p> <ol style="list-style-type: none"> (1) Both the Jalaur proper and Suague RIS will be revitalized under the project and the irrigation performance of both systems will be improved, contributing to the improvement of regional economy through increase in agricultural productivity. (2) Farm economy will be remarkably improved and stabilized as compared to present condition. (3) The project will create demand for farm labor due to the intensive farming activities, more intensive land use and increased agricultural production. (4) The project will improve road network condition and generate the post-harvest business by farmers in the area. (5) The farmer's income in the project area is expected to increase considerably about 2 to 5 times through increase in crop production.
<p>Constraints and Risks</p>	
<p>Lessons Learnt</p>	<ol style="list-style-type: none"> (1) Recommended that the projects be implemented as early as possible (2) Inappropriate irrigation facilities of illegal water users in the upper river basin shall be improved by developing new communal irrigation projects under the guidance of NIA and LGU considering the importance of the basin-wide water management approach and the water right shall be given to these areas for legal authorization (3) The presently slow progress of CARP program, especially in the Jalaur extension area be accelerated for successful devt in the study area (4) In order to ensure the successful and effective implementation of the propose projects, an integrated-phased development approach is recommended. First phase covers the soft aspects of the prospective plans to carry out in advance the strengthening of the IAs, rehab of farmers' cooperatives, development of women service cooperatives and activation of agricultural extension services. The first phase also covers a part of rehab/ improvement of irrigation facilities and improvement of O&M skills. Second phase will carry out the full implementation of hard aspects of the prospective plans and further advancement of the soft aspects. (5) The model project for the watershed management and rehabilitation of the Suague sub-watershed area should be implemented by DENR as early as possible to demonstrate the effects of the model project to the surrounding areas. (6) The present quarry activity downstream of the Suague RIS diversion dam should be restricted to prevent the degradation of the riverbed.

Table 1.3 Outline of Past and On-going Study / Project (13/29)

Ref no. 13

Title of Study/ Project	Study on Strengthening of NIA's Management System		
Type of Study/ Project	Study (M/P) <input checked="" type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/>	Planned <input type="checkbox"/>
Period	2000 – 2001		
Executing Agency	National Irrigation Administration		
Funding Source/ Donor	Government of Japan through Japan International Cooperation Agency		
Type of Assistance	Technical Cooperation <input checked="" type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/ Project	(1) To formulate an improvement plan for strengthening of NIA's management system aiming at more efficient and effective implementation and operation of irrigation projects/systems (2) To carry out technology transfer to the Philippine counterpart personnel during the course of the study		
Location	Nationwide		
Features of Study/Project	(1) Review of present situation and formulation of the capacity improvement plan of NIA (2) Formulation of the NIA's management system strengthening plan		
Targets of Study/ Project	Action Plans for the strengthening of NIA's management system are; (1) Plan for support to top management a) reorganizing NIA Board of Directors, b) strengthening policy program and planning, c) establishment of MIS, d)strengthening of internal audit (2) Plan for project development and implementation a) devolving functions to RIO with strengthened support of CO, b) application of project management tools, c) updating manual/design standard and application of CAD, d) facilitating procurement (3) Plan for operation and maintenance a) strengthening O&M functions of NISO, b) secure fund for maintenance and for calamity, c) improving equipment management, d)strengthening IA support (4) Plan for financial management a) further decentralization of accounting function, b)improvement of financial system/computerization, c) strengthening of manpower (5) Plan for personnel and administrative services a) improvement of personnel management, b) strengthening of HRD, c) introducing early retirement program with incentives, d) recruitment of new staff (6) Plan for revenue increase a) adjustment of ISF rates (1975 rates), b) increase billable area & increase Isf collection efficiency, c) increase management fee, d) increase revenue from other sources		
Cost	Foreign (Mill. US\$)	Total (Mill. US\$)	
	Local (Mill. US\$)		
Evaluation of Performance of Study/ Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/ Project	NIA prepared the proposed strengthening streamline program to DBM in February 2002.		
Constraints and Risks	(1) Inadequate fund for implementation of the program (2) Insufficient intensity of the streamline program		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (14/29)

Ref no. 14

Title of Study/Project	Bohol Integrated Agriculture Promotion Project (BIAPP)	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input checked="" type="checkbox"/> Implementation <input type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>
Period	1996-2003	
Executing Agency	National Irrigation Administration (NIA)	
Funding Source/Donor	Government of Japan through Japan International Cooperation Agency	
Type of Assistance	Technical Cooperation <input checked="" type="checkbox"/>	Grant <input type="checkbox"/> Loan <input type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	The principal objective of the project is improvement of rural livelihood of the beneficiaries in Capayas Irrigation System (500 ha) which was constructed by the grant aid of JICA, through demonstration and dissemination of appropriate farming techniques to the project area.	
Location	Bohol Province, Region VII	
Features of Study/Project	(1) Base line survey (2) Improvement of farming techniques in planting of rice and diversified crops, water management, farm machinery, and marketing and dissemination of the techniques. (3) Enhancement of the farmers associations (4) Training on the agricultural technicians and the beneficiary farmers (5) Strengthening of the coordination with the local government unit and the related agencies.	
Targets of Study/Project	Improvement of livelihood of beneficiaries and increment of rice production through appropriate farming techniques to the area	
Cost	Foreign (Mill. US\$)	Total (Mill. US\$)
	Local (Mill. US\$)	
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	Increment of rice production from 2.8 t/ha to 4.6 t/ha	
Constraints and Risks	(1) Inadequate institutional capability	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (15/29)

Ref no. 15

Title of Study/Project	Japan Overseas Cooperation Volunteer in Aganan Irrigation Project	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input checked="" type="checkbox"/> Implementation <input type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>
Period	1998-2001	
Executing Agency	National Irrigation Administration (NIA)	
Funding Source/Donor	Government of Japan through Japan International Cooperation Agency	
Type of Assistance	Technical Cooperation <input checked="" type="checkbox"/>	Grant <input type="checkbox"/> Loan <input type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	Increment of effect of the completed irrigation rehabilitation project program and sustainable and efficient operation of the post harvest facility under JICA grant aid through strengthening of the federation of irrigators association and the irrigators associations and improvement of operation of post-harvest facility.	
Location	Iloilo, Region 6	
Features of Study/Project	(1) Strengthening of the federation of irrigators association and the irrigators associations (2) Improvement of operation of the post-harvest facility (3) Construction of a training center	
Targets of Study/Project	Sustainable operation of the post-harvest facility by the federation of irrigators association	
Cost	Foreign (Mill. US\$) Local (Mill. US\$)	Total (Mill. US\$)
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	Improvement in accounting and management system of the post-harvest facility Utilization of a completed training center	
Constraints and Risks	Inadequate capability for the management of the post-harvest facilities Unfaithful management	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (16/29) -1/2

Ref no. 16

Title of Study/Project	Second Palawan Integrated Area Development Project	
Type of Study/Project	Study (M/P) <input type="checkbox"/> Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>	
Status	Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Planned <input type="checkbox"/>	
Period	1991 – 1998	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Asian Development Bank	
Type of Assistance	Technical Cooperation <input type="checkbox"/> Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>	
Objectives of Study/ Project	(1) Develop available land and water resources primarily in the northern half of the island of Palwan and the island municipalities of the province (2) Raise the level of agricultural production and productivity and generate employment (3) opportunities in order to increase rural incomes, reduce the high incidence of poverty (4) and to improve the quality of life of the subsistence farmers and fishermen (5) Address the problem of environmental degradation to ensure the sustainability of the natural resource base through appropriate land use	
Location	Palawan, Region IV	
Features of Study/ Project	(1) Agricultural development through crop intensification & diversification, livestock development and fishery support services (2) Rehabilitation of existing irrigation systems and construction of new schemes (3) Land survey and titling to halt encroachment of forest areas and facilitate issuance of land titles under the government's agrarian reform program (4) Construction of roads and breakwater & ancillary facilities to protect the port at Brookes Point constructed under PIADP I (5) Social services: integrated health program, rural water supply and women in development (6) Forestry and environmental stabilization (7) Project management	
Targets of Study/Project	For irrigation development, rehabilitation of 5 CIS constructed in the 1970s and construction of 15 new CIS. Targets set during the project's appraisal are indicative and actual accomplishment may vary from targets depending on the selection of subprojects to be implemented.	
Cost	Foreign (Mill. US\$) 17.995 Total (Mill. P) 549.501 Local (Mill. P) 118.35	
Evaluation of Performance of Study/Project	<u>Planned:</u> Rehab : 1,760 ha New Area generation : 4,700 ha	<u>Performed</u> Rehab : 7,396 ha New area generation : 2,613 ha
Impact of Study/Project	(1) Increase in annual production of rice from 6,760 mt to 36,160 mt; and annual incremental production of 6,300 mt of cashew, 350 mt of coffee and 120 mt of cacao (2) About 200,000 people will be served annually through the provision of local health stations and rural households will be supplied with safe drinking water. (3) Incidence of malaria will be reduced from 29 to 9 per thousand population. (4) The project will generate about 14,300 man-years of employment during implementation and about 6,500 man-years of additional employment annually. (5) The project will have positive impact on the ecology of the degraded catchments areas and contribute to environmental protection.	

Table 1.3 Outline of Past and On-going Study / Project (16/29) - 2/2

Constraints and Risks	<ol style="list-style-type: none">(1) A major risk in the implementation of multi-component integrated area development projects arises from the difficulties of coordination among the multiple executing agencies. However, this is minimal for the Project which benefited from the collaborative arrangements that have been well established under PIADP I.(2) Insufficient access to credit from lending institutions may affect the ability to purchase the inputs required for agricultural intensification.(3) Inadequate marketing arrangements may reduce the incentives for upland farmers to switch over to the new cropping patterns encouraged under the Project.(4) Farmers may be reluctant to adopt new cropping patterns because of lack of suitable support services.
Lessons Learnt	Active community participation is needed in the implementation of the agricultural development component of the project.

Table 1.3 Outline of Past and On-going Study / Project (17/29)

Ref no. 17

Title of Study/Project	Kabulnan Irrigation and Area Development Project	
Type of Study/Project	Study (M/P) ___ Study (F/S) ___ Technical Cooperation ___ Implementation _x Study (Institutional) ___	
Status	Completed <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Planned <input type="checkbox"/>	
Period	1992 – 2001	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Asian Development Bank	
Type of Assistance	Technical Cooperation <input type="checkbox"/> Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>	
Objectives of Study/ Project	<ul style="list-style-type: none"> (1) Reduce poverty and improve living conditions of a group of indigenous people in Central Mindanao, 96% of whom are Muslims (2) Improve farm production and productivity, and employment opportunities (3) Provide better access to health, sanitation and education through improvement of social infrastructure facilities 	
Location	Province of Maguindanao, Region XII	
Features of Study/ Project	<ul style="list-style-type: none"> (1) Development of irrigation and drainage facilities to serve an area of 11,780 ha (2) Construction/improvement of rural roads (3) Strengthening of agricultural extension services and development of farmer institutions (4) Soil conservation in the watershed (5) Upgrading of social infrastructure facilities in health, rural water supply and education (6) Enhancement of the capacity of the rural women to participate in economic activities and promotion of their role in the development process 	
Targets of Study/Project	Provision of irrigation facilities to serve 11,780 ha : diversion head works, irrigation canal system, terminal facilities, drainage canals, structures, road system, protection dike, and institutional development activities	
Cost	Foreign (Mill. P) 1,228 Total (Mill. P) 1,999 Local (Mill. P) 771 (costs are for irrigation component only)	
Evaluation of Performance of Project	<u>Planned:</u> New Area generation : 11,780 ha	<u>Performed</u> New area generation : 8,985 ha
Impact of Study/Project	<ul style="list-style-type: none"> (1) The average yield of rice will increase from 2.0 mt per ha under rainfed condition to 4.5 mt per ha under irrigated condition. Average corn yield will increase from present yield of 2.05 mt per ha to 3.5 mt per ha. (2) With increased farm productivity, farmers will realize higher levels of income, enabling them to improve their livelihood. (3) People will be served through the provision of local health stations and rural households will be supplied with safe drinking water. (4) The project will generate employment. (5) The proposed women-in-development component will not only gainfully employ women in income-generating activities but also have long-term benefits by enhancing the role of women in the development process. (6) The project will bring about some positive impact on the environment: (a) the provision of drinking water, health and sanitation components will reduce the incidence of communicable diseases, and (b) soil conservation component will help contain potential siltation problems in the river. 	
Constraints and Risks	<ul style="list-style-type: none"> (1) Inadequate and untimely release of funds (2) Peace and order 	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (18/29)

Ref no. 18

Title of Study/Project	Second Irrigation System Improvement Project (ISIP-II)	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>
Period	1997 - 2004 (revised)	
Executing Agency	National Irrigation Administration (NIA)	
Funding Source/Donor	Asian Development Bank (ADB)	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	The objective of the Project is to reduce poverty and improve the general living standard of the farming communities by increasing the income of about 12,000 farm households, increase food production, improve road network leading to better access to market, provide control of schistosomiasis and promote environmental protection and monitoring.	
Location	9 NISs in Northern Leyte, Region VIII	
Features of Study/Project	<p>(1) Institutional development: *Training on O&M, ISF collection and cooperative activities, *Construction of post harvest facilities, *Benefit monitoring and evaluation</p> <p>(2) Physical infrastructure: *Rehabilitation and improvement of NISs with about existing area of 12,600ha and expansion area of 800ha, *Improvement of road networks, *Development of TSA rotational irrigation system</p> <p>(3) Agricultural improvement: *Research cum demonstration plots, *Integrated Pest Management, *Income generating activities for women</p> <p>(4) Environmental and social improvement and monitoring</p>	
Targets of Study/Project	Increased production of paddy of 39,300 t/year and vegetables of 1,610 t/year will result from (1) increment of irrigated area from 8,583 ha to 13,458 ha (2) 9% increase in average irrigated paddy yields, and (3) increment of in average cropping intensity to 190%.	
Cost (original)	Donor (PHP) 750.0 x 10 ⁶ (US\$ 30.0 x 10 ⁶) Total (PHP) 1,172.1 x 10 ⁶ (US\$ 46.88 x 10 ⁶) GOP (PHP) 422.1 x 10 ⁶ (proposed revised cost total PHP 2,127.1 x 10 ⁶)	
Evaluation of Performance of Study/Project	<u>Planned</u> : Schedule: 1996-2002	<u>Performed</u> Schedule: 1997-2004
Impact of Study/Project		
Constraints and Risks	(1) On-going irrigation operation and farming activities hampers construction activities. (2) Delayed concurrence by ADB of LMCs for CY2002 affects implementation of contract works	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (19/29)

Ref no. 19

Title of Study/Project	Southern Philippines Irrigation Sector Project	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>
Period	2000 – 2006	
Executing Agency	National Irrigation Administration (NIA), Provincial Government of Agusan del Norte	
Funding Source/Donor	Asian Development Bank (ADB)	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	<ul style="list-style-type: none"> (1) Increase incomes of about 10,000 farm households through increased agricultural production and crop diversification by investment in irrigation infrastructure and measures to promote user participation in project development or improvement and subsequent system management (2) Strengthen participatory process by facilitating building capacity of self-reliant irrigators association to undertake O&M of their irrigation systems (3) Improve general living standards of farming community by improving road network leading to markets (4) Provide for improved management of degraded watersheds, resettlement of people displaced by reservoir impoundment, measures to control schistosomiasis, and development of indigenous people 	
Location	ARMM Region, Caraga Region, Region VI and Region VII	
Features of Study/Project	<ul style="list-style-type: none"> (1) Increase of capacity of NIA and LGU staff (2) Training of beneficiaries through on-the-job training on the latest cultivation practices, focussing on cropping patterns, seed varieties, seedling, planting, fertilizer, IPM, post harvest and cooperation in O&M (3) Development of at least ten CIS more than 100 ha each, ten NIS with about 27,000 ha area, eight small reservoir irrigation system (SRIS) with about 5,000 ha potential area (4) Construction of about 60 km of access and service roads (5) Project cost : US\$102 mill 	
Targets of Study/Project	(1) Incremental food grain production of about 67,900 tons of paddy at full development valued at US\$ 13.5 million at mid-1998 prices	
Cost	Foreign (Mill. US\$) 44.6	Total (Mill. US\$) 102.0
	Local (Mill. US\$) 57.4	
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	<ul style="list-style-type: none"> (1) With irrigation, farmers in the subproject area can generate from Peso12,000~27,000/ha /year net additional income, enough to pay IA dues and amortization charge (2) IRR of subproject is expected to be ranging from 16.8% to 19.4% (3) Poverty incidence in the project area is expected to decline as irrigation and agricultural support services are improved and made available to 10,000 beneficiary households 	
Constraints and Risks	<ul style="list-style-type: none"> (1) Inadequate institutional capacity (2) Improper planning and operation management (3) Inadequate agricultural supplies and support services 	
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (20/29)

Ref no. 20

Title of Study/Project	Grains Sector Development Project - Irrigation Component	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/> Planned <input type="checkbox"/>
Period	2000 - 2004	
Executing Agency	National Irrigation Administration	
Funding Source/Donor	Asian Development Bank	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/Project	<p>The primary goals of the project are to attain sustained growth in grains productivity and grains households' income; reduce the level of rural poverty; and achieve most cost effective, resource efficient food security. The overall objectives of GSDP are to improve (a) the existing inappropriate grains policy regime, (b) agricultural infrastructure and support services, and (c) the relatively low institutional capacity of the national and local government institutions in the grains sector.</p> <p>The objective of the irrigation component of GSDP is to improve grain production in the eight key grain subsystems by strategic investments in improving irrigation infrastructure</p>	
Location	Eight key grain subsystems: (1) Panay-NCR, (2) Mindoro-NCR & Southern Luzon, (3) Region 2-NCR, (4) Panay-Visayas, (5) Bicol, (6) Northern-Central Luzon, (7) Northern Mindanao-Visayas, (8) Southern Mindanao-NCR	
Features of Study/Project	<p>(1) Rehabilitation and expansion of national and communal irrigation systems including main diversion structures, diversion, main and lateral canals, water control and canal cross drainage structures, drainage canals, farm distribution systems and access roads in selected grain centers</p> <p>(2) Provision of equipment and vehicles for operations and maintenance</p> <p>(3) Training</p> <p>Four core subprojects have been selected: Aklan RIS & Magallanes CIS in Aklan province, Buayan-Tinagakan RIS and Domolok-Tokawal CIS in Sarangani province. Additional subprojects will be identified & implemented during the implementation of the project for the remaining target areas.</p>	
Targets of Study/Project	<p>By the end of the project, it is expected that 16,456 ha will be rehabilitated and an additional 1,544 ha will be generated that would benefit some 15,000 farmer beneficiaries. Cropping intensity of NIS will increase from 130% to 180%; for CIS, from 110% to 180%</p>	
Cost	Foreign (Mill. Pesos) 1,417.4	Beneficiaries (Mill Pesos) 15.6
	GOP (Mill. Pesos) 752.5	LGU (Mill Pesos) 46.9
	Total (Mill Pesos) 2232.4	
Evaluation of Performance of Study/ Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	<p>(1) Raise annual farm incomes</p> <p>(2) Make better utilization of previous investments in irrigation</p> <p>(3) Stimulate commercial grains activity</p> <p>(4) Improve the reliability of irrigation water supply from the water source, reduction of seepage losses and improved water management</p>	
Constraints and Risks		
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (21/29)

Ref no. 21

Title of Study/Project	Cordillera Highland Agricultural Resource Management Project – IC		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	1996 – 2003		
Executing Agency	Department of Agriculture		
Funding Source/Donor	Asian Development Bank		
Type of Assistance	Technical Cooperation <input checked="" type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/ Project	<p>(1) Reduce poverty in the Cordillera Region by increasing the disposable incomes of small-holder farm families in the target areas:</p> <p>(2) To increase average annual farm family incomes from P21,000 to at least P56,000 by the year 2006</p> <p>(3) To reduce the number of families below the poverty line in CAR from 36,000 to 12,000</p>		
Location	CAR - Provinces of Abra, Benguet and Mountain Province		
Features of Study/ Project	<p>Construction of 26 Communal Irrigation Projects and rehabilitation of 26 Communal Irrigation Systems in the provinces covered by the project</p> <p>Organization and training of farmer-beneficiaries in preparation to system turnover</p>		
Targets of Study/Project	<p>(1) To generate a total area of 1,387 ha broken down as follows: rice = 678 ha, and vegetable = 709 ha</p> <p>(2) To rehabilitate a total area of 1,325 ha broken down as follows: rice = 1,037 ha and vegetable - 288 ha</p>		
Cost	<p>Foreign (Mill. US\$) 1.96 Total (Mill. US\$) 8.52</p> <p>Local (Mill. US\$) 6.56</p>		
Evaluation of Performance of Study/Project	<p><u>Planned:</u></p> <p>New Area generation : 1,387 ha</p> <p>Rehab : 1,325 ha</p> <p>Conduct 22 staff development training</p> <p>Repair 3 heavy & 20 light equipment</p> <p>Purchase 60 units of equipment for survey, hydrology, office & communication system</p>	<p><u>Performed (as of July 2002)</u></p> <p>New area generation : 260 ha</p> <p>Rehab : 380 ha</p> <p>Conducted 11 staff development training</p> <p>Repaired 3 heavy & 16 light equipment</p> <p>Purchased 54 units of equipment</p>	
Impact of Study/Project	For a total of 52 projects, 20 are still on-going, 11 is for implementation, and 11 were completed. The only impact felt right now is the increase in labor generation.		
Constraints and Risks	<p>(1) Delayed release of fund from the Local Counterpart slows down the implementation of the irrigation projects.</p> <p>(2) Cost-cutting of funds by the ADB deferred some proposed irrigation projects under CHARMP even those that had completed detailed engineering. It also affected the deficit in the planned vs. performed activities in terms of repair of vehicles and purchase of office, survey and hydrologic equipments.</p>		
Lessons Learnt	<p>(1) Maximize the involvement of beneficiaries in planning and implementation</p> <p>(2) Strengthen the existing institutional mechanisms and their service delivery capability</p> <p>(3) Focus on rehabilitation of existing irrigation systems rather than new construction</p> <p>(4) Ensure compliance with environmental guidelines</p>		

Table 1.3 Outline of Past and On-going Study / Project (22/29)

Ref no. 22

Title of Study/ Project	Bukidnon Integrated Area Development Project - Irrigation Component	
Type of Study/ Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	For Irrigation component - temporarily suspended For other components – ongoing	
Period	1999 - 2004	
Executing Agency	NIA- Provincial Irrigation Office (Bukidnon) - for irrigation component Provincial Govt of Bukidnon - for farm to market roads, water supply, and day care & health centers & hospitals	
Funding Source/ Donor	ADB and Provincial Govt of Bukidnon	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/ Project	To improve the socio-economic status of poor rural communities in the Northern part of Bukidnon through increased and sustained production of vegetables and other high value crops at five target sites and improved access to basic social services throughout the area	
Location	Bukidnon	
Features of Study/ Project	(1) Construction of five communal irrigation projects with a total area of 1,160 ha (2) Run-of-the-river schemes where water will be conveyed thru main pipes to a reservoir (3) then to distribution system fitted with drip hoses (4) Provision of community development support for the 5 CIPs through community organizing and training activities, agricultural extension services, rural livelihood skill training and agricultural support	
Targets of Study/ Project	Construction of 5 CIPs with total area of 1,160 ha	
Cost	Whole Project: Foreign : \$ 20.0 M PGB : \$ 17.3 M Total : \$ 37.3 M	Irrigation Component: Foreign : \$ 6.770 M PGB : \$ 4.506 M Total : \$ 11.276 M
Evaluation of Performance of Study/ Project	<u>Planned:</u> Service area : 1,160 ha	<u>Performed</u> Over-all accomplishment of the project : 39% Accomplishment for irrigation component : 12.84%
Impact of Study/ Project	There will be increase in opportunities for improving the socio-economic status of poor rural communities in the northern part of Bukidnon due to: (1) Increase in area planted with vegetables/high value crops thus, increasing fresh and processed vegetables and other agricultural products (2) Net increase in average household income of direct beneficiaries of the project (3) Significant improvement in health and nutrition status of the targeted communities	
Constraints and Risks	For irrigation component: (1) With the suspension of the project, there is a tendency that the unfinished construction of the reservoir, diversion dam and other irrigation structures and facilities will deteriorate. (2) Discouragement on the part of the farmer-beneficiaries who are expecting the benefits brought about by the project	
Lessons Learnt	Projects to be funded by local government units should be programmed and implemented within the term of the officials only.	

Table 1.3 Outline of Past and On-going Study / Project (23/29)

Ref no. 23

Title of Study/Project	Review of Cost Recovery Mechanisms for National Irrigation System	
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input checked="" type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/> Planned <input type="checkbox"/>
Period	2000	
Executing Agency	National Irrigation Administration (NIA)	
Funding Source/Donor	Asian Development Bank (ADB)	
Type of Assistance	Technical Cooperation <input checked="" type="checkbox"/>	Grant <input type="checkbox"/> Loan <input type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	To assist the Government in reviewing the application of irrigation service fee to promote full recovery of O&M costs and a part of the capital investment costs for NISs	
Location		
Features of Study/Project	<ol style="list-style-type: none"> (1) Reviewing and assessing the relevant reports, regulations on ISF, and NIA performance, (2) Conducting and analysis of NIA's financial viability and assess its corporate plan, (3) Conduction a socioeconomic field survey on ISF in a typical NIS area, (4) Examining alternative rate-setting methodologies taking into account the level of participation of beneficiaries in O&M, (5) Examining the possibility of establishing O&M funds, including CISs, (6) Recommending the appropriate level of ISF and beneficiary participation for O&M and the future role of IAs (7) Recommending and appropriate training program for NIA staff and IAs to improve the collection ration of ISF, and (8) Conducting two workshops on ISF at the beginning and end of the Study 	
Targets of Study/Project	Full recovery of O&M costs and a part of the capital investment costs for NISs by ISF collection	
Cost	Foreign (Mill. US\$)	Total (Mill. US\$) 0.43 Local (Mill. US\$)
Evaluation of Performance of Study/Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/Project	<p>The major recommendations from the study are as follows;</p> <ol style="list-style-type: none"> (1) Adequacy of NIS O&M (2) Appropriate ISF rate (3) The two-tiered ISF (4) Socio-economic weakness of IAs and IA capacity and functionality (5) Pre-requisites for full IMT (6) Implementing the framework of IMT (7) Restructuring NIA (8) NIA's financial viability 	
Constraints and Risks		
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (24/29)

Ref no. 24

Title of Study/ Project	Participatory Irrigation Development Project II		
Type of Study/ Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input type="checkbox"/>	Planned <input checked="" type="checkbox"/>
Period	2004 – 2012		
Executing Agency	National Irrigation Administration		
Funding Source/ Donor	Proposed for ADB assistance		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/ Project	<p>(1) Optimization of irrigation potentials through restoration/rehabilitation and improvement of existing NIS and CIS, construction of additional and new irrigation facilities and structures, augmentation of water supply, and other relevant measures that would ensure sustainability</p> <p>(2) Institutional strengthening of NIA, IAs and LGUs towards sustainable O&M of irrigation systems and project implementation through participatory approach and provision of necessary support and assistance</p> <p>(3) Sustenance and development of appropriate technologies through applied research, materials development, information sharing and dissemination</p> <p>(4) Watershed Protection and erosion control in micro watershed of CIS</p> <p>(5) Augmentation and improvement of technical capability for feasibility study, detailed engineering and project benefit monitoring and evaluation considering participatory development and sustainability through technical assistance</p>		
Location	Nationwide		
Features of Study/ Project	<p>(1) Irrigation development</p> <p>(2) Participatory development</p> <p>(3) Research and advocacy</p> <p>(4) Micro-watershed management and erosion control</p> <p>(5) Technical assistance</p>		
Targets of Study/ Project	Rehabilitation of existing irrigation facilities covering 329,673 ha and expansion of irrigation service to 10,540 ha		
Cost	Foreign (Mill. US\$) 135.49		Total (Mill. Pesos) 8468.32
	Local (Mill. Pesos) 1693.0		
Evaluation of Performance of Study/ Project	<u>Planned:</u>	<u>Performed</u>	
Impact of Study/ Project	<p>(1) Increase in irrigation area that would contribute to higher agricultural production</p> <p>(2) Increased income and income opportunities</p> <p>(3) Improved capability of NIA-IA-LGU in resource management</p>		
Constraints and Risks			
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (25/29)

Ref no. 25

Title of Study/ Project	Second Communal Irrigation Development Project	
Type of Study/ Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/> Planned <input type="checkbox"/>
Period	1991 - 2000	
Executing Agency	National Irrigation Administration	
Funding Source/ Donor	World Bank	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/ Project	(1) Provide continuity and improvements in the implementation of government's ongoing communal irrigation development efforts, through construction and rehabilitation of 180 communal irrigation schemes in impoverished rural areas, thereby contributing to poverty alleviation by enhancing farm income of about 20,000 rural families (2) Strengthen capacity of NIA and IAs, contributing further to the improvement of communal irrigation	
Location	Nationwide	
Features of Study/ Project	(1) Rehabilitation and construction of communal irrigation schemes (2) Development of communal IAs (3) Institutional strengthening of NIA (4) Agricultural development	
Targets of Study/ Project	Rehabilitation of existing CIS and construction of new CIPs; erosion protection, provision of service & link roads, grain-drying facilities; training & related activities for establishment and strengthening of IAs	
Cost	Foreign (Mill. US\$) 36.80 Total (Mill. US\$) 56.80 Local (Mill. US\$) 20.00	
Evaluation of Performance of Study/ Project	<u>Planned:</u> Service area : 30,850 ha Construction service roads :not quantified Construction link roads : not quantified Development of IAs : no. of training not quantified	<u>Performed</u> Service area : 34,127 ha Construction service roads : 30 km Construction of link roads : 113 km Dev. of IAs : 444 batches of training in leadership, financial management and others
Impact of Study/ Project	(1) Farmers benefited : 26,000 (2) Incremental income per ha due to project is P 17,840 in constant 1999 prices. (3) Incremental paddy production due to the project is 73,216 mt/year.	
Constraints and Risks	(1) Implementation of a number of CIS was affected by occurrence of typhoons and law & order problems. (2) Inadequate allocation of counterpart funds and cash releases (3) Devolution of responsibility for communal irrigation to LGUs also slowed the pace of implementation.	
Lessons Learnt	(1) Communal responsibility is an effective way of ensuring sustainable irrigation schemes. (2) Successful implementation of communal irrigation requires clear directions in the roles and responsibilities of each stakeholder, including a comprehensive institution-building program. (3) A self-sustaining system for O&M and repair & rehab needs to be evolved. (4) Improvement of irrigation facilities should be complemented by agricultural support services. (5) Technical innovations are long overdue in the communal irrigation sector.	

Table 1.3 Outline of Past and On-going Study / Project (26/29)

Ref no. 26

Title of Study/Project	Second Irrigation Operation Support Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/>	Planned <input type="checkbox"/>
Period	1993 – 2000		
Executing Agency	National Irrigation Administration (NIA)		
Funding Source/Donor	The World Bank (WB)		
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	The project's principal objective was to achieve sustainable improvement in the operational efficiency of national irrigation systems and thereby help increase agricultural production and small farmers' incomes, expand rural employment opportunities, and contribute to rural poverty alleviation. A distinctive feature of the project was its emphasis on participation of beneficiaries in identifying irrigation system improvement works, sharing in improvement costs through labor contributions, and assuming operations and maintenance (O&M) responsibility for laterals and sub-laterals after completion of improvement works.		
Location	Nationwide		
Features of Study/Project	<p>(1) Improvement of 17 National Irrigation System (NIS), urgent structural repair in 14 NIS, Construction of 3 sediment excluders, improved water control structures, and erosion prevention measures in critical areas;</p> <p>(2) Continued support of the improved system-level operation and maintenance services;</p> <p>(3) Institutional development through strengthening of existing Irrigator's Association and NIA;</p> <p>(4) Strengthening agricultural support services.</p>		
Targets of Study/Project	Incremental rice production of 93,000 t/year, incremental farm income of 460,000 beneficiaries through improvement of 18 NIS covered 95,944 ha		
Cost	Foreign (PHP)	1,785.8 x 10 ⁶	Total (PHP) 2,334.9 x 10 ⁶
	Local (PHP)	549.1 x 10 ⁶	
Evaluation of Performance of Study/Project	<p><u>Planned:</u></p> <p>Farmers Benefited: 460,000</p> <p>Farm net income:</p> <p>Share tenant: 19,104 Peso/ha/year</p> <p>Owner: 38,209 Peso/ha/year</p> <p>Incremental rice production: 93,000 t/year</p> <p>Number of system improved: 18</p> <p>Service area: 95,944 ha</p> <p>Incremental irrigation area 22,673 ha</p>		<p><u>Performed</u></p> <p>Farmers Benefited: 504,850</p> <p>Farm net income:</p> <p>Share tenant: 21,600 Peso/ha/year</p> <p>Owner: 44,100 Peso/ha/year</p> <p>Incremental rice production: 94,000 t/year</p> <p>Number of system improved: 17</p> <p>Service area: 86,913 ha</p> <p>Incremental irrigation area 11,915 ha</p>
Impact of Study/Project	<p>(1) Beneficiary farmers generated net income of P21,600 /ha/year for share tenants and P44,100/ha/year for owner cultivators.</p> <p>(2) Rural poverty alleviation in the rehabilitated area for 504,850 beneficiaries</p> <p>(3) Increment of rice production is 94,000 t/year</p> <p>(4) Empowerment of IA and implemented 40 IMT contracts with 56,594 ha</p>		
Constraints and Risks	<p>Following issues relating to the Irrigation Management Transfer (IMT) to be solved;</p> <p>(1) NIA field office staff redundancy,</p> <p>(2) Provision to farmers the option of ISF sharing or fixed payment,</p> <p>(3) Establishment of earmarked O&M fund,</p> <p>(4) Formulation of guidelines for trust funds, and</p> <p>(5) Definition of major repair works in IMT contract.</p>		
Lessons Learnt	<p>(1) Political commitment is essential for irrigation sector reform,</p> <p>(2) A program approach is needed for irrigation sector reform and NIS improvement,</p> <p>(3) The borrowing policy for TA should be decided early in the project cycle, and</p> <p>(4) IA's participatory system evaluation improves sustainability of improvement works.</p>		

Table 1.3 Outline of Past and On-going Study / Project (27/29)

Ref no. 27

Title of Study/Project	Water Resources Development Project		
Type of Study/Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/>	Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input checked="" type="checkbox"/>	Planned <input type="checkbox"/>
Period	January 1997 ~ December 2002		
Executing Agency	National Irrigation Administration (NIA), Department of Environment and Natural Resources (DENR), National Water Resources Board (NWRB), Department of Health (DOH)		
Funding Source/Donor			
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/>	Loan <input checked="" type="checkbox"/> Other <input type="checkbox"/>
Objectives of Study/Project	<p>(1) Developing an appropriate policy and institutional framework to improve water resources planning, development and management in the country;</p> <p>(2) Initiating an integrated and comprehensive approach to watershed management to sustain water resources;</p> <p>(3) Raising water use efficiency in irrigation, and thereby increasing agricultural production (mainly rice);</p> <p>(4) Alleviating rural poverty;</p> <p>(5) Improving irrigation services in the long-term by accelerating management turn-over of irrigation systems to water users and by increasing NIA's institutional effectiveness; and</p> <p>(6) Improving the environment in irrigated areas, mainly by controlling Shistosomiasis, a water-borne disease.</p>		
Location	Nationwide		
Features of Study/Project	<p>(1) Improved water resources planning and management (NWRB)</p> <p>(2) Improved watershed management (DENR)</p> <p>(3) Improvement and repair of NIS (NIA)</p> <p>(4) Institutional strengthening of NIA and IAs (NIA)</p> <p>(5) Environmental improvement (DOH)</p>		
Targets of Study/Project	Incremental rice production of about 150,000 ton by expansion of irrigation area of about 22,000ha and improvement of cropping intensity from 133 % to 171 %through the rehabilitation works		
Cost	Foreign (PHP)	1,670.1 x 10 ⁶	Total (PHP) 2,418.2 x 10 ⁶
	Local (PHP)	748.1 x 10 ⁶	
Evaluation of Performance of Study/Project	<u>Planned:</u>		<u>Performed</u>
Impact of Study/Project	The project would contribute to alleviation of rural poverty by directly increasing the productivity and incomes of about 20,000 families on irrigation incremental area. Indirectly, an additional 25,000 small farmers would benefit from sub-components for repairs to major irrigation structures and schistosomiasis control. A significant number of farmers would also benefit from investments in watersheds.		
Constraints and Risks	<p>(1) The long standing problem of staff redundancy / retrenchment and the non-assurance of attractive financial package to address the compensation issue</p> <p>(2) Clamor / demand of IAs for the completion of system improvement as a pre-condition to IMT contract signing</p> <p>(3) Non-synchronized implementation of institutional and technical activities</p> <p>(4) Insufficiency and decrease in institutional development program manpower complement</p>		
Lessons Learnt			

Table 1.3 Outline of Past and On-going Study / Project (28/29)

Ref no. 28

Title of Study/ Project	Participatory Irrigation Development Project I	
Type of Study/ Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input type="checkbox"/>	On-going <input type="checkbox"/> Planned <input checked="" type="checkbox"/>
Period	2003 – 2012	
Executing Agency	National Irrigation Administration	
Funding Source/ Donor	Proposed for World Bank assistance	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/ Project	(1) Optimization of irrigation potentials through restoration/rehabilitation and improvement of existing NIS and CIS, construction of additional and new irrigation facilities and structures, augmentation of water supply, and other relevant measures that would ensure sustainability (2) Institutional strengthening of NIA, IAs and LGUs towards sustainable O&M of irrigation systems and project implementation through participatory approach and provision of necessary support and assistance (3) Sustenance and development of appropriate technologies through applied research, materials development, information sharing and dissemination (4) Watershed Protection and erosion control in micro watershed of CIS (5) Augmentation and improvement of technical capability for feasibility study, detailed engineering and project benefit monitoring and evaluation considering participatory development and sustainability through technical assistance	
Location	Nationwide	
Features of Study/ Project	(1) Irrigation development (2) Participatory development (3) Research and advocacy (4) Micro-watershed management and erosion control (5) Technical assistance	
Targets of Study/ Project	Rehabilitation of existing irrigation facilities covering 315,679 ha and expansion of irrigation service to 8,247 ha	
Cost	Foreign (Mill. US\$) 157.23 Total (Mill. Pesos) 9,826.9 Local (Mill. Pesos) 1,965.38	
Evaluation of Performance of Study/ Project	<u>Planned:</u>	<u>Performed</u>
Impact of Study/ Project	(1) Increase in irrigation area that would contribute to higher agricultural production (2) Increased income and income opportunities (3) Improved capability of NIA-IA-LGU in resource management	
Constraints and Risks		
Lessons Learnt		

Table 1.3 Outline of Past and On-going Study / Project (29/29)

Ref no. 29

Title of Study/ Project	Visayas Communal Irrigation and Participatory Project	
Type of Study/ Project	Study (M/P) <input type="checkbox"/>	Study (F/S) <input type="checkbox"/> Technical Cooperation <input type="checkbox"/> Implementation <input checked="" type="checkbox"/>
Status	Completed <input checked="" type="checkbox"/>	On-going <input type="checkbox"/> Planned <input type="checkbox"/>
Period	1992 – 2000	
Executing Agency	National Irrigation Administration	
Funding Source/ Donor	International Fund for Agricultural Development	
Type of Assistance	Technical Cooperation <input type="checkbox"/>	Grant <input type="checkbox"/> Loan <input checked="" type="checkbox"/> Others <input type="checkbox"/>
Objectives of Study/ Project	<p>(1) To provide for continuity and improvements in the implementation of communal irrigation development program, based on experience gained under the previous IFAD supported CIDP 1</p> <p>(2) To rehabilitate existing systems & construct new schemes in impoverished rural locations, contributing to the Government's goals of poverty alleviation and food self-sufficiency</p> <p>(3) To strengthen capacity of NIA and capability of IAs to fully participate in the design, construction and maintenance of irrigation facilities</p>	
Location	Regions 6, 7 and 8 (Visayas)	
Features of Study/ Project	<p>(1) Rehabilitation of 55 existing and construction of 25 new CIS, including the provision of access roads</p> <p>(2) Watershed protection & erosion control surrounding selected irrigation areas</p> <p>(3) Strengthening of IAs</p> <p>(4) Institutional strengthening of NIA's capacity to implement its own communal irrigation program</p> <p>(5) Strengthening of agricultural support services</p>	
Targets of Study/ Project	Rehabilitation of existing CIS and construction of new CIPs. Targets set during the project's appraisal are indicative and actual accomplishment may vary from targets depending on the selection of subprojects to be implemented.	
Cost	<p>Foreign (Mill. US\$) 13.866 Total (Mill. Pesos) 514.207</p> <p>Local (Mill. Pesos) 103.648</p>	
Evaluation of Performance of Study/ Project	<p><u>Planned:</u></p> <p>Rehabilitation : 7,700 ha</p> <p>New Area generation : 3,250 ha</p>	<p><u>Performed</u></p> <p>Rehabilitation : 1,366 ha</p> <p>New area generation : 3,984 ha</p>
Impact of Study/ Project	<p>(1) Incremental annual paddy production of 43,400 mt and maize production increases from</p> <p>(2) 1,400 mt to 2,000 mt</p> <p>(3) Increase incomes and welfare of about 11,600 families as a result of increased farm output</p> <p>(4) Benefit other small-scale IAs by enhancing institutional capabilities, within NIA & IAs</p> <p>(5) Forest self-sustaining development by combining appropriate resource management and environmental conservation practices</p>	
Constraints and Risks	The target areas at project appraisal are indicative and varies from the actual accomplishment. This is mainly due to the fact that areas to be generated/rehabilitated are determined only after the evaluation and selection of subprojects.	
Lessons Learnt		

ANNEX 3

IRRIGATORS ASSOCIATION IN NATIONAL IRRIGATION SYSTEM

**THE STUDY
ON
THE IRRIGATORS ASSOCIATION STRENGTHENING PROJECT
IN
NATIONAL IRRIGATION SYSTEMS**

ANNEX 3

**IRRIGATORS ASSOCIATION IN NATIONAL
IRRIGATION SYSTEM**

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ANNEX 3 IRRIGATORS ASSOCIATION IN NATIONAL IRRIGATION SYSTEM

1. Profile of IAs

The formation of an IA starts at the tertiary level through the organization of turnout service area groups (TSAG) or farmer irrigators group (FIG) normally composed of 40-50 farmers/irrigators. Each TSAG will associate with another TSAG at the secondary canal and the conglomeration of four (4) to five (5) TSAGs of about 160-250 farmers constitute an IA. Typical IAs have landholdings served by one or more laterals or common water source. They have juridical personality, being registered with the Securities and Exchange Commission (SEC), and have elected Board of Directors (BOD) and set of officers. Strong and cohesive IAs have executed into a contractual arrangement with NIA for ISF collection and/or repair and maintenance of secondary canals and other minor facilities. The more advanced arrangement is JSM/IMT, but only a few IAs have this kind of engagement. The apex organization is CIA or FIA, which comprises several IAs.

The salient features described below were culled from the IA inventory survey conducted by the JICA Study Team in June 2002. Table 1.1 shows selected indicators depicting the profile of IAs.

- (a) Membership: Less than 1% of total IAs have membership of 60% and above. (per cent of members to total farmers). The membership rate of most IAs ranges from 50 to 59%. This stemmed from the voluntary nature of membership participation, which is considered defective. Further room for expanding membership should be promoted to strengthen the IAs' foundation.
- (b) Farm/land Holding: A typical IA member has an average farm size varying from 1.1 to 1.5 hectares. About 30% of total members have this landholding size regardless of tenure, and 20% have landholdings of 0.6 to 1.0 hectare. Overall, roughly 50% have lands of 1.5 hectares and below. Only 7% have farm holdings above 2.6 hectares. The farm size is relatively low by standard. The smallness of farm holdings is deterrent to getting higher farm incomes unless complimented with improved technologies.
- (c) Land Tenure Status: Owner cultivator and CLT holders (who by definition are actual tiller) account for 56% of total members, while tenant represent about 25%. Lessees represent about 17%, and transient farmers comprise roughly

3%. Incidence of tenancy is thus high by standard. This rate goes as high as 45% in medium-sized IAs. The incidence of tenancy is even more apparent in non-functional IAs located across hydrological boundaries, ranging from 34 to 63%, as revealed in the 200-sample IA inventory survey. The implication is that the owner-cultivator reported by NIA is likely absentee land owner and thus the tenancy rate is understated. Tenancy is thus considered deterrent to active participation, since land occupancy is temporary. Landlords can replace anytime the tenants and thus the incentive to participate in IA activities is minimum.

- (d) Productivity: Average yield of palay is relatively low. Only 7% of total IAs registered yield of above 100 cavans per hectare during the dry season and only 1% during the wet season. The modal yield ranges from 70 to 90 cavans per hectare, and 55% of IAs obtained this range for both the dry and wet seasons. About 37% and 27% have obtained yield of 70 cavans and below per hectare during the wet season and dry seasons, respectively. The relatively low yields obtained limit the IAs to fulfill their obligations in paying ISF and widen their business opportunities.
- (e) Service Area: About 60% of total IAs, have service areas ranging from 151 to 500 hectares (medium). Next is represented by IAs whose service area is below 150 hectares, roughly 30% of total. The large service area, above 500 hectares, is accounted by 14%.
- (f) ISF Collection Efficiency: ISF collection efficiency among IAs is generally low. More than 30% have collection efficiency below 50%, and only 11% have attained 81 to 100% collection efficiency. About 18% have attained 66 to 80% and 51 to 65% collection efficiency, respectively. The low collection efficiency affects both the financial viability of NIA and IA, and it is considered a major hindrance to better delivery of service by both institutions.
- (g) Networth: More than 40% of total IAs have networth of less than 20,000 pesos in 2001, and only 4% have posted 100,000 pesos and above. With very limited capital base, it is extremely difficult for IAs to engage in short-term investments to expand sources of revenues. This condition stems from: (i) IAs inability to access credit from formal sources largely because of their non-bankable structure; and (ii) limited income arising largely from ISF collection. Roughly 50% of IA members have family income below 20,000 pesos per cropping season, and savings mobilization among members to generate short-term funds can be initiated for livelihood projects.

- (h) Management Contract: Almost 50% of IAs have both Type I and II contracts. IAs with only Type I contract accounts for 13%, while Type II represents about 10%. JSM being enforced under the ADB and World Bank-assisted projects, and considered the current program for IMT accounts for 12%. IAs that have existing contracts are paid by NIA, and that payment represent their major part of income. Those that do not have contract (about 14%) are not eligible and thus may be considered weak.
- (i) Implementation of O&M Plans: Hydrological locations affect the intensity of implementing various O&M plans. Functional to moderately functional IAs in upstream areas generally implement cropping calendar, water delivery and distribution, repair and maintenance and ISF collection plans. The record, however, is only 50% of total IAs do these tasks. Non-functional IAs never bothered to implement such plans. This is primarily the reason why IAs are poor in O&M activities.
- (j) Gender Equality: IAs' members are male dominated, which stemmed from the by-laws' provision that only the household head (who is usually a male) is considered a bona fide member. IAs with 100 and above male members represent 65% of total IAs. In contrast, the concentration of female members is in 10 or below bracket, accounting for 30% of total. The current structure restricts women participation, as core partners for off and non-farm activities

2 Institutional Development of IAs

2.1 Present Situation

NIA's fundamental strategy to institutional development is participatory management, the cornerstone of which is organizing, training, and sustenance. NIA's approach to training is basically the classroom and lecture-type series. IAs, particularly leaders are given at least one (1) round of training during the early stages of development of the following courses:

- (a) Basic leadership development;
- (b) Systems management (water distribution, cropping calendar, system maintenance, ISF collection, and conflict management); and
- (c) Financial management centered on bookkeeping and money management.

The second round is given at the request of the IA, providing 50% of the cost. With the virtual depletion of NIA's operating funds, however, the momentum has often been disrupted. Over the last three years, the degree of training given to IAs has been declining as evidenced in the table below.

**Physical Accomplishment of Training Given to National Irrigation Systems
(As of December 2001)**

	1999	2000	2001	% Change 1999-2001
1. IA Training				
1.1. Number of batches	2,790	1,284	845	-70
1.2. Number of participants	69,756	38,528	28,931	-59
2. Staff Training				
2.1. Number of batches	984	8	160	-84
2.2. Number of participants	24,608	192	4075	-83
3. IA Sustainance				
3.1. Number of IAs	1,651	931	832	-50
3.2. Area covered (ha)	485,702	326,700	209,269	-57
3.3. Number of farmers	295,091	226,474	136,702	-54

Source: Institutional Development Department, NIA

Because of the limited funds coupled with the often bias of low funding priority given to institutional training vis-à-vis systems improvement, NIA has been resorting to a target-based of allocating its institutional budget, using the service area as main criterion. Thus it discriminates small areas from getting the required funding and likely ending up with smaller budget to the extent of sacrificing the quality of training. There is really a need to change this approach to a demand-based to make the training responsive to the changing environment. From a unit cost standpoint, NIA is neither prudent nor efficient, with almost 41% going to overhead. Direct training cost is 27% of total unit cost.

**IA Training Cost
(1000 Pesos per IA participant)**

Cost Item	1999	2000	2001	Average	% Share
Salary for IDO	83	77	292	151	32
Direct Training	57	103	224	128	27
Overhead (Supervision)	90	175	318	194	41
Total	230	354	835	473	100

Source: Institutional Development Department, NIA

Training needs assessment (TNA) of NIA's regular training program has not been conducted for quite a long time. The merits of new subjects and replacement of old and non-responsive courses are certainly difficult to assess in the absence of TNA. The existing training package suffers from: (a) limited innovative subjects; (b) limited upstream activities on water delivery and direct ISF billing; (c) limited information on marketing and entrepreneurial activities; and (d) too much reliance on NIA's IDOs instead of well trained IA leaders. With the influx of ADB, WB, and JICA assistance, somehow this deficiency has been partly resolved. These donors have formulated different training strategies, however, more often than not, the strategy is tied up with the nature of assistance.

2.2 Training Approaches and Strategies of Donors

WB through IOSP II's training design focused on NIA-IA dialogue. This was complemented with funding the positions of institutional development officers (IDOs) to support the monthly meeting of the board of directors (BODs) and O & M conferences for three times in two croppings per year. Note that the training was centered on leaders, aimed at canal operation and financial management, which was the primary objective of IOSP II. In addition, the training was also directed on strengthening IA membership at TSAG level using gender friendly technique, primarily to enhance the role of women.

There are two essential elements of the WB training intervention. The training was focused on leaders, and second was the funding of IDOs who were responsible for the regular coaching job. The IDOs are perceived the strongest link between NIA and IAs relative to the promotion of cohesiveness and technology awareness. NIA, however, has not sustained the salaries of IDOs after project completion. The ad-hoc and temporary nature of IDOs at the systems offices is bound to create the same problem unless they are permanently appointed. In the recently completed evaluation report of IOSP II, the training accordingly had a positive impact to the extent in achieving an intensive level of participatory management - giving a better condition of the systems than those operated by NIA without beneficiary participation. WRDP followed the same approach.

ADB through the on-going SPISP introduced the so-called cascading system of small group activities and on-the-job training. The principle is that "trainees at one level, becomes trainers at the next lower level." NIA's staff and SPISP consultants direct their training efforts at the implementation of group activities and on-the-job training on the FIA. The FIA trainers prepare the IA trainees to conduct small group of activities at the TSAG level with their membership. The FIA trainers become available for supervision and support at the TSAG level when the IA personnel conduct the training. The cascading system essentially ensures the trainers at higher level of well-informed observations, insights and constraints happening at the lower level. In the absence of an in-depth evaluation, due to its early stages of implementation, the impact is yet to be established.

JICA assisted the IAs by way of its in-country training approach. The in-country training introduced in early 2001 is a mixture of classroom discussion and cross visits to well-managed irrigation systems, research institutions and successful IAs locally. It utilizes in-house resource persons, primarily NIA's senior staff members from the Central Office (CO) and selected JICA experts. The cross visit component is relevant as it opened the door of opportunities for IAs to learn from

actual interaction with practitioners of successfully managed institutions. The participants are mixture of NIA's staff and IA officers. In the first in-country training, 50 participants comprising of 32 IA officers and 18 NIA staff attended. The course centered on improvement of O&M systems and technology of IAs. Succeeding in-country training courses are being planned jointly by NIA and JICA, with the second launched on November 4 to December 7, 2001 and the 3rd batch on September 23 – October 25, 2002.

The different training approaches have demonstrated their own merits and strengths. NIA has actually been offered a menu of training designs through these various strategies, which can be replicated utilizing internally generated resources. To be responsive and sustainable, however, NIA will have to stick to its role as facilitator and transfer whatever technology to the IAs, so that the advance IAs will eventually assume the role of major trainers. To do this, NIA must accelerate its reorganization, as this paves the way for the permanent appointment of IDOs at the field level.

3 IA Functionality Survey and Results

NIA evaluates the degree of functionality of individual IA through the conduct of functionality survey annually. The survey instrument was developed at the CO utilizing five (5) major criteria (Operation & Maintenance, Organization, Financial Performance, Organizational Discipline and Additional Indicator). Each criterion was assigned corresponding score and weight, and the weighted score determine the classification of an IA into five (5) classes (outstanding, very satisfactory, satisfactory, fair and poor). Field personnel of NISO administered the survey.

The JICA Study Team inputted the weighted scores submitted by the field offices, and the results of the classes during the last three years are summarized below.

**IA Functionality Survey Results
(Number of IAs)**

IA Classes	1999		2000		2001	
	IA nos.	%	IA nos.	%	IA nos.	%
Outstanding	20	2	46	5	69	4
Very Satisfactory	122	10	181	21	297	18
Satisfactory	313	26	332	39	480	29
Fair	280	23	167	20	373	23
Poor	481	40	128	15	434	26
Total IA	1,216	100	854	100	1,53	100

Source of Raw Data: IDD and Field Offices, NIA

IDD Rating: Outstanding – 95 and above; Very satisfactory – 85 to 94; Satisfactory – 75 to 84; Fair – 65- to 74; and Poor – below 65

The relative total revealed that there has been slight improvement in the functionality of IAs, nationwide over the three-year period. The relative shares of fair and poor classes decreased to 49% in 2001, from 62 % in 1999, while the relative shares of very satisfactory and satisfactory classes improved significantly, from 36% in 1999 to 47% in 2001. The relative share of outstanding also increased moderately, from 2% in 1999 to 4% in 2001. Generally, however, the proportion of fair and poor classes of about 50% in 2001 is significant, an indication of weak and non-functional IAs.

There are limitations of the functionality survey, and interpretation of the results in itself should be qualified. Among its limitations are: (a) wide ranking variability due to differences in perceptions and absence of standards; and (b) arbitrary scoring due to lack of logistics support. A number of NISOs field personnel failed to appreciate the usefulness of the survey, and perceived it to be an additional burden. The survey was administered merely for the sake of compliance rather than as a management tool to monitor IAs' degree of intervention. With these limitations, the JICA Study Team formulated an alternative method of ranking and classifying IAs through a multivariate analysis taking into consideration wider perspectives of information (technical, infrastructure, socio-economy, and institutional), which are perceived to have great influence on the functionality of IAs (see Chapter 6). The result of the 2001 functionality survey is one of the information considered.

4 IA Activities' Assessment

4.1 Survey of 200 IAs

A survey of 200 IAs was made in the Study to assess the O&M and other activities of IAs. The sample size of 200 was pre-determined, but selection was stratified according to (a) hydrological locations and (b) functionality of IAs based on NIA's criteria. All outstanding IAs were included in the sample and categorized as "functional". IAs with very satisfactory and satisfactory rating, classified as "moderately functional" and fair and poor grouped as "non-functional" were selected proportionately from the number of IAs available in 196 NISs. To facilitate the assessment, a questionnaire was prepared and responses were recorded in the questionnaire through group interviews of IA officers, notably the president, secretary and treasurer. The distribution of samples is given below, and selected information on O&M activities are given in Tables 4.1 to Table 4.6.

Distribution of 200 Sample IAs

Category	Upstream		Midstream		Downstream		Total	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Functional	42	53	14	18	23	29	79	100
Moderately Functional	36	38	28	30	30	32	94	100
Non-Functional	8	30	5	19	14	52	27	100
Total	86	43	47	24	67	34	200	100

4.2 Preparation of O&M Plans

- (a) Cropping Calendar: Preparation of cropping calendar for every cropping season (at least two per year) is low. Under functional IAs, the rate ranges from 14% to 44% of total, with the highest in the upstream and lowest at midstream. Moderately functional and non-functional IAs posted lower rates, ranging from 15% to 30%, with the highest at downstream and lowest at midstream.
- (b) Water delivery and distribution: Preparation of water delivery and distribution for every cropping season follows the same pattern as cropping calendar. Under functional IAs, the rate varies from 14% to 46% of total, with the highest in the upstream and lowest at midstream. Moderately functional and non-functional IAs recorded lower rates from 15% to 30%.
- (c) Repair and Maintenance: Preparation of repair and maintenance plan following the regular cropping cycle, is relatively low. Functional IAs recorded rates as low as 4% (midstream) to 32% (upstream) of total. Moderately functional and non-functional IAs posted rates ranging from 4% to 33%, with the highest rate at downstream area posted by non-functional IAs. It can be inferred that non-functional IAs at downstream areas bothered to prepare this plan to ensure good condition of the facilities, so as not to be unduly deprived of water during critical periods.
- (d) ISF Collection: ISF collection plan preparation following the regular cropping cycle is low. Functional IAs recorded rates ranging from 11% to 35% of total, with the lowest at midstream and highest at upstream. Moderately functional to non-functional IAs, recorded further lower rates ranging from 7% to 29%, with lowest at midstream and highest at upstream.
- (e) Other Plans (Budget and Business): Preparation of other plans is generally not given due importance. Less than 5% of IAs bothered to prepare such plans, implying limited perspective for expanding business opportunities. This is indicative of the acute lack of skills in project development and preparation.

4.3 Implementation of O&M Plans

- (a) Cropping Calendar: Very few implement fully the cropping calendar plan. Rates of full implementation among functional IAs ranges from 17% to 45% of total, with the highest at upstream and lowest at midstream. Moderately

functional to non-functional IAs, reported lower rates varying from 6% to 23%, with the lowest at downstream and highest at midstream. Failure to implement fully the cropping calendar plan is affected by the lack of readily available cash to purchase farm inputs and seeds for timely planting, and shortage of water at downstream during critical irrigation periods.

- (b) Water delivery and distribution: Full implementation of water delivery and distribution schedule is low. Rates of compliance under functional IAs vary from 11% to 34% of total, with the lowest at downstream and highest at upstream. Moderately functional to non-functional IAs recorded rates of compliance ranging from 13% to 29%, with the lowest at upstream and highest at downstream. With these rates of compliance, inequitable use of water is rampant.
- (c) Repair and Maintenance: Full implementation of repair and maintenance plan is low. Rates of compliance under functional IAs ranges from 8% to 25% with the lowest at midstream and highest at upstream. Moderately functional to non-functional IAs recorded rates varying from 9% to 20%. Regardless of the functionality, IAs generally do not bother to implement fully the repair and maintenance plan. This is a serious problem as this is the primary cause for the rapid deterioration of the irrigation facilities and structures.
- (d) ISF Collection: Full implementation of ISF collection plan is low. Rates of compliance under functional IAs vary from 11% to 35% with the lowest at midstream and highest at upstream. Moderately functional to non-functional IAs reported rates ranging from 10% to 22%, with both the lowest and highest at upstream. This is indicative of the lack of seriousness to pursue a good collection scheme; hence collection efficiency is always below normal.

4.4 Conduct and Attendance in Meeting

- (a) TSA Meeting: About 60% of functional IAs located in upstream, with attendance rate of 80% conduct monthly TSA meeting. In contrast, functional IAs located in midstream and downstream rarely hold monthly meeting. Monthly meetings of moderately functional are held by only 20% to 45%, with attendance rate of 75%. Around 18% to 55% of non-functional IAs conduct their monthly meeting, with attendance rate of 30% to 84%. Unless there are conflicts to be resolved at the tertiary level, the TSA meeting appears to have little importance as far as moderately and non-functional IAs are concerned.
- (b) BOD Meeting: Roughly 50% of functional IAs located in upstream, with attendance rate of more than 90% hold monthly BOD meeting. On the other hand, functional IAs located in midstream and downstream conduct monthly meeting by only 16% to 30%, with attendance rate from 80% to 90%. Monthly meeting of moderately non-functional IAs are held by 20% to 40%, with attendance rate of 90%. Non-functional IAs have relatively high

compliance of monthly meeting, ranging from 40% to 52% with attendance rate of 80% to 90%. While attendance rate is relatively high, compliance is still poor, and given the policy nature of BOD meeting, IAs are normally left with un-updated policies.

- (c) GA Meeting: Quarterly GA meeting is relatively high in functional to moderately functional IAs located upstream, with 70% to 75% compliance and 65% to 90% attendance. Non-functional IAs located upstream prefer to have semestral, with 50% compliance and 80% attendance rate. On the other hand, IAs regardless of functionality, and located in midstream and downstream generally followed erratic schedule. GA meeting is considered the venue for all members to be apprised of IAs policies and programs. With erratic schedule for GA meeting, it is not surprising to find out that cohesiveness in less functional IAs is getting weaker.

4.5 Implementation of Contracts

To assess the performance of contracts, the difference between the percentage renewed and rejected was taken as an indicator. Positive, the relative proportion of contract renewed is greater than the contracts rejected, means a net gain, and conversely negative implies a net loss.

Generally, upstream areas, had the advantage of having the most contracts renewed regardless of IAs functionality, as shown in table below. All types of contracts recorded net gains. In contrast, the midstream and downstream areas had the most number of contracts rejected. This is understandable given the better physical conditions in upstream vis-à-vis midstream and downstream areas, and relative better performance of IAs in upstream areas. The potential areas of JSM/IMT are the upstream and midstream, given the gains reported.

Status of Renewing and Rejected IMT Contract

Contract	Upstream				Midstream				Downstream				Total
	1st	Renew	Reject	S-total	1st	Renew	Reject	S-total	1st	Renew	Reject	S-total	
Type I	17.8	12.7	12.1	42.6	8.9	5.1	5.7	19.7	17.8	9.6	10.2	37.6	100
Type II	22.3	13.6	12.6	48.5	7.8	3.9	6.8	18.5	15.5	8.7	8.7	32.9	100
Type I&II	19.4	12.5	11.1	43.0	11.1	7.6	9.7	28.4	12.5	6.9	9.0	28.4	100
JSM/IMT	26.4	15.7	12.1	54.2	12.1	9.6	3.6	25.3	13.3	3.6	3.6	20.5	100

Source of Raw Data: 200 IA Questionnaires, JICA Study Team

(% indicates present IMT status out of IA's belonging to respective IMT Types)

4.6 Approach and Participation Rate in Maintenance

Group work is generally high in functional and moderately functional IAs located

in upstream, but very low in midstream and downstream areas. More than 60% of total labor types are accounted by IAs, located in said areas. Voluntary and assignment are also high, accounting for more than 40%, and 60%, respectively. In contrast, non-functional IAs, located in upstream and downstream prefer hired labor and assignment over other types, reporting for more than 80%. It can be inferred that cooperation among members is relatively easier for IAs whose preference is group and voluntary work than those IAs opting for hired labor. This implies that water, which is normally plentiful in upstream is a key element for bonding and cohesiveness. Membership according to hydrological location can be an alternative to reforming the current IA structure, to increase the level of participation.

5 Issues

The functional issues affecting the IAs are summarized in Table 5.1. The problem tree analysis on organization, O&M and finance given in Chapter 8 can enlighten the inter-linkages of the problems and issues. The systemic issues are discussed below in relation to the promotion of IMT and devolution of NIA's major functions to IAs.

- (a) Defective Membership Structure: Inherent defects in the membership include:
 - (i) voluntary nature of membership hence the difficulty of enforcing penalties and sanctions among non-members;
 - (ii) high incidence of absentee landowners, thus defeating the purpose of actual-tiller membership;
 - (iii) high degree of inactive members from downstream users;
 - (iv) dominance of pseudo leaders who are inactive in farming; and
 - (v) multiple membership arising from transient farming. The bonding and cohesiveness of IAs is superficial and continuously being eroded, as a result of these basic flaws. The consequence is regular rejuvenation of IAs and NIA's effort to sustain IAs is getting costly.
- (b) Weak Absorptive Capacity: Only 3% of total IAs can be considered self-reliant and providing relatively good service to its members on water management and systems maintenance, including related farm businesses. These are exceptional IAs, managing their operations strictly from a sound business principle. They are liquid and can afford to make investments. As service providers, they are relatively better off than NIA's field office. On the other hand, the greater number of IAs has difficulties replicating the good ones due to: (i) low level of skills; (ii) poor leadership; (iii) lack supportive members; and (iv) lack of financial resources. These are IAs that often fails to fulfill their contractual obligations with NIA.
- (c) Defective By-laws: The existing by-laws are restrictive. There are: (i) no formal recognition of the rights of members to an equitable supply of water

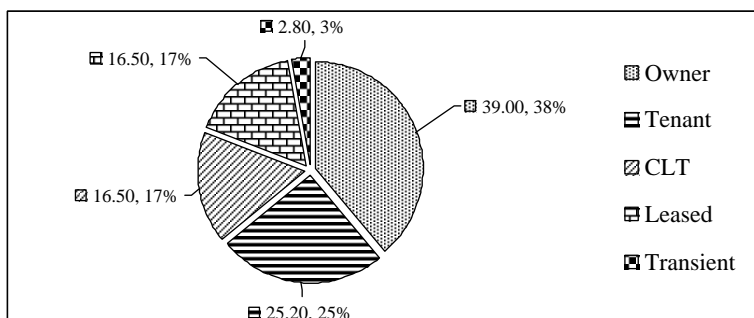
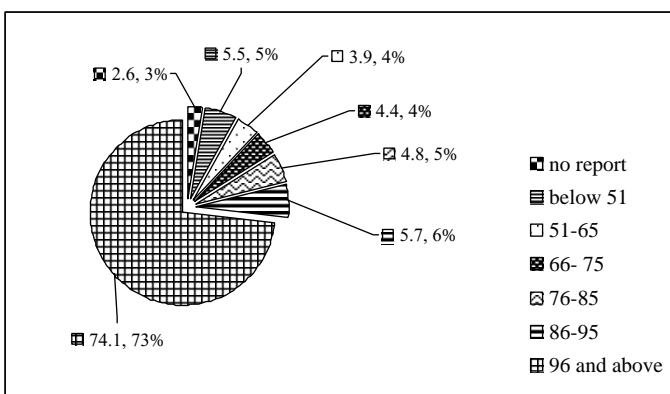
vis-à-vis landholding size; (ii) no progressive development into market-driven organization; (iii) no incentive schemes to expand membership and operations; and (iv) limited access to formal credit source. The restrictive by-laws essentially stemmed from NIA's consideration of IAs as mere sub-contractors and not as genuine partners in irrigation development. The responsibilities given to IAs collector of ISF and clearing canals under Type 1 and II Contracts is sub-contacting in the real sense. This has created a syndrome of dependency in IAs for continuing support from NIA.

- (d) Conflict of Interest In NIA's IMT: Instead of encouraging IAs to grow independently, they are prevented because of NIA's preference to retain its field personnel over IMT implementation. NIA's oft-repeated argument about the non-preparedness of IAs to assume the bigger role of O&M is being used to keep its field personnel. A permanent solution for NIA's personnel to be displaced must be in place to permit orderly and independent growth of IAs.
- (e) Inadequacy of Training: Skills are limited in terms of O&M, ISF collection and project development to enhance IA's livelihood opportunities. These limitations apply to leaders as well as members. The assistance provided by donors have given NIA varied menu of training approaches, but the outreach is oftentimes stifled due to: (i) improper identification of training needs due to absence of TNA; (ii) lack of trainers, especially IAs who can relate better with their counterparts; and (iii) low funding priority for training by NIA vis-à-vis other support.
- (f) Low Financial Resources: IAs relatively low financial resources are inherent in their structure. Currently, the main sources of revenue are from ISF shares and compensation for canal clearing (Type I), with the former accounting for the bulk portion. The problem with the ISF shares is that it is being used by the IAs to finance maintenance activities. Most often, the ISF share is insufficient to fund O&M because the volume collection is low, which is affected by low rates, unreported billing and low collection efficiency. None is left to finance other activities. From the very beginning, IAs have always been treated as mere institutions to provide water delivery service to members. NIA has always taken a parochial attitude to consider IAs as sub-contractors of maintenance activities. There has not been any intervention to expand the capabilities of the IAs to become market-driven institution. With relatively low productivity and small land holdings among members, coupled with low ISF collection the problem has become endemic to the organization.

Table 1.1 Selected Indicators of NIS-IAs (1/4)

1. Ratio of actual members to potential members

Actual Members (%)	Freq.	Percent
no report	52	2.6
below 51	112	5.5
51-65	80	3.9
66- 75	70	4.4
76-85	98	4.8
86-95	116	5.7
96 and above	1,509	74.1
Total	2,037	101



2. Land Tenure Status

Actual Member	Owner		Tenant		Certificate of Land Transfer		Leased		Transient		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
below 50	6,955	4.40	5,904	5.80	2,028	3.00	1,723	2.6	288	2.50	16,898	4.1
		41.20		34.90		12.00		10.20		1.70		100
51 to 65	5,865	3.70	5,445	5.30	1,120	1.70	2,318	3.50	465	4.10	15,213	3.70
		38.60		35.80		7.40		15.20		3.10		100
66 to 75	5,132	3.20	3,808	3.70	1,263	1.90	3,130	4.70	327	2.90	13,660	3.40
		37.60		27.90		9.20		22.90		2.40		100
76 to 85	9,710.00	6.10	6,844	6.70	2,537	3.80	3,502	5.20	788	6.90	23,381	5.70
		41.50		29.30		10.90		15.00		3.40		100
86 to 95	10,043	6.30	5,946	5.80	4,260	6.30	5,036	7.50	1,376	12.00	26,661	6.50
		37.70		22.30		16.00		18.90		5.20		100
96 and above	121,211	76.30	74,713	72.80	55,943	83.30	51,438	76.60	8,214	71.70	311,519	76.50
		38.90		24.00		18.00		16.50		2.60		100
Total	158,916	100	102,660	100	67,151	100	67,147	100	11,458	100	407,332	100
		39.00		25.20		16.50		16.50		2.80		100

3. Average Farm holding of IA Members

Farm Size (Ha.)	Freq.	Percent
none	389	19.1
below 2.5	71	3.5
0.6 to 1.0	399	19.6
1.1 to 1.5	587	28.8
1.6 to 2.0	325	16
2.1 to 2.5	127	6.2
2.6 and above	139	6.8
Total	2,037	100

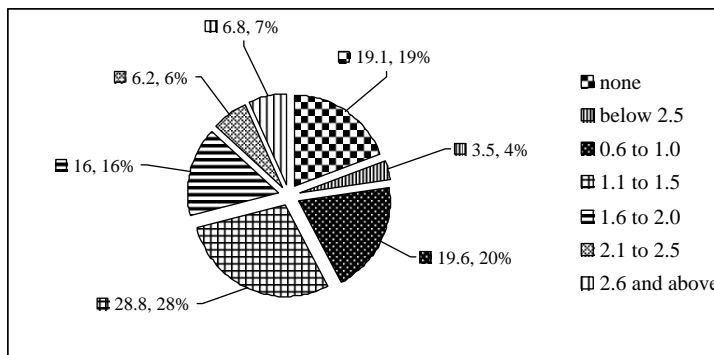
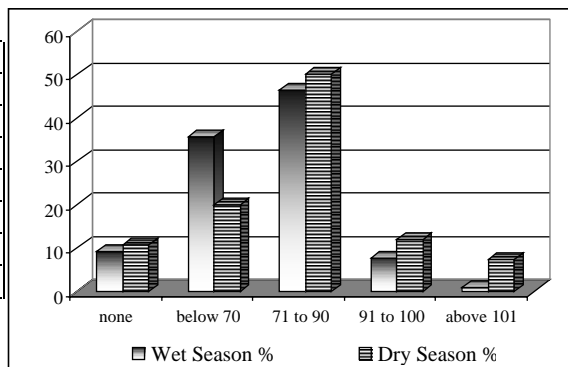


Table 1.1 Selected Indicators of NIS-IAs (2/4)

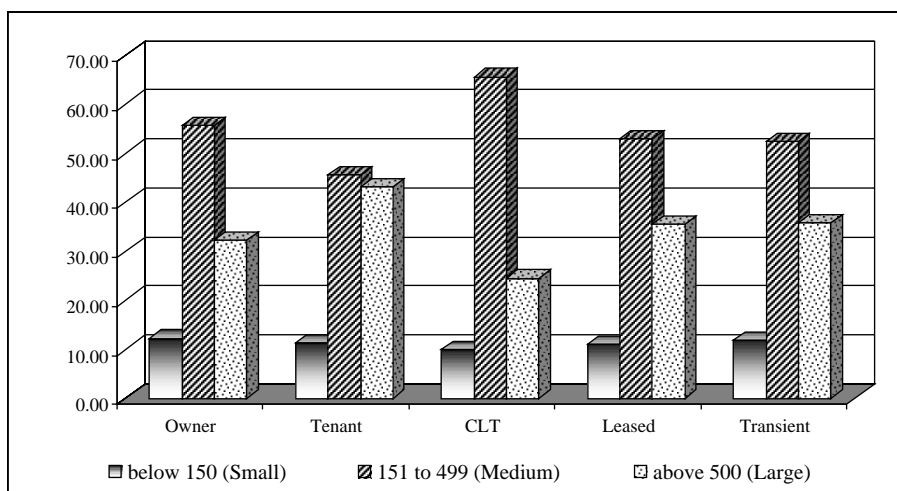
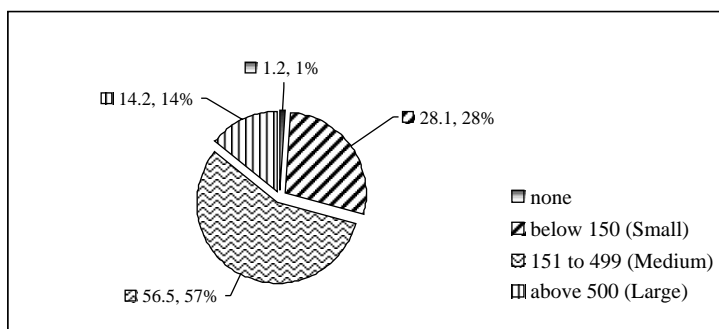
4. Productivity by Season (Yield of Palay)

Cavans/Ha.	Wet Season		Dry Season	
	Freq.	%	Freq.	%
none	190	9.3	218	10.7
below 70	726	35.6	406	19.9
71 to 90	947	46.5	1020	50.1
91 to 100	155	7.6	244	12
above 101	19	0.9	149	7.3
Total	2,037	100	2,037	100



5. Service Area of IA by Category

Area (Ha.)	Freq.	Percent
none	25	1.2
below 150 (Small)	573	28.1
151 to 499 (Medium)	1,150	56.5
above 500 (Large)	289	14.2
Total	2,037	98.8



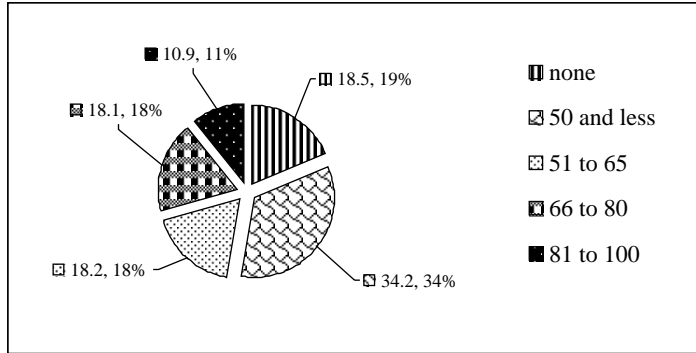
6. Land Tenure Status by Service Area of IA

Service Area	Owner		Tenant		Certificate of Land Transfer		Leased		Transient		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
below 150 (Small)	20,030	12.30	11,769	11.30	6,733	9.9	7,869	11.04	1,414	11.80	47,815	11.5
		41.90		24.60		14.10		16.50		3.00		100.10
151 to 499 (Medium)	90,646	55.60	47,656	45.60	44,696	65.6	36,568	53.00	6,284	52.40	225,850	54.1
		40.10		21.10		19.80		16.20		2.80		100.00
above 500 (Large)	52,468	32.20	45,144	43.20	16,715	24.5	24,534	35.6	4,290	35.80	143,151	34.3
		36.70		31.50		11.70		17.10		3.00		100.00
Total	163,144	100	104,569	100	68,144	100	68,971	100	11,988	100	416,816	100
		39.10		25.10		16.30		16.50		2.90		100

Table 1.1 Selected Indicators of NIS-IAs (3/4)

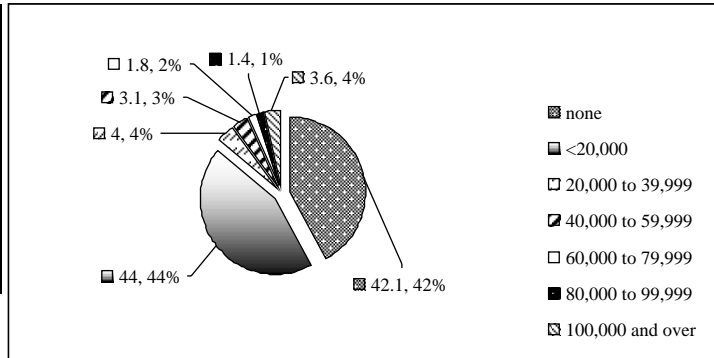
7. ISF Collection Efficiency of IA

Collection Efficiency (%)	Freq.	Percent
none	377	18.5
50 and less	697	34.2
51 to 65	371	18.2
66 to 80	369	18.1
81 to 100	223	10.9
Total	2,037	100



8. IA Network

Pesos	Freq.	Percent
none	857	42.1
<20,000	897	44
20,000 to 39,999	82	4
40,000 to 59,999	63	3.1
60,000 to 79,999	36	1.8
80,000 to 99,999	29	1.4
100,000 and over	73	3.6
Total	2,037	100



9. Family Income of IA Members

Cavans/Ha.	Wet Season		Dry Season	
	Freq.	%	Freq.	%
none	299	14.7	232	11.4
<20,000	1,074	52.7	1,023	50.2
20,000 to 39,999	453	22.2	527	25.9
40,000 to 59,999	171	8.4	180	8.8
60,000 to 79,999	30	1.5	48	2.4
80,000 to 99,999	5	0.2	19	0.9
100,000 and over	5	0.2	8	0.4
Total	2,037	100	2,037	100

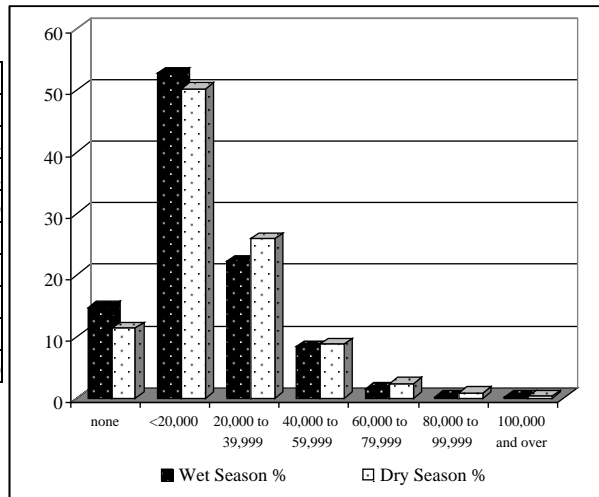
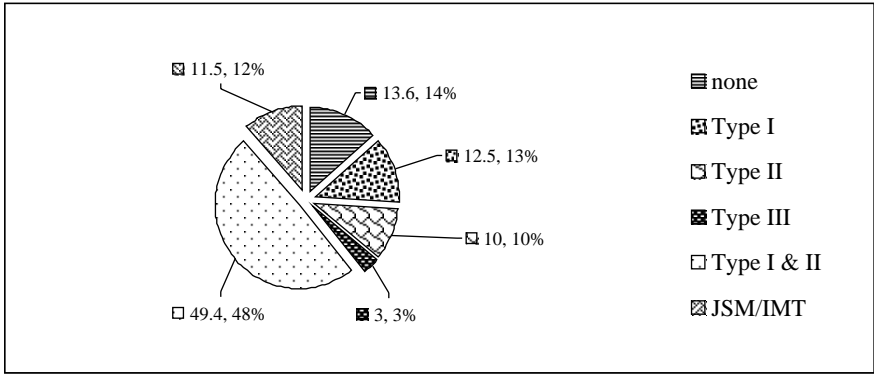
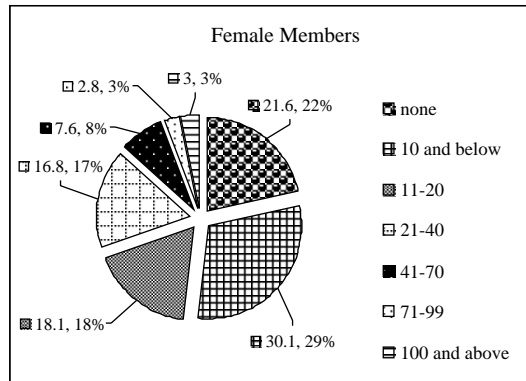
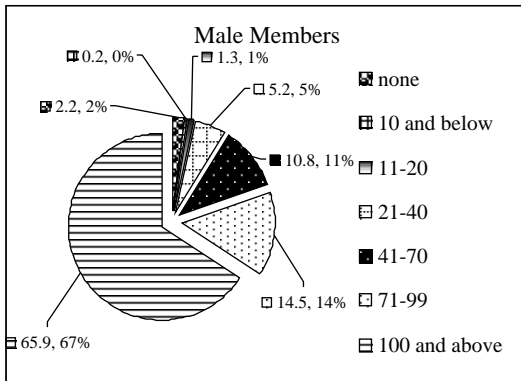


Table 1.1 Selected Indicators of NIS-IAs (4/4)



10. Distribution of IA by Type of Contract

Contract	Freq.	Percent
none	278	13.6
Type I	254	12.5
Type II	203	10
Type III	62	3
Type I & II	1,006	49.4
JSM/IMT	234	11.5
Total	2,037	100



11. Number and Percent of IA Members by Gender Classification

Number of IA Members	Male		Female		Average Percent
	Freq.	Percent	Freq.	Percent	
none	44	2.2	441	21.6	22
10 and below	4	0.2	613	30.1	0.2
11-20	26	1.3	368	18.1	1
21-40	105	5.2	343	16.8	4
41-70	221	10.8	154	7.6	8
71-99	295	14.5	57	2.8	13.5
100 and above	1,342	65.9	61	3	71.1
Total	2,037	100	2,037	100	100

Table 4.1 Number and Percent Distribution of IA Respondents on the Preparation of Operation and Maintenance Plan by Category and Location, 2002

(Percent across location)

Category/Plan	UPSTREAM								MIDSTREAM							
	One per Cropping Cycle		Two per Cropping Cycle		None		Total		One per Cropping Cycle		Two per Cropping Cycle		None		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
A. Functional																
1. Cropping Calendar	6	7.6	35	44.3	1	1.3	42	53.2	3	3.8	11	13.9	-	-	14	17.7
2. Water delivery and dist	5	6.3	36	45.6	1	1.3	42	53.2	3	3.8	11	13.9	-	-	14	17.7
3. Repair and Maint.	14	17.7	25	31.6	3	3.8	42	53.2	7	8.9	3	3.8	4	5.1	14	17.7
4. ISF Collection	8	10.1	28	35.4	6	7.6	42	53.2	3	3.8	9	11.4	2	2.5	14	17.7
5. Other Plan	1	1.3	3	3.8	38	48.1	42	53.2	1	1.3	-	-	13	16.5	14	17.7
6. Budget	6	7.6	7	8.9	29	36.7	42	53.2	5	6.3	1	1.3	8	10.1	14	17.7
7. Business	4	5.1	1	1.3	37	46.8	42	53.2	3	3.8	-	-	11	13.9	14	17.7
8. Others	1	1.3	-	-	41	51.9	42	53.2	-	-	-	-	14	17.7	14	17.7
B. Moderately Functional																
1. Cropping Calendar	8	8.5	28	29.8	-	-	36	38.3	5	5.3	23	24.5	-	-	28	29.8
2. Water delivery and dist	8	8.5	26	27.7	2	2.1	36	38.3	6	6.4	22	23.4	-	-	28	29.8
3. Repair and Maint.	13	13.8	22	23.4	1	1.1	36	38.3	13	13.8	15	16.0	-	-	28	29.8
4. ISF Collection	5	5.3	27	28.7	4	4.3	36	38.3	8	8.5	14	14.9	6	6.4	28	29.8
5. Other Plan	1	1.1	1	1.1	34	36.2	36	38.3	-	-	-	-	28	29.8	28	29.8
6. Budget	3	3.3	5	5.5	25	27.5	33	36.3	4	4.4	1	1.1	23	25.3	28	30.8
7. Business	2	2.1	-	-	34	36.2	36	38.3	-	-	-	-	28	29.8	28	29.8
8. Others	1	1.1	1	1.1	34	36.2	36	38.3	-	-	-	-	28	29.8	28	29.8
C. Non-Functional																
1. Cropping Calendar	2	7.4	5	18.5	1	3.7	8	29.6	1	3.7	4	14.8	-	-	5	18.5
2. Water delivery and dist	-	-	6	22.2	2	7.4	8	29.6	1	3.7	4	14.8	-	-	5	18.5
3. Repair and Maint.	3	12.5	1	4.2	1	4.2	5	20.8	1	4.2	3	12.5	1	4.2	5	20.8
4. ISF Collection	-	-	5	18.5	3	11.1	8	29.6	-	-	2	7.4	3	11.1	5	18.5
5. Other Plan	-	-	-	-	8	29.6	8	29.6	-	-	-	-	5	18.5	5	18.5
6. Budget	2	7.4	-	-	6	22.2	8	29.6	-	-	-	-	5	18.5	5	18.5
7. Business	1	3.7	-	-	7	25.9	8	29.6	-	-	-	-	5	18.5	5	18.5
8. Others	-	-	-	-	8	29.6	8	29.6	-	-	-	-	5	18.5	5	18.5
D. All Categories																
1. Cropping Calendar	16	8.0	68	34.0	2	1.0	86	43.0	9	4.5	38	19.0	-	-	47	23.5
2. Water delivery and dist	13	6.5	68	34.0	5	2.5	86	43.0	10	5.0	37	18.5	-	-	47	23.5
3. Repair and Maint.	30	15.2	48	24.4	5	2.5	83	42.1	21	10.7	21	10.7	5	2.5	47	23.9
4. ISF Collection	13	6.5	60	30.0	13	6.5	86	43.0	11	5.5	25	12.5	11	5.5	47	23.5
5. Other Plan	2	1.0	4	2.0	80	40.0	86	43.0	1	0.5	-	-	46	23.0	47	23.5
6. Budget	11	5.6	12	6.1	60	30.5	83	42.1	9	4.6	2	1.0	36	18.3	47	23.9
7. Business	7	3.5	1	0.5	78	39.0	86	43.0	3	1.5	-	-	44	22.0	47	23.5
8. Others	2	1.0	1	0.5	83	41.5	86	43.0	-	-	-	-	47	23.5	47	23.5

Category/Plan	DOWNSTREAM								ALL AREAS							
	One per Cropping Cycle		Two per Cropping Cycle		None		Total		One per Cropping Cycle		Two per Cropping Cycle		None		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
A. Functional																
1. Cropping Calendar	5	6.3	18	22.8	-	-	23	29.1	14	17.7	64	81.0	1	1.3	79	100.0
2. Water delivery and dist	3	3.8	20	25.3	-	-	23	29.1	11	13.9	67	84.8	1	1.3	79	100.0
3. Repair and Maint.	13	16.5	10	12.7	-	-	23	29.1	34	43.0	38	48.1	7	8.9	79	100.0
4. ISF Collection	6	7.6	15	19.0	2	2.5	23	29.1	17	21.5	52	65.8	10	12.7	79	100.0
5. Other Plan	2	2.5	2	2.5	19	24.1	23	29.1	4	5.1	5	6.3	70	88.6	79	100.0
6. Budget	7	8.9	1	1.3	15	19.0	23	29.1	18	22.8	9	11.4	52	65.8	79	100.0
7. Business	-	-	-	-	23	29.1	23	29.1	7	8.9	1	1.3	71	89.9	79	100.0
8. Others	-	-	-	-	23	29.1	23	29.1	1	1.3	-	-	78	98.7	79	100.0
B. Moderately Functional																
1. Cropping Calendar	3	3.2	26	27.7	1	1.1	30	31.9	16	17.0	77	81.9	1	1.1	94	100.0
2. Water delivery and dist	1	1.1	28	29.8	1	1.1	30	31.9	15	16.0	76	80.9	3	3.2	94	100.0
3. Repair and Maint.	10	10.6	16	17.0	4	4.3	30	31.9	36	38.3	53	56.4	5	5.3	94	100.0
4. ISF Collection	5	5.3	18	19.1	7	7.4	30	31.9	18	19.1	59	62.8	17	18.1	94	100.0
5. Other Plan	-	-	-	-	30	31.9	30	31.9	1	1.1	1	1.1	92	97.9	94	100.0
6. Budget	10	11.0	1	1.1	19	20.9	30	33.0	17	18.7	7	7.7	67	73.6	91	100.0
7. Business	2	2.1	-	-	28	29.8	30	31.9	4	4.3	-	-	90	95.7	94	100.0
8. Others	-	-	-	-	30	31.9	30	31.9	1	1.1	1	1.1	92	97.9	94	100.0
C. Non-Functional																
1. Cropping Calendar	4	14.8	9	33.3	1	3.7	14	51.9	7	25.9	18	66.7	2	7.4	27	100.0
2. Water delivery and dist	4	14.8	8	29.6	2	7.4	14	51.9	5	18.5	18	66.7	4	14.8	27	100.0
3. Repair and Maint.	5	20.8	8	33.3	1	4.2	14	58.3	9	37.5	12	50.0	3	12.5	24	100.0
4. ISF Collection	3	11.1	6	22.2	5	18.5	14	51.9	3	11.1	13	48.1	11	40.7	27	100.0
5. Other Plan	-	-	-	-	14	51.9	14	51.9	-	-	-	-	27	100.0	27	100.0
6. Budget	2	7.4	-	-	12	44.4	14	51.9	4	14.8	-	-	23	85.2	27	100.0
7. Business	1	3.7	-	-	13	48.1	14	51.9	2	7.4	-	-	25	92.6	27	100.0
8. Others	-	-	-	-	14	51.9	14	51.9	-	-	-	-	27	100.0	27	100.0
D. All Categories																
1. Cropping Calendar	12	6.0	53	26.5	2	1.0	67	33.5	37	18.5	159	79.5	4	2.0	200	100.0
2. Water delivery and dist	8	4.0	56	28.0	3	1.5	67	33.5	31	15.5	161	80.5	8	4.0	200	100.0
3. Repair and Maint.	28	14.2	34	17.3	5	2.5	67	34.0	79	40.1	103	52.3	15	7.6	197	100.0
4. ISF Collection	14	7.0	39	19.5	14	7.0	67	33.5	38	19.0	124	62.0	38	19.0	200	100.0
5. Other Plan	2	1.0	2	1.0	63	31.5	67	33.5	5	2.5	6	3.0	189	94.5	200	100.0
6. Budget	19	9.6	2	1.0	46	23.4	67	34.0	39	19.8	16	8.1	142	72.1	197	100.0
7. Business	3	1.5	-	-	64	32.0	67	33.5	13	6.5	1	0.5	186	93.0	200	100.0
8. Others	-	-	-	-	67	33.5	67	33.5	2	1.0	1	0.5	197	98.5	200	100.0

Source: 2002 IA Inventory Survey, NIA-JICA

Table 4.3 Number and Percent Distribution of IA Respondents on the Conduct of TSA Meeting by Category and Location, 2002

(Percent across location)

Category/ Frequency	UPSTREAM			MIDSTREAM			DOWNSTREAM			ALL AREAS		
	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)
A. Functional												
none	1	50.0		-	-		1	50.0		2	100.0	
monthly	25	59.5	79	8	19.0	76	9	21.4	85	42	100.0	80
quarterly	3	37.5	77	2	25.0	90	3	37.5	73	8	100.0	80
semestral	8	57.1	84	2	14.3	78	4	28.6	85	14	100.0	82
annually	1	100.0	40	-	-		-	-		1	100.0	40
per cropping	4	40.0	76	2	20.0	80	4	40.0	85	10	100.0	80
emergency	-	-		-	-		2	100.0	60	2	100.0	60
Sub-Total	42	53.2	71	14	17.7	81	23	29.1	78	79	100.0	77
B. Moderately Functional												
none	4	25.0		4	25.0		8	50.0		16	100.0	-
monthly	20	45.5	75	14	31.8	75	10	22.7	78	44	100.0	76
quarterly	2	28.6	80	2	28.6	85	3	42.9	80	7	100.0	82
semestral	6	50.0	80	1	8.3	90	5	41.7	72	12	100.0	81
annually	1	33.3	55	2	66.7	70	-	-		3	100.0	63
per cropping	2	18.2	70	5	45.5	78	4	36.4	83	11	100.0	77
emergency	1	100.0	72	-	-		-	-		1	100.0	72
Sub-Total	36	38.3	72	28	29.8	80	30	31.9	78	94	100.0	77
C. Non-Functional												
none	-	-		-	-		2	100.0		2	100.0	-
monthly	3	27.3	55	2	18.2	30	6	54.5	84	11	100.0	56
quarterly	2	33.3	51	1	16.7	100	3	50.0	40	6	100.0	64
semestral	1	33.3	92	-	-		2	66.7	55	3	100.0	74
annually												
per cropping	1	33.3	90	2	66.7	75	-	-		3	100.0	83
emergency	1	50.0	100	-	-		1	50.0		2	100.0	100
Sub-Total	8	29.6	78	5	18.5	68	14	51.9	60	27	100.0	68
D. All Categories												
none	5	25.0		4	20.0		11	55.0		20	100.0	-
monthly	48	49.5	70	24	24.7	60	25	25.8	82	97	100.0	71
quarterly	7	33.3	69	5	23.8	92	9	42.9	64	21	100.0	75
semestral	15	51.7	85	3	10.3	84	11	37.9	71	29	100.0	80
annually	2	50.0	48	2	50.0	70	-	-		4	100.0	59
per cropping	7	29.2	79	9	37.5	78	8	33.3	84	24	100.0	80
emergency	2	40.0	86	-	-		3	60.0	60	5	100.0	73
TOTAL	86	43.0	74	47	23.5	76	67	33.5	72	200	100.0	74

Source: 2002 IA Inventory Survey, NIA-JICA

Table 4.4 Number and Percent Distribution of IA Respondents on the Conduct of BOD Meeting by Category and Location, 2002

(Percent across location)

Category/ Frequency	UPSTREAM			MIDSTREAM			DOWNSTREAM			ALL AREAS		
	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)
A. Functional												
none												
monthly	40	53.3	93	12	16.0	84	23	30.7	93	75	37.5	90
quarterly	1	33.3	100	2	66.7	88	-	-		3	1.5	94
semestral	1	100.0	80	-	-		-	-		1	0.5	80
annually	-	-		-	-		-	-		-	-	
per cropping	-	-		-	-		-	-		-	-	
emergency	-	-		-	-		-	-		-	-	
Sub-Total	42	53.2	91	14	17.7	86	23	29.1	93	79	39.5	90
B. Moderately Functional												
none							2	100.0	80	2	1.0	-
monthly	26	39.4	89	24	36.4	88	16	24.2	90	66	33.0	89
quarterly	4	33.3	81	2	16.7	80	6	50.0	77	12	6.0	79
semestral	4	36.4	95	2	18.2	88	5	45.5	95	11	5.5	93
annually	1	50.0	100	-	-		1	50.0	100	2	1.0	100
per cropping	-	-		-	-		-	-		-	-	
emergency	1	100.0	90	-	-		-	-		1	0.5	90
Sub-Total	36	38.3	91	28	29.8	85	30	31.9	90	94	47.0	89
C. Non-Functional												
none	-	-		-	-		1	100.0	80	1	0.5	80
monthly	8	44.4	90	-	-		10	55.6	81	18	9.0	85
quarterly	-	-		-	-		2	100.0	55	2	1.0	55
semestral	-	-		4	100.0	64	-	-		4	2.0	64
annually	-	-		1	100.0	95	-	-		1	0.5	95
per cropping												
emergency	-	-		-	-		1	100.0	80	1	0.5	80
Sub-Total	8	29.6	90	5	18.5	79	14	51.9	72	27	13.5	80
D. All Categories												
none	-	-		-	-		3	100.0	80	3	1.5	80
monthly	74	46.5	91	36	22.6	86	49	30.8	88	159	79.5	88
quarterly	5	29.4	91	4	23.5	84	8	47.1	66	17	8.5	80
semestral	5	31.3	88	6	37.5	76	5	31.3	95	16	8.0	86
annually	1	33.3	100	1	33.3	95	1	33.3		3	1.5	98
per cropping												
emergency	1	50.0	90	-	-		1	50.0		2	1.0	90
TOTAL	86	43.0	91	47	23.5	83	67	33.5	85	200	100.0	86

Source: 2002 IA Inventory Survey, NIA-JICA

Table 4.5 Number and Percent Distribution of IA Respondents on the Conduct of General Assembly by Category and Location, 2002

(Percent across location)

Category/ Frequency	UPSTREAM			MIDSTREAM			DOWNSTREAM			ALL AREAS		
	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)	Number	%	Attendance Rate (%)
A. Functional												
none	3	75.0	80	1	25.0	80	-	-		4	2.0	
monthly												
quarterly	3	75.0	87	1	25.0	35	-	-		4	2.0	61
semestral	17	70.8	77	3	12.5	83	4	16.7	85	24	11.9	82
annually	19	40.4	79	9	19.1	68	19	40.4	78	47	23.4	
per cropping	-									-	-	
emergency	-									-	-	
Sub-Total	42	53.2	81	14	17.7	62	23	29.1	81	79	39.3	75
B. Moderately Functiona												
none	-									-	-	-
monthly	1	20.0	80	1	20.0	80	3	60.0	80	5	2.5	80
quarterly	2	66.7	65	-	-		1	33.3	90	3	1.5	78
semestral	1	25.0	80	2	50.0	78	1	25.0	50	4	2.0	69
annually	10	38.5	67	11	42.3	69	5	19.2	49	26	12.9	62
per cropping	21	40.4	65	11	21.2	68	20	38.5	77	52	25.9	70
emergency	1	25.0	95	3	75.0	90	-	-		4	2.0	93
Sub-Total	36	38.3	75	28	29.8	77	30	31.9	69	94	46.8	74
C. Non-Functiona												
none	-									-	-	
monthly	-	-		-	-		1	100.0	80	1	0.5	80
quarterly	-	-		-	-		1	100.0	60	1	0.5	60
semestral	2	50.0	80	-	-		2	50.0	75	4	2.0	78
annually	1	25.0	80	2	50.0	88	1	25.0	80	4	2.0	83
per cropping	4	25.0	66	3	18.8	45	9	56.3	52	16	8.0	55
emergency	1	50.0	80				1	50.0	80	2	1.0	80
Sub-Total	8	28.6	77	5	17.9	66	15	53.6	71	28	13.9	71
D. All Categories												
none	3	75.0	80	1	25.0	80	-	-	-	4	2.0	-
monthly	1	16.7	80	1	16.7	80	4	66.7	80	6	3.0	80
quarterly	5	62.5	76	1	12.5	35	2	25.0	75	8	4.0	66
semestral	20	62.5	79	5	15.6	80	7	21.9	70	32	15.9	76
annually	30	39.0	76	22	28.6	75	25	32.5	69	77	38.3	72
per cropping	25	36.8	66	14	20.6	57	29	42.6	65	68	33.8	62
emergency	2	33.3	88	3	50.0	90	1	16.7	80	6	3.0	86
TOTAL	86	42.8	77	47	23.4	69	68	33.8	73	201	100.0	74

Source: 2002 IA Inventory Survey, NIA-JICA

Table 4.6 Number and Percent Distribution of Respondents on the Status of Operation and Maintenance Implementation by Type of Contract, Category and Location, 2002

(Percent across location)

Category/Contract	UPSTREAM								MIDSTREAM								
	First		Renewal		Denied		Total		First		Renewal		Denied		Total		
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
A. Functional																	
1. Type I	13	23.2	8	14.3	8	14.3	29	51.8	6	10.7	3	5.4	4	7.1	13	23.2	
2. Type II	11	37.9	6	20.7	5	17.2	22	75.9	2	6.9	1	3.5	2	6.9	5	17.2	
3. Type I & II	17	28.8	10	17.0	9	15.3	36	61.0	3	5.1	1	1.7	7	11.9	11	18.6	
4. JSM/IMT	9	25.7	5	14.3	4	11.4	18	51.4	2	5.7	2	5.7	1	2.9	5	14.3	
B. Moderately Functional																	
1. Type I	12	15.6	9	11.7	10	13.0	31	40.3	7	9.1	4	5.2	4	5.2	15	19.5	
2. Type II	11	19.3	7	12.3	8	14.0	26	45.6	3	5.3	1	1.8	2	3.5	6	10.5	
3. Type I & II	9	13.0	6	8.7	7	10.1	22	31.9	12	17.4	9	13.0	6	8.7	27	39.1	
4. JSM/IMT	11	27.5	7	17.5	5	12.5	23	57.5	7	17.5	5	12.5	2	5.0	14	35.0	
C. Non-Functional																	
1. Type I	3	12.5	3	12.5	1	4.2	7	29.2	1	4.2	1	4.2	1	4.2	3	12.5	
2. Type II	1	5.9	1	5.9	-	-	2	11.8	3	17.7	2	11.8	3	17.7	8	47.1	
3. Type I & II	2	12.5	2	12.5	-	-	4	25.0	1	6.3	1	6.3	1	6.3	3	18.8	
4. JSM/IMT	2	25.0	1	12.5	1	12.5	4	50.0	1	12.5	1	12.5	-	-	2	25.0	
D. All Categories																	
1. Type I	28	17.8	20	12.7	19	12.1	67	42.7	14	8.9	8	5.1	9	5.7	31	19.8	
2. Type II	23	22.3	14	13.6	13	12.6	50	48.5	8	7.8	4	3.9	7	6.8	19	18.5	
3. Type I & II	28	19.4	18	12.5	16	11.1	62	43.1	16	11.1	11	7.6	14	9.7	41	28.5	
4. JSM/IMT	22	26.5	13	15.7	10	12.1	45	54.2	10	12.1	8	9.6	3	3.6	21	25.3	
Category/Contract	DOWNSTREAM								ALL AREAS								
	First		Renewal		Denied		Total		First		Renewal		Denied		Total		
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
A. Functional																	
1. Type I	7	12.5	3	5.4	4	7.1	14	25.0	26	46.4	14	25.0	16	28.6	56	100.0	
2. Type II	2	6.9	-	-	-	-	2	6.9	15	51.7	7	24.1	7	24.1	29	100.0	
3. Type I & II	6	10.2	2	3.4	4	6.8	12	20.3	26	44.1	13	22.0	20	33.9	59	100.0	
4. JSM/IMT	7	20.0	2	5.7	3	8.6	12	34.3	18	51.4	9	25.7	8	22.9	35	100.0	
B. Moderately Functional																	
1. Type I	15	19.5	8	10.4	8	10.4	31	40.3	34	44.2	21	27.3	22	28.6	77	100.0	
2. Type II	11	19.3	7	12.3	7	12.3	25	43.9	25	43.9	15	26.3	17	29.8	57	100.0	
3. Type I & II	9	13.0	5	7.3	6	8.7	20	29.0	30	43.5	20	29.0	19	27.5	69	100.0	
4. JSM/IMT	3	7.5	-	-	-	-	3	7.5	21	52.5	12	30.0	7	17.5	40	100.0	
C. Non-Functional																	
1. Type I	6	25.0	4	16.7	4	16.7	14	58.3	10	41.7	8	33.3	6	25.0	24	100.0	
2. Type II	3	17.7	2	11.8	2	11.8	7	41.2	7	41.2	5	29.4	5	29.4	17	100.0	
3. Type I & II	3	18.8	3	18.8	3	18.8	9	56.3	6	37.5	6	37.5	4	25.0	16	100.0	
4. JSM/IMT	1	12.5	1	12.5	-	-	2	25.0	4	50.0	3	37.5	1	12.5	8	100.0	
D. All Categories																	
1. Type I	28	17.8	15	9.6	16	10.2	59	37.6	70	44.6	43	27.4	44	28.0	157	100.0	
2. Type II	16	15.5	9	8.7	9	8.7	34	33.0	47	45.6	27	26.2	29	28.2	103	100.0	
3. Type I & II	18	12.5	10	6.9	13	9.0	41	28.5	62	43.1	39	27.1	43	29.9	144	100.0	
4. JSM/IMT	11	13.3	3	3.6	3	3.6	17	20.5	43	51.8	24	28.9	16	19.3	83	100.0	

Source: 2002 IA Inventory Survey, NIA-JICA

Table 5.1 Issues and Problems Affecting IA's Functionality

Operation and Maintenance (O&M)	Organization	Finance
1. Non-adherence to cropping calendar	1. Lack of incentives to expand membership, especially non-IA members.	1. Low production and farm income
- Lack of funds for inputs during wet season		2. Shortage of ISF shares
2. Non-adherence to water delivery/distribution plan	- Non-members can use water upon payment of ISF	3. Delayed remittance of ISF shares
- Closure of lateral gates for non-irrigation	- Inequity in water usage vis-à-vis landholding size	4. Shortage of capital for farm inputs
- Deliberate destruction of canals & steelgates	- Multiple membership by virtue of transient farming	5. Lack prudence in financial transactions
- Illegal diversion of water	2. Lack of cooperation from downstream users	- Low CBU and high overhead cost
- Ignore water delivery schedule	due to shortage of water	- Weak savings mobilization
- Shortage of water	- High degree of inactive members among downstream users	- Syndrome of financial dependency culture from NIA relying mainly from ISF shares as revenue
- Upstream users leave turnout gates fully open		
3. Non-adherence to ISF collection Plan	3. Misappreciation of membership responsibilities	6. Limited economic activities
- Unauthorized deduction of members obligation, CBU, and other dues, from ISF payment	- ISF contribution	- IAs activities focused only on water mgt.
- Unclear understanding in ISF rate shifts from socialized (Estrada administration) to current rates (2 cavans during wet & 3 cavans during dry seasons, respectively)	- Ignore obligation payment	- Few livelihood activities
- Low production	- Minimal role of women	7. Limited support extended either by NIA or external agencies.
- High collection efficiency target	- Passive role for non-landowners & dominance of influential leaders	- Inadequate training modules, & non-conduct of TNA
- Deliberate non-payment by erring members	4. Defective IA by-laws	- Target based of training rather than demand-based
- Non-reporting of billable ISF collection, collusion between field personnel and members	- Non recognition of formal rights of members	- Low funding priority
	- Restricted economic and financial access	
4. Lack of understanding about IMT contract provisions	- Agency imposed rather than by members preparing their own by-laws based on felt needs	
- ISF sharing	5. Inadequate leadership skills	
- Repairs belong to NIA and not IA	- Educated farmers doubt leadership integrity	
- Delayed payment for Type I contract	- IA Chairperson arbitrarily appointing TSAG leaders	
	- Officers keep their positions too long, thus breeding ground for corruption	
5. Lack of funds to repair service road and farm ditches	6. Low level of skills	
- Use of toll fee as source of fund unacted by NIA	- Inadequate training	
- Inability of NIA to repair major work on time		
	7. Limited support extended either by NIA or external agencies.	
6. Limited support extended either by NIA or external agencies.	- Inadequate training modules, & non-conduct of TNA	
- Inadequate training modules, & non-conduct of TNA	- Target based of training rather than demand-based	
- Target based of training rather than demand-based	- Low funding priority	
- Low funding priority		