

ANNEX 5

IRRIGATION WATER ECONOMY

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

ANNEX 5

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1. ISF and its implications¹

1.1. Water Pricing

There still prevails the predominant idea that water is recognized as a social good rather than an economic good. Although water services fees are charged in some areas of the country, the rate is usually small, and fails to cover the service delivery costs.

Inadequate or no cost recovery agenda do not encourage the conservation of water and as far as water is treated as “free” commodity, there is no initiative to conserve water. This creates an imbalance in the allocation of water among the competitive sectors. This imbalance also affects the water distribution efficiency in the irrigator sector as well.

Irrigation sector uses approximately 42.42 km³/year (79%) of total water of the nation followed by 5.91 km³/year or 11% for domestic and municipal consumption and 5.37 km³/year or 10% for industry.

It is still a common internal idea in NIA that ISF does not include the economic value of water and it only represents the cost of facilities and services required for storage and distribution of water because of the predominance of the idea that water is conceived as a social good. Accordingly, it is still a rare case in NIA that water pricing is discussed from the viewpoint of pure sense of economic value. Also the economic value of water is not taken into consideration the process of ISF determination in the IMT contract. The ten years deferment of water cost payment to NWRB by NIA also indicates that NIA scarcely acknowledges irrigation water as an economic good.

The NWRB stands for the principle that water resources is one of the socio-economic goods. NWRB² is authorized to collect fees for water rights from the concerned government agencies and private sectors based on quota and progressive demand. NWRB³ currently bills NIA for irrigation water rights at the rate of Pesos

¹Based on the IA Strengthening Project Interim Report

² The recent EO123 (September 12, 2002) ordered NWRB to be transferred to the attachment under the Office of the President from the previous umbrella of DPWH. The EO 123 also proclaimed that upon approval by the president of the new/revised organization and manpower structure of the NWRB Secretariat, the NWRB should be transferred to DENR as a bureau for the purposes of administrative control and supervision.

³ EO 123 reconstituted the Board of NWRB to exclude those with direct claims on water resources. Through this action such as NIA, DPWH, and DOH are excluded from the Board. Secretary of the DENR chairs the board and other 6 agencies

5.50/liters/sec plus a flat rate of 500 pesos or roughly 8.60 per ha at 50% irrigation efficiency.

NIA is not paying to NWRB at all. Unlike the private sectors to which NWRB levies strict penalty in case of delinquency, most of government agencies are ignoring the payment to NWRB. The accumulative amount due during the period of 1980 and 1999 chargeable to NIA was at 33 million pesos.

According to NWRB, many government agencies are not paying water rights properly due to shortage in the budget. The Water District governed under the LUWA is one of the exceptions from delinquency. It is considered that the consciousness on paying water charges based on consumed volume but not on the facilities and services provided is rooted already together with the sense that potable water dealt with by LUWA is an essential economic good for human being. It means that the idea indicating that water is an economic good is already penetrated in the potable water supply projects. Vice versa, it is too early to introduce the ISF payable in portion to the consumed volume (volumetrical one) as long as the change in social awareness of water value is made in public.

NWRB's Present Water Charges	
NWRB's Present Water Charges	
NATURE OF SERVICE/FEE/CHARGE	APPROVED RATES (in peso)
APPLICATION/FILING FEE	
Water Permit	500.00
CPC/CPCN Applications	1,500.00
Protest/Water Use Conflict	2,000.00
Rate/Adjustment Increase	1,200.00
Sale/Transfer/Donation of Water System with CPC/CPCN	1,000.00
Re-appraisal/Re-evaluation of Assets	1,200.00
Authority for Extension of Service	1,000.00
Extension of the Validity of CPC/CPCN	1,000.00
Authority to Increase capital stock	1,000.00
Time Extension to submit annual report of operation	600.00
Provisional Authority	1,000.00
Transfer of Water Permit	700.00
Well Driller's Registration (renewable every 3 years)	
a) Individual	350.00
b) Partnership or Corporation	700.00
Authority to charge water rates	1,200.00
ANNUAL WATER CHARGES	
Annual Water Charges Base Cost (for all use)	500.00

(table continued)

in total compose the board members.

Irrigation use (lps)	In addition to the base cost of P 500.00,
Commercial use (lps)	₱2.75/lps will be charged for not more
Industrial, Fishery (lps)	than 30 lps withdrawal, ₱ 4.25 lps for
Livestock use (lps)	more than 30 lps but not exceeding 50
Power/Recreation (lps)	lps, ₱5.50/lps for more than 50 lps
Domestic use (lps)	
Use of water at its natural location for fish culture:	
a) for surface area not greater than 15 has.	110.00/ha.
b) for surface area greater than 15 has.	1,650.00
	₱65.00/ha in excess of 15 has.
Waterworks Operation	₱0.50 per ₱100 capital stock subscribed
Supervising/Regulation Fee	or paid or capital invested, or of the
	property and equipment in service which
	ever is higher
OTHER CHARGES	
CPC/CPCN Certificate	300.00
Testing and Sealing Fee	15.00
Annual Report Form	150.00
Penalty for non-payment of Annual Water Charges	2,500.00/year
Penalty for delinquency payment	P25.00/day of delay but not exceed P5,
	000.00
Certification Charges	20.00
Renewal of Well Driller's Registration	
a) Individual	350.00
b) Partnership or Corporation	700.00

1.2 Proper Irrigation Fee

Discussion paper in 1974 says that irrigation fee prevailed during the period of 1975 and 1989 stand for the following basic idea.

- *Initial Cost Allocation:* 1974 theory has obviously taken the principle that the 30-50% of initial capital should be covered from the water charge. The calculation actuary was taking into consideration the amount of initial construction cost to the irrigation charge.
- *Collection in Kind:* 1974 philosophy was to collect irrigation charge in kind by doing so, the collected amount could in some sense absorb the inflated cost of construction, operation and maintenance.
- *Expectation of Farmers' Durability on Charge Increase:* 1975 water charge increase was a drastic one. It was prevailed at 25 pesos/ha in wet season and 30 pesos/ha in dry season of irrigation fee before new water rate was introduced in 1974. It was designed to collect approximately above 100 pesos/ha/year in new pricing system, so that more or less 2 times of price increase was levied to beneficial farmers.

The following are the hypothetical investigation on water charge based on the theory applied in 1974 above. It has been tried to obtain proper irrigation charge where above concept is applied to status quo. The trial has adopted the up-to-date figures in the form of comparison (see the table on the previous page). According to the trial calculation, adoptable irrigation fee is 6 cavans/ha in the wet season and 8cavans/ha in the dry season respectively. Weighted inflation ratio in terms of kind is averaged at 250%.

1.3 Determination of ISF

The prevailing ISF rates were established in 1974. Before that year, monetary unit has been applied for the irrigation water: viz. 25 pesos/ha in wet season and 35 pesos/ha in dry season have been constantly and uniformly adopted.

The discussion in 1974 was addressed not only for subsidizing O&M cost of irrigation, but also for covering a part of the capital cost of NIS. At an average of 105 pesos/ha of ISF in 1974, about 40% of the initial NIS construction cost was envisaged for recovery. The 105 pesos/ha is equivalent to 3 cavans of palay, applying the 1974 rate of 35 pesos/cavan. At present, however, it is commonly acknowledged that the ISF rates cover the required O&M cost, though it is actually insufficient.

The payment in palay or in-kind was applied to forestall the recurrence of the adverse effects of rising costs as against fixed revenues. Likewise, the basic concept of irrigation fee at 2 cavans/ha in wet season and 3 cavans/ha in dry season has been determined.

1.4 Trends towards ISF rate

In 1974, MC21 revised the ISF rates to align with the type of irrigation scheme and crop planted so that corresponding O&M cost increases can be integrated. This scheme has been the policy for almost 30 years. The exception has been in 1998 through the implementation of the so-called socialized ISF rate under AO 17. The scheme, however, led to rampant non-payment of ISF among water users, which has badly deteriorated NIA's cash flow.

In 2001, the 1975 ISF rates were again re-imposed following the provisions of EO197 and EO218, allowing government corporations to raise their current fees to improve their revenues.

1975 ISF MC21 - 1974 Resolution

Scheme/Crop	WS(cavan/ha)	DS(cavan/ha)	3rd Crop (cavan/ha)
a. Diversion Scheme(Dam incuded)			
Rice	2.0	3.0	3.0
Other Seasonal		60% of rice	
Annual		5.0	
b. Reservoir Scheme			
Rice	2.5	3.5	3.5
Other Seasonal		60% of rice	
Annual		6.0	
c. Pumping Scheme			
Rice	Variable (6-14 in WS, 6-16 in DS)		
Other Seasonal	Variable (3.6-8.4 in WS, 3.6-9.6 in DS)		
Annual	Variable (12-30 Annually)		

AO 17 ISF Rates

September 1998 (AO17)		
Scheme/Crop	WS(cavan/ha)	DS(cavan/ha)
a. Diversion Scheme(Dam incuded)		
Rice<=2.0ha	1.0	1.5
>2.0~5.0ha	2.0	3.0
>5.0ha	3.0	4.5
Other Seasonal	60% of rice	
Annual	7.5	
b. Reservoir Scheme		
Rice<=2.0ha	1.5	2.0
>2.0~5.0ha	2.5	3.5
>5.0ha	4.0	5.0
Other Seasonal	60% of rice	
Annual	9.0	
c. Pumping Scheme		
Existing	Maintain standing rates	
New	Same as in (b) + power cost	

1.5 ISF Collection and Actual O&M Cost

NIA was able to obtain ISF amounting to 623 million pesos⁴, which was still 48 % lower than the O&M cost spent for NIS annually at 1,206 million pesos⁵. The current average annual O&M expenditure per ha for the 17 NIS improved under WB-assisted IOSP II was estimated at 1,500 pesos, while ADB's TA⁶ study on cost

⁴ Average of 5 years (1997-2001) target ISF collection referred from Performance Evaluation Report (SMD).

⁵ Average of 5 years (1996-2000) of annual O&M cost referred from NIA's profit & loss (PL) statement.

⁶ According to the ADB TA 3235 namely "Review of Cost Recovery Mechanisms for National Irrigation Systems", the distribution of the NIS as of year 2000 is categorized as follows:

Reservoir Storage	242,465 ha
Direct Diversion	416,158 ha
Pumping System	19,926 ha

recovery mechanism revealed at 2,300 pesos per ha is a desirable figure. These figures reflect the direct O&M cost but do not include the indirect cost spent in NIA's headquarters, regional and provincial offices.

1.6 Proposal for New ISF Rates

There are two directions in this regard. The first direction is to increase the prevailing ISF rates based on area-based water allocation. The following proposal came out from the NIA ISF Study Team in August 1998. In this proposal, NIA has resurrected the idea of adopting the contribution to capital cost, which was being practiced in 1974.

The proposed 1998 ISF

Proposed ISF(August 1998)			
Scheme/Crop	WS(cavan/ha)	DS(cavan/ha)	3rd Crop (cavan/ha)
a.Diversion Scheme(Dam incuded)			
Rice	3.0	5.0	5.0
Other Seasonal		60% of rice	
Annual		8.0	
b. Reservoir Scheme			
Rice	3.5	5.5	5.5
Other Seasonal		60% of rice	
Annual		9.0	
c. Pumping Scheme			
Rice	7.0	10.0	10.0
Other Seasonal		60% of rice	
Annual		17.0	

2. Justification of Calculated Irrigation Fee⁷

Increase of consumer price index (CPI) during the period of 1974 to 2001 is about 1,576 points accounting for 15.8 times of 1974 constant price. The comparison of price escalation on major cost and income is tabled as follows:

Comparison of price escalation on major cost and income

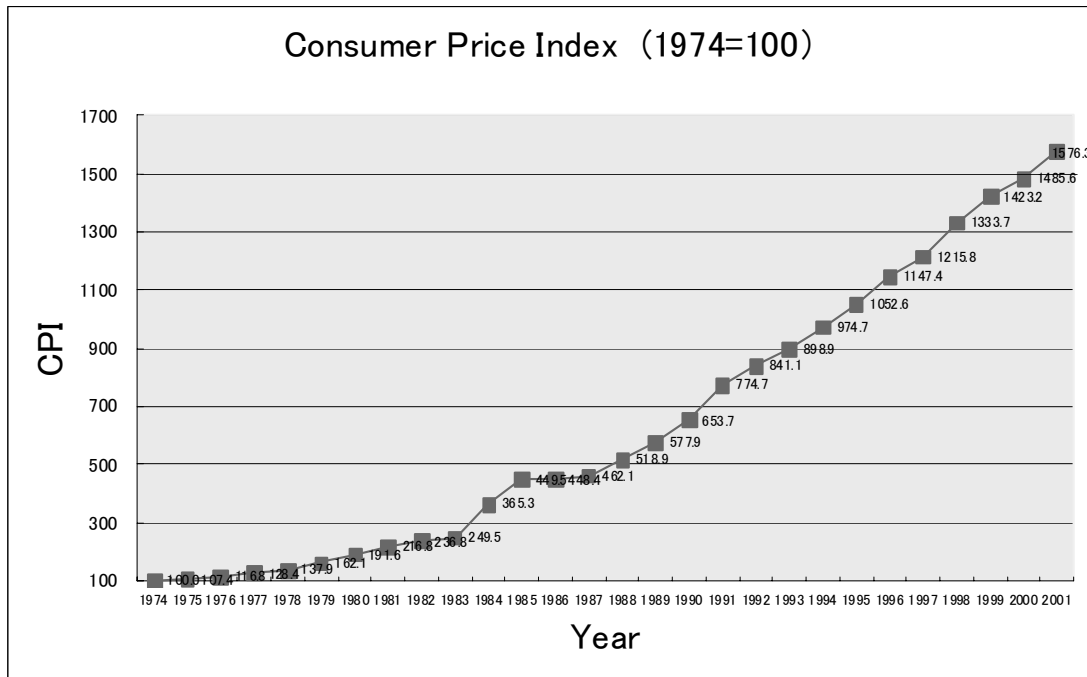
Items	1974 constant price	2001 constant price	Price increase
Per ha O&M cost (1)	64 pesos/ha	1,000 pesos/ha (NIA's Achievement)	15.6 times
Per ha O&M cost (2)	64 pesos/ha	2,300 pesos/ha (Actual Necessity)	35.9 times
Per ha Newly Development Cost	2,200 pesos/ha	150,000 pesos/ha	68.2 times ⁸
Palay cavan per 50kg	35 pesos/cavan	475 ⁹ pesos/cavan	13.6 times

⁷ Based on the draft appendix for Water Economy by Mr. Takano for the IA Strengthening Final Report

⁸ The 68.2 times of price increase indicates that the price escalation of construction materials and construction machineries is remarkable. It is considered that the construction of new NIS and O&M of these systems are very tough because the materials and equipment used for these purposes are mostly imported goods.

⁹ Increase of the government support price of palay at 9.0 pesos/kg in the wet season and 10.0 pesos/kg in the dry season was made in 2000, however it is very seldom for farmers to sell palay at these prices. It is normal case that palay is sold to private buyers at 20 – 30 % less than the government support price.

It is obvious that the difference of inflation at more than 40 times of O&M cost and at more or less 14 times of ISF income jeopardized the existing ISF scheme principally. The price escalation on cash expenditure overwhelms CPI, while cash income (palay) underlies the CPI: it means that from the structural point of view, it is already impossible to apply the 1974 rate to date. The renewal of ISF is thus inevitably necessary.



Consumer Price Index

The ADB proposed ISF at 3,325 pesos/ha year is 19 times of that of 175 pesos/ha year in 1974 level. The magnitude of increase indicates that the proposed rate at 3,325 pesos/ha year holds sufficient elasticity toward actually required O&M cost.

Therefore, it is considered ADB's proposed ISF 6.5/7.5 cavans/ha year is justifiable one of proper theoretical and economical viability.

Analysis on Appropriate Irrigation Service Fee

	Determination of Irrigation Fee in 1974		2003 Calculation	
Service Area of NIS	340,300	ha	689,010	ha (2000)
Dry season coverage	33	% of NIS area	64	% of NIS area (Ave. of last 5years.)
Annual O&M cost	22	million Php	1,259	million Php (2001)
per ha O&M cost	64	Php/ha	1,000	Php/ha (Actual 1999)
Development of NIS	2,200	Php/ha	150,000	Php/ha
Annual Repayment				
Financed by RA3601	44	Php/ha year	3,000	Php/ha year
Financed by 7% interest 25 years repayment loan	189	Php/ha year	6,465	Php/ha year
Range of Annual Cost per hectar	108	Php/ha year	4,000	Php/ha year
	253	Php/ha year	7,465	Php/ha year
Overall Concept on Rate of Irrigation Fees	Irrigation Fees cover at least operation and maintenance costs and subsidize a part (30 - 50%) of capital costs.		Irrigation Fees cover full cost of O&M expenses.	
Range of Irrigation Fees to be levied to Benefitiaries	100	Php/ha year	2,300	Php/ha year
	125	Php/ha year		
Concept on mode of payment	To forestall the recurrence of the adverse effects of rising costs as against fixed revenues, payment in monetary unit should be changed into payment in palay. (Min. =100+108*0.3=132.4pesos/ha)		To forestall the recurrence of the adverse effects of rising costs as against fixed revenues, payment in monetary unit should be changed into payment in palay.	
Present Price of Palay (50kg cavan)	35	Phps/cavan	475	Php/cavan (Ave. 9.5 pesos/kg)
Target Weighed Average of Irrigation Fee	175	Php/ha	3,325	Php/ha (Weighted Average)
Irrigation Fee (Wet)	2.0	cavan/ha	3.0	cavan/ha
Irrigation Fee (Dry)	3.0	cavan/ha	3.5	cavan/ha
		Both for Diversion and Reservoir		For Diversion
Irrigation Fee (Wet)	-		3.5	cavan/ha
Irrigation Fee (Dry)	-		4.0	cavan/ha
				For Reservoir

Since NIA has no intention to ask farmers for a part of asset share at present, these figures are not allowed for the ISF calculation.

3. Review of Former Project Undertaken by NIA

3.1. Second Irrigation Operation Support Project (IOSP II) (WB) June 13, 2001

The Second Irrigation Operations Support Project (IOSP2) has significant improvements in the irrigation service despite the many setbacks mainly from the people involved in the project.

Part of the framework – changes in the cost recovery policies

- the IMT contract replaced the system of sharing the irrigation service fee (ISF) collection between NIA and the IAs/CIA by a negotiated share of usually 50/50, this has some drawbacks such as the NIA made late remittances that was gradually replaced by a lump sum payment system (probably from a weekly or monthly basis to a quarterly or yearly basis)

Incremental Operations and Management

- it is not yet clear if the maintenance of service roads, maintenance of control structures and gates and incremental personnel costs for the Institutional

development officers is included in the maintenance fee charged to the farmers or if it is included in the ISF of farmers

- 95% of the O&M cost in 1999 was met through the ISF collection
- the objective of increasing the ISF collection received a major setback when the then president announced condonation of the ISF and as a result, the farmers stopped paying the ISF. Therefore, to address this damage a socialized ISF rates based on the size of holdings which were lower than the previous ISF rates were established

Agricultural Support Services

- demonstration of trials of appropriate technologies: seed multiplication, distribution, and production training of farmers in soil and water management, integrated pest management, improved rice production technologies, crop diversification, rice-fish culture...etc., the effects of these training reduced the expenditures on pesticides thus the reduction of expenses and the increase in farm income due to improved production have direct poverty alleviation effects.

Factors affecting implementation and outcome

- Natural disasters which resulted in the delay of the construction period and implementation and increase in cost
- Delay due to release of government funds
- NIA's efficiency in equipment declined in the last three years of the project which could have made efforts in accelerating the implementation of improvement works and the IMT programs
- Cost in financing
- It seems that there are no problems with the farmers or with the IAs as support with the project is concerned.

Sustainability

- it is considered that the likelihood of the projects generating flow of benefits or income exceeding the marginal costs of operation and maintenance will occur
- steps that should be taken by the government and NIA to ensure proper O&M of systems and maximizing project benefits includes:
 - = current average annual O&M expenditure for 17 NIS is P 1,500.00 per ha, the desirable O&M expenditure on cost recovery mechanism for NIS should be ₱ 2,300.00. The desirable expenditure will be lower as the IMT program progresses since the IAs/CIAs with IMT contracts would have their own staff whose salaries and wages are much lower than those of the NIA staff.
- to further improve the sustainability of the O&M expenditures on headworks and main canals in larger systems (above 3000 ha) will remain with NIA even after IMT; NIA will continue to increase ISF collection (including efforts to

reinstate the pre-1998 ISF rates) and reduce its operating cost by persuading the government to allocate sufficient funds for early retirement of NIA staff; the current costly practice of collecting ISF from farmers (water retailing) should be replaced by direct billing to the IAs (wholesaling); taken in great consideration is the movement of the present system of sharing the ISF based on uniform national rates to a lump sum system-specific, and negotiated payment

- O&M funds of the NIA will share with the CIAs/IAs ISF collection for monitoring of the smaller systems and proper maintenance in areas of the IMT. The exact proportion to be earmarked would depend on the O&M cost and will differ from system to system and this could be supplemented by voluntary labor by the farmers or additional funds from the IA's share of ISF collection. This could be done through changing the by-laws of the IA and modify the IMT contract.
- the earmarked fund will also supplement the trust fund which is currently kept by the regional managers of the NIA, this was the equity contribution established by the farmers for improvement works

Comments from NIA

- In reaction to the Institutional Development's report that the training programs to increase participation of women was not implemented, NIA have this aspect mainstreamed in their programs and strategies but the solution for increasing women participation is the provision of opportunities to occupy operations.

ISF Collection and payment

- When the CIA/IA management was asked if all the O&M expenses had to be covered to be able to continue providing irrigation service and if they are paying their ISF, most of them said yes, though the main reason for those who were not able to pay their ISF were low yield, sale from harvest is not enough for the family's needs, insufficient water or late water delivery etc.
- Although the collected ISF by the IA was remitted to the CIA, which in turn remits the collected ISF to NIA, the NIA failed to give the CIA their share of ISF even if all the required documents have been complied with. This caused distrust and frustration among the farmers in relation to NIA's sincerity in pursuing its commitment to the CIA/IA as expressed in the Memorandum of Agreement.
- The collection rate of the ISF improved after irrigation management transfer (IMT) according to 68% of the respondents.
- To improve the collection of ISF 69% of the respondents suggests that there should be an intensive collection drive, information dissemination on the importance of payment, collection by group and good irrigation service as

means for improving collection.

Sharing arrangements

- 47% only expressed satisfaction with the present sharing arrangement for ISF, the reason for dissatisfaction of the majority of the respondents was the inability of the NIA to give CIA's share immediately and the misunderstanding of the sharing basis indicated in the MOA signed by both parties. (Refer to 2nd bullet under the ISF Collection and payment).

Farmers

Participation of family members in farming activities

- 47% of the respondents claim that at least one male member of the family was helping full time in farming, 9% reported that a female member was involved full time in farming. This low involvement is due to the fact that some members of the family are still studying or working outside the farm and that explains the dependence of the farmers on hired labor. Women's role includes: preparation of food for farm labor (69%), (>30%) on choosing seeds/variety of plants, planting, drying, and selling of palay. Other activities were harvesting, threshing, and winnowing.

IA Membership and IMT

1. Participation in IA Activities

- a. Planning – 75% participated in the planning area, 18% not aware of the activity, 19% planning activities were only for officers
- b. Irrigation Canal Maintenance activities – vegetative clearing (74%) and canal clearing (71%), a big # of the respondents also participated in canal shaping and repair of service road.

2. Knowledge and perception of IOSP 2/ IMT

- there is no adequate information dissemination on what IOSP is all about
- 69 % only of the respondents acknowledge that there had been improvements such as: better irrigation service, repair/lining of canals, improved control points etc.

3. Changes in IA due to IOSP II/IMT

- generally farmers are satisfied with the improved irrigation service but some noted that system improvement had not been completed and this might cause maintenance problem in the future.
- Though some noted that members showed positive attitude (cooperative, active, and responsible) there were still those who lack cooperation among members.

4. Impressions on IMT

- 55% says that IMT was beneficial to farmers because of improved water supply; IMT became a channel by which farmers could become more responsible and cooperative. Some says that IMT may bring about maintenance problems because of non-completion of the system improvement (refer to #3), 3% were not satisfied because it was difficult to manage and some thought that even with IMT, NIA needs to provide support to the farmers.

Impact of IOSP II/IMT on irrigation service

- According to the farmers, overall they were satisfied with irrigation service in terms of timeliness of water delivery, equity of distribution and adequacy of water supply after project implementation.

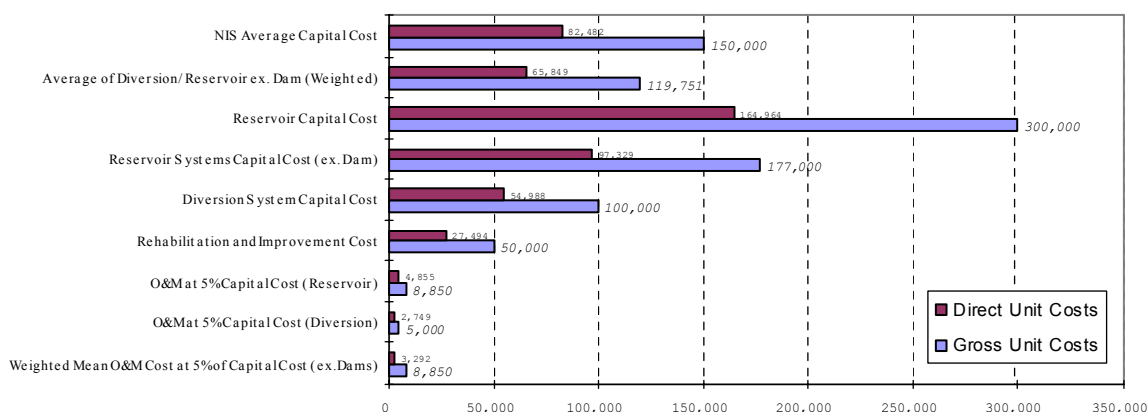
3.2. Cost Recovery Mechanisms for National Irrigation Systems (ADB)

Major Numerical Figures Proposed by ADB in the Process of Cost Recovery Review

Review of Cost Recovery Mechanisms for National Irrigation Systems in 2000		
- Major Numerical Figures Proposed by ADB TA in the Process of Cost Recovery Review -		
Major Figures	Amount	Year
<p>NIA's Proposed new ISF rates</p> <p>Weighted average of O&M cost at 5% capital cost (ex. Dams). ADB Consultant collected unit cost data (Yr2000) for run-of the-river diversion and reservoir systems and for system rehabilitation and improvement from PDD. Estimated ISF covers O&M cost/ha for preventive system O&M and capital buildup, however NIA unit costs were deflated to remove indirect fees, and other indirect costs to derive 'unit direct capital cost/ha'. The coefficient of 5% of capital costs was used to estimate ISF requirement for the NIS. This ISF rate estimates are used to determine the real system O&M costs for operations and preventive maintenance to preserve the useful economic life of the NIS infra. Plus a marginal increment to finance regional overheads and allow for capital buildup, which could be used as an emergency O&M fund for system rehabilitation.</p>	<i>PHP 3,292</i>	<i>1998</i>
<p>ADB Study Estimate ISF</p> <p>Weighted average of diversion dam and reservoir systems corresponding 6.5/7.5 cavans of palay subject to palay selling price at 9.5pesos/kg. The Study confirmed the farmer's capability enough to pay it.</p>	<i>PHP 3,325</i>	<i>2000</i>
<p>ADB Study Estimate O&M recovery cost at NIS level</p> <p>Corresponding to 4.8 cavans/ha. The amount is more than double of actual O&M expenditure by NIA at 1,109/ha in 1999. The balance between ISF and full O&M cost at NIA level (Php 1,025) would represent NIA's ISF share (31%)</p>	<i>PHP 2,300</i>	<i>1998</i>

(table continued)

<p>ADB Study estimate the spread between ISF and the full cost of O&M</p> <p>The balance between ISF and full O&M cost at NIA level (Php1, 025) would represent NIA's ISF share (31%). This could either be collected, as done at present, or be recovered in a volumetric water charge. A major requirement to insure adequate levels of NIS preventive maintenance is that the system O&M portion of the ISF (2,300 pesos/ha) should be retained by the system and earmarked for system O&M.</p>	<p><i>PHP 1,025</i></p>	<p><i>2000</i></p>
<p>ADB Study estimate Irrigation Water Pricing</p> <p>Dry Season Water</p> <p>Wet Season Water</p>	<p><i>0.10 pesos/cum</i></p> <p><i>0.036 pesos/cum</i></p>	<p><i>2000</i></p> <p><i>2000</i></p>
<p>ADB Study estimates the volumetric revenues per ha.</p>	<p><i>2,176 pesos/ha</i></p>	<p><i>2000</i></p>
<p>WB's Second Irrigation Operation Support Project (IOSP 2) estimate annual O&M expenditure for target 17 NIS</p> <p>This figure becomes the base of ADB's estimate O&M recovery cost at NIS level at 2,300 pesos/ha. WB proposed that the desirable expenditure would be lower than 2,300 pesos/ha because as the progress of IMT progress, IAs tend to hire their own staff whose salaries and wages are much lower than those of NIA staff.</p>	<p><i>1,500 pesos/ha</i></p>	<p><i>1998</i></p>



3.2.1 NIA's Proposed New ISF Rates (3,292 pesos/ha)

Graph 1. Estimates of the ISF Requirement to Cover System O&M and Indirect Costs

Weighted average of O&M cost at 5% capital cost (ex. Dams). ADB Consultant collected unit cost data (Yr. 2000) for run-of-the-river diversion and reservoir systems and for system rehabilitation and improvement from PDD. Estimated ISF covers O&M cost/ha for preventive system, O&M and capital buildup however, NIA unit costs were deflated to remove indirect fees, and other indirect costs to derive 'unit direct capital cost/ha'. The coefficient of 5% of capital costs was used to estimate ISF requirement for the NIS. This ISF rate estimates are used to determine the real system O&M costs for operations and preventive maintenance to preserve

the useful economic life of the NIS infrastructures plus a marginal increment to finance regional overheads and allow for capital buildup, which could be used as an emergency O&M fund and for system rehabilitation.

3.2.2 ADB Study Estimate ISF (3,325 pesos/ha)

The analysis of ISF rate alternatives shows that the proposed 1998 ISF rate of 8 and 9 cavans of palay/ha comes closer to the estimated mean requirement of 3,329 pesos/ha than the other alternatives. However this rate of 8/9 cavans/ha still appears too high. With downward adjustment of 1 cavan/ha, 1998 proposed ISF at 9.5 pesos would be 3,325 pesos/ha for diversion systems and 3,800 pesos/ha for reservoir system. Adjusting the rate further to 6.6cavans/ha for diversion system, and 7.5 cavans/ha for reservoir system would give an ISF of 3,088 pesos/ha for diversion system and 3,562 pesos/ha for reservoir system. The average ISF between two types of systems would be 3,325 pesos/ha.

3.2.3 ADB Study Estimate O&M Recovery Cost at NIS Level (2,300 pesos/ha)

It is corresponding to 4.8 cavans/ha. The amount is more than double of actual O&M expenditure by NIA at 1,109/ha in 1999.

Calculation by ADB TA for obtaining of Full O&M Cost Recovery

Type of Irrigation System	2000 Estimate of Acreage by Irrigation System	1998 Estimates of Full O&M Cost Recovery* (P/ha)
Reservoir/storage	242,465	2,537
Direct Diversion	416,158	2,273
Pumping system	19,926	4,891
Total	678,549	
Weighted average of Full O&M cost Recovery for Reservoir and Diversion	658,623	2,370
	≡	2,300

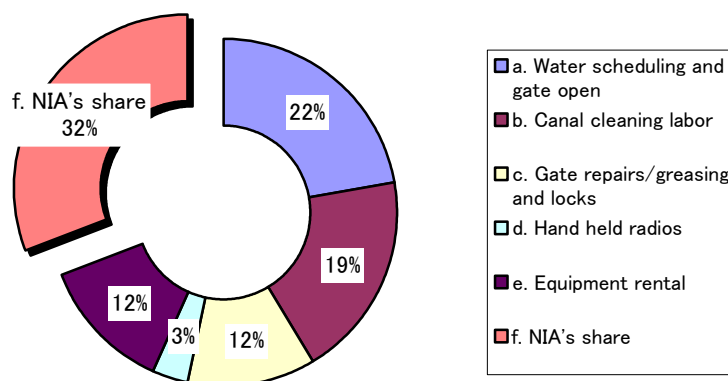
* Estimated by NIA

NIS Systems Level O&M Expenditures vs. Sustainable O&M Expenditure

O&M expenditure item	Recommended O&M cost at NIS level (Pesos	Actual expenditure of NIS in 1999 (Pesos 1,109/ha)
a. Water scheduling and gate open	Php 736 (32%)	Php 576 (52%)
b. Canal cleaning labor	Php 644 (28%)	Php 344 (31%)
c. Gate repairs/greasing and locks	Php 391 (17%)	Php 78 (7%)
d. Hand held radios	Php 115 (5%)	Php 0 (0%)
e. Equipment rental	Php 414 (18%)	Php 111 (10%)
Total	Php 2,300 (100%)	Php 1,109 (100%)

3.2.4 ADB Study Estimate the Spread between ISF and the Full Cost of O&M

The spread between the ISF (3,325pesos/ha) and the full cost of O&M (2,300pesos/ha) would represent regional share of the ISF (32%) prior to irrigation management transfer (IMT). This share should be used to fund regional overhead expenditures, emergency O&M funds, watershed management, service area expansion, and system rehabilitation.



Breakdown of Proposed ISF (3,325pesos/ha)

3.2.5 Irrigation Water Pricing under Volumetric System (2,176 pesos/ha)

Calculation of Water Charge per Hectare

Season		Wet	Dry	Total
Water volume payable (cum/ha)	Farm Use	10,368	-	-
	System losses	5,628	-	-
	Total	15,996	-	-
Unit ISF rate (Pesos/cum)		0.036	0.10	-
Amount (Pesos/ha)		1,600	576	2,176

The model (Marginal Product of Rice Irrigation Water in the Philippine: ADB TA) estimates the marginal product of rice irrigation water as 9.25 g/cum. This estimate is for the dry season to reflect seasonal scarcity. At the prevailing NFA support price for dry season palay, marginal value productivity (MVP) of irrigation water is: 0.01 kg x 10 pesos/kg = 0.10 pesos/cum. The base volumetric price of 0.10 pesos/cum in the dry season and 0.036 pesos/cum in the wet season is applied for diversion systems. For reservoir system, 20% could be added to cover the incremental O&M costs of main systems and infrastructures, giving a reservoir volumetric price at 0.12 pesos/cum in the dry season and 0.0432 pesos/cum in the wet season.

3.3. The Study on the Strengthening of NIA's Management System (JICA)

The objective of the study is to formulate an improvement plan for strengthening the management system of NIA and carry out technology transfer to the Philippine counterpart personnel.

The plans for strengthening NIA's management system are the following:

3.3.1 Top Management

It is proposed that the improvement plan for the top management will include expansion of the membership of the board and elevate the status of the Administrator as co-chairman, strengthen the policy and planning and delegate a permanent Technical Secretariat to the board, establish MIS and create an integrated department to process and control flow of information for prompt decision making and expand the scope of internal auditing and create an office directly under the supervision of the Administrator.

3.3.2 Project Development and Implementation

Planning includes the transfer of function to the field offices, enhance the application of project management tools to improve the quality of project preparation and evaluation, update and design standards and manuals, and facilitate procurement process by delegating greater authority to the FOs.

3.3.3 Operation and Maintenance

This includes the strengthening of the O&M function of the NISO through the following measures:

- activate distinct sections for O&M and assign permanent staff
- establish O&M fund
- emphasize the monitoring system by continuing the capacity improvement of the introduced by the JICA study team
- appoint permanent IDOs
- improve the technical capacities of the NISO staff including the IAs management of equipment

And improving the management of equipment and supporting IAs and LGUs in the procurement and modernization of O&M equipment and enforce the policy on equipment fund.

3.3.4 Financial Management

Included in the improvement plan for financial management are the decentralization of accounting functions to the NISOs and improvement of

financial systems particularly for general accounting and financial reporting, property accounting consisting of fixed assets and inventory accounting and construction cost accounting

3.3.5 ISF

The proposed plan for revenue increase will include upward adjustment of the ISF rates to the 1975 level, increase the billable area and ISF collection efficiency through improved monitoring system, increase management fee on the implementation of projects mainly for operations and maintenance, and disposition of other assets and aggressive marketing network through subsidiary business.

Other plans for strengthening the NIA's management system are improvement plan for the audit, establish Information Systems Department for improved IT management, improvement plan for administrative services that includes manpower and career development and training of employees, and the proposed early retirement program.

4. Consideration on Volumetric System¹⁰

Another direction is the adoption of the volumetric pricing system, which is being pilot tested in several areas¹¹ in the Philippines. Although the volumetric pricing system was proposed a long time ago, it was not realized at all, probably because of technical difficulties. Recently, ADB-TA on cost recovery mechanism for NIS and WB's IOSP II are thoroughly supporting this concept. Although it still needs some time to obtain the numerical result from pilot projects, the expectation toward the volumetric pricing system is getting higher.

The JICA Study team conducted an interview among leaders in NIA to get the perceptions on the volumetric pricing system. Although the preference has been shown entirely, there still exist prudent opinions throughout all divisions interviewed.

¹⁰ Based on the IA's Strengthening Project Interim Report

¹¹ The pilot areas include MRIIS, Sta. Maria (region IV), Roxas Kuya (Region X), Sta. Cruz (Region IV) and Angat (Region III). Most of the pilot projects are financed from WB. Recently Japan's grant aid project is introduced in MARIS and Sta. Cruz, which provides 4 units of pro gauges, amounted to 300,000 pesos in total.

Typical Comment on Application of Volumetric Pricing System

Positive Comments For the System	Negative Comments Against the System
<ul style="list-style-type: none"> ➤ Procedure of invoicing and issuing receipt is simplified. ➤ Ideal to prevail the idea that water is dealt as economic good and NIA can pay water right if this system can be introduced. ➤ System in the Pilot Project area is functioning well. They are still investigating the preference of gauge type. It is good lesson for the Philippines to pilot test the project. At least, it is necessary for NIA to collect volumetric data at the pilot area. ➤ Generally, farmers willingly prepare gauge at their expense. ➤ More efficient water usage can be expected. 	<ul style="list-style-type: none"> ➤ It is difficult for IAs to manage volumetric system and it is still early to introduce the system in the Philippines. Necessary to observe the result of pilot project. ➤ The idea of volumetric pricing system is not new in the Philippines. Although it is a tendency of the Filipino to love a rationalistic new idea, the operation always fails because we forget that Filipino also does the operation of system. ➤ NIA will meet difficulty in retrenching people for streamlining. ➤ No automatic gauge locally produced. Imported gauge is rather expensive at 250,000 pesos.

Note: The comments above are not necessarily reflecting the formal opinion of the section/position since the interviews were conducted on personal bases. Totally 11 section heads/experts are interviewed.

NIA's problems and responsibility with regards to water management

Sure delivery of the irrigation water to the nation's farmers is one of NIA's responsibilities to help alleviate the major concern for producing enough supply of rice for the rapid population growth of the country. In addition to some of the problems above, other problems related to water distribution, supply and management are the following: inadequate watershed management, inadequate water availability, the high levels of system degradation affecting water distribution, inadequate flow measurement devices and too many control structures, making it difficult to control water flows in main systems, inequitable distribution of water particularly at the tail ends, lack of incentives for conserving water.

Volumetric Pricing

ISF will be charged for the volume of water used by the farmers in the National Irrigation Systems (NISs) in lieu of the current practice of using the area-based or land based fee for billing. NIA will stand as a water wholesaler and will charge the IAs for the amount of water used by the whole lateral and in turn the IAs will charge the farmer members based on area size. A gauge-like device is installed to manually measure water discharged flowing from the laterals.

Unit cost of ISF based on the volumetric pricing method is derived by applying either of the 2 methodologies:

1. net profit per unit of water requirement as expressed in cubic meters and

beneficiary's affordability (presumably set at 8% of net profit)

2. incremental rice production attributable to irrigation water supply and beneficiary's affordability

This appears to be the most advantageous to both NIA and the farmers. It has a major impact on efficiency of water use and canal discharge. This would recognize the value of water as an economic commodity and will help improve the efficiency of irrigation water use. This method of pricing is the most direct way to link the water use benefits with the costs and the value of services provided. By setting the volumetric prices equal to marginal values, water is efficiently allocated, static allocation efficiency gains are reaped, and deadweight losses are avoided. Because water rents are captured through such pricing, losses associated with rent-seeking are also avoided. Costs included in the volumetric pricing are the following: capital, administrative and institutional costs associated with volumetric metering; billing and collections of water charges from beneficiaries. If volumetric should be adopted, the ISF rates will become area specific and the IAs will be given authority to set the rates. Though there is no experience in volumetric pricing of water in the Philippines (except for the banana plantation in Mindanao), there is a widespread interest among the farmers regarding this mechanism and the Water Resources Development Project (WRDP) had already made an agreement with the government to implement the method although, the results or the success of which are yet to be concluded.

Volumetric vs. other water wholesaling alternatives. Volumetric irrigation water service pricing is one method of bulk delivery in a wholesale mechanism. Another method is the use of weirs and flumes to measure the volume of water delivered over time with O&M costs recovery tariff applied to an agreed bulk delivery unit (or charge for a unit of flow per unit of time).

One disadvantage of bulk delivery without volumetric metering is the difficulty of keeping accurate records for IAs and the farmers need for transparency and accuracy in billings. Records could be kept by monitoring flows over weirs and flumes but the degree of accuracy would be significantly less than that of the flow meter with a counter measure and record the water delivered. These inaccuracies may lead to conflict and further ISF delinquency. It is most likely that the IAs and the farmers would prefer the more accurate method of recording water deliveries at the lateral head-gates.

Volumetric Irrigation Service Fee Mechanism

There is a need for a two-tiered irrigation service fee mechanism for the installation

of a volumetric irrigation water service pricing. Here, the NIA charges volumetrically at the main lateral head-gates and IAs set an ISFs to be paid by the farmer members along the laterals, sub-laterals and tertiary channels to farm turnouts. The local ISF in the lateral level can either be an area-based or a volumetric-based pricing depending on the choices of the farmer members. The volumetric service fee within the IA's area of jurisdiction, measurement of the farm turnout could be made by the installation of locally manufactured cutthroat flumes that costs at about 1,000 pesos each.

Difference between area-based or land-based service fee and volumetric service fee:

Volumetric service fee. The revenue based here is the cubic meter. The IAs are billed based on their water consumption. So NIA's billing to IA depends on the season of harvest as the ISF is based on the volume of water used. The estimated annual cost as determined by the regions would be allocated over the total projected water requirements including losses to arrive at the basic ISF rate.

Land-based service fee. The revenue base is on the hectare basis. NIA's billing is constant regardless of the season of harvest, changes only occur when there is a change in the ISF itself. The estimated annual cost is divided by the number of farm lots within the region, to come up with the basic ISF unit.

Local ISF should cover the following:

1. volumetric charge for water delivery recorded at the head gates,
2. full cost of the lateral, sub-lateral, and tertiary channel operations and management (O&M), and
3. administrative costs of the CIA and/or the IA

NIA's implementation of the volumetric service cost recovery mechanism would be 3,986 head gates x 27,000 pesos per flow meter and structures = Php 108 M or \$ 2.45 M.

NIA and the IA's roles in the 2-tiered cost recovery mechanism:

NIA will be responsible for:

1. reliable water supply in the main channel
2. training the IAs for:
 - maintenance
 - channel operations
 - on-farm water use and management
 - secondary and tertiary canal design

3. imposing the volumetric water charge at the secondary channel turnout
4. IA registration and legality of status of the IAs

IAs will be responsible for:

1. distributing water in the secondary and tertiary canals
2. collecting the volumetric or area-based ISF
3. paying NIA for bulk delivery of irrigated water from the main systems
4. creating contracts for secondary and tertiary O&M
5. imposing fines and sanctions

Further clarification have to be made by the NIA and IAs regarding where, how much volume, the time and duration of water delivery, the cost of services, billing procedures, procedures and time-frame of second billing notices, service suspension procedures for non-payment after second notice, and service resumption procedures following payment of overdue accounts etc. Because of legal, political, and security aspect, the concerned local government units (LGUs) such as the barangay captain, mayors, and governors should be given responsibility for its full implementation, therefore, they should also be included in the memorandum of agreement (MO) between the NIA and the IAs. Since the LGU will be taking part in the implementation of the mechanism they will also get a share from the volumetric revenues.

Below is a table for the revenue impact of volumetric pricing and the estimated per ha from volumetric pricing of irrigation services:

Revenue impact of volumetric pricing

	Revenue Potential from MVP Volumetric Water Pricing with 54% irrigation efficiency	Estimated volumetric revenues/ha
Average (1995-1999) Wet Season Irrigated Area	442, 927 ha	
Average Dry Season Irrigated Area	382, 962 ha	
Wet Season Revenue	442, 927 ha x 10, 368 m ³ x 0.036 pesos per m ³ = P165.3 million	10, 368 m ³ /ha x 0.036 pesos per m ³ (consumptive use) + 5, 628 m ³ x P 0.036 per m ³ (system losses) = P576.00/ha
Dry Season Revenue	382, 962 ha x 10, 368 m ³ x 0.10 pesos per m ³ = P397 M	10, 368 m ³ /ha x 0.10 pesos per m ³ (consumptive use) + 5,628 m ³ x P 0.10 per m ³ (transmission losses) = P1,600/ha
Sub-total	P 562.4 M	
Total Revenue	562.4 M x 1.6 m/ha (consumptive requirement of 1.0368 m/ha/season plus 0.5628 m/ha/season) = P 899.94 M (P 449.92 at 50% collection efficiency)	P 2, 176/ha/year from dry and wet seasons

The estimated per hectare volumetric revenues will be used for the following purposes:

1. O&M of main channels and infrastructure
2. Provide irrigation and farming systems technical support services to IAs
3. Promote capital build-up at the regional and system level for emergency repairs, and O&M support to IAs during period of typhoons and other natural disasters

The remaining revenues (may either be in cash or cavans) will be allocated for the full cost recovery of sustainable system O&M. The IAs collection for its turnover lateral will then be used for the maintenance and operation of the lateral network.

5 Present Situation and Problem on ISF Operation

5.1. ISF Sharing on IMT

ISF sharing between NIA and IA, with reference to JSM or IMT varies from one system to the other. Although there has been no common strategy in NIA, the sharing rates between NIA and IA are gradually being established by location or by system. The immediate action toward the standardization of sharing rates taking into consideration the location, system, and other socio-cultural factors are really necessary for NIA.

What is fixed are the rates embodied in Type II contract as given below.

ISF Incentives	
% Of Current Collection	% Of Incentive to IA
>50	0%
51-60	2%
61-70	5%
71-90	10%
91-100	15%

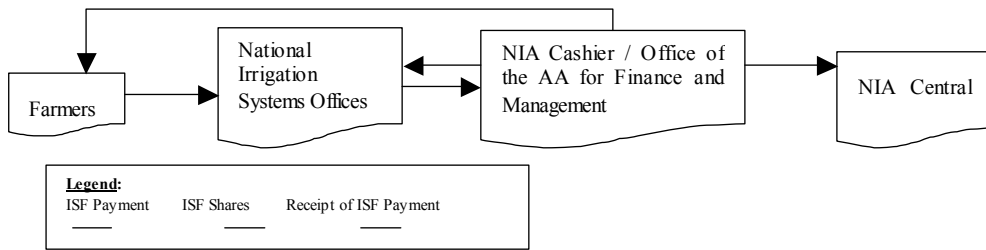
To obtain an incentive, IAs are requested to collect at least 50% of the current ISF collectibles, and in order to accelerate the collection of delinquent accounts 2% will be credited to the IA for every collected delinquent account, and an incentive of 25% will be credited to IAs for every collected delinquent account prior to date of effectiveness of the contract. The incentives to IAs are gradually increased as years passed by, because the incentive established in the early stage was not so attractive to the farmers¹².

5.2 Existing ISF and Its Circulative Mechanism

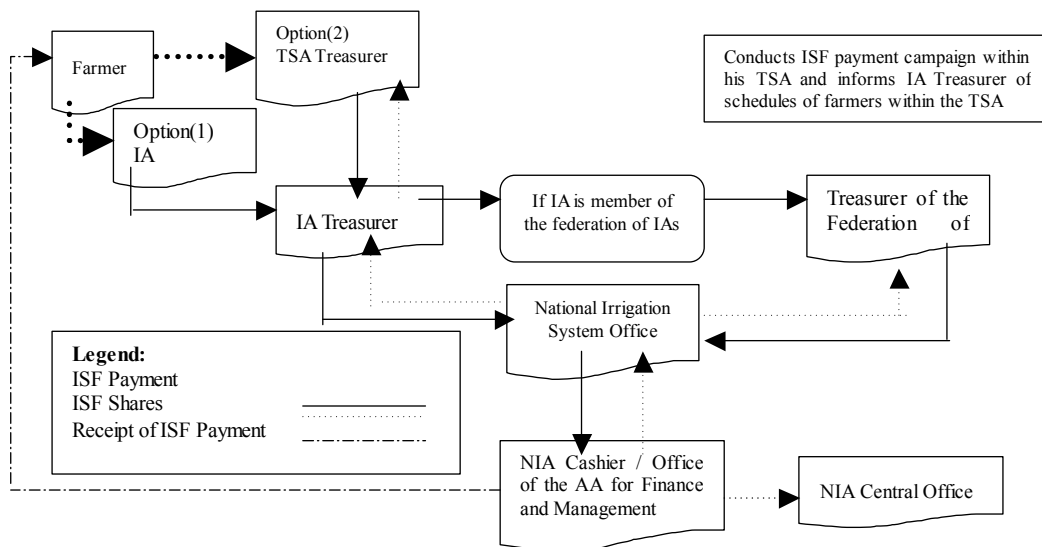
Presented below is the flow of collection of ISF payments and ISF sharing to the

¹² In the previous regulations stated in MC14 in 1989, current collection vs. incentive is as follows: less 70%:0%, 70-79%:2%, 80-85%:4%, 86-90%:6%, and 91-95%: 8%, and 96-100%:10%. The incentives toward the IA have increased approximately 25% in the process of 1989 MC14 to 1990 MC41. For the collection of backlog account, 25% are given to IA as the incentive. This figure remains constantly.

different sectors or agencies involved. The shares from the total ISF collection that the different sectors receive depend on the memorandum of agreement (MOA) between NIA and IAs.



ISF flow of collection and payment for Farmers who are not member of IAs



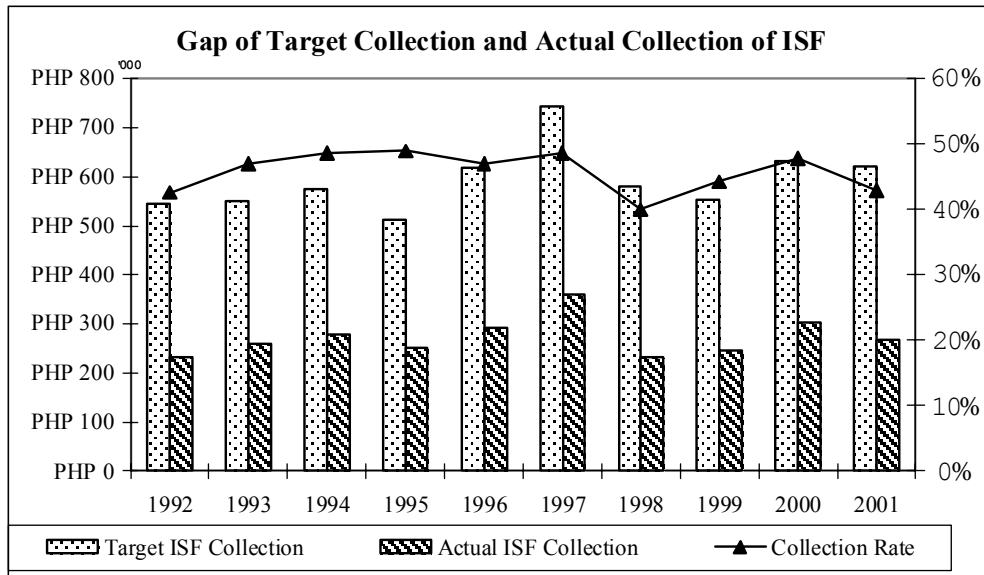
Flow of collection and retrieval of ISF payments and shares by farmers who are members of IA.

The detailed flow charts of billing procedure for irrigation fee and irrigation fee cash collection and remittance are shown in Tables 5.1 and 5.2, respectively.

5.3 ISF Performance Evaluation

(1) Evaluation Criteria

NIA evaluates ISF collection performance by region or by system level. The graph below shows the historical performance of ISF collection between 1992 and 2001.



Gap of Target Collection and Actual Collection of ISF

The procedure for performance evaluation is outlined as follows:

(a) Estimate of ISF Collection

ISF Collection is estimated based on programmed irrigation area. The following formula is used for the estimation.

$$\text{Estimated ISF Collection} = \text{P.A. (WS)} \times 2 \text{ cavans} \times 50 \text{ kg/cavan} \times \text{Government Support Price for Palay (DS)} + \text{P.A. (DS)} \times 3 \text{ cavans} \times 50 \text{ kg/cavan} \times \text{Government Support Price for Palay (WS)}$$

(b) Adjustment to Target ISF Collection

The estimated ISF Collection is usually revised downward because the programmed service area is always less than actual irrigated area. The estimated ISF Collection is then adjusted to the target ISF Collection, taking into consideration the actual irrigated area and other exemptions, as authorized by regional offices.\

$$\begin{aligned} \text{Target ISF Collection} &= \text{Estimated ISF Collection} \times \text{Percentage Commitment} \\ \text{Collection Efficiency} &= \text{Target ISF Collection} / \text{Estimated ISF Collection} \times 100 \end{aligned}$$

(c) Actual ISF Collection based on Benefited Area (BA)

At present, NIA does not charge irrigation fees for service area with a yield of less than 40 cavans and below.

$$\begin{aligned} \text{Actual ISF Collection} &= \text{B.A. (WS)} \times 2 \text{ cavans} \times 50 \text{ kg/cavan} \times \text{Government Support Price for Palay (DS)} + \text{B.A. (DS)} \times 3 \text{ cavans} \times 50 \text{ kg/cavan} \times \text{Government Support Price for Palay (WS)} \\ \text{Collection Efficiency} &= \text{ISF Current Account Collection} / \text{Actual ISF Collectibles} \times 100 \end{aligned}$$

The two indicators further discount the target ISF Collection. The first indicator is “yield” which is uncontrollable factor by NIA, and the other is “collection rate” with NIA’s full responsibility. Accordingly, the “Actual ISF Collection” does not fully represent the performance of collector or collecting capability.

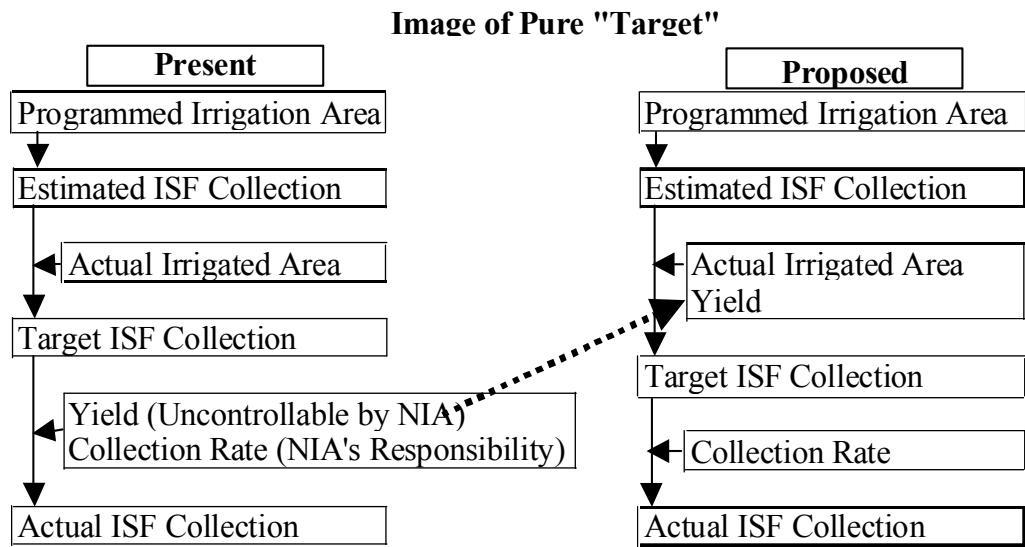
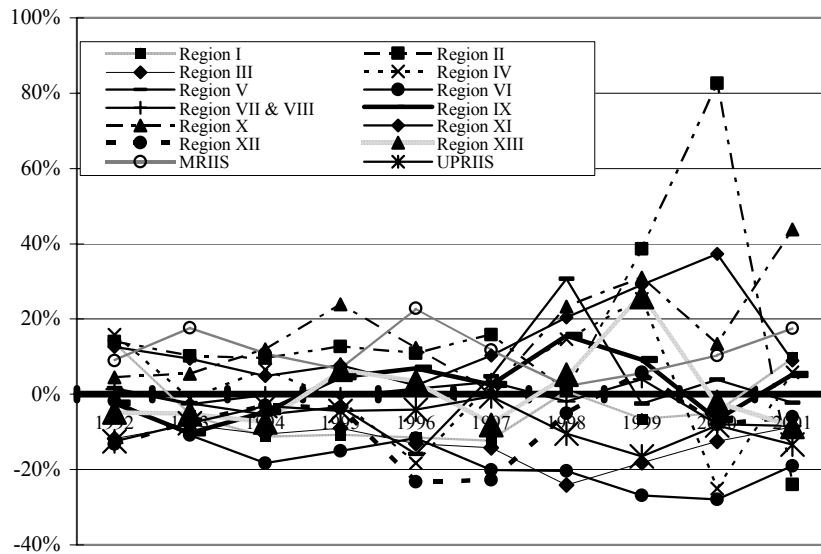


Image of Pure Target

For objectivity in performance evaluation, it is proposed that the context “target” should not include uncontrollable factors. In this sense, “yield” reduction should be counted before setting “target ISF Collection”. By doing so, the target ISF collection will become more rigid indicator reflecting solely the performance of the collecting capability of NIA.

(2) Target Setting

For the last 10 years, the problem on existing evaluation system is easily observed because some regions are always overestimating/underestimating the target. For example, the following were observed by region.



Deviation of ISF Collection Rate Between National Collection Average
 (X Axes = Average of National ISF Collection Rate)

Target Setting

Region	10 years Tendency	Observation
Region I	Out of 10 consecutive years, the region overwhelmed the national average ISF collection rate 3 times. The difference between the national average ranged from -12% to +14%.	Probably, target setting is moderate and the ISF collecting is conducted rather smoothly.
Region II	The region overwhelmed the national average rate 9 times. The difference between the national average ranged from -24% to +84%.	Target is undervalued, or collecting capability is supreme.
Region III	The region has never overwhelmed the national average rate at all. The difference between the national average ranged from -24% to -9%.	Target is overvalued, or collecting capability is inferior.
Region IV	The region overwhelmed the national average rate 6 times. The difference between the national average ranged from -25% to +25%.	Probably, target setting is moderate.
Region V	The regional average is close to the national average. The region overwhelmed the national average rate 4 times. The difference between the national average ranged from -16% to +31%.	Probably, target setting is moderate and collecting capability is stable.
Region VI	The region has never overwhelmed the national average rate at all. The difference between the national average ranged from -28% to -2%.	Target is overvalued, or collecting capability is inferior.
Region VII&VIII	The regional average is close to the national average. The region overwhelmed the national average rate 6 times. The difference between the national average ranged from -8% to +4%.	Probably, target setting is moderate and collecting capability is stable.

(table continued)

Region IX	The region overwhelmed the national average rate 6 times. The difference between the national average ranged from -10% to +16%.	Probably, target setting is moderate.
Region X	For the 10 years continuously, the region overwhelmed the national average rate. The difference between the national average ranged from +1% to +44%.	Target is undervalued, or collecting capability is supreme.
Region XI	For the 10 years continuously, the region overwhelmed the national average rate. The difference between the national average ranged from +9% to +37%.	Target is undervalued, or collecting capability is supreme.
Region XII	The region has exceeded the national average only once in 10 years. The difference between the national average ranged from -23% to +6%.	Since the deviation from the national average is not so big, it is considered that the target is established properly.
Region XIII	The regional average is close to the national average. The region overwhelmed the national average rate 4 times. The difference between the national average ranged from -9% to +26%.	Probably, target setting is moderate.
MARIIS	For the 10 years continuously, the region overwhelmed the national average rate. The difference between the national average ranged from +2% to +23%.	Target is undervalued, or collecting capability is supreme.
UPRIIS	The region has never overwhelmed the national average rate at all. The difference between the national average ranged from -16% to -1%.	Target is overvalued, or collecting capability is inferior.

If the performance evaluation is properly managed, the target setting must be monitored and revised every year. In this sense, it is necessary for SMD to reconsider the total performance evaluation system again in order that each region can compete for ISF collection rate more objectively.

Table 5.1 Flow Chart for Irrigation Fee Cash Collection and Remittance

Following the Manual for Billing and Collection of ISF as stated in MC67 of 2001 and MC52 of 1982, listed below are the procedures for ISF cash collection and remittance:

1. The Bill Collector (BC) collects the ISF and prepares and issues the Irrigation User (IU) of the official receipt (OR).
2. After collecting ISF from the IU, the BC turns over the collection and the report of collection to the System's Cashier (SC). The SC receives the collection and the report and issues OR to the BC
3. The IU has the option of going straight to the SC to pay for his/her ISF. The SC in turn issues the OR to the IU and gives an original copy of the OR to the BC.
4. After issuing the ORs, the SC prepares and submits the report of collection to the Regional or Project Accountant (RPA)
5. After the preparation and submission of the collection report of the SC to the RPA, the SC remits the collection to the PNB or any accredited bank by the NIA. After receiving the remittance from the SC, the bank issues the SC a bank draft.
6. The SC, after receiving the bank draft from the bank sends the bank draft together with NIA Remittance Advice to the NIA Treasury or the Central Office.
7. The NIA Office/Central Office then prepares and sends the Monthly Summary of Remittances with attached OR to the RPA.
8. After receiving the Monthly Summary of Remittances and the OR from the NIA Office/Central Office, the RPA sends the OR to the SC for filing.

Table 5.2 Flow Chart for Billing Procedure for Irrigation Fee

Listed in the MC #71 series of 1991 are the General Guidelines and Procedures for Utilization of the Parcellary Maps. Listed below are the procedures for the billing and collection of irrigation fees:

I. Irrigated/Planted Areas

1. The Watermaster (WRFT) prepares and submits 2 copies of LIPA weekly (usually during the end of the week) to Irrigation Superintendent (IS).
2. The IS reviews and approves the original copy of LIPA and forwards it to the Bill Processor (BP).
3. Using LIPA copy #2 color codes irrigated/planted lots in the Parcellary Sheet Maps (PSM) with slash (refer to Item 3.1 of the Guidelines and Procedures for Utilization of the Parcellary Maps)
4. The IS forwards LIPA copy No. 2 to BP.
5. IS field inspects unreported planted lots; resolves problems/ issues and rectifies discrepancies between service area and irrigated or planted areas.

II. Billed Areas

A. Bills Prepared

6. The BP prepares the bills and statement of account (BSA) based on the original LIPA
7. Using LIPA No. 2, marks with a check the lot numbers where bills have been prepared and forwards it to the IS.
8. The IS color codes the lots with bills prepared with a 1/2 back slash above the slash symbol
9. The IS ensures that irrigated/planted lots are properly billed; resolves problems/issues and rectifies discrepancies between planted and areas with bills prepared

B. Bills Served

10. The BP corrects, adjusts, and cancels BSAs based on the approved List of Lots and Total Crop Failure (LLTCF) & Amendments to List of Lots Planted (ALLP). Submits 2 copies of corrected

BSAs to IS and a summary of approved exemptions for approval.

11. The IS approves all BSAs on a per lot basis
12. IS forwards 2 copies of BSAs to the Collection Officer/Deputized Bill Collector (CO/DBC)
13. The CO/DBC distributes/gives the original copy of BSA to the landowner (LO) or Farmer Tiller (FT)
14. The CO/DBC requests LO/FT to acknowledge receipt of BSA-1 by signing at the back of the BSA-2.
15. The LO/FT receives the original BSA-1.
16. The LO/FT acknowledges the receipt of BSA-1 by signing at the back of BSA-2 and submits it to CO/DBC.
17. The CO/DBC prepares the summary list of acknowledged BSAs and submits it to the IS
18. The IS color codes the lots with bills served with a 1/2 back slash below the slash symbol.
19. The IS ensures that all irrigated and planted lots are properly served with bills; resolves problems or issues and rectifies discrepancies between lots billed and served.

III. Collected/Paid Areas

20. The CO/DBC submits weekly report of cash collection (ROCC) with official receipt (OR) and weekly report of in-kind collection (ROIC) with acknowledgement receipt (AR) to the System's Cashier (SC)
21. The SC prepares and submits the weekly report of collection to the IS
22. The IS color codes the collected/paid lots with a circle
23. The IS ensures that all irrigated, planted and billed lots are reported as paid; resolves problems or issues and rectifies discrepancies between billed and collected areas.

IV. Exempted Areas

24. The WRFT prepares and submits LLTCF to IS for approval
25. On a later date, the WRFT prepares and submits AALP to IS for approval.
26. The IS verifies and approves the LLTCF and later the AALP
27. The IS forwards the LLTCF and AALP to the BP
28. The BP, using the approved LLTCF and ALLP corrects, adjusts and cancels BSA accordingly
29. The BC prepares the summary of approved exemptions and submits it to the IS
30. The IS color codes the lots with exemptions:
 - a. For lots with total crop failure shade all spaces of the symbol
 - b. For lots with partial crop failure shade only the lower portion of the symbol.

31. The IS monitors and verifies areas reported for exemption or areas with crop damages.
32. IS recommends farmer's request for exemption to the Regional Office (RO)
33. Upon the approval of the RO, the IS distributes the copies to the end-users and the BP.
34. The BP posts the exemptions to the Irrigation Fee Register (IFR).

ANNEX 6

LEGAL FRAMEWORK ON NIS-IA

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

ANNEX 6

LEGAL FRAMEWORK ON NIS-IA

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ANNEX 6 LEGAL FRAMEWORK ON NIS-IA

1. **Legal Framework on the Development of Irrigators' Associations (IAs)**

The organization of IAs has been part and parcel of NIA's operational strategy to facilitate the delivery of irrigation services. The formation of IAs is envisioned to result in a) planned cropping calendar and better sharing of water among farmers; b) increased benefited area; and c) increased cropping intensity which will increase farmers' incomes and willingness to pay the ISF.

1.1 Existing Policies on IA Organization

NIA organized the IAs by virtue of RA 3601 which empowered the agency to undertake necessary activities conducive to the attainment of its objectives. Following the issuance of PD 552 in 1974 which provided for systems turnover, a NIA MC was issued in 1975 authorizing the organization of IAs to assist in the construction of irrigation projects and ISF collection. The 1975 circular, however, focused on the organization of IAs in CIS.

The adoption of participatory approaches to irrigation construction and management introduced under foreign-assisted projects in the early 1980s expanded the IA strategy in the NIS. The management turnover program, which evolved into the IMT program currently implemented by NIA, has underscored not only the organization of IAs but also their development into viable organizations in the joint or full management of the systems. Management turnover arrangements were prescribed in several NIA MCs and formalized through management contracts between the concerned IA and NIA such as Stage/Types I-III, JSM or IMT contracts.

However, unlike cooperatives which are governed by the Cooperative Code of the Philippines, there are no explicit laws or policies on the organization and operations of the IAs. There are no hard and strict rules to IA organization except that membership is voluntary and limited to any of the following: a) agricultural lessee, b) amortizing owner, c) owner cultivator, and d) other lawful possessor of agricultural land situated within the irrigable service area who is actually engaged in farming. The current process of organization is contained in several participatory irrigation and development management manuals (e.g. Manual on Farmer Irrigators' Organization Program) prepared by NIA.

Even recent laws such as RA 7607 (Magna Carta of the Small Farmers, 1992) and RA 8435 (AFMA, 1997) failed to provide a definitive legal framework on the IAs

and their role in food production. A specific provision in RA 7607 encouraged IA institutional strengthening but did not provide the mechanisms to enable them to effectively assume the O&M of irrigation systems and responsibility of collecting fees from the individual members. The AFMA also stressed the need for capacity building to support NIA's turn over of systems management to the IAs but similarly failed to clarify the framework on IA roles and sustainability. AFMA's specific provision limiting the turnover to the O&M of secondary canals and on-farm facilities in NIS without asset transfer further created confusion on the role and involvement of the IAs in these irrigation systems.

1.2 IA Internal Policies

IA organization and operations are governed by their own policies that are incorporated in their Articles of Incorporation and By-laws. A prototype Articles of Incorporation and By-Laws issued through NIA MC #43 (1990) intended to guide the IAs in their formal registration with accredited government institutions (SEC, CDA or DOLE). Following the prototype, many IAs have registered as non-stock, non-profit organizations with SEC. Registration with SEC provides them legal status as private organizations.

2. Issues on IA Role and Sustainability

2.1 Lack of a Definitive Policy on IAs

The absence of a specific law or policy on IA organization and operation has limited their development into sustainable groups. Existing policies provide NIA with sufficient authority to form IAs, however, they do not a) ensure NIA's sustained capacity to develop, not just organize IAs; b) provide mechanisms to ensure IA organizational and financial viability; and c) secure the long term O&M of the systems especially in the NIS. All these have direct bearing on the sustainability of the IAs and of the NIS facilities and services. An explicit law or policy recognizing the social role of IA in food production such as the Cooperative Code of the Philippines for Cooperatives and the CARP for ARB organizations is necessary to make them legal recipients of government and donor institutional support. Such a policy will likewise clarify the role of IAs in IMT and facilitate its implementation.

2.2 Defective By-laws

The IA by-laws a) are restrictive in nature in terms of qualified membership; b) limit expansion in membership due to lack of incentives and benefits; c) lack jurisdictional authority over the system considering that IA organization is based on shared residential cluster rather than on hydrological considerations; d) deficient in financial sustainability mechanisms given focus on O&M and ISF activities; e) do

not encourage compliance since there are no sanctions and penalties for faulty and inactive members; and f) lack regular monitoring and evaluation mechanisms. A policy guideline requiring revisions in the IA by-laws is needed to address said deficiencies. Enhancement of the by-laws should focus on strengthening organizational discipline, improving O&M and ISF collection responsibilities and sustaining financial performance of IAs.

2.3 Limited Entrepreneurial Capacity

NIA generally intended the IAs to be non-stock, non-profit organizations so they can focus on O&M and ISF collection activities. Because of this organizational stature, IAs have become highly dependent on O&M fees and ISF collection shares as sources of income and are constrained to undertake internal fund generation activities such as savings and capital build up generation. Consequently, they have limited capacities to engage in other entrepreneurial activities and have remained highly monoculture. Moreover, IAs have limited access to credit because of difficulty or failure in meeting borrowing requirements of financing institutions including putting up of equity capital for income generating projects. There is, therefore, a need to beef up the entrepreneurial capacities of IAs to make them more sustainable organizations.

2.4 Unclear IMT Policy

The absence of formal operational guidelines on the implementation of the IMT has led to varying interpretations of the role and responsibilities of IAs. Moreover, IMT without the actual transfer of assets and water rights has not promoted a sense of ownership among the IAs. These have resulted in weak IMT contracts between NIA and the IAs (without self-sustaining mechanisms) and compliance problems. To address these problems, an explicit policy on the process of conversion of Stage/Type I-III contracts to JSM or IMT contracts and contracting criteria for new IMT contracts should be put in place.

2.5 Lack of Support Systems

A major part of NIA's policy in support of IA development is the implementation of its institutional development program (IDP). IDP for IAs covers organization, farm productivity enhancement, systems O&M and preparation for management turnover. However, due to resource constraints, NIA's institutional strengthening programs have been limited in terms of content, quality and reach and continued to focus on physical O&M of the irrigation systems, water distribution, ISF collection, basic financial management and monocropping practices. This traditional program orientation has continued the dependency of IAs on NIA support and failed to

encourage them to evolve into more viable organizations.

Despite its limited resources for institutional capacity building, NIA's IDP has been highly dependent on internal funds and donor support for institutional development. It has not significantly mobilized resources for technical, marketing and financial support for the IAs from other institutions. With increasing demand for capacity building in the light of IMT implementation, NIA stands to benefit from the active participation of other government institutions such as the DA-ATI, DAR, DTI, LANDBANK, QUEDANCOR and the LGUs particularly their respective Offices of the Provincial Agriculturists (OPA) in its IDP.

3. Policy Options to Address Legal Concerns Related to IAs

There are several options to enhance the legal framework for IA institutional development. These can be done through the issuance of a NIA Memorandum Circular (MC) or passage of a congressional act. The latter, compared to a NIA MC, will provide a stronger impetus in IA institutional development but will involve more time and resources. Nonetheless, any policy change, whether through an MC or law, will require a strong political will within NIA, its management and stakeholders like the IAs for its formulation and implementation.

3.1 Immediate to Short-term Actions

The following policy/legal options can be pursued through the issuance of NIA MCs and need to be accompanied by vigorous advocacy and training activities:

3.1.1 Requiring Mandatory Membership and Participation in the IAs

A NIA MC can require registration and membership in IAs as a prerequisite to the provision of water to farmers in the NIS. This can be legally done since NIA possesses the water rights and has ownership of the irrigation systems in NIS. Mandatory membership can facilitate the updating of NIA's records and determination of demand for irrigation services in the NIS while also improving ISF collection and O&M activities.

3.1.2 Enhancement of IA Policies, Systems and Procedures (PSPs) including By-laws

A NIA MC can be issued requiring the enhancement of IA PSPs to include amendments to by-laws, installation of efficient financial systems with appropriate accountability measures and conduct of regular audit and performance evaluation in conjunction with NIA, SEC and other concerned agencies. Below are some recommendations to enhance the by-laws of IAs:

Legal Implications of Revisions to IA By-laws

Area of Concern	Existing Provision	Recommended Revision	Legal Implication
1. Membership	Voluntary; Limited to landowner and household head	Mandatory; Expanded to include actual tiller including tenant or caretaker through forging of lease or land trust arrangements	Imposing mandatory membership is legally sound since NIA owns the water rights and the facilities. Lease, land trust or management arrangements are also legal with consent of landowner.
2. Status	Non-stock, non-profit organization	Provision for conversion to other types of organizations may be included. If stock, profit organization, IA will be subject to tax; if a cooperative, it will be tax-exempt	Amendment of Articles of Incorporation and by-laws or drawing up of articles of cooperation upon approval of 2/3 majority of IA members
3. Boundaries of Service Area Covered by IA	Based on shared residential cluster	Based on hydrological consideration	Inclusion of defined area in the by-laws and IMT contract based on updated parcellary maps
4. Fees, Dues and Other Contributions	Fixed rates	Provision for capital build up and increasing fees per annum based on agreed conditions	None
5. Liability Clause	None	Inclusion of a clause that will make each member liable to transactions entered into by the IA, e.g. IMT contracts, debts	Part of code of membership
6. Privileges or Benefits	None	Priority and ensured allocation of water to members; Other privileges agreed upon by members and NIA within bounds of law	None. These have to accompany the imposition of mandatory membership to ensure the active participation of IA members.
7. Quorum	Majority of members	Specific percentage of total number of members	None
8. Sanctions and Penalties	Termination and suspension of membership based on certain grounds Imposition of penalties in amount set by the IA	Same plus enforcement measures including monitoring and reporting	None as long as penalties are allowed under the law and agreed by majority of IA members
9. Use and Disposition of IA Funds	Payments for discharge and obligations, O&M and other payments that may arise	Add provision for IA's capital build-up (certain percentage of funds generated from ISF and O&M) for sustainability of its operations	Agreement by majority

3.1.3 Implementation of Innovative Schemes to Consolidate IA Activities

Some innovative schemes may be implemented to expedite the implementation of IA activities. One scheme is the drawing up of usufruct, lease, land trust or management agreements between landowners and the IA. This scheme will facilitate decision-making and coordination by the IA of planting schedules, management of the NIS, ISF collection and conduct of O&M activities. Aside from ensuring ISF collection from absentee landowners, this scheme will also expand IA membership with the accreditation of tenants and caretakers.

Bona fide landowners can enter into lease, land trust or management contracts with legal entities. In fact, even agrarian reform beneficiaries who are holders of Emancipation Patents or Certificates of Land Ownership Awards are allowed by law to enter into such contracts (per DAR Administrative Order 02-99).

Other innovative options that can be employed by the IA to consolidate the production, processing and marketing activities of its members and obtain economies of scale include

- a) production contracting arrangements where a buyer may provide the necessary inputs and have sole right to marketable surplus of the IA members;
- b) establishment of IA assembling markets where necessary facilities will be put up and the IA serves as broker of its members;
- c) entering into marketing contracts or acquisition of instruments such as guarantee to buy or letter of intent to buy from major commodity or institutional buyers; and
- d) affiliation with existing cooperatives under “big brother-small brother arrangements” where the big brother cooperative serves as the entrepreneurial arm of the IA.

There are no legal constraints to these arrangements. However, certain guidelines may need to be drawn for the IAs in entering into any of these arrangements. A NIA MC can introduce appropriate schemes to the IAs accompanied by guidelines in contracting. DAR Administrative Order 02-99 may serve as reference to NIA in the drafting of such guidelines.

3.1.4 Issuance of an Explicit IMT Policy

NIA is authorized to issue policies related to the management of the NIS by virtue of PD 552. Relatedly, the operational guidelines for IMT implementation can be issued through a NIA MC.

The matrix below suggests some amendments to the current draft IMT policy to

incorporate self-sustaining mechanisms. Existing IMT contracts between NIA and IAs will have to be revised in accordance with the enhanced provisions of said IMT policy.

Recommended Amendments to the Draft IMT Policy

Area of Concern	Existing Provision	Recommended Revision/Provision
Legal Basis	AFMA, PD552	<ul style="list-style-type: none"> • Include NIA MCs related to turnover program
Program Scope	Part of General Policies	<ul style="list-style-type: none"> • Separate section entitled Scope and Coverage to include target number and service areas of NIS to be covered
Definition of Terms	None	<ul style="list-style-type: none"> • All terms related to IMT including major and minor repair work, types of contracts, etc.
Existing Status/Situationer	None	<ul style="list-style-type: none"> • Include the following: <ol style="list-style-type: none"> a) existing contracts (Types I- III, JSM, IMT) b) NIS areas not yet covered by contracts
General Policies	Section includes scope, policy statements, transfer of documents, training, funding	<ul style="list-style-type: none"> • Separate section on policies • General policies to highlight the following: <ol style="list-style-type: none"> a) participatory approach to systems management as overarching policy b) qualification standards of IAs for contracting, including membership; c) types of contracts (joint or full management) covered; d) contract area; e) transition conditions – transformation of Type Contracts into JSM; JSM to full management; and f) legal instrument to effect contract and contracting/signing parties
Process of Contracting	Not stated	<ul style="list-style-type: none"> • Phased manner as implemented under IOSP: <ol style="list-style-type: none"> a) pre-mobilization; b) mobilization; c) participatory phase; and d) implementation. • Should indicate length of time and conditions to move from one phase to the next.
Duties and Responsibilities	Not stated	<ul style="list-style-type: none"> • Spell out technical and financial duties and responsibilities of NIA and IA
Financial Arrangements	None	<ul style="list-style-type: none"> • Terms of payment for O&M • Sharing responsibilities in repair, rehabilitation, replacements of facilities • ISF sharing arrangements, with increasing IA share based on phase • Innovative collection schemes • Mandatory retention of funds for seed fund and repair and rehab from NIA ISF share and CBU from IA share
Sanctions and Penalties	None	<ul style="list-style-type: none"> • Sanctions and penalties should be imposed on both NIA and IA on the following: <ol style="list-style-type: none"> a) Delayed and non-delivery of water by NIA; b) Delayed remittance of ISF shares by NIA; c) IA non-compliance to clearing and maintenance of canals; d) Illegal acts such as diversion of water, etc. e) Poor ISF collection performance • Penalties maybe in the form of fines, suspension, cancellation of contract or imprisonment.

Area of Concern	Existing Provision	Recommended Revision/Provision
Monitoring, Reporting and Evaluation	None	<ul style="list-style-type: none"> • Mechanisms for regular monitoring, including performance and financial audit, reporting and evaluation
Funding	Identifies sources of funding only	<ul style="list-style-type: none"> • Source and specific budgetary allocations should be included for seed fund, O&M, future repair and rehab
Provision for Amendments	None	<ul style="list-style-type: none"> • Conduct of regular review of IMT policy and inclusion of amendment mechanisms

3.2 Medium to Long-term Actions

3.2.1 Conversion of IAs into Entrepreneurial Organizations

IAs can be transformed into higher levels of organizations depending on their organizational and financial capacities to sustain their operations. There are three ways to expand the operations of the IAs and make them more entrepreneurial organizations:

- (a) from non-stock, non-profit to stock and profit organizations (IA operations will be subject to tax);
- (b) joint venture arrangements with NIA, private sector or LGU (if a new entity like a corporation will be set-up, said entity will also be subject to tax); or
- (c) conversion to cooperatives which are tax-exempt.

Conversion activities will only require a majority vote of IA members and change in their Articles of Incorporation and By-laws. These activities will necessitate a reorientation on IA role, intensive advocacy and trainings on management and entrepreneurial activities and registration with the appropriate agency such as CDA or SEC for joint venture arrangements. However, a NIA MC should be drawn to provide the mechanisms to ensure that the basic roles of IAs will not be eroded by other business concerns.

3.2.2 Passage of an Irrigator's Association Law

The passage of a special law on IAs can provide a stronger basis for the organization and operations of the IAs. The proposed legislation will clearly define the social role of IAs in food production and guide their involvement in the management of NIS. The law will also make them legal recipients of government and donor support. The following provisions should be highlighted in the proposed legislation:

Highlights of the Proposed Irrigator’s Association Law

Provision	Details
A. Purpose of IA Organization	For: a) planned cropping calendar and better sharing of irrigation water among farmers; b) proper O&M of irrigation facilities; c) efficient collection of ISF; d) participatory construction, repair and rehabilitation of irrigation facilities; and e) consolidation of production and marketing activities
B. Roles and Responsibilities	a) Highlight social role of IA as service provider in food production activities; b) IA as retailer of irrigation water; and c) Roles and responsibilities related to section A above
C. Benefits and Privileges	a) Priority water allocation, b) Preferential price for irrigation water to members c) Recipients of government and donor support d) Fiscal incentives as may be deemed appropriate
D. Guidelines on Organization and Development	a) Membership criteria and requirements b) Procedures for organization c) Drawing up of Articles of Incorporation and By-laws d) Registration with Accredited Institutions e) Others
D. Institutional Development Mechanisms	a) Provision of trainings by stakeholders b) Contracting Arrangements c) Capital Build-up d) Conversion into other types of organizations e) Other sustainability mechanisms

3.3.3 Consolidation of Irrigation Policies

Effective and efficient IA operations cannot be ensured without the support mechanisms in place. Thus, a comprehensive law on irrigation development is seen as a more sustainable legislation in the long run. The law should be able to consolidate relevant policies into a single legislation. It is envisioned to expedite the implementation of needed reforms and improvements in the irrigation subsector. The following are the proposed elements of the comprehensive law:

Elements of the Proposed Comprehensive Irrigation Law

Section	Proposed Details
Declaration of Policy	<ul style="list-style-type: none"> ▪ lift from AFMA Section 26 with emphasis on efficiency and sustainability of existing and new systems and participatory approaches to irrigation management
Objectives	<ul style="list-style-type: none"> ▪ To improve the delivery of agricultural services in the light of sustainable agricultural and global competitiveness; ▪ To enhance existing systems and operations related to irrigation service delivery to achieve efficiency and sustainability; and ▪ To accelerate the expansion of irrigation services nationwide
Definition of Terms	<ul style="list-style-type: none"> ▪ All related terms
Coverage	<ul style="list-style-type: none"> ▪ Irrigated and potential irrigable areas nationwide ▪ NIS and CIS, other minor irrigation systems
NIA Organization	<ul style="list-style-type: none"> ▪ DA as mother agency of NIA to ensure coordination with other agricultural development activities ▪ Powers and responsibilities of NIA as stated in PD 552
	<ul style="list-style-type: none"> ▪ Highlight on NIA's role related to systems management turnover and institutional building of IAs
	<ul style="list-style-type: none"> ▪ Streamlining of NIA bureaucracy (to contain recommendations from the JICA Study on Strengthening of NIA's Management System) and timeframe
Members of the BOD	<ul style="list-style-type: none"> ▪ As recommended by the JICA Study on Strengthening of NIA's Management System to include: DA Secretary as Chair; NIA Administrator as Vice-Chair; Secretaries of DAR, DENR, NEDA, DPWH, President of the NPC as members; and Head of the National Confederation of IAs as private sector representative ▪ Powers and responsibilities of the BOD to include mandate to issue and amend operational policies related to irrigation development and management as necessary
Irrigation Development and O&M	<ul style="list-style-type: none"> ▪ Criteria for selection of irrigation development scheme (lift from AFMA) ▪ Targets and timeframe for rehabilitation and repairs and development by type of system –NIS, CIS, minor systems
Development of Irrigators Associations	<ul style="list-style-type: none"> ▪ Purpose of organizing IAs ▪ Roles and responsibilities of IAs ▪ Benefits and privileges ▪ Guidelines on organization and development ▪ Institutional development mechanisms ▪ Guidelines for sustainability of operations
Irrigation Management Arrangements	<ul style="list-style-type: none"> ▪ General policies on irrigation management involving IAs and other stakeholders like the LGUs ▪ Process or phases of management <ol style="list-style-type: none"> a) Shared management b) Full management without asset turnover c) Full management with asset turnover ▪ Duties and responsibilities of NIA and IA in each phase ▪ Financial arrangements including ISF shares and mandatory retention of funds for seed fund and repair and rehab from NIA ISF share and CBU from IA share ▪ Sanctions and penalties

Section	Proposed Details
Cost Recovery Mechanisms	<ul style="list-style-type: none"> ▪ Determination of appropriate ISF (costs and revenues, cropping intensity, performance operations and sustainability of water supply: uniform vs. system-based pricing) ▪ Cost recovery of systems in case of asset turn over ▪ Implementation schemes
Roles of Other Government Agencies and the LGUs	<ul style="list-style-type: none"> ▪ Specific roles for DA as the mother agency, DPWH, NFA, NEDA, NPC, concerned LGUs particularly in provision of support services, institution building and monitoring
Monitoring, Reporting and Evaluation (MRE)	<ul style="list-style-type: none"> ▪ Role of NIA, IA and other stakeholders in MRE ▪ Installation of MRE structure and systems
General Provisions	<ul style="list-style-type: none"> ▪ Budgetary appropriation for streamlining, rehabilitation and repair of existing systems and construction of new systems ▪ Drafting of the implementing rules and regulations of the proposed law ▪ Repealing clause ▪ Effectivity